| **year** | **title** | **journal** | **author** | **doi** | **research\_type** | **continent** | **country** | **data\_type** | **response\_level** | **response\_var** | **response\_kingdom** | **response\_phylum** | **response\_flex** | **landscape\_group** | **landscape\_type** | **change\_category** | **study\_spatial\_scale** | **method** | **delay\_type** | **delay\_quantified** | **what\_quantified** | **delay\_direction** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,018 | Projected regional forest plant community dynamics evidence centuries-long effects of habitat turnover | Journal of Vegetation Science | LalechÃ¨re, Etienne and Jabot, Franck and Archaux, FrÃƒÂ©dÃƒÂ©ric and Deffuant, Guillaume | 10/gdxcxn | empirical | Europe | France | database | single species | probability of occupancy | Plantae |  | considered | terrestrial | Temperate and boreal forests and woodlands | habitat change | regional | metapopulation | extinction debt; immigration credit | yes | proportion of patches | bi\_directional |
| 2,018 | Sustainable Land-use Management Under Biodiversity Lag Effects | Ecological Economics | Lafuite, A.-S. and Denise, G. and Loreau, M. | 10/gd9w4j | methodological |  |  | simulation | multi species | biodiversity |  |  |  |  |  |  |  | economic | extinction debt | no |  | mono\_directional |
| 2,018 | Land use legacy effects on woody vegetation in agricultural landscapes of south-western Ethiopia | Diversity and Distributions | Shumi, Girma and Schultner, Jannik and Dorresteijn, Ine and Rodrigues, PatrÃƒÂ­cia and Hanspach, Jan and Hylander, Kristoffer and Senbeta, Feyera and Fischer, Joern | 10/gdxb2k | empirical | Africa | Ethiopia | field | multi species | community index; species richness; population structure | Plantae |  | not considered | terrestrial | Cultivated areas; Tropical and subtropical dry and humid forests | habitat change | local | glm w/ past/present terms | extinction debt; immigration credit | no |  | bi\_directional |
| 2,018 | Do asynchronies in extinction debt affect the structure of trophic networks? A case study of antagonistic butterfly larvae-plant networks | Oikos | Guardiola, MoisÃƒÂ¨s and Stefanescu, ConstantÃƒÂ­ and RodÃƒÂ , Ferran and Pino, Joan | 10/gdsbx5 | empirical | Europe | Spain | database; field | multi species | species richness; network metrics | Animalia | Insects | not considered | terrestrial | Temperate grasslands | habitat change | regional | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,018 | Nestedness-resultant community disassembly process of extinction debt in a highly fragmented semi-natural grassland | Plant Ecology | Koyanagi, Tomoyo F. and Furukawa, Takuya and Osawa, Takeshi | 10/gd4nkh | empirical | Asia | Japan | database; field | multi species | species richness; beta diversity; nestedness; turnover | Plantae |  | not considered | terrestrial | Temperate grasslands | fragmentation | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,018 | Present conditions may mediate the legacy effect of past land-use changes on species richness and composition of above- and below-ground assemblages | Journal of Ecology | Janssen, Philippe and Bec, StÃƒÂ©phane and Fuhr, Marc and Taberlet, Pierre and Brun, Jean-Jacques and Bouget, Christophe | 10/gcq7vz | empirical | Europe | France | field | multi species | species richness; community index | Plantae |  | not considered | terrestrial | Temperate and boreal forests and woodlands | habitat change | local | glm w/ past/present terms | extinction debt; colonization credit | no |  | bi\_directional |
| 2,018 | Land-use history drives contemporary pollinator community similarity | Landscape Ecology | Cusser, Sarah and Neff, John L. and Jha, Shalene | 10/gdzw23 | empirical | North America | USA | database; field | multi species | community index | Animalia | Insects | not considered | terrestrial | Cultivated areas | habitat change | local | glm w/ past/present terms | none | no |  |  |
