

Dr. Stefanie Heinicke

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Work experience

- since 03.2020 **Postdoc, Potsdam Institute for Climate Impact Research (PIK), Potsdam, Germany**
- Cross-Sectoral Science Team of the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP, www.isimip.org)
 - since 01.2024 - lead of work package 6 ‘Climate-driven tipping of ecological and social systems’ of HORIZON TipESM project (www.tipesm.eu)
 - since 07.2023 contact for terrestrial biodiversity for ISIMIP
 - since 06.2024 trainer and supervisor in two-part workshop “Training great ape range country nationals in the analysis of Wildlife Survey Data, Interpretation, and Paper Writing” in Kinigi, Rwanda
 - 11.2022–05.2023 trainer and supervisor in two-part workshop “Training young academics in processing, analyzing and interpreting wildlife survey data” in Abidjan, Côte d’Ivoire (2022) and Kinigi, Rwanda (2023)
- 07.2019–02.2020 **Postdoc, Max Planck Institute for Evolutionary Anthropology (MPI EVA), Leipzig, Germany**
- Project: Compiling site-level information on threats, conservation activities and impediments to apes as an open access platform – the A.P.E.S. Wiki (wiki.iucnapesportal.org)
- 10.2014–06.2019 **Doctoral Researcher, Max Planck Institute for Evolutionary Anthropology (MPI EVA), German Centre for Integrative Biodiversity Research (iDiv) and University Leipzig, Germany**
- Ph.D. Dissertation: Informing the transition to evidence-based conservation planning for western chimpanzees [Supervisors: Prof. Hjalmar Kühl, Dr. Roger Mundry, Prof. Christophe Boesch]
 - 2016–2020 member of scientific committee for conservation action plans for western chimpanzees in Guinea and West Africa
responsible for technical analyses, coordinated working group on chimpanzee status for workshop preparation, facilitated working group during workshop in Liberia, contributed to action plan writing, co-editor for regional action plan

- 02.2014–08.2014 **Intern, Management of marine and coastal biodiversity in Pacific island states, German Corporation for International Cooperation (GIZ), Fiji**
- developed and implemented policy analysis, developed target-group specific presentation of results, participated in national NBSAP consultations
- 10.2013-01.2014 **Research associate, MPI EVA, Leipzig, Germany**
- wrote manuscript on passive acoustic monitoring of primates
- 09.2012–12.2012 **Research intern, Colobus Conservation, Kenya**
- studied human-baboon conflicts, identified conflict hotspots, developed solution strategies in cooperation with stakeholders
- 09.2009–08.2010 **Volunteer, Sea Turtle Conservation and Eco-Tourism Project, FSL, India**
- 08.–09.2008 **Volunteer, Sea Turtle Conservation Project, Archelon, Greece**
- 06.–07.2006 **Volunteer, Orang-Utan Conservation Project, Indonesia**

Education

- 10.2011–10.2013 **M.Sc., International Nature Conservation, University Göttingen, Germany and Lincoln University, New Zealand**
- Master thesis at MPI EVA, Leipzig: Assessment of a semi-automated acoustic monitoring method and its potential for primate conservation [Supervisors: Prof. Hjalmar Kühl (MPI EVA), Prof. Julia Fischer (University Göttingen)]
- 10.2007–09.2011 **B.Sc., Biodiversity and Ecology, University Göttingen, Germany**

Student supervision and training

- since 06.2024 Supervision of research project as part of “Training great ape range country nationals in the analysis of Wildlife Survey Data, Interpretation, and Paper Writing”, Jean Pierre Samedi Mucyo (Dian Fossey Gorilla Fund, Rwanda), Paul Kazaba (Dian Fossey Gorilla Fund, Rwanda), Solange Kamga (University of Dschang, Cameroon), Razak Kiribou (Haramaya University, Ethiopia)
- 04.2024 B.Sc. thesis, supervisor, Examining spatial and ecological overlap of primates and wintering birds across Africa to inform synergistic conservation, Tim Sasse, University of Leipzig, Germany
- 11.2022–05.2023 Supervision of research project as part of “Training young academics in processing, analyzing and interpreting wildlife survey data”, Paul Tehoda (Koforidua Technical University, Ghana), Onyekachi Chukwu (Nnamdi Azikiwe University, Nigeria), Godfred Bempah (Nanjing Forestry University, China), Razak Kiribou (Haramaya University, Ethiopia)
- 08.2022 M.Sc. thesis, supervisor, Climate change impacts on apes, Julie Ferreira, University of Strasbourg, France

04.–09.2022 Podcast Series '[Ecologizing our living spaces](#)', advising students from 'Hochschule der Medien', Stuttgart, and Robert Bosch Alumni Network

