

Dr. Achaz von Hardenberg

Associate Professor

Department of Earth and Environmental Sciences · University of Pavia · Pavia, Italy

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EDUCATION

Postgraduate Certificate in Learning and Teaching in Higher Education, University of Chester, UK. 2017

Ph.D. in Biology, Université de Sherbrooke (Quebec, Canada)

Thesis title: *Senescence, Sexual Selection and Population Dynamics of Alpine ibex (Capra ibex)*
2005

Laurea Degree in Biological Sciences (5 years), University of Pavia, Italy

Thesis title: *Territorial behaviour of male alpine chamois (Rupicapra rupicapra)* 1998

EMPLOYMENT AND ACADEMIC POSITIONS

Associate Professor

Department of Earth and Environmental Sciences, University of Pavia, 2023 From the 1st November 2023 onwards

Associate Professor

Department of Biological Sciences, University of Chester, UK 1st January 2023-31st October 2023

Senior Lecturer in Conservation Biology

Department of Biological Sciences, University of Chester, UK 1st August 2019-31st December 2022

Lecturer in Conservation Biology

Department of Biological Sciences, University of Chester, UK 17 August 2015 - 31 July 2019

Contract Professor in Ecological Data Management and Analysis

Module open to level6 BSc students in Natural Sciences and MSc students in “Evolution of Animal and Human Behaviour”“, Faculty of Science, University of Turin, Italy 2014-2015

Post-doc Visiting Research Fellow

National Centre for Statistical Ecology
School of Mathematics, Statistics and Actuarial Science
University of Kent, Canterbury, UK 2009-2010

Research Biologist, Responsible for wildlife research and conservation projects

Alpine Wildlife Research Centre, Scientific Research Service
Gran Paradiso National Park, Italy 2005-2015

Contract Professor in Animal Behaviour

BSc in Animal Productions, Wildlife Management and Conservation,
Faculty of Veterinary Medicine, University of Turin, Italy / 2007-2009

Wildlife research and conservation consultant

Wildlife Science Srl
Private wildlife management consultancy company (Founder and CEO) 2003-2005

Postgraduate Research fellow Université de Sherbrooke (Quebec, Canada)
with a University of Pavia postgraduate fellowship

1999

TEACHING EXPERIENCE

Module leadership

University of Pavia - **Elements of GIS and introduction to Spatial data analysis** (UG 3rd Year, 2023-24); **Laboratory of environmental management planning** (PG, 2023 onwards); **Wildlife Conservation and Management** (PG, 2024 onwards)

University of Chester - **Ecology** (UG 1st year, 2016-2023); **Field Ecology** (UG 2nd year, 2018-2023); **Population Biology and Conservation** (UG 2nd year, 2017-2023); **Field Techniques for Wildlife Conservation** (PG, 2018-2023)

Short courses and workshops taught

April-May 2019, March-May 2021, April-May 2022, April-May 2023 - **Modelling animal movement and habitat suitability for conservation programs** Post Graduate course, Visiting Professorship, University of Torino, Italy.

April 2019, May 2022 - **Species distribution models in R** 5 days PhD course, University of Pavia, Italy.

April 2018 - **Introduction to Occupancy models for the management of small populations** pre-conference 1 day short course at the “Future Directions in the Management of Small Populations” BES Meeting, University of Chester, UK.

December 2017 - **Species distribution and occupancy models in R**, 4 days short course for staff of Chester Zoo, Chester, UK.

July 2017 - **A primer of causal inference for conservation biologists**, pre-conference 1 day short course at the International Conference for Conservation Biology 2017, Cartagena, Colombia.

April 2017 - **Advanced applied Statistical Methods for Researchers** (26 hours), Istitut Agricole Regional de la Valle d’Aoste, Italy

April 2016 - **Bayesian methods for Ecologists**, 4 days PhD level course, Univeristy of Pavia, Italy.

April 2015 - **Causal Inference for Ecologists**, 4 days PhD level course, University of Pavia, Italy.