| 2,018 | Time-lagged lichen extinction in retained buffer strips 16.5 years after clear-cutting | Biological Conservation | Johansson, Victor and WikstrÃƒÂ¶m, Carl-Johan and Hylander, Kristoffer | 10/gd4std | empirical | Europe | Sweden | field | multi species | species richness; species frequency | Fungi | Lichens and Bryophytes | not considered | terrestrial | Temperate and boreal forests and woodlands; Inland surface waters and water bodies/freshwater | habitat change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,018 | Past levels of canopy closure affect the occurrence of veteran trees and flagship saproxylic beetles | Diversity and Distributions | MiklÃƒÂ­n, Jan and Sebek, Pavel and Hauck, David and Konvicka, Ondrej and Cizek, Lukas | 10/gcvgj7 | empirical | Europe | Czech Republic | database; field | single species | population size | Plantae; Animalia |  | not considered | terrestrial | Temperate and boreal forests and woodlands | habitat change | local | glm | extinction debt | no |  | mono\_directional |
| 2,018 | Lags in the response of mountain plant communities to climate change | Global Change Biology | Alexander, Jake M. and Chalmandrier, LoÃƒÂ¯c and Lenoir, Jonathan and Burgess, Treena I. and Essl, Franz and Haider, Sylvia and Kueffer, Christoph and McDougall, Keith and Milbau, Ann and NuÃƒÂ±ez, Martin A. and Pauchard, AnÃƒÂ­bal and Rabitsch, Wolfgang and Rew, Lisa J. and Sanders, Nathan J. and Pellissier, LoÃƒÂ¯c | 10/gcmq8c | methodological |  |  | simulation |  | metapopulation | Plantae |  | not considered | terrestrial | Tundra and High Mountain habitats | climatic change |  | metapopulation | dispersal lag; establishment lag; extinction debt | no |  | bi\_directional |
| 2,018 | Importance of local habitat conditions and past and present habitat connectivity for the species richness of grassland plants and butterflies in power line clearings | Biodiversity and Conservation | Lampinen, Jussi and Heikkinen, Risto K. and Manninen, Paula and RyttÃƒÂ¤ri, Terhi and Kuussaari, Mikko | 10/gctg97 | empirical | Europe | Finland | database; field | multi species | species richness | Plantae; Animalia | Insects | considered | terrestrial | Temperate grasslands | habitat change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,019 | Interactive persistent effects of past landâ€cover and its trajectory on tropical freshwater biodiversity | Journal of Applied Ecology | Santos, Edineusa P and Wagner, Helene H and Ferraz, SÃƒÂ­lvio F B and Siqueira, Tadeu |  | empirical | South America | Brazil | database; field | multi species | abundance; rarefied species richness; Tsallis entropy species richness | Animalia | Insects | not considered | aquatic | Inland surface waters and water bodies/freshwater | habitat change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,019 | Characterising extinction debt following habitat fragmentation using neutral theory | Ecology Letters | Thompson, Samuel E. D. and Chisholm, Ryan A. and Rosindell, James | 10/gf9z57 | methodological; empirical | South America | Brazil | simulation; database | multi species | species richness | Plantae |  | not considered | terrestrial | Tropical and subtropical dry and humid forests | habitat change; fragmentation | regional | IBM | extinction debt | yes | species richness | mono\_directional |
| 2,019 | Extinction debts and colonization credits of non-forest plants in the European Alps | Nature Communications | Rumpf, Sabine B. and HÃƒÂ¼lber, Karl and Wessely, Johannes and Willner, Wolfgang and Moser, Dietmar and Gattringer, Andreas and Klonner, GÃƒÂ¼nther and Zimmermann, Niklaus E. and Dullinger, Stefan | 10/gjh9dd | empirical | Europe | Austria; Switzerland; Italy; Slovenia; Germany | database; field | single species | presence | Plantae |  | not considered | terrestrial | Tundra and High Mountain habitats | climatic change | regional | SDM | extinction debt; colonization credit | yes | predicted presence/absence by sdm | bi\_directional |
