CURRICULUM VITAE

Mgr. Martin Macek

Born 17th March 1986, Prague

Web of Science ResearcherID: A-3371-2016

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Education:

2011 – 2020	Graduate study: Charles University, doctoral study programme Botany.
2006 – 2011	Undergraduate study: Charles University in Prague, Faculty of Science, master's study programme Geobotany. Master thesis: Vliv světla na složení a diverzitu lesní vegetace v Českém středohoří (Effects of light on understory vegetation composition and diversity)
2006 – 2009	Undergraduate study: Charles University in Prague, Faculty of Science, bachelor's study programme Ecological and Evolutionary Biology. Bachelor thesis: Variabilita vegetace dubohabrových lesů na jemné škále (Small-scale vegetation variability of oak-hornbeam forests).

Employment

2010 – 2020	Research assistant, Institute of Botany of the Czech Academy of Sciences, Průhonice; Department of GIS and Remote Sensing.

Research project participation

2019 - 2021	(TAČR ZETA TJ02000281) Innovative microclimate measurement as a tool for forest management in NP Bohemian Forest. PI: Josef Brůna
2019 - 2021	(GAČR 19-20970Y) Land use, social transformations and woodland in Central European Prehistory. Modelling approaches to human-environment interactions. PI: Jan Kolář
2017 – 2019	(GAČR GA17-19376S) Ecological and Evolutionary Responses of Plants to Climate Change: Growth Analysis across Ecosystems and Evolutionary Linkages. PI: Jiří Doležal
2017 – 2019	(GAČR GA17-13998S) Forest microclimate - neglected link between plant diversity and climate change. PI: Jan Wild
2017 – 2018	(GAČR GA17-09283S) Humans as nature: anthropogenic legacy in temperate forest ecosystems. PI: Radim Hédl

2017 – 2019 (GAČR GA17-07378S) Spatiotemporal reconstruction of tropical cyclones and their impact on the forest structure and diversity in Northeast Asia. PI: Jan Altman

2015 – 2017 (GAUK 359515) Parametrization of ecological niche of forest plant species. PI: Martin Macek

2013 – 2017 (GAČR GA13-13368S) Plant diversity changes under climate warming: from regional flora to microhabitat adaptation and diversity patterns. PI: Jiří Doležal.

2012 – 2016 (ERC 278065) Long-term woodland dynamics in Central Europe: from estimations to a realistic model. PI: Peter Szabó.

2011 – 2013 (TAČR TA01021283) Vývoj a kalibrace modulární autonomní stanice pro měření vlhkostních a teplotních podmínek v rozsáhlých bodových polích. PI: Jan Wild.

2010 – 2013 (GAČR P504/10/0843) The role of disturbances in dynamics of temperate mountain spruce-dominated forests – a landscape simulation model of the Šumava Mts. PI: Jan Wild.

Publications (WOS)

Macek, M., Kopecký M. & Wild J. (2019) Maximum air temperature controlled by landscape topography affects plant species composition in temperate forests. *Landscape Ecology 34 (11):2541-2556.* https://doi.org/10.1007/s10980-019-00903-x

Šipoš, J., Chudomelová M., Vild O., **Macek M.**, Kopecký M., Szabó P. & Hédl R. (2019) Plant diversity in deciduous temperate forests reflects interplay among ancient and recent environmental stress. *Journal of Vegetation Science.* In press. https://doi.org/10.1111/jvs.12816

Depauw, L., Perring M. P., Landuyt D., Maes S. L., Blondeel H., De Lombaerde E., Brūmelis G., Brunet J., Closset-Kopp D., Czerepko J., Decocq G., Den Ouden J., Gawryś R., Härdtle W., Hédl R., Heinken T., Heinrichs S., Jaroszewicz B., Kopecký M., Liepiņa I., **Macek M.**, Máliš F., Schmidt W., Smart S. M., Ujházy K., Wulf M., & Verheyen K. (2020). Light availability and land-use history drive biodiversity and functional changes in forest herb layer communities. *Journal of Ecology*. https://doi.org/10.1111/1365-2745.13339

Knapp, M., Seid M., Knappová J., **Macek M.** & Saska P. (2019). Temporal changes in the spatial distribution of carabid beetles around arable field-woodlot boundaries. *Scientific Reports* 9:8967. https://doi.org/10.1038/s41598-019-45378-7

Dolezal, J., Kopecky M., Dvorsky M., **Macek M.,** Rehakova K., Capkova K., Borovec J., Schweingruber F., Liancourt P. & Altman J. (2019) Sink limitation of plant growth determines treeline in the arid Himalayas. *Functional Ecology 33 (4): 553-565.* https://doi.org/10.1111/1365-2435.13284