January 2015 - **Bayesian methods for Biologists and Veterinarians and Disentangling Evolutionary Relationships with Phylogenetic Comparative Methods** (Together with Dr. A. Gonzalez-Voyer). **Visiting Professor**, 2 weeks Postgraduate summer school, Universidad Austral de Chile, Valdivia, Chile.

December-February 2014-15 - **Applied Statistical Methods for Researchers** (32 hours), Istitut Agricole Regional de la Valle d’Aoste, Italy

October 2013 - **Disentangling Evolutionary Relationships with Phylogenetic Comparative Methods** (Together with Dr. A. Gonzalez-Voyer). 5 days course at Transmitting Science, Els Hostalets de Pierola, Barcelona, Spain

Current postgraduate students

Valeria Ferrario, PhD, University of Turin, Italy (2022-current); **Maria Virginia Boiani** PhD, University of Chester, UK (2021 - current); **Matteo Panaccio** PhD, University of Chester, UK (2021 - current); **Alex Lancaster**, PhD, University of Chester, UK (2019 - current); **Naomi Matthews** PhD, University of Chester, UK (2019 - current); **Amber Williams** MPhil, University of Chester, UK (2023- current)

People who have earned a PhD degree or completed a post-doc stay under my supervision

Postdoc: Alice Brambilla (2014-2015); Rocco Tiberti (2013-2017); Cristian Pasquaretta (2009-2011). *PhD*: Caterina Ferrari, University of Turin (2017-2022); Luigi Ranghetti, University of Pavia (2011-2014); Alice Brambilla, University of Pavia (2010-2013); Rocco Tiberti, University of Pavia (2008-2011).

Higher education qualifications

Fellow of the Higher Education Academy, recognition reference number: PR131728, obtained in August 2017.

ACADEMIC ROLES

Member of the Research Oversight Group, Faculty of Science and Engineering, University of Chester 2022-2023

Member of the TRansparent Approach to Costing Return Working Group, University of Chester 2022-2023

REF2021 UA05 Biological Sciences Coordinator, University of Chester 2019-2023

Member of the Research and Knowledge Transfer Committee University of Chester 2019-2023

Member of the Faculty Research Ethics Committee, Faculty of Medicine, Dentistry and Life Sciences, University of Chester 2018-2021

Member of the Athena Swan Committee, Department of Biological Sciences, University of Chester, 2015-2016

Independent Chair, PhD Ms. Elizabeth Cait Deery, University of Chester March 2020

External Examiner, MRes Miss. Phoebe Sadler, University of Bangor November 2019

External Examiner, PhD of Mr. Niu Kefeng, University of Turin, Italy, March 2018

External Examiner, PhD of Mr. Rocco Iacobuzio, University of Milano, Italy January 2018

External Examiner, MRes Viva of Mr. Owain Barton, University of Bangor January 2018

External Examiner, PhD Viva of Ms. E. Iranzo, Universidad de Madrid March 2017

EDITORIAL AND PEER-REVIEW ACTIVITY

Associate Editor for *Frontiers in Ecology and Evolution* 2022-current.

Associate Editor for *Journal of Mountain Ecology* 2005-current.

Has served as reviewer for the following journals: *Nature Communications*, *Proceedings of the royal Society B*, *Animal Behaviour*, *Bioscience*, *Mammal Review*, *Methods in Ecology and Evolution*, *Conservation Biology*, *Biology letters*, *Behavioural Ecology*, *Behavioural Ecology and Sociobiology*, *Journal of Animal Ecology*, *Biological Journal of the Linnean Society*, *Wildlife Research*, *Journal of Mountain Ecology*, *Wildlife Biology*, *Journal of Arid Environments*, *Journal of Zoology*, *Mammal Biology*, *Mammalia*, *Wildlife Society Bulletin*, *International Journal of Biodiversity and Conservation*, *Italian Journal of Zoology*, *European Journal of Wildlife Research*, *Folia Zoologica*, *Hystrix - Italian Journal of Mammalogy*, *PLOS-ONE*, *American Naturalist*, *European Journal of Zoology*, *Journal of Evolutionary Biology*, *Ecography*, *Biological Conservation*, *Frontiers in Ecology and Evolution*

