Maximilian H.K. Hesselbarth

Postdoctoral Fellow

Coastal Ecology and Conservation Lab, University of Michigan

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Professional Appointments

University of Michigan   Ann Arbor, USA

Postdoctoral Fellow, Coastal Ecology and Conservation Lab   *2020/08/01 - ongoing*

Education

University of Goettingen   Goettingen, Germany

Dr. rer. nat, Department of Ecosystem Modelling   *2016/10/01 - 2020/04/06*

University of Goettingen   Goettingen, Germany

Master of Sciences, Ecosystem Analysis and Modelling   *2014/10/01 - 2016/11/15*

University of Applied Sciences and Arts   Goettingen, Germany

Bachelor of Sciences, Forestry   *2011/10/01 - 2014/07/07*

Internships / Research visits

Iowa State University   Ames, USA

Department of Ecology, Evolution and Organismal Biology   *2017/10/18 - 2017/12/21*

University of KwaZulu-Natal   Pietermaritzburg, South Africa

School of Life Sciences   *2016/03/07 - 2016/08/01*

North-West University   Potchefstroom, South Africa

Land Degradation and Restoration Ecology   *2016/03/07 - 2016/08/01*

Northwest German Forestry Research Institute   Goettingen, Germany

Department of Growth Modeling   *2015/09/01 - 2015/10/01*

SilvaTerra Ltd.   Lilongwe, Malawi

Forest Consulting and Research   *2013/11/04 - 2014/03/30*

Wise Batten Inc.   Estill, USA

Forestry Services and Wildlife Management   *2011/06/02 - 2011/08/01*

State Forestry Department Heuberg   Messtetten, Germany

Forest Managment   *2010/08/02 - 2010/08/27*

State Forestry Department Heuberg   Messtetten, Germany

Forest Managment   *2009/08/31 - 2009/09/11*

Conferences / Workshops (attended)

World Congress International Association of Landscape Ecology
<div align="right">Milano, Italy</div>

<div align="right">*2019/07/01 - 2019/07/05*</div>

Annual Meeting of the Ecological Society of Germany, Austria and Switzerland
<div align="right">Vienna, Austria</div>

<div align="right">*2018/09/10 - 2018/09/14*</div>

Spatial Modelling *inlabru*
<div align="right">St. Andrews, UK</div>

<div align="right">*2018/03/26 - 2018/03/30*</div>

Deep Learning with *Keras* and *TensorFlow*
<div align="right">Solingen, Germany</div>

<div align="right">*2018/01/18 - 2018/01/19*</div>

Young Modellers in Ecology
<div align="right">Freiburg, Germany</div>

<div align="right">*2017/04/29 - 2017/05/05*</div>

Advances in Spatial Analysis of Multivariate Ecological Data
<div align="right">Port Talbot, UK</div>

<div align="right">*2017/04/02 - 2017/04/07*</div>

Fire Protection and Management
<div align="right">Prodromos, Cyprus</div>

<div align="right">*2013/09/07 - 2013/09/22*</div>

Publications

Copies of all publications and talks can be found on my homepage.

Articles

Simpkins, C.E., Hanß, S., Spangenberg, M.C., Salecker, J., **Hesselbarth, M.H.K.**, Wiegand, K., 2022. *spectre: An R package to estimate spatially-explicit community composition using sparse data*. Ecography. `https://doi.org/10.1111/ecog.06272`

Esquivel, K.E.†, **Hesselbarth, M.H.K.**†, Allgeier, J.E., 2022. *Mechanistic support for increased primary production around artificial reefs*. Ecological Applications e2617. `https://doi.org/10.1002/eap.2617`

Hesselbarth, M.H.K., 2021. *shar: An R package to analyze species-habitat associations using point pattern analysis*. Journal of Open Source Software 6, 3811. `https://doi.org/10.21105/joss.03811`

Hesselbarth, M.H.K., Nowosad, J., Signer, J., Graham, L.J., 2021. *Open-source tools in R for landscape ecology*. Current Landscape Ecology Reports 6, 97-111. `https://doi.org/10.1007/s40823-021-00067-y`