Wild, J., Kopecký M., **Macek M.**, Šanda M., Jankovec J. & Haase T. (2019) Climate at ecologically relevant scales: A new temperature and soil moisture logger for long-term microclimate measurement. *Agricultural and Forest Meteorology*, 268, 40–47. https://doi.org/10.1016/j.agrformet.2018.12.018

Dolezal, J., Dvorský M., Kopecký M., Altman J., Mudrák O., Čapková K., Řeháková K., **Macek M.** & Liancourt P. (2019) Functionally distinct assembly of vascular plants colonizing alpine cushions suggests their vulnerability to climate change. *Annals of Botany 123(4): 569-578.* https://doi.org/10.1093/aob/mcy207

Altman, J., Ukhvatkina O. N., Omelko A. M., **Macek M.**, Plener T., Pejcha V., Cerny T., Petrik P., Srutek M., Song J.-S., Zhmerenetsky A. A., Vozmishcheva A. S., Krestov P. V., Petrenko T. Y., Treydte K. & Dolezal J. (2018) Poleward migration of the destructive effects of tropical cyclones during the 20th century. *Proceedings of the National Academy of Sciences 115 (45): 11543 - 11548.* https://doi.org/10.1073/pnas.1808979115

De Lombaerde, E., Verheyen K., Perring M. P., Bernhardt-Römermann M., Van Calster H., Brunet J., Chudomelová M., Decocq G., Diekmann M., Durak T., Hédl R., Heinken T., Hommel P., Jaroszewicz B., Kopecký M., Lenoir J., **Macek M.,** Máliš F., Mitchell F. J. G., Naaf T., Newman M., Petřík P., Reczyńska K., Schmidt W., Świerkosz K., Vild O., Wulf M. & Baeten L. (2018). Responses of competitive understorey species to spatial environmental gradients inaccurately explain temporal changes. *Basic and Applied Ecology 30:52-64.* doi: 10.1016/j.baae.2018.05.013

Vild, O., Šipoš J., Szabó P., **Macek M.,** Chudomelová M., Kopecký M., Suchánková S., Houška J., Kotačka M. & Hédl R. (2018) Legacy of historical litter raking in temperate forest plant communities. *Journal of Vegetation Science 29:596-606.* doi: 10.1111/jvs.12642

Szabó, P., Suchánková S., Křížová L, Kotačka M., Kvardová M., **Macek M.,** Müllerová J. & Brázdil R. 2018. More than trees: The challenges of creating a geodatabase to capture the complexity of forest history. *Historical Methods: A Journal of Quantitative and Interdisciplinary History 5440:1–15.* doi: 10.1080/01615440.2018.1444523

Röder, M., Latifi H., Hill S., Wild J., Svoboda M., Brůna J., **Macek M.,** Nováková M. H., Gülch E. & Heurich M. (2018). Application of optical unmanned aerial vehicle-based imagery for the inventory of natural regeneration and standing deadwood in post-disturbed spruce forests. *International Journal of Remote Sensing*, 39 (15-16): 5288-5309. doi:10.1080/01431161.2018.1441568

Dvorský, M., **Macek M.,** Kopecký M., Wild J. & Doležal J. (2017) Niche asymmetry of vascular plants increases with elevation. *Journal of Biogeography 44 (6) 1418-1425.*

Macek, M., Wild J., Kopecký M., Červenka J., Svoboda M., Zenáhlíková J., Brůna J., Mosandl R. & Fischer A. (2017) Life and death of Picea abies after bark-beetle outbreak: ecological processes driving seedling recruitment. *Ecological Applications 27:156–167.*

Verheyen, K., P. De Frenne, L. Baeten, D. M. Waller, R. Hédl, M. P. Perring, H. Blondeel, J. Brunet, M. Chudomelová, G. Decocq, E. De Lombaerde, L. Depauw, T. Dirnböck, T. Durak, O. Eriksson, F. S. Gilliam, T. Heinken, S. Heinrichs, M. Hermy, B. Jaroszewicz, M. A. Jenkins, S. E. Johnson, K. J. Kirby, M. Kopecký, D. Landuyt, J. Lenoir, D. Li, **M. Macek,** S. L. Maes, F. Máliš, F. J. G. Mitchell, T. Naaf, G. Peterken, P. Petřík, K. Reczyńska, D. A. Rogers, F. Hø. Schei, W. Schmidt, T. Standovár, K. Świerkosz, K. Ujházy, H. Van Calster, M. Vellend, O. Vild, K. Woods, M. Wulf & Bernhardt-Römermann M. (2017) Combining Biodiversity Resurveys across Regions to Advance Global Change Research. *BioScience 67:73–83.*

Kolář, J., Tkáč P., **Macek M.** & Szabó P. (2016) Archaeology and historical ecology: the archaeological database of the LONGWOOD ERC project. *Archäologisches Korrespondenzblatt* 46:539-554.