OTHER RECENT SCHOLARITY ACTIVITY

Member of the Scientific Committee of the “World Conference on Mountain Ungulates”.
Cogne, Italy, 27-30 September 2022

Expert Panel Member for the Italian Wolf Monitoring Strategy. Italian National Institute for Environmental Protection and Research (ISPRA), January 2020-current

***Member of the Organising Committee** of the “Think-tank on Conservation technologies” at the International Conference for Conservation Biology 2017, Cartagena, Colombia, 22-26 July 2017.

Member of the Scientific Committee of the “International Meeting on the Conservation of High Altitude Lakes”, held in the Gran Paradiso National Park, Italy from 6-8 July 2017.

GRANTS AND CONTRACTS AWARDED

Sustainable Futures PhD Scholarships Grant - Matched funding (Sponsor: Gran Paradiso National Park, Italy) for a PhD on the biodemography of mountain ungulates in the age of climate change 61,052 GBP 2021-2024

Sustainable Futures PhD Scholarships Grant - Matched funding (Sponsor: Alpi Marittime Natural Park, Italy) for a PhD on the spatial dynamics of the wolves in the Alps. 61,052 GBP 2021-2024

Biological Sciences QR Research Grant - Conservation physiology of human-wildlife conflict: effects of sheep herding on stress and reproductive physiology of wild guanaco. 1200 GBP 2020-2021

External expert in FONDECYT Chile Research Grant - Ecological interactions between domestic sheep livestock and wild Guanaco (Dr. Paulo Corti PI) 355,500 US\$ (10,000 US\$ for research expeditions to Chile by the external expert) 2017-2021

Knowledge Transfer Fund Causal inference in Ecology, Evolution and Conservation (N on Credit bearing CPD course). University of Chester, 3,500 GBP 2017

Species distribution and occupancy models in R, 4 days short course for staff of Chester Zoo, Chester. Chester Zoo, 2,000 GBP 2017

International Research Excellence Grant
University of Chester (Funded by Santander) 1,000 GBP 2016

Project coordinator
LIFE+ BIOAQUAE (Biodiversity Improvement of Aquatic Alpine Ecosystems). EU LIFE Funding 1,353,540 € www.bioaquae.eu 2012-2015

Project coordinator

Updating the European distribution map of Alpine ibex.
BAFU, Swiss Ministry of Environment 14,000 € 2014

Scientist in charge for GPNP

ACQWA Assessing Climate impacts on the Quantity and quality of Water.
7th Research Framework Programme (EU - FP7) 80,000 € 2007-2012

AWARDS AND FELLOWSHIPS

European Social Fund, Research Travel Grant - Universidad Austral de Chile 2010

Postdoc fellowship of the European Social Fund - University of Kent, UK 2009-2010

European Social Fund Research Travel Grant for participating to the Distance Sampling Workshops, St. Andrews, Scotland, August 2007 2007

Excellence studentship of the University of Sherbrooke 2000-2001

DAAD fellowship (Deutscher Akademischer Austauschdienst, Program HSP III) for pursuing a Ph.D. At the University of Sherbrooke, Canada 2000-2001

“Marco Marchesini” Prize of the “Istituto Veneto di Scienze, Lettere ed Arti” for the best diploma thesis in Ethology defended in Italy in 1997-98 1999

Abroad specialisation research studentship of the University of Pavia; held at the University of Sherbrooke, Canada 1999

MEMBERSHIPS

Member of the Society for Conservation Biology and of the British Ecological Society

LANGUAGES

I speak and write fluently in **English, German, Italian** and **Spanish**. My level of spoken and written **French** is intermediate.

PUBLICATIONS AND SCHOLARLY WORKS

Books and monographs

1. Prigioni C. and **von Hardenberg A.** (1996) Biologia della lontra (*Lutra lutra*) e prospettive di un suo ritorno in Valle d'Aosta. (Monograph) 36 pp. Torino, Collana scientifica del Parco Nazionale Gran Paradiso nr.4.

