

Dr. Johanna Buchner

SILVIS Lab
Department of Forest and Wildlife Ecology
University of Wisconsin - Madison
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PROFESSIONAL INTERESTS

I am passionate about conservation planning that supports conservation efforts, informs local stakeholders, and improves future land-use management. My work focuses on forest fires in protected areas and on conservation responsibility for endangered species, using spatial analysis and remote sensing data.

PROFESSIONAL EXPERIENCE

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| 02/2025 – present | Postdoctoral Research Associate, University of Wisconsin-Madison, USA
Department of Forest and Wildlife Ecology, SILVIS Lab (advisor: Dr. Volker C. Radeloff) |
| 04/2021 – 01/2025 | Research Scientist, Bavarian Environment Agency, Germany
Department of Nature Conservation and Bavarian Centre for Species Conservation
Unit: Bavarian Centre for Species Conservation |
| 02/2021 – 03/2021 | Biodiversity Consultant, District Office Dingolfing-Landau, District Government of Lower Bavaria, Germany
Department of Nature Conservation |

EDUCATION

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| 2015 – 2020 | Ph.D. in Forestry, University of Wisconsin-Madison, USA
Department of Forest and Wildlife Ecology, SILVIS Lab (advisor: Dr. Volker C. Radeloff)
Title: Wars, protected areas, and land-cover change in the Caucasus Mountains. |
| 2012 – 2015 | M.Sc. in Environmental Sciences, University of Trier, Germany
Department of Environmental Remote Sensing and Geoinformatics, (advisors: Dr. Thomas Udelhoven, Dr. Achim Röder)
Title: Assessing large ungulate habitat in Northern Botswana using remote sensing data and species distribution modeling. A comparison of long-term and short-term data. |
| 2008 – 2011 | B.Sc. in Biogeography, University of Trier, Germany
Department of Biogeography, (advisors: Dr. Michael Veith, Dr. Jörg Müller) |

Title: Horizontal distribution and vertical stratification of habitat-foraging bat guilds in near natural low mountain range forest.

2005 – 2007 Environmental Engineering Science, University of Bayreuth, Germany

RESEARCH EXPERIENCE

07/2015 – 12/2020 **Research Assistant, University of Wisconsin-Madison, USA**
Department of Forest and Wildlife Ecology, SILVIS Lab

07/2019 – 08/2019 **Visiting Scholar, University of California-Berkeley, USA**
Department of Environmental Science, Policy, & Management, LUC Lab

04/2013 – 03/2015 **Graduate Assistant, University of Trier, Germany**
Department of Environmental Remote Sensing and Geoinformatics

08/2014 – 11/2014 **Visiting Scholar, University of Wisconsin-Madison, USA**
Department of Forest and Wildlife Ecology, SILVIS Lab

02/2014 – 04/2014 **Intern, Luxembourg Institute of Science and Technology (LIST), Luxembourg**
Environmental Research and Innovation (ERIN), Remote Sensing and Ecosystem Processes

02/2008 – 07/2013 **Intern and Graduate Assistant, Bavarian Forest National Park, Germany**
Department of Conservation and Research

01/2012 – 03/2012 **Intern, University of Auckland, New Zealand**
School of Biological Science

08/2010 – 10/2010 **Intern, Consultancy for Environmental Studies “Büro für ökologische Studien”, Germany**

TEACHING EXPERIENCE

07/2024 Online tutorials with Planet Labs on how to use Planet Data for nature conservation for government agencies, Bavarian Environment Agency, Augsburg, Germany

04/2024 Guest lecture on ‘The ecological network – new approaches, new insights’ for the environmental lecture series ‘UmweltStudium’ (collaboration between the University of Augsburg and the Bavarian Environment Agency), Bavarian Environment Agency, Augsburg, Germany

2021/’22/’23/’24 Lecture on ecological networks and remote sensing as part of the yearly civil servant trainee program in nature conservation, Bavarian Environment Agency, Augsburg, Germany

Spring 2018/’19/’20 Teaching assistant for ‘Forest Biometry’ (Lead Lecturer: Dr. Volker C. Radeloff), Department of Forest and Wildlife Ecology, University of Wisconsin-Madison, USA

08/2015 3-day ‘Maxent’ workshop, lead and design of lecture and lab
University of Yakutsk, Yakutia, Russia

04/2010 – 09/2010 Teaching assistant for ‘Applied Genetics’ (Lead Lecturer: Dr. Brunhilde Blömeke), Department of Environmental Toxicology, University of Trier, Germany

