

MERIN REJI CHACKO

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RESEARCH EXPERIENCE

- 02.2025– **Postdoctoral Researcher**
Conservation Biology (PI: Dr. Marco Moretti)
Biodiversity & Conservation Biology Unit, Swiss Federal Institute WSL,
Birmensdorf, Switzerland
- 01.2025 **Postdoctoral Researcher**
Ecosystems & Landscape Evolution (PI: Prof. Loïc Pellissier)
Land Use Change Unit, Swiss Federal Institute WSL, Birmensdorf,
Switzerland
- 05.2024 **Visiting Researcher**
Behavioural Ecology & Ecological Networks (Host: Prof. Hsi-Cheng Ho)
Department of Ecology and Evolutionary Biology
National Taiwan University, Taipei, Taiwan
- 01.2021–
12.2024 **Doctoral Researcher**
Ecosystems and Landscape Evolution (PI: Prof. Loïc Pellissier)
Swiss Federal Institute WSL, Birmensdorf, Switzerland, &
ETH Zurich, Zurich, Switzerland
- 02.2020–
12.2020 **Graduate Intern**
Spatial Ecology & Remote Sensing (PI: Prof. Gabriela Schaepman-Strub)
Department of Evolutionary Biology & Environmental Studies
University of Zurich, Zurich, Switzerland
- 07.2016 –
09.2017 **Undergraduate Intern**
Sánchez Lab (PI: Prof. Marcelo Sánchez), Department of Palaeontology
University of Zurich, Zurich, Switzerland

EDUCATION

- 2021–2024 **Environmental Sciences, PhD**
Ecosystems & Landscape Evolution, Swiss Federal Institute WSL &
ETH Zurich. Doctoral thesis: Unveiling spatial patterns of multi-trophic
biodiversity using the metaweb approach, under supervision of Profs.
Loïc Pellissier and Florian Altermatt.

- 2016–2019 **Environmental Sciences, MSc**
 Soil Ecology and Global Change, University of Zurich. Master thesis:
 Searching High and Low: the biodiversity-ecosystem functioning
 relationship across local and landscape scales, under supervision of Prof.
 Pascal Niklaus and Sarah Mayor. Minor in Astronomy and Astrobiology
- 2011–2015 **Environmental Sciences, BSc**
 Open University, Milton Keynes, England, United Kingdom

PUBLICATIONS

- Perrelet, K., Cook, L., **Reji Chacko, M.**, Altermatt, F., and Moretti, M. Urbanization drives the decoupling, simplification, and homogenization of aquatic and terrestrial food webs through the loss of mesopredators. *Authorea* (2025).
<https://doi.org/10.22541/au.174559004.40925248/v1> [Under Review]
- Mayor, S. Altermatt, F., Crowther, T., Hordjik, I., Oehri, J., **Reji Chacko, M.**, Schaepman, M., Schmid, B., Niklaus, P. Landscape diversity promotes landscape functioning in North America. *Communications Earth and Environment*, 6, 28 (2025).
<https://doi.org/10.1038/s43247-025-02000-1>
- Reji Chacko, M.**, Albouy, C., Altermatt, F., Boussange, V., Brändle, M., Farwig, N., Gossner, M.M., Ho, H-C., Joss, A., Neff, F., and Pellissier, L. Decreases in the robustness of regional food webs to sequential species extinctions following habitat loss. *ResearchSquare* (2024). <https://doi.org/10.21203/rs.3.rs-5225132/v1> [Under Review].
- Reji Chacko, M.**, Albouy, C., Altermatt, F., Casanelles-Abella, J., Brändle, M., Boussange, V., Campell, F., Ellis, W.N., Fopp, F., Gossner, M.M., Ho, H-C., Joss, A., Kipf, P., Neff, F., Petrović, A., Prié, V., Tomanović, Ž., Zimmerli, N., Pellissier, L. trophiCH – a national species-level trophic metaweb of 23k species for Switzerland. *EcoEvoRxiv* (preprint). <https://doi.org/10.32942/X2GD03> [Under Review].
- Reji Chacko, M.**, Altermatt, F., Fopp, F., Guisan, A., Keggin, T., Lyet, A., Rey, P-L., Richards, E., Valentini, A., Waldock, C., Pellissier, L. Catchment-based sampling of river eDNA integrates terrestrial and aquatic biodiversity of alpine landscapes. *Oecologia* (2023). <https://doi.org/10.1007/s00442-023-05428-4>
- Reji Chacko, M.**, Plekhanova, E., Oehri, J., and Schaepman-Strub, G. Will Current Protected Areas Harbour Refugia for Threatened Arctic Vegetation Types until 2050? A First Assessment. *Arctic, Antarctic and Alpine Research*. **55**, 2203478 (2023).
<https://doi.org/10.1080/15230430.2023.2203478>