Chapters of books

1. **von Hardenberg A.** and Bassano B. (2000) I mammiferi. In: C. Ferrari & L. Gambi (Eds.) *Un Po di terra: Guida all'ambiente della Bassa Pianura Padana e alla sua storia.* pp 237-282. Reggio Emilia, Diabasis Editore.
2. Bassano B., **von Hardenberg A.**, Viterbi R. and Provenzale A. (2007) Impatto della variabilità climatica sugli ecosistemi alpini. In: B. Carli, G. Cavarretta, M. Colacino and S. Fuzzi (Eds.) *Clima e Cambiamenti Climatici: le attività di ricerca del CNR.* pp 677-680. Roma, Consiglio Nazionale delle Ricerche.

3. Gonzalez-Voyer A. and von Hardenberg A. (2014) An introduction to Phylogenetic Path Analysis. In: L.S. Garamszegi (Ed.) *Modern phylogenetic comparative methods and their application in evolutionary biology*. pp 201-230. Berlin, Springer.
4. Brambilla A., Bassano B., Biebach I., Bollman K., Keller L., Toigo C. and von Hardenberg A. (2020) Alpine Ibex *Capra ibex* Linnaeus, 1758. In: Hackländer, K., Zacos, F.E. (Eds.) *Handbook of the Mammals of Europe. Handbook of the Mammals of Europe*. https://doi.org/10.1007/978-3-319-65038-8_32-1. pp 1-27. Cham, Springer.
5. von Hardenberg A., Brambilla A. and Bassano B. (2022) Renzo Vidorsot and the conservation of Alpine ibex. In: *Gran Paradiso National Park: 100 years and hundred more. pp 158-168. Parma, Cosimo Panini Editore.

Full papers in referred journals

1. Bertolino S., von Hardenberg A. & G. Ribetto (2000) Population dynamics of mouflon, *Ovis [orientalis] musimon*, in a protected area in the Italian Alps. *Journal of Mountain Ecology*, 5:193-200.
2. von Hardenberg A., Bassano B., Peracino V., von Hardenberg J. & Provenzale A (2000) Preliminary results on the temporal variability of the Alpine ibex population in the Gran Paradiso National Park. *Journal of Mountain Ecology*, 5:201-210.
3. von Hardenberg A., Bassano B., Peracino, A. & S. Lovari (2000) Male alpine chamois occupy territories at hotspots before the mating season. *Ethology*, 106:617-630.
4. Bassano B., Perrone A. and von Hardenberg A. (2003) Body weight and horn development in Alpine chamois, *Rupicapra rupicapra* (*Bovidae*, *Caprinae*). *Mammalia*, 67(1):65-73.
5. von Hardenberg A., Shipley B. and M. Festa Bianchet (2003) Another one bites the dust: Does incisor arcade size affect mass gain and survival in grazing ungulates? *Canadian Journal of Zoology*, 81 (9): 1623- 1629.
6. Bassano B., von Hardenberg A., Pelletier. F. and G. Gobbi (2003) A method to weight free- ranging ungulates without handling. *Wildlife Society Bulletin*. 31(4):1205-1209.
7. Maudet C., Luikart G., Dubray D., von Hardenberg A., Taberlet P (2004) Low genotyping error rates when analysing microsatellite DNA from wild ungulate faeces sampled in winter. *Molecular Ecology Notes*, 4(4): 772-775.
8. Jacobson, A.R., Provenzale, A., von Hardenberg A., Bassano B. and M. Festa-Bianchet (2004) Climate forcing and density dependence in a mountain ungulate population. *Ecology*, 85(6): 1598-1610.
9. von Hardenberg A., Bassano B., Zumel Arranz M.d.P. and G. Bogliani (2004) Horn growth but not asymmetry heralds the onset of senescence in male Alpine ibex. *Journal of Zoology*, 263: 425-432.
10. Jacobson A.R., Festa-Bianchet M., Provenzale A., von Hardenberg A. and Bassano B (2006) Comment on Lima & Berryman (2006): the Alpine ibex revisited. *Climate Research*, 32:137.
11. Pettorelli N., Pelletier F., von Hardenberg A., Festa-Bianchet M. and Cote S (2007) Early onset of vegetation growth versus rapid green-up: impacts on juvenile mountain ungulates. *Ecology*, 88(2):381- 390.