| 2,019 | Relative importance of landscape and species characteristics on extinction debt, immigration credit and relaxation time after habitat turnover | Population Ecology | LalechÃƒÂ¨re, Etienne and Archaux, FrÃƒÂ©dÃƒÂ©ric and Jabot, Franck | 10/gm4hth | methodological; empirical |  |  | simulation | single species | population size |  |  | not considered |  |  |  |  | metapopulation | extinction debt; colonization credit | yes | population change | bi\_directional |
| 2,019 | Extinction debt repayment via timely habitat restoration | Theoretical Ecology | Meyer, Katherine | 10/gm4htf | methodological |  |  | simulation | single species | patch occupancy |  |  |  |  |  | habitat change |  | metapopulation | extinction debt | no | population change | mono\_directional |
| 2,019 | Understanding extinction debts: spatio-temporal scales, mechanisms and a roadmap for future research | Ecography | Figueiredo, Ludmilla and Krauss, Jochen and SteffanÃ¢â‚¬ÂDewenter, Ingolf and Sarmento Cabral, Juliano | 10/gg4x94 | review |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,019 | Extinction debt in a biodiversity hotspot: the case of the Chilean Winter Rainfall-Valdivian Forests | Landscape and Ecological Engineering | Noh, Jin-kyoung and EcheverrÃƒÂ­a, Cristian and Pauchard, AnÃƒÂ­bal and Cuenca, Pablo | 10/gm4hs2 | empirical | South America | Chile | database; field | multi species | species richness | Plantae | Vascular plants | considered | terrestrial | Temperate and boreal forests and woodlands; Mediterranean forests, woodlands and scrub | habitat change; fragmentation | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,019 | Compounding human stressors cause major regeneration debt in over half of eastern US forests | Journal of Applied Ecology | Miller, Kathryn M. and McGill, Brian J. | 10/gm4hsq | empirical | North America | USA | database | multi species | density | Plantae | Vascular plants | not considered | terrestrial | Temperate and boreal forests and woodlands | habitat change | regional |  | regeneration debt | no | potential based on current densities | mono\_directional |
| 2,019 | The legacy of past human land use in current patterns of mammal distribution | Ecography | Polaina, Ester and GonzÃƒÂ¡lezÃ¢â‚¬ÂSuÃƒÂ¡rez, Manuela and Revilla, Eloy | 10/gjcst4 | empirical | Global |  | database | multi species | species richness | all |  | not considered | terrestrial |  | habitat change | global | glm | extinction debt | no |  | mono\_directional |
| 2,019 | Effect of present and past landscape structures on the species richness and composition of ground beetles (Coleoptera: Carabidae) and spiders (Araneae) in a dynamic landscape | Landscape and Urban Planning | Duan, Meichun and Liu, Yunhui and Li, Xiang and Wu, Panlong and Hu, Wenhao and Zhang, Feng and Shi, Hongliang and Yu, Zhenrong and Baudry, Jacques | 10/gm4hsh | empirical | Asia | China | database | multi species | species richness; traits | Animalia | Insects | considered | terrestrial | Urban/Semi-urban | habitat change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,019 | Abiotic, present-day and historical effects on species, functional and phylogenetic diversity in dry grasslands of different age | PLOS ONE | BelinchÃƒÂ³n, RocÃƒÂ­o and HemrovÃƒÂ¡, Lucie and MÃƒÂ¼nzbergovÃƒÂ¡, Zuzana | 10/gm4hsg | empirical | Europe | Czech Republic | database; field | multi species | species richness; functional diversity; phylogenetic diversity | Plantae |  | considered | terrestrial | Temperate grasslands | habitat change | local | glm w/ past/present terms | colonization credit | no |  | mono\_directional |