Teaching

July 2024	Wildlife Survey Data Workshop: Analysis, Interpretation, and Paper Writing, 1 st part, Kinigi, Rwanda, 6 days
SS 2024	lecture on 'Climate impact modeling in the context of ISIMIP and TipESM' in M.Sc. course 'Energieseminar' (in German), Technical University Berlin, Germany
SS 2023	lectures on 'Vegetation & fauna', 'Savanna', and 'Tropics' in B.Sc. course 'Ecozones of the World' (in German), University Potsdam, Germany
Apr 2023	Workshop for training young academics in processing, analyzing and interpreting wildlife survey data in R, 2 nd part, Kinigi, Rwanda, 6 days
Nov 2022	Workshop for training young academics in processing, analyzing and interpreting wildlife survey data in R, 1 st part, Abidjan, Côte d'Ivoire, 7 days
since WS 2020/21	lecture on 'Climate change' in B.Sc. course 'Introduction to behavioral biology' (in German), University Leipzig (online + on-site), Germany
since WS 2020/21	lecture on 'Primate conservation' in M.Sc. course 'Primate behavioral ecology', University Leipzig (online + on-site), Germany
WS 2019/20	lecture on 'Primate ecology' in M.Sc. course 'Primate behavioral ecology', University Leipzig, Germany
SS 2018, SS 2019	lectures on 'Behavioral economics' and 'Climate change' in B.Sc. course 'Introduction to behavioral biology' (in German), University Leipzig, Germany
SS 2017	teaching assistant in B.Sc./M.Sc. course 'Introduction to Statistics and R', weekly course for one semester, University Leipzig, Germany
SS 2016, SS 2017	guest lecture in M.Sc. course 'Close to research', University Leipzig, Germany
SS 2016, SS 2017	student assistant in course 'Linear Models and their application in R', MPI EVA, Leipzig, Germany

Grants

01.2024–12.2027	co-applicant: HORIZON 'TipESM - Exploring Tipping Points and Their Impacts Using Earth System Models' as lead of WP6 'Climate-driven tipping of ecological and social systems'
11.2022–05.2023	co-applicant: Volkswagen Foundation, workshop "Training young academics in processing, analyzing and interpreting wildlife survey data" Côte d'Ivoire (2022) and Rwanda (2023)
03.2019	DAAD, conference grant, UK
06.2018	German Society for Primatology, conference grant, Finland
12.2017	iDiv Science Policy Shadowing Programme, travel grant, Liberia
09.2017	Research Academy Leipzig and Biotop, travel grant, Guinea
10.2014–06.2018	Ph.D. scholarship by the Max Planck Society

02.–06.2012	DAAD, study stipend, semester at Lincoln University, New Zealand
02.2011–10.2013	German Academic Scholarship Foundation, study stipend

Outreach

06.2024	Article for ISIpedia (open climate-impacts encyclopedia), " Evaluation of simulated discharge in global hydrological models from ISIMIP3a "
03.2024	Interview for Deutschlandfunk " Affen im Klimawandel: Erderwärmung gleich beim Naturschutz einplanen ", by Lennart Pyritz
02.2024	Interview for CBC News " Climate change could cause 'generational trauma' in great apes ", by Anand Ram
02.2024	Interview for Courthouse News " African apes already feeling the heat from climate change " by Ryan Geller
02.2024	Press release " African great apes predicted to see frequent extreme climate events in the next 30 years " on EurekAlert
02.2023	Article for ISIpedia (open climate-impacts encyclopedia), " Can models correctly simulate crop failures caused by droughts and heatwaves? "
07.2020	Interview for Mongabay " 10-year plan hopes to give western chimpanzees a fighting chance " by Jim Tan
09.2019	Interview for Physics World " One-tenth of western chimps live close to planned development corridors " by Kate Ravilious
05.2019	Interview for Mongabay " Western chimp numbers revised up to 53,000, but development threats loom " by Ashoka Mukpo
03.2019	Press release " Sweeping census provides new population estimate for western chimpanzees " on EurekAlert
03.2016	Interview for Deutschlandfunk Kultur " Forschung im Regenwald - Mit Mikrofonen den Affen auf der Spur ", by Annegret Faber

Technical skills

Software	<p>R: generalized linear mixed models, satellite data extraction and processing, writing functions, spatial analyses, plotting (maps, 2D and 3D graphs), bootstrapping, autocorrelation, data standardization, web scraper, R Markdown</p> <p>ArcGIS/QGIS: spatial analyses, create maps, georeference maps</p> <p>Distance: distance sampling analysis</p> <p>cluster computing: parallelized and array jobs</p> <p>Python</p>
Methods	species distribution modelling, mixed-effects modelling, multi model inference, processing satellite data, data simulation, mapping, evaluating automated acoustic monitoring output, writing spatial prioritization algorithm
Reviewer for	American Journal of Primatology, Communications Earth & Environment, Earth's Future, International Journal of Primatology, Tropical Conservation Science
Languages	German (native), English (fluent), French (good)