Kolář, J., Kuneš P., Szabó P., Hajnalová M., Svobodová-Svitavská H., **Macek M.** & Tkáč P. (2016) Population and forest dynamics during the Central European Eneolithic (4500-2000 BC). *Archaeological and Anthropological Sciences 10(5):1153-1164.* doi:10.1007/s12520-016-0446-5

Dolezal, J., Dvorsky M., Kopecky M., Liancourt P., Hiiesalu I., **Macek M.,** Altman J., Chlumska Z., Rehakova K., Capkova K., Borovec J., Mudrak O., Wild J. & Schweingruber F. (2016) Vegetation dynamics at the upper elevational limit of vascular plants in Himalaya. *Scientific Reports 6:24881.*

Kolář, J., Szabó P., **Macek M.** & Tkáč P. (2016) Spatio-temporal modelling as a way to reconstruct patterns of past human activities. *Archeometry 58 (3): 513-528*

Dvorský, M., Chlumská Z., Altman J., Čapková K., Řeháková K., **Macek M.**, Kopecký M., Liancourt P. & Doležal J. (2016) Gardening in the zone of death: an experimental assessment of the absolute elevation limit of vascular plants. *Scientific Reports 6:24440.*

Fischer, A., Fischer H. S., Kopecký M., **Macek M.** & Wild J. (2015) Small changes in species composition despite stand-replacing bark beetle outbreak in Picea abies mountain forests. *Canadian Journal of Forest Research 45:1164–1171.*

Bernhardt-Römermann, M., Baeten L., Craven D., De Frenne P., Hédl R, Lenoir J., Bert D, Brunet J., Chudomelová M., Decocq G., Dierschke D., Dirnböck T., Dörfler I., Heinken T., Hermy M., Hommel P., Jaroszewicz B., Keczyński A., Kelly D. L., Kirby K. J., Kopecký M., **Macek M.,** Máliš F., Mirtl M., Mitchell F. J. G., Naaf T., Newman M., Peterken G., Petřík P., Schmidt W., Standovár T., Tóth Z., Van Calster H., Verstraeten G., Vladovič J., Vild O., Wulf M. & Verheyen K. (2015) Drivers of temporal changes in temperate forest plant diversity vary across spatial scales. *Global Change Biology 21:3726–3737.*

Kuneš, P., Kolář J., Hajnalová M., Abraham V., Svobodová-Svitavská H., **Macek M.,** Tkáč P. & Szabó P. (2015) The origin of grasslands in the temperate forest zone of east-central Europe: long-term legacy of climate and human impact. *Quarternary Science Reviews 116, 15–27.*

Kopecký, M. & **Macek M.** (2015) Vegetation resurvey is robust to plot location uncertainty. *Diversity and Distributions 21, 322–330.*

Müllerová J., Szabó P., Kopecký M. & **Macek M.** (2013) LONGWOOD: integrating woodland history and ecology in a geodatabase through an interdisciplinary approach. Proceedings of SPIE - The International Society for Optical Engineering 8795:1-8

Other publications:

Kolář J., **Macek M.** & Szabó P. (2018) Using archaeology for population estimates and land-use reconstructions: a perspective from Central Europe. *Past Global Changes Magazine 26:30-31.* https://doi.org/10.22498/pages.26.1.30

Wild J., Svoboda M., **Macek M.**, Kopecký M., Zenáhlíková J., Červenka J. & Bače R. (2016) Jak roste přirozené zmlazení v horských smrčinách? *In: Hubený P., Čížková P. (eds.) Šumavské lesy pod lupou. Správa NP Šumava, p. 56-65*

Wild J., **Macek M.**, Kopecký M., Zmeškalová J., Hadincová V. & Trachtová P. (2013) Temporal and spatial variability of microclimate in sandstone landscape: detailed field measurement. *In: Migon P. & Kasprzak M. (eds.) Sandstone Landscapes, Proceedings of the 3rd International Conference on Sandstone Landscapes, Uniwersytet Wroclawski, Wroclaw. P. 220-224*

Červenka J., Wild J., Svoboda M., Kopecký M., **Macek M**., Brůna J. & Zenáhlíková J. (2011) The state of the Natural Regeneration in Bavarian Forest National Park, 10 Years after the Total Death Parent Stands. *In: Marušák R., Dvořák J. & Natov P. (eds.) Proceedings of the 4th International Conference of Young Scientists (COYOUS 2011), Česká zemědělská univerzita, Praha.*

Zenáhlíková J., Svoboda M., Wild J., Kopecký M. & **Macek M**. (2011) The Regeneration Stand and Heigh Increment 10 Years after a Dieback Caused by Bark Beetle Outbreak. *In: Marušák R., Dvořák J. & Natov P. (eds.) Proceedings of the 4th International Conference of Young Scientists (COYOUS 2011), Česká zemědělská univerzita, Praha.*

Conference attendance

62nd IAVS Symposium, Bremen. Bremen, Germany (14. - 19. 7. 2019)

Presentation: Macek, M., Kopecký, M. & Wild J. Buffering climate change impacts in forests: it is not (only) about temperature.