| 2,019 | Delayed and immediate effects of habitat loss on the genetic diversity of the grassland plant Trifolium montanum | Biodiversity and Conservation | Aavik, T. and Thetloff, M. and TrÃƒÂ¤ger, S. and HernÃƒÂ¡ndez-Agramonte, I. M. and Reinula, I. and PÃƒÂ¤rtel, M. | 10/gm4hsf | empirical | Europe | Estonia | database; field | single species | allelic richness; gene diversity; inbreeding coefficient; Observed heterozygosity | Plantae | Grasses | considered | terrestrial | Temperate grasslands | habitat change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,019 | Placing human landscape legacies in a dynamic systems framework | American Journal of Botany | Ross, Nanci J. and Stevens, M. Henry H. | 10/gm4hsd | theoretical |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,019 | Are extinction debts reflected in temporal changes of life history trait profiles? A fifteen-year reappraisal of bryophyte metacommunities in a fragmented landscape | Biological Conservation | Sierra, Adriel M. and Toledo, JosÃƒÂ© J. and Nascimento, Henrique E. and Pereira, Marta R. and Zartman, Charles E. | 10/gm4hsc | empirical | South America | Brazil | database; field | multi species | species richness; abundance; beta diversity | Plantae | Lichens and Bryophytes | not considered | terrestrial | Tropical and subtropical dry and humid forests | fragmentation | local | glm | none | no |  |  |
| 2,019 | Life history traits predict colonization and extinction lags of desert plant species since the Last Glacial Maximum | Ecology | Butterfield, Bradley J. and Holmgren, Camille A. and Anderson, R. Scott and Betancourt, Julio L. | 10/gm4hsb | empirical | North America | USA; Mexico | database; field | multi species | lags | Plantae |  | not considered | terrestrial | Deserts and xeric shrublands | climatic change | regional | glm | extinction debt; colonization credit | no | difference between time of occurrence in paleo-records traces | bi\_directional |
| 2,019 | Extinction debt and delayed colonization have had comparable but unique effects on plant community-climate lags since the Last Glacial Maximum | Global Ecology and Biogeography | Butterfield, Bradley J. and Anderson, R. Scott and Holmgren, Camille A. and Betancourt, Julio L. | 10/gm4hrz | empirical | North America | USA; Mexico | database; field | multi species | cold tolerances | Plantae |  | not considered | terrestrial | Deserts and xeric shrublands | climatic change | regional |  | extinction debt; colonization credit | no | difference between time of occurrence in paleo-records traces | bi\_directional |
| 2,020 | Evidence for a possible extinction debt in Swiss wetland specialist plants | Ecology and Evolution | Jamin, Anine and Peintinger, Markus and Gimmi, Urs and Holderegger, Rolf and Bergamini, Ariel | 10/gm4htr | empirical | Europe | Switzerland | database; field | multi species | species richness | Plantae |  | considered | terrestrial | Wetlands | habitat change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,020 | Temporal lags in observed and dark diversity in the Anthropocene | Global Change Biology | Trindade, Diego P. F. and Carmona, Carlos P. and PÃƒÂ¤rtel, Meelis | 10/gjh4h8 | theoretical |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,020 | Extinction debt in local habitats: quantifying the roles of random drift, immigration and emigration | Royal Society Open Science | Wu, Yongbin and Chen, Youhua and Chang, Shui-Ching and Chen, You-Fang and Shen, Tsung-Jen | 10/gh3shc | methodological |  |  |  | multi species | species richness |  |  | not considered |  |  | habitat change |  | time-dependent stochastic neutral model | extinction debt; colonization credit | no |  |  |
| 2,020 | The effect of hedgerow density on habitat quality distorts species-area relationships and the analysis of extinction debts in hedgerows | Landscape Ecology | Litza, Kathrin and Diekmann, Martin | 10/ggvv45 | empirical | Europe | Germany | database; field | multi species | species richness | Plantae | Vascular plants | considered | terrestrial | Temperate and boreal forests and woodland | habitat change | local | glm w/ past/present terms | extinction debt; colonization credit | no |  | bi\_directional |