12. **von Hardenberg A.**, Bassano B., Festa-Bianchet M., Luikart G., Lanfranchi P. and Coltman D (2007) Age dependent genetic effects on a secondary sexual trait in male Alpine ibex (*Capra ibex*). *Molecular Ecology*, 16:1969-1980.
13. Decristophoris P.M.A., **von Hardenberg A.** and McElligott A.G. (2007) Testosterone is positively related to the output of nematode eggs in male Alpine ibex (*Capra ibex*) faeces. *Evolutionary Ecology Research*, 9:1277-1292.
14. Bergeron P., Festa-Bianchet M., **von Hardenberg A.** and Bassano B. (2008) Heterogeneity in male horn growth and longevity in a highly sexually dimorphic ungulate. *Oikos*, 117, 77-82.
15. Ferrari C. Bogliani G. and **von Hardenberg A.** (2009) Alpine marmots (*Marmota marmota*) adjust vigilance behaviour according to environmental characteristics of their surrounding. *Ethology, Ecology & Evolution*, 21:355-364.
16. Rughetti, M. , Toigo, C., **von Hardenberg A.**, Rocchia E. and M. Festa-Bianchet (2011) Effects of an exceptionally snowy winter on chamois survival. *Acta Theriologica*, 56(4): 329-333.
17. Costantini D., Ferrari C., Pasquaretta C., Carere C., **von Hardenberg A.** and Reale D. (2012) Interplay between plasma oxidative state, cortisol and coping styles in wild Alpine marmots (*Marmota marmota*). *Journal of Experimental Biology*, 215(2):374-383.
18. Pasquaretta C., Bogliani G. Ferrari C., Ranghetti L. and **von Hardenberg A.** (2012) The Animal Locator: A new method for the accurate and fast collection of animal locations for visible species. *Wildlife Biology*, 18(2):202-214.
19. Tiberti, R and **von Hardenberg A.** (2012) Impact of introduced fish on Common frog (*Rana temporaria*) close to its altitudinal limit in alpine lakes. *Amphibia-Reptilia*, 33(2):303-307.
20. Dumont F. Pasquaretta C., Bogliani G. Reale D. & **von Hardenberg A.** (2012) Flight initiation distance and starting distance: biological effect or mathematical artifact? *Ethology*, 118(11): 1051-1062.
21. Ferrari C., Pasquaretta C., **von Hardenberg A.** and Bassano B. (2012) Intraspecific killing and cannibalism in adult Alpine marmots *Marmota marmota*. *Ethology, Ecology and Evolution*, 24 (4): 388-394.
22. Mignatti A., Casagrandi R., Provenzale A. **von Hardenberg A.** and Gatto M. (2012) Sex and age- structured models for Alpine ibex *Capra ibex* population dynamics. *Wildlife Biology*, 18 (3): 318-332.
23. Corlatti L. Bethaz S., **von Hardenberg A.**, Bassano B., Palme, R. & Lovari S. (2012) Hormones, parasites and male mating tactics in Alpine chamois: identifying the mechanisms of life history trade-offs. *Animal Behaviour*, 84(4):1061-170, doi: 10.1016/j.anbehav.2012.08.005.
24. Ferrari, C., Pasquaretta, C., Carere, C., Cavallone, E., **von Hardenberg, A.** and Reale, D. (2013) Testing for the presence of coping styles in a wild mammal. *Animal Behaviour*, 85(6):1385-1396, doi: 10.1016/j.anbehav.2013.03.030.
25. Viterbi R., Cerrato C., Bassano B., Bionda R., **von Hardenberg A.**, Provenzale A. and Bogliani G.(2013) Patterns of biodiversity in the northwestern Italian Alps: a multi-taxa approach. *Community Ecology* 14(1):18-30. doi: 10.1556/ComEc.14.2013.1.3.