Borthwick, R.*, de Flamingh, A.*, **Hesselbarth, M.H.K.***, Parandhaman, A.*, Wagner, H.H., Abdel Moniem, H.E.M., 2020. *Alternative Quantifications of Landscape Complementation to Model Gene Flow in Banded Longhorn Beetles [Typocerus v. velutinus (Olivier)]*. Frontiers in Genetics 11, 307. `https://doi.org/10.3389/fgene.2020.00307`

Hesselbarth, M.H.K., 2020. *Analysing and modelling spatial patterns to infer the influence of environmental heterogeneity using point pattern analysis, individual-based simulation modelling and landscape metrics* (Dissertation). University of Goettingen, Goettingen, Germany. `http://dx.doi.org/10.53846/goediss-7959`

Hesselbarth, M.H.K., Sciaini, M., With, K.A., Wiegand, K., Nowosad, J., 2019. *landscapemetrics: An open-source R tool to calculate landscape metrics*. Ecography 42, 1648-1657. `https://doi.org/10.1111/ecog.04617`

Hesselbarth, M.H.K., Wiegand, K., Dreber, N., Kellner, K., Esser, D., Tsvuura, Z., 2018. *Density-dependent spatial patterning of woody plants differs between a semi-arid and a mesic savanna in South Africa.* Journal of Arid Environments 157, 103-112. `https://doi.org/10.1016/j.jaridenv.2018.06.002`

† Authors contributed equally; * Author sequence is alphabetical

Talks/Poster

Hesselbarth, M.H.K., and others, 2022. *Advanced R Workshop*. Ecology and Evolutionary Biology Department, University of Michigan. Ann Arbor (USA). Workshop.

Hesselbarth, M.H.K., 2022. *Introduction to R Workshop*. Ecology and Evolutionary Biology Department, University of Michigan. Ann Arbor (USA). Workshop.

Hesselbarth, M.H.K., 2021. *Spatial patterns in ecology and what we (hopefully) can learn from them*. Ecology and Evolutionary Biology Department Seminar, University of Michigan. Ann Arbor (USA). Talk.

Nowosad, J., **Hesselbarth, M.H.K.**, 2020. *Introduction to landscape ecology with R*. Annual Meeting International Association of Landscape Ecology North America. Toronto (Canada). Workshop.

Hesselbarth, M.H.K., Sciaini, M., Nowosad, J., Hanss, S., 2019. *landscapemetrics: Introducing a new R tool to characterize landscapes*. 10th World Congress International Association of Landscape Ecology. Milano (Italy). Conference poster.

Hesselbarth, M.H.K., Wiegand K., 2018. *A simulation study comparing methods to analyze species-habitat associations of forest trees*. 48th Annual Meeting of the Ecological Society of Germany, Austria and Switzerland. Vienna (Austria). Conference poster.

Software

`arrR` Simulating artificial reefs in R   Link to homepage

`landscapemetrics` Landscape Metrics for Categorical Map Patterns.   Link to homepage

`shar` Species-Habitat Associations.   Link to homepage

`onpoint` Helper Functions related to Point Pattern Analysis.   Link to homepage

Peer reviewer for scientific journals

Ecological Indicators; Global Ecology and Biogeography; Journal of Animal Ecology; Journal of Open Source Software; Journal of Tropical Ecology; Journal of Vegetation Science; Methods in Ecology and Evolution; PeerJ; Perspective in Plant Ecology, Evolution and Systematics; Plant and Soil; Plant Ecology; Scientific Reports; Synthesis Centre for Biodiversity Sciences; Web Ecology

Skills

Languages: German (native), English (fluent)

R: ●●●●●   C++: ●●○○○   NetLogo: ●●○○○   html, CSS: ●○○○○

SQL/SQLite: ●○○○○   LaTeX: ●●●○○   git: ●●●○○   QGIS: ●●○○○