Presentation: Pettit J., Macek M., Brůna J., Bace R, Wild J., Kopecký M., & Svoboda M. Intraspecific interactions in post-disturbance communities in a changing climate: insights from a long-term seedling mortality dataset

61st IAVS Annual Symposium. Bozeman, Montana, USA (22. - 27. 7. 2018)

Presentation: Macek M., Kopecký M. & Wild J. What do forest plants think about climate?

Poster: Macek M., Dvorský M., Kopecký M., Wild J. & Doležal J. Can ecological rules survive in Himalaya? (Young Scientist Poster Award: 1st prize)

Poster: Hiiesalu I., Macek M., Kopecký M., Altman J., Liancourt P., Mudrák O. & Doležal J. Arbuscular mycorrhizal fungi in the arid Himalayas

Climate Change Biogeography: International Biogeographical Society meeting. Évora, Portugal (20. - 24. 3. 2018).

Poster: Macek M., Dvorský M., Kopecký M., Wild J. & Doležal J. Can ecological rules survive in Himalaya?

Poster: Kopecký M., Macek M. & Wild J. Forest plant distribution is controlled by topographic effects on maximum temperature.

Conference on Forests. Neuschönau, Germany (26. - 29. 4. 2017)

Presentation: Macek M, Wild J., Kopecký M., Svoboda M. & Fischer A. Life and death of spruce forest: ecological processes in the first 12 years after bark-beetle outbreak.

British Ecological Society Annual Meeting 2016. Liverpool, UK (11. - 14. 11. 2016)

Presentation: Macek M., Müllerová J., Kopecký M. & Szabó P. Historical distribution of tree species: a bridge between native and actual range?

15th Meeting on Vegetation Databases. Potsdam, Germany (2. - 4. 3. 2016)

Poster: Macek M., Kopecký M. & Hédl R. Regional drivers of forest vegetation change.

Presentation: Hédl R., Szabó P., Kopecký M., Chudomelová M., Vild O., Macek M., Petřík P., Suchánková S., Štěrba T. & Zouhar V. Towards an integrated research platform of the Czech forest vegetation: combining long-term plot resurveys and historical management data.

58th Annual Symposium of the International Association for Vegetation Science: Understanding broad-scale vegetation patterns. Brno, Czechia (19. - 24. 7. 2015)

Presentation: Macek M., Kopecký M. & Hédl R. Modelled niche parameters along soil reaction gradient outperform Ellenberg indicator values.

Presentation: Kuneš P., Abraham V., Svobodová- Svitavská H., Kolář J., Hajnalová M., Macek M., Tkáč P., Jamrichová E. & Szabó P. Pollen-based land-cover reconstruction, human activity and climate explain the origin of vegetation patterns at various spatial scales.

Presentation: Hédl R., Chudomelová M., Kopecký M., Macek M., Riedl V., Szabó P. & Vild O. You cannot step twice into the same river: the transformation of Central European temperate forest communities over the past century.

Presentation: Bernhardt-Römermann et al., Baeten L., Craven D., De Frenne P., Hédl R., Lenoir J., Bert D., Brunet J., Chudomelová M., Decocq G., Dierschke H., Dirnböck T., Dörfler I., Heinken T., Hermy M., Hommel P., Jaroszewicz B., Keczyński A., Kelly D. L., Kirby K. J., Kopecký M., Macek M., Máliš F., Mirtl M., Mitchell F. J. G., Naaf T., Newman M., Peterken G., Petřík P., Schmidt W., Standovár T., Tóth Z., van Calster H., Verstraeten G., Vladovič J., Vild O., Wulf M. & Verheyen K. Drivers of temporal changes in temperate forest plant diversity vary across spatial scales.

Presentation: Doležal J., Dvorský M., Kopecký M., Liancourt P., Borovec J., Macek M., Hiiesalu I., Altman J., Čapková K., Chlumská Z., Mudrák O., Řeháková K., Wild J. & Schweingruber F. Vulnerability of Himalayan plants to climate change: a new approach in assessing impacts of climate change on plant migrations

56th IAVS Symposium. Tartu, Estonia (26. - 30. 6. 2013)

Poster: Macek M. & Kopecký M. Scale matters: Disentangling drivers of fine-scale and regional species richness pattern in temperate forest understorey.

Poster: Wild J., Zmeškalová J., Macek M. & Kopecký M. Microclimatic variability within topographically complex landscape and its influence on plant species composition