Extracurricular training

- Introduction to Data Science in Python, Coursera & University of Michigan, 2021
- Python programming, Online course, Hasso Plattner Institute, Potsdam, 2020
- Git – Version control and open source, Online course, Hasso Plattner Institute, Potsdam, 2020
- Data simulation for linear models in R, MPI EVA, Leipzig, 2018
- Handling spatial data and mapping in R, UFZ, Leipzig, 2018
- Statistical rethinking—A Bayesian course with examples in R and Stan, MPI EVA, Leipzig, 2016
- Project management, yDiv, Leipzig, 2016
- Scientific writing, MPI EVA, Leipzig, 2016
- Environmental economics, yDiv, Leipzig, 2015
- Linear Models and their application in R, MPI EVA, Leipzig, 2015

Personal interests

02.2020	German Academic Scholarship Foundation, Germany member of selection committee
10.2014–12.2019	Conservation Group MPI EVA, Leipzig awareness raising activities on palm oil and illegal possession of apes as pets
04.2008–03.2013	Jugendumweltnetzwerk Niedersachsen (JANUN Ortsgruppe Göttingen), Germany leading and developing alternative city tours on globalisation and consumption, organizing seed exchanges
04.2008–02.2011	Grüne Hochschulgruppe Göttingen, Germany

Memberships

- Deutscher Hochschulverband (DHV)
- Naturschutzbund Deutschland (NABU)

Publication list

Peer-reviewed

2024

Heinicke S, Volkholz J, Schewe J ... Frieler K. 2024. [Global hydrological models continue to overestimate river discharge](#). Environmental Research Letters, doi:10.1088/1748-9326/ad52b0

Junker J, Quoss L, Valdez J, ... **Heinicke S**, ... Sop T. 2024. [Threat of mining to African great apes](#). Science Advances 10, eadl0335

Kiribou R, Tehoda P, Chukwu O ... **Heinicke S**. 2024. [Exposure of African ape sites to climate change impacts](#). PLOS Climate, 3(2): e0000345

Treu S, Muis S, Dangendorf S, Wahl T, Oelsmann J, **Heinicke S**, Frieler K, Mengel M. 2024. [Reconstruction of hourly coastal water levels and counterfactuals without sea level rise for impact attribution](#). Earth System Science Data, 16, 1121–1136

2022

Heinicke S, Frieler K, Jägermeyr J and Mengel M. 2022. [Global gridded crop models underestimate yield responses to droughts and heatwaves](#). Environmental Research Letters, 17, 044026

Contributing author: O'Neill B, van Aalst M, Ibrahim ZZ, Berrang-Ford L, Bhadwal S, Buhaug H, Diaz D, Frieler F, Garschagen M, Magnan A, Midgley G, Mirzabaev A, Thomas A, and Warren R. 2022. Key Risks Across Sectors and Regions. In: [Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change](#) [Pörtner H-O, Roberts DC, Tignor M, Poloczanska ES, Mintenbeck K, Alegría A, Craig M, Langsdorf S, Lösschke S, Möller V, Okem A, Rama B (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 2411–2538, doi:10.1017/9781009325844.025

2021

Heinicke S, Ordaz-Németh I, Junker J ... Kühl HS. 2021. [Open-access platform to synthesize knowledge of ape conservation across sites](#). American Journal of Primatology. 10.1002/ajp.23213

Ordaz-Németh I, Sop T, Bala A, ... **Heinicke S**, ... Kühl HS. 2021. [Range-wide indicators of African great ape density distribution](#). American Journal of Primatology, e23338

Andrasi B, Jaeger JAG, **Heinicke S**, Metcalfe K, Hockings KJ. 2021. [Quantifying the road-effect zone for a critically endangered primate](#). Conservation Letters, e12839

2019

Heinicke S, Mundry R, Boesch C ... Kühl HS. 2019. [Towards systematic and evidence-based conservation planning for western chimpanzees](#). American Journal of Primatology. 81:e23042

Heinicke S, Mundry R, Boesch C ... Kühl HS. 2019. [Advancing conservation planning for western chimpanzees using IUCN SSC A.P.E.S. – the case of a taxon-specific database](#). Environmental Research Letters, 14, 064001

Heinicke S, Mundry R, Boesch C ... Kühl HS. 2019. [Characteristics of positive deviants in western chimpanzee populations](#). Frontiers in Ecology and Evolution, 7:16