| 2,020 | Extinction debt of fishes in Great Lakes coastal wetlands | Biological Conservation | Montgomery, Fielding and Reid, Scott M. and Mandrak, Nicholas E. | 10/gm4htk | empirical | North America | Canada | database; field | multi species | species richness; community metrics | Animalia | Fish | considered | aquatic | Inland surface waters and water bodies/freshwater | habitat change | regional | stable/unstable habitat comparison | extinction debt | yes | species richness | mono\_directional |
| 2,020 | Ecological time lags and the journey towards conservation success | Nature Ecology & Evolution | Watts, Kevin and Whytock, Robin C. and Park, Kirsty J. and Fuentes-Montemayor, Elisa and Macgregor, Nicholas A. and Duffield, Simon and McGowan, Philip J. K. | 10/ggjh23 | empirical | Europe | United Kingdom | database | single species | abundance | Animalia | Birds | considered | terrestrial | Temperate and boreal forests and woodland | habitat change | regional | glm | extinction debt; colonization credit | no |  | bi\_directional |
| 2,020 | Assessing the legacy of land use trajectories on stream fish communities of southern Brazil | Hydrobiologia | Camana, Mateus and Dala-Corte, Renato Bolson and Collar, Fernanda Carello and Becker, Fernando Gertum | 10/gm4htc | empirical | South America | Brazil | database; field | multi species | species richness | Animalia | Fish | not considered | aquatic | Inland surface waters and water bodies/freshwater | habitat change | regional | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,020 | Extinction debt across three taxa in well-connected calcareous grasslands | Biological Conservation | LÃƒÂ¶ffler, Franz and Poniatowski, Dominik and Fartmann, Thomas | 10/gm4hs8 | empirical | Europe | Germany | database; field | multi species | species richness | Animalia; Plantae | Insects; Grasses | considered | terrestrial | Temperate grasslands | habitat change; fragmentation | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,020 | Contrasting time-scale effects of land-use legacy on species richness, diversity and composition in Mediterranean scrubland communities | Landscape Ecology | Gamboa-Badilla, Nancy and Segura, Alfonso and Bagaria, Guillem and Basnou, Corina and Pino, Joan | 10/gm4hs7 | empirical | Europe | Spain | database; field | multi species | species richness; shannon; evenness | Plantae | Vascular plants | not considered | terrestrial | Mediterranean forests, woodlands and scrub | habitat change | local | glm w/ past/present terms | extinction debt; colonization credit | no |  | bi\_directional |
| 2,020 | Quantifying Long-Term Urban Grassland Dynamics: Biotic Homogenization and Extinction Debts | Sustainability | du Toit, MariÃƒÂ© J. and Kotze, D. Johan and Cilliers, Sarel S. | 10/gm4hs6 | empirical | Africa | South Africa | database; field | multi species | species richness | Plantae | Grasses | not considered | terrestrial | Urban/Semi-urban | habitat change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,020 | Plant community assembly in suburban vacant lots depends on earthmoving legacy, habitat connectivity, and current mowing frequency | Ecology and Evolution | Tsuzuki, Yoichi and Koyanagi, Tomoyo F. and Miyashita, Tadashi | 10/gm4hsk | empirical | Asia | Japan | database; field | multi species | species richness; beta diversity; nestedness; turnover | Plantae | Grasses | considered | terrestrial | Temperate grasslands | habitat change | local | glm w/ past/present terms | none | no |  |  |