Heim, R., Iturrate-Garcia, M., Plekhanova, E., **Reji Chacko, M.**, and Schaepman-Strub, G. Arctic deciduous shrubs demonstrate a leaf-level shift from a resource-conservative to a resource-acquisitive strategy with increasing soil nutrient availability. *Journal of Geophysical Research: Biogeosciences*, 128, e2023JG007657 (2023).
<https://doi.org/10.1029/2023JG007657>

Ho, H-C., Brodersen, J., Gossner, M., Graham, C., Kaeser, S., **Reji Chacko, M.**, Seehausen, Ole., Zimmermann, N., Pellissier, L., Altermatt, F. Blue and green food webs respond differently to elevation and land use. *Nat Commun* **13**, 6415 (2022).
<https://doi.org/10.1038/s41467-022-34132-9>

Oehri, J., Euskirchen, E., Grünberg, I., Grysko, R., Kim, J-S., Kropp, H., **Reji Chacko, M.**, Zemlianskii, V., Schaepman-Strub, G., *et al.* Vegetation type is an important predictor of the arctic summer land surface energy budget. *Nat Commun* **13**, 6379 (2022).
<https://doi.org/10.1038/s41467-022-34049-3>

Krstovic, M., Brown, L., **Reji Chacko, M.**, & Trinh, B. Grade 9 Astronomy Study: Interests of Boys and Girls Studying Astronomy at Fletcher’s Meadow Secondary School. *Astronomy Education Review*, 7(2), 18–24. (2009). <https://doi.org/10.3847/aer2008017>

UNPUBLISHED MANUSCRIPTS

Reji Chacko, M., Frey, D., Albrecht, M., Ghazoul, J., and Moretti, M. No one-size-fits-all: trait-dependent effects of local plant diversity on pollinators and pollination services along an urban densification gradient. *In preparation*.

Reji Chacko, M., Albouy, C., Altermatt, F., Fopp, F., Gossner, M.M., Ho, H-C., and Pellissier, L. Elevation and land use gradients drive food web structure and trophic connectivity. *In preparation*. <https://doi.org/10.3929/ethz-b-000628135>

Fopp, F., Albouy, C., Dahito, M-A., **Reji Chacko, M.**, and Pellissier, L. Swisscatchment: mapping biodiversity at the Swiss scale and catchment resolution. *In preparation*.

INVITED TALKS

11.2024 Saint Mary’s College, Department of Biology and Environmental Studies. Women in Science Guest Lecture. “Unveiling spatial patterns of food webs using a metaweb approach.” Host: Prof. Joel Raston.

07.2024 National Taiwan University, Department of Entomology. “Comparing species interaction networks in space using the metaweb framework.” Host: Prof. Po-An Lin.

05.2024 National Taiwan University, Institute of Ecology and Evolutionary Biology. “A metaweb framework for investigating the structure and stability of large-scale food webs.” Host: Prof. Hsi-Cheng Ho.

CONFERENCE CONTRIBUTIONS

Agarwal, S., Albouy, C., Altermatt, F., Ho, H-C., **Reji Chacko, M.**, & Pellissier, L. (2024, January). Unravelling Ecological Complexity: Dynamics and Resilience of Plant-Insect Networks in the Face of Species Loss. Biology 24, Zurich, Switzerland (Poster).

Reji Chacko, M., Albouy, C., Altermatt, F., Boussange, V., Gossner, M., Ho, H-C., Joss, F., & Pellissier, L. (2024, January). From pond to pasture: the robustness of a national trophic metaweb to habitat loss. Biology 24, Zurich, Switzerland (Poster).

Reji Chacko, M., Albouy, C., Altermatt, F., Fopp, F., Pellissier, L. (2022, June) Contemplating the Structure and Function of a Trophic Metaweb for Swiss Fauna. World Biodiversity Forum, Davos, Switzerland (Talk).

Oehri, J., Schaepman-Strub, G., Kim, J.-S., Grysko, R., Kropp, H., Grünberg, I., Zemlianskii, V., Sonnentag, O., Euskirchen, E. S., and **Reji Chacko, M.** and the ArcticSEB - Synthesis Team: Vegetation Type is an Important Predictor of the Arctic Terrestrial Summer Surface Energy Budget, EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-7636, <https://doi.org/10.5194/egusphere-egu22-7636>, 2022 (Talk).

Reji Chacko, M., Goerens, A., Plekhanova, E., Oehri, J., and Schaepman-Strub, G. (2021, March). Will Current Protected Areas Harbour Refugia for Threatened Arctic Vegetation Types until 2050? Arctic Science Summit Week, Online, Portugal (Poster).

Niklaus, P.A., Altermatt, F., Mayor, S., Oehri, J., **Reji Chacko, M.**, Schaepman, M., Schaepman-Strub, G., and Schmid, B (2020, February). Biodiversity Effects at Novel Scales of Organization. World Biodiversity Forum, Davos, Switzerland (Talk).