PEER-REVIEWED PUBLICATIONS

- Besenius, K., Voith, J., Ripperger, S., **Buchner, J.**, Langensiepen, I. (2025): Bayerisches Vertragsnaturschutzprogramm erhöht die Insektenvielfalt auf Äckern. – *Anliegen Natur* 47(2): 89–102, Laufen.
- Huber-García, V., Kriese, J., Asam, S., Dirscherl, M., Stellmach, M., **Buchner, J.**, Kerler, K., Gessner, U. (2025): Hedgerow map of Bavaria, Germany, based on orthophotos and convolutional neural networks, *Remote Sensing Applications: Society and Environment*, Volume 37:101451.
- Rizayeva, A., Nita, M.D., Yin, H., **Buchner, J.**, Kasraee, N., Rogova, N., Askerov, E., Gavashelishvili, A., Aleksanyan, A., Abbasov, R., Radeloff, V.C. (2025): A half-century of land cover changes in the Caucasus derived from Corona spy satellite and Landsat images. *Regional Environmental Change* 25:27.
- Buchner, J.**, Butsic, V., Yin, H., Kuemmerle, T., Baumann, M., Zazanashvili, N., Stapp, J., Radeloff, V. C. (2022): Localized versus wide-ranging effects of the post-Soviet wars in the Caucasus on agricultural abandonment. *Global Environmental Change*. 76:102580.
- Buřivalová, Z., Rosin, C., **Buchner, J.**, Radeloff, V. C., Ocampo-Peñuela, N. (2022): Conservation responsibility for bird species in tropical logged forests. *Conservation Letters*. 15, e12903.
- Lewińska, K. E., **Buchner, J.**, Bleyhl, B., Hostert, P., Yin, H., Kuemmerle, T., Radeloff, V. C. (2021): Changes in the grasslands of the Caucasus based on Cumulative Endmember Fractions from the full 1987–2019 Landsat record. *Science of Remote Sensing*. 4:100035.
- Buchner, J.**, Yin, H., Frantz, D., Kuemmerle, T., Askerov, E., Bakuradze, T., Bleyhl, B., Elizbarashvili, N., Komarova, A., Lewińska, K. E., Rizayeva, A., Sayadyan, H., Tan, B., Tepanosyan, G., Zazanashvili, N., Radeloff, V. C. (2020): Land-cover change in the Caucasus Mountains since 1987 based on the topographic correction of multi-temporal Landsat composites. *Remote Sensing of Environment*. 248:111967.
- Lewińska, K. E., Hostert, P., **Buchner, J.**, Bleyhl, B., Radeloff, V. C. (2020): Short-term vegetation loss versus decadal degradation of grasslands in the Caucasus based on Cumulative Endmember Fractions. *Remote Sensing of Environment*. 248:111969.
- Yin, H., de Oliveira Brandao Junior, A., **Buchner, J.**, Helmers, D., Iuliano, B. G., Kimambo, N. E., Lewińska, K. E., Razenkova, E., Rizayeva, A., Rogova, N., Spawn, S. A., Xie, Y. H., Radeloff, V. C. (2020): Monitoring cropland abandonment with Landsat time series. *Remote Sensing of Environment*. 246:111873.
- Yin, H., Butsic, V., **Buchner, J.**, Kuemmerle, T., Prishchepov, A. V., Baumann, M., Bragina, E. V., Sayadyan, H., Radeloff, V. C. (2019): Agricultural abandonment and re-cultivation during and after the Chechen Wars in the northern Caucasus. *Global Environmental Change*, 55: 149-159.
- Yin, H., A. V. Prishchepov, T. Kuemmerle, B. Bleyhl, **J. Buchner**, and V. C. Radeloff. (2018): Mapping agricultural land abandonment using spatial and temporal segmentation of dense Landsat time series. *Remote Sensing of Environment*, 210:12-24.
- Müller, J., Brandl, R., **Buchner, J.**, Pretzsch, H., Seifert, S., Strätz, C., Veith, M., Fenton, B. (2013): From ground to above canopy - Bat activity in mature forests is driven by vegetation density and height. *Forest Ecology and Management*, 306:179-184.
- Seibold, S., **Buchner, J.**, Bässler, C., Müller, J. (2013): Ponds in acidic mountains are more important for bats in providing drinking water than insect prey. *Journal of Zoology*, 290:302-308.

SCIENTIFIC TALKS

- Stellmach, M., **Buchner, J.** (2024): Support of biotope mapping with remote sensing and artificial intelligence (Motivation for mapping hedgerows using remote sensing). Contributing talk at the FPCUP user workshop (Framework Partnership Agreement on Copernicus User Uptake) organized by the German Aerospace Center (DLR), online 10 April 2024
- Buchner, J.**, Schöttner, R. (2023): Current state of the ecological network in Bavaria. LBV Symposium “Five years of the referendum ‘Save the Bees’ and its implementation“, Freising, Germany, 15-16 March 2024

Buchner, J., Yin, H., Frantz, D., Bleyhl, B., Kuemmerle, T., Bakuradze, T., Komarova, A., Rizayeva, A., Sayadyan, H., Tepanosyan, G., Radeloff, V. C. (2019): Large-area land-cover and land-use change mapping in the Caucasus Mountains using topographically corrected multi-temporal Landsat composites. AAG annual meeting, Washington DC., USA, 3-7 April 2019

Buchner, J., Yin, H., Radeloff, V. C. (2017): Effects of armed conflicts and other socio-economic shocks on land use change in the Caucasus. GOFC-GOLD Caucasus Regional Network Kick-off Meeting, Tbilisi, Georgia, 11-12 September 2017

CONFERENCE POSTER

Buchner, J., Bateman, B. L., Röder, A., Radeloff, V. C., Stellmes, M., Fynn, R. W. S., Udelhoven, T. (2016): Large herbivore movements versus seasonal variation in vegetation in the Okavango ecosystem based on dynamic satellite data. North American Congress for Conservation Biology, Madison, USA, 17-20 July 2016

AWARDS & SCHOLARSHIPS

2017	Center for Russia, East Europe, and Central Asia (CREECA), UW-Madison, CREECA Graduate Student Research Travel Award, \$3,000
2014	German Academic Exchange Service (DAAD) PROMOS, Scholarship for academic training and continuing education abroad, 1100€
2012	German Academic Exchange Service (DAAD) PROMOS, Scholarship for academic training and continuing education abroad, 975€

TECHNICAL SKILLS & PROFESSIONAL TRAINING

Software: ArcGIS Pro (Python, Geodatabase & ModelBuilder), R, Stata, Marxan, Maxent, Microsoft Office

OUTREACH

Served as supporting scientist for junior high-school students in the Climate Detectives school project initiated by the European Space Agency Education Office (http://www.esa.int/Education/Climate_detectives)

LANGUAGES

English – fluent in writing and speaking
German – native