| 2,020 | Effects of Past and Present-Day Landscape Structure on Forest Soil Microorganisms | Frontiers in Ecology and Evolution | Mennicken, Sophie and Kondratow, Floriane and Buralli, Florian and Manzi, Sophie and Andrieu, Emilie and Roy, MÃƒÂ©lanie and Brin, Antoine | 10/gm4hr8 | empirical | Europe | France | database; field | multi species | species richness; shannon; simpson | Fungi; Bacteria | Bacteria; Fungi | considered | terrestrial | Temperate and boreal forests and woodland | habitat change | regional | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,020 | Extinction-immigration dynamics lag behind environmental filtering in shaping the composition of tropical dry forests within a changing landscape | Ecography | Blanchard, GrÃƒÂ©goire and Birnbaum, Philippe and Munoz, FranÃƒÂ§ois | 10/gm4hr7 | empirical | Oceania | New Caledonia | database; field | multi species | species richness; shannon; functional composition; community weighted mean ; community weighted variance | Plantae | Vascular plants | not considered | terrestrial | Tropical and subtropical dry and humid forests | habitat change | regional | ABC; | extinction debt; colonization credit | no |  | bi\_directional |
| 2,021 | Inconsistent detection of extinction debts using different methods | Ecography | Ridding, Lucy E. and Newton, Adrian C. and Keith, Sally A. and Walls, Robin M. and Diaz, Anita and Pywell, Richard F. and Bullock, James M. | 10/ghfbcw | empirical | Europe | United Kingdom |  | multi species | species richness | Plantae | Vascular plants | considered | terrestrial | Temperate grasslands | habitat change | regional | glm w/ past/present terms; stable/unstable habitat comparison; past communities | extinction debt | yes | species richness | mono\_directional |
| 2,021 | Past landscape structure drives the functional assemblages of plants and birds | Scientific Reports | Lecoq, Lucie and Ernoult, Aude and Mony, Cendrine | 10/gm4htn | empirical | Europe | France | database; field | multi species | species richness; functional diversity; community weighted mean ; community weighted variance | Animalia; Plantae | Birds; Vascular plants | considered | terrestrial | Cultivated areas | habitat change; fragmentation | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,021 | Evaluating extinction debt in fragmented forests: the rapid recovery of a critically endangered primate | Animal Conservation | AlcocerÃ¢â‚¬ÂRodrÃƒÂ­guez, M. and ArroyoÃ¢â‚¬ÂRodrÃƒÂ­guez, V. and GalÃƒÂ¡nÃ¢â‚¬ÂAcedo, C. and CristÃƒÂ³balÃ¢â‚¬ÂAzkarate, J. and Asensio, N. and Rito, K. F. and Hawes, J. E. and VeÃƒÂ , J. J. and Dunn, Jacob C. | 10/gm4htg | empirical | North America | Mexico | database; field | single species | occupancy; popualtion size | Animalia | Primates | not considered | terrestrial | Tropical and subtropical dry and humid forests | habitat change; fragmentation | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,021 | Potential extinction debt due to habitat loss and fragmentation in subalpine moorland ecosystems | Plant Ecology | Makishima, Daichi and Sutou, Rui and Goto, Akihito and Kawai, Yutaka and Ishii, Naohiro and Taniguchi, Hayami and Uchida, Kei and Shimazaki, Masaya and Nakashizuka, Tohru and Suyama, Yoshihisa and Hikosaka, Kouki and Sasaki, Takehiro | 10/gm4hs3 | empirical | Asia | Japan | database; field | multi species | species richness; functional diversity | Plantae |  | considered | terrestrial | Tundra and High Mountain habitats | climatic change | local | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,021 | Estimating the impacts of habitat loss induced by urbanization on bird local extinctions | Biological Conservation | Dri, Gabriela Franzoi and Fontana, Carla Suertegaray and Dambros, Cristian de Sales | 10/gm4hsw | empirical | South America | Brazil | database; field | multi species | species richness | Animalia | Birds | not considered | terrestrial | Urban/Semi-urban | habitat change | local | glm w/ past/present terms; occupancy model | extinction debt | no |  | mono\_directional |
| 2,021 | Towards quantifying the mass extinction debt of the Anthropocene | Proceedings of the Royal Society B: Biological Sciences | Spalding, Christopher and Hull, Pincelli M. | 10/gjvnzb | methodological; empirical | Global |  | database | multi species | extinction rates |  |  | not considered | terrestrial; aquatic |  | habitat change | global | model ad-hoc | extinction debt | no |  | mono\_directional |