Reji Chacko, M., Goerens, A., and Schaepman-Strub, G. (2020, February). Threatened Arctic Vegetation Types: Conservation in the Face of Climate Change. World Biodiversity Forum, Davos, Switzerland (Poster).

Reji Chacko, M., Altermatt, F., Crowther, T., Hordjik, I., Mayor, S., Schaepman, M., Schmid, B., and Niklaus, P.A. (2019, November). Searching High and Low: the biodiversity-ecosystem functioning relationship across local and landscape scales. Geoscience Meeting, Fribourg, Switzerland (Poster).

Reji Chacko, M. and Carrillo-Briceño, J.D. (2016, November). A Bony Fish Assemblage (Teleostei) From the Early Miocene of the Southern Caribbean (Cocinetas Basin, Guajira Peninsula). Swiss Geoscience Meeting, Geneva, Switzerland (Poster).

AWARDS

Frontiers Planet Prize (2024). Co-author of the winning National Champion for Switzerland, with the research article “Vegetation type is an important predictor of the arctic summer land surface energy budget” for the Frontiers Planet Prize 2nd Edition.

GRANTS

Forschungskredit CanDoc Grant, University of Zurich, received 15th June 2020.
“Diversity-ecosystem functioning relationships at large spatio-temporal scales: patterns and mechanisms”. FK 20-086. (CHF 26,500, approx. 29,083 USD)

WSL Biodiversity Center Internal Grant, Swiss Federal Institute for Forest, Snow and Landscape Research, received 06th March 2024. “PhD Club Career Day 2024. (CHF 1,700, approx. 1,865 USD)

TEACHING ACTIVITIES

2024	Ecological Networks, National Taiwan University, Taipei, Taiwan Function: preparation and presentation of a lecture on spatiotemporal aspects of food webs. Responsible: Prof. Dr. Hsi-Cheng Ho 401-4620-00L Statistics Lab, ETH Zurich Function: preparation of course datasets for the group project and mentorship of the three student project groups Responsible: Prof. Dr. Markus Kalisch 701-0560-00L Praktikum Wald und Landschaft (Practical for Forest and Landscape), ETH Zurich Function: teaching assistant, preparation of R scripts for exercises Responsible: Prof. Dr. Loïc Pellissier
2023-2024	Master Thesis Supervision - Shreyas Agarwal, ETH Zurich Function: main supervisor Responsible: Prof. Dr. Loïc Pellissier
2023	701-3001-00L Environmental Systems Data Science, ETH Zurich Function: teaching assistant Responsible: Prof. Dr. Loïc Pellissier 701-0553-00L Landscape Ecology, ETH Zurich Function: preparation of scripts for video-based learning materials Responsible: Prof. Dr. Loïc Pellissier 701-1613-01L Landscape Patterns and Processes, ETH Zurich Function: preparation of R scripts for exercise sessions Responsible: Prof. Dr. Loïc Pellissier
2021	701-1679-00L Landscape Modelling of Biodiversity: From Global Changes to Conservation, ETH Zurich Function: teaching assistant Responsible: Prof. Dr. Loïc Pellissier & Prof. Dr. Nick Zimmermann

2020 **UWW252 Spatial Ecology and Remote Sensing, University of Zurich**
Function: lead teaching assistant
Responsible: Prof. Dr. Gabriela Schaepman-Strub

REVIEW

2025 *Environmental DNA*
 Functional Ecology

2022 *Ecology and Evolution.*

OTHER ACADEMIC SERVICES

2024 **Seminar: WSL Career Day 2024**
Planned and hosted a pilot half-day seminar with visiting external experts for a discussion on career planning for PhDs and Postdocs at WSL and moderated the panel session.
Location: WSL Birmensdorf, Switzerland

2024 **Mentorship**
Participation as a mentor in the Women of Colour & Non-Binary People of Colour in Ecology & Evolutionary Biology 1-on-1 mentorship program (<https://wocineeb.org/index.html>)

2022-2024 **Member of the WSL PhD Club**
Responsibilities included yearly budgeting of PhD Club funds, the organisation of workshops, courses, and social events for PhD students in close collaboration with WSL Workplace Diversity, and the welcoming and orientation of new PhD students to the WSL.
Location: WSL Birmensdorf, Switzerland

2022-2024 **Workshop: strengthen resilience – increase effectiveness**
Organisation of internal annual workshop for PhD students and post-doctoral researchers at WSL, in collaboration with WSL Workplace Diversity, and the BWI Coaching and Further Education Institute.
Location: WSL Birmensdorf, Switzerland

NON-ACADEMIC WORKS

Reji Chacko, M. (2023). “*Kanthari*”. A short story, in *Translating Stories Into Art. ExpoTransKultur*. (Found in Translation: the 2nd Edition)
<https://open.spotify.com/episode/0vEqiJzhQUw50egVq6TaBy?si=a8a1bc39d48f4887>