26. Brambilla A., **von Hardenberg A.**, Kristo O., Bassano B. and Bogliani G. (2013) Don't spit in the soup: faecal avoidance in foraging wild Alpine ibex, *Capra ibex*. *Animal Behaviour*, 86(1): 153-158, doi: 10.1016/j.anbehav.2013.05.006.
27. **von Hardenberg A.** and Gonzalez-Voyer A. (2013) Disentangling evolutionary cause-effect relationships with phylogenetic confirmatory path analysis. *Evolution* 67: 378–387, doi: 10.1111/j.1558- 5646.2012.01790.x.
28. Tiberti R., **von Hardenberg A.** and Bogliani G. (2014) Ecological impact of introduced fish in high altitude lakes: a case of study from the European Alps. *Hydrobiologia*, 724(1):1:19 doi: 10.1007/ s10750-013- 1696-1.
29. Brambilla B., Biebach I., Bassano B., Bogliani G. and **von Hardenberg A.** (2015) Direct and indirect causal effects of heterozygosity on fitness-related traits in Alpine ibex. *Proc. Roy. Soc. B*. doi: 10.1098/rspb.2014.1873.
30. Pasquaretta C., Busia L., Ferrari C., Bogliani, G., Reale, D., **von Hardenberg, A.** (2015) Helpers influence on territory use and maintenance in Alpine marmot groups. *Behaviour*, 152(10), 1391-1412.
31. Quevedo P. **von Hardenberg A.**, Pastore H., Alvarez J. and Corti P. (2016) Predicting the potential distribution of the endangered huemul deer *Hippocamelus bisulcus* in North Patagonia. *Oryx*, doi: 10.1017/S0030605315001106.
32. Ranghetti, L., Bassano B., Bogliani G., Palmonari A., Formigoni A, Stendardi L. and **von Hardenberg A.** (2016) MODIS time series contribution for the estimation of nutritional properties of alpine grassland. *European Journal of Remote Sensing*. 49, 691-718.
33. Tiberti, R., Ottino, M., Brighenti, S., Iacobuzio, R., Rolla, M., **von Hardenberg, A.** and Bassano B. (2017) Involvement of recreational anglers in the eradication of alien brook trout from high altitude lakes. *Journal of Mountain Ecology*, 10, 13-26.
34. Zanet S., Miglio G., Ferrari C., Bassano B., Ferroglio E. and **von Hardenberg, A.** (2017) Higher Risk of Gastrointestinal Parasite Infection at Lower Altitudes Suggests Possible Constraints in the Distributional Niche of Alpine Marmots. *PLOS ONE*. 12(8),e0182477.
35. Scridel D., Bogliani B., Pedrini P., Iemma A., **von Hardenberg A.** and Brambilla M. (2017) Thermal niche predicts recent range variation in birds. *Climate Research*. 73(3), 207-216.
36. Davies, R., **von Hardenberg, A.**, & Geary, M. (2018) Recapture rates and habitat associations of White-faced Darter *Leucorhinnia dubia* on Fenn's and Whixall Moss, Shropshire, UK. *Journal of the British Dragonfly Society* bioRxiv, 349936.
37. Tiberti R.,Bogliani G., Brighenti S., Iacobuzio R., Liautaud K., Rolla M., **von Hardenberg A.**, Bassano B. (2018) Recovery of high mountain lake ecosystems after the eradication of introduced fish using non-chemical methods. *Biological Invasions* 21(3):875-894.
38. Santini L., González-Suárez M., Russo D.,Gonzalez Voyer A., **von Hardenberg A.**, Ancillotto L. (2019) One strategy doesn't fit all: determinants of urban adaptation in mammals. *Ecology Letters*, 22(2):365-376.
39. Brambilla, A., **von Hardenberg, A.**, Nelli, L., & Bassano, B. (2020) Distribution, status, and recent population dynamics of Alpine ibex *Capra ibex* in Europe. *Mammal Review*, 50(3):267-277.

