

# MERIN REJI CHACKO

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## EDUCATION

- 2021–present      **Ecology, PhD**  
Swiss Federal Institute of Forest, Snow and Landscape Research (WSL) & Swiss Federal Institute of Technology (ETH), Ecosystems and Landscape Evolution Group
- Doctoral thesis: trophic interaction networks under supervision of Prof. Dr. Loïc Pellissier and Prof. Dr. Florian Altermatt.
- 2016–2019      **Environmental Sciences, MSc.**  
University of Zurich, Zurich, Switzerland
- Master thesis: “Searching High and Low: the biodiversity-ecosystem functioning relationship across local and landscape scales” under supervision of Prof. Dr. Pascal Niklaus and Sarah Mayor.
  - Minor in Astronomy and Astrobiology
  - 87 ECTS towards additional qualifications in biology, chemistry, physics, and mathematics
- 2011–2015      **Environmental Sciences, BSc.**  
Open University, Milton Keynes, England, United Kingdom

## RESEARCH EXPERIENCE

- 05.2024      **Visiting Researcher**  
Hosted by Behavioural Ecology and Ecological Networks Lab under Prof. Dr. Hsi-Cheng Ho.  
National Taiwan University, Taipei, Taiwan
- 02.2020–  
12.2020      **Graduate Intern**  
Research internship on 1) threatened Arctic vegetation, 2) leaf optical properties and the leaf economic spectrum, and 3) Arctic surface energy budget under supervision of Prof. Dr. Gabriela Schaepman-Strub.  
University of Zurich, Zurich, Switzerland

## RESEARCH EXPERIENCE (CONTINUED)

07.2016 – **Student Intern**  
09.2017 Research internship on identification of fish and shark dental remains under the supervision of Prof. Dr. Marcelo Sanchez.  
University of Zurich, Zurich, Switzerland

## PUBLICATIONS

**Reji Chacko, M.**, Altermatt, F., Fopp, F., Guisan, A., Kegglin, 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>

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. *In Revision*.

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>

## 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).

## INVITED TALKS

2024

National Taiwan University, Institute of Ecology and Evolutionary Biology Seminar. “A metaweb framework for investigating the structure and stability of large-scale food webs”

## GRANTS

Forschungskredit CanDoc Grant, University of Zurich, received 15<sup>th</sup> 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 06<sup>th</sup> March 2024. “PhD Club Career Day 2024. (CHF 1,700, approx. 1865 USD)

## CO-ORGANISED EVENTS

- 2022-2024      **Strength resilience – increase effectiveness**  
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
- 12.04.2024      **PhD Club and Biodiversity Center’s Career Day**  
Planned and hosted a pilot half-day seminar with visiting external panelists for a discussion on career planning for PhDs and Postdocs at WSL and moderated the panel session.  
Location: WSL Birmensdorf, Switzerland

## TEACHING ACTIVITIES

- 2024      **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

## ENGAGEMENT

- 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 Revision of one manuscript for the journal *Ecology and Evolution*.
- 2022-2024 **Member of the PhD Club (WSL, Birmensdorf, Switzerland)**  
Involvement in the 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.