2018

Voigt M, Wich SA, Ancrenaz M, Meijaard E, Abram N, Banes GL, Campbell-Smith G, d'Arcy LJ, Delgado RA, Erman A, Gaveau D, Goossens B, **Heinicke S**, ... Kühl HS. 2018. [Global demand for natural resources eliminated more than 100,000 Bornean orangutans](#). *Current Biology*, 28, 761-769

2015

Heinicke S, Kalan AK, Wagner OJJ, Mundry R, Lukashevich H & Kühl HS. 2015. [Assessing the performance of a semi-automated acoustic monitoring system for primates](#). *Methods in Ecology and Evolution*, 6(7), 753-763

Kalan AK, Mundry R, Wagner OJJ, **Heinicke S**, Boesch C & Kühl HS. 2015. [Towards the automated detection and occupancy estimation of primates using passive acoustic monitoring](#). *Ecological Indicators*, 54, 217-226

Reports & book chapters

2021

Sop T, Cheyne SM, Bachmann M, Gatiso T, **Heinicke S**, ... Kühl HS. 2021. [The status of apes: a foundation for systematic, evidence-based conservation, State of the apes: killing, capture, trade and conservation](#), ed. Arcus Foundation (Arcus Foundation). Cambridge: Cambridge University Press.

2020

Co-editor: [IUCN SSC Primate Specialist Group](#). 2020. Regional action plan for the conservation of western chimpanzees (*Pan troglodytes verus*) 2020–2030. IUCN, Gland, Switzerland

Member scientific committee: MEEF. 2020. PNCCG - Plan National de Conservation des Chimpanzés (*Pan troglodytes verus*) de Guinée 2020 - 2030. Ministère de l'Environnement, des Eaux et Forêts, Conakry, République de Guinée

Dataset

2023

Treu S, Muis S, Dangendorf S, Wahl T, Oelsmann J, **Heinicke S**, Frieler K, Mengel M. 2023. Hourly Coastal water levels with Counterfactual (HCC). ISIMIP Repository. <https://doi.org/10.48364/ISIMIP.749905>

2019

Heinicke S, Mundry R, Boesch C ... Kühl HS. 2019. Density distribution of western chimpanzees. [IUCN SSC A.P.E.S. database](#).

Talks

- 07.2024 *Investigating climate-driven tipping in great apes using agent-based modelling*, Wildlife Survey Data Workshop: Analysis, Interpretation, and Paper Writing, Ellen DeGeneres Campus of the Dian Fossey Gorilla Fund, Kinigi, Rwanda
- 04.2024 *ISIMIP Biodiversity sector*, session chair and presenter, Cross-sectoral ISIMIP and PROCLIAS Workshop, Potsdam, Germany
- 01.2024 *Climate change impact modelling and the need to include biodiversity – introduction to the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP)*, invited talk, iDiv Seminar Series, Leipzig, Germany
- 10.2023 *Inter-Sectoral Impact Model Intercomparison Project: Biodiversity Sector*, GEOBON EcoCode Workshop, Montreal, Canada (online)
- 06.2023 *Evaluating simulated discharge in global hydrological models from ISIMIP3a*, Cross-sectoral ISIMIP and PROCLIAS Workshop, Prague, Czech Republic
- 04.2023 *Primates and climate change: concepts, current knowledge and research gaps*, invited talk, Ellen DeGeneres Campus of the Dian Fossey Gorilla Fund, Kinigi, Rwanda
- 08.2022 *Exposure of ape habitat to extreme events and climate change impacts*, European Congress of Conservation Biology, Prague, Czech Republic
- 06.2020 *Representation of historical heat waves and drought impacts in GGCM models – preliminary results*, Cross-sectoral ISIMIP Workshop, Online
- 03.2019 *Estimating the impact of planned infrastructure projects on chimpanzees in West Africa*, Conservation Geopolitics Forum, Oxford, UK
- 09.2018 *Applying the positive deviance approach to conservation management*, Pathways Europe – Human Dimensions of Wildlife: Resurrecting the Wild, Goslar, Germany
- 08.2018 *Modeling western chimpanzee densities to support regional conservation planning*, Congress of the International Primatological Society, Nairobi, Kenya
- 06.2018 *Applying the positive deviance approach to identify sustainable social-ecological settings*, European Congress of Conservation Biology, Jyväskylä, Finland
- 12.2017 *Western chimpanzee status: Population trend, abundance and distribution*, Regional Western Chimpanzee Action Planning Process & Workshop, Monrovia, Liberia
- 09.2017 *Analyses pour soutenir les plans d'action pour la conservation des chimpanzés*, Atelier du plan d'action national pour la conservation des chimpanzés en Guinée, Conakry, Guinea
- 12.2015 *Determining the influence of socio-economic conditions on the rangewide density distribution of two African and Asian ape taxa*, iDiv Annual Conference, Leipzig, Germany

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