| 2,021 | How to consider history in landscape ecology: patterns, processes, and pathways | Landscape Ecology | Tappeiner, Ulrike and Leitinger, Georg and ZariÃ…â€ a, Anita and BÃƒÂ¼rgi, Matthias | 10/ghn7jg | theoretical |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,021 | Historical ecology of Mediterranean forests: Land use legacies on current understorey plants differ with time since abandonment and former agricultural use | Journal of Vegetation Science | Abadie, Juliet and Dupouey, JeanÃ¢â‚¬ÂLuc and Salvaudon, Aline and Gachet, Sophie and Videau, NoÃƒÂ©mie and Avon, Catherine and Dumont, JÃƒÂ©rÃƒÂ´me and Tatoni, Thierry and BergÃƒÂ¨s, Laurent | 10/gm4hss | empirical | Europe | France | database | multi species | functional diversity; community metrics | Plantae |  | considered | terrestrial | Mediterranean forests, woodlands and scrub | habitat change | local | glm w/ past/present terms | extinction debt; colonization credit | no |  | bi\_directional |
| 2,021 | Using Climatic Credits to Pay the Climatic Debt | Trends in Ecology & Evolution | Vaughan, Ian P. and Gotelli, Nicholas J. | 10/gm4hsn | theoretical |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,021 | Mismatches between birds' spatial and temporal dynamics reflect their delayed response to global changes | Oikos | GaÃ¼zÃ¨re, Pierre and Devictor, Vincent | 10/gj3px3 | empirical | Europe | France | database | single species | abundance | Animalia | Birds | considered | terrestrial |  |  | country-wide | glm | extinction debt; colonization credit | yes | deviation (delta pop trend and size) | bi\_directional |
| 2,021 | Historical, local and landscape factors determine the success of grassland restoration for arthropods | Agriculture, Ecosystems & Environment | Woodcock, B.A. and Pywell, R.F. and Macgregor, N.A. and Edwards, M.E. and Redhead, J. and Ridding, L.E. and BatÃƒÂ¡ry, P. and CzerwiÃ…â€žski, M. and Duffield, S. | 10/gm4hr9 | empirical | Europe | United Kingdom | database; field | multi species | species richness; similarity | Animalia | Insects | considered | terrestrial | Cultivated areas | habitat change | regional | glm w/ past/present terms |  | no |  |  |
| 2,021 | How to assess the temporal dynamics of landscape connectivity in ever-changing landscapes: a literature review | Landscape Ecology | Uroy, LÃƒÂ©a and Alignier, Audrey and Mony, Cendrine and FoltÃƒÂªte, Jean-Christophe and Ernoult, Aude | 10/gm4hr5 | review |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,021 | How do habitat amount and habitat fragmentation drive time-delayed responses of biodiversity to land-use change? | Proceedings of the Royal Society B: Biological Sciences | Semper-Pascual, AsunciÃƒÂ³n and Burton, Cole and Baumann, Matthias and Decarre, Julieta and Gavier-Pizarro, Gregorio and GÃƒÂ³mez-Valencia, Bibiana and Macchi, Leandro and Mastrangelo, MatÃƒÂ­as E. and PÃƒÂ¶tzschner, Florian and Zelaya, Patricia V. and Kuemmerle, Tobias | 10/gm4hr3 | empirical | South America | Argentina | database | multi species | occupancy | Animalia | Mammals; Birds | not considered | terrestrial | Tropical and subtropical dry and humid forests | habitat change; fragmentation | regional | glm w/ past/present terms | extinction debt | no |  | mono\_directional |
| 2,021 | Imperfect detection biases extinction-debt assessments | Conservation Science and Practice | Montgomery, Fielding A. and Reid, Scott M. and Mandrak, Nicholas E. | 10/gm4hr2 | empirical | North America | Canada | database | multi species | species richness | Animalia | Fish | considered | aquatic | Inland surface waters and water bodies/freshwater; Wetlands | habitat change | local | stable/unstable habitat comparison | extinction debt; immigration credit | yes | species richness | bi\_directional |