40. Geary, M., & **von Hardenberg, A.** (2020) White-faced darter distribution is associated with coniferous forests in Great Britain. *Insect Conservation and Distribution* 14(1):15-25.
41. González-Suárez, M., Gonzalez-Voyer, A., **von Hardenberg, A.**, & Santini, L. (2021) The role of brain size on mammalian population densities. *Journal of Animal Ecology*, 90(3):653-661.
42. Panaccio, M., Ferrari, C., Bassano, B., Stanley, C. R., & **von Hardenberg, A.** (2021) Social network analysis of small social groups: Application of a hurdle GLMM approach in the Alpine marmot (*Marmota marmota*). *Ethology*, 127(6):453-464.
43. Rolle F., Torti V., Valente D., De Gregorio C., Giacoma C. & **von Hardenberg A.** (2021) Sex and age-specific survival and life expectancy in a free ranging population of *Indri indri* (Gmelin, 1788), *The European Zoological Journal*, 88:1, 796-806, <https://doi.org/10.1080/24750263.2021.1947398>.
44. Fernández, T., Lancaster, A., Moraga, C. A., Radic-Schilling, S., **von Hardenberg, A.**, & Corti, P. (2021) Behavioural Indicators of Intra-and Inter-Specific Competition: Sheep Co-Grazing with Guanaco in the Patagonian Steppe. *Animals*, 11(11), 3333.
45. Brambilla, A., **von Hardenberg, A.**, Sueur, C., Canedoli, C., & Stanley, C. R. (2022) Long term analysis of social structure: evidence of age-based consistent associations in Alpine ibex. *Oikos*, e09511.
46. Ferrari, C., Zanet, S., Rolando, A., Bertolino, S., Bassano, B., & **von Hardenberg, A.** (2022) Marginal habitats provide unexpected survival benefits to the alpine marmot. *Population Ecology*, 64(1), 64-77.
47. Ferrari, C., Pasquaretta, C., Caprio, E., Ranghetti, L., Bogliani, G., Rolando, A., Bertolino S., Bassano B. & **von Hardenberg, A.** (2022) Extrinsic and intrinsic factors affecting the activity budget of alpine marmots (*Marmota marmota*). *Mammal Research*, <https://doi.org/10.1007/s13364-022-00623-9>.
48. Lancaster A., Corti P., Fernández T., Moraga C.A., Radic-Schilling S., **von Hardenberg A.** (2022) Changes in foraging behaviour suggest competition between wild and domestic ungulates: Guanaco and domestic sheep in Southern Patagonia. *Journal of Zoology*, 317:213–228. [doi:10.1111/jzo.12971](https://doi.org/10.1111/jzo.12971).
49. Peters C., Geary M., Nelson H., Rusk B., **von Hardenberg A.** and Muir A. (2023) Phylogenetic placement and life history trait imputation for Grenada Dove *Leptotila wellsi*. *Bird Conservation International*, 1-11. <https://doi.org/10.1017/S0959270922000065>.
50. Matthews, N., Nixon, S., **von Hardenberg, A.**, & Geary, M. (2023) Targeting burrows improves detection in giant pangolin *Smutsia gigantea* camera trap surveys. *Oryx*, 1-9. [doi: 10.1017/S0030605322000692](https://doi.org/10.1017/S0030605322000692)
51. Ferrari C., Cerri J., Rolando A., Bassano B, **von Hardenberg A.** & Bertolino S. (2023) See you in spring: overwinter survival is higher than post summer in the Alpine marmot. *Ethology Ecology & Evolution*, 35:5, 617-628, DOI: 10.1080/03949370.2022.2157891
52. Ravaglia, D.; Ferrario, V.; De Gregorio, C.; Carugati, F.; Raimondi, T.; Cristiano, W.; Torti, V.; **von Hardenberg, A.**; Ratsimbazafy, J.; Valente, D.; et al. (2023) There You Are! Automated Detection of Indris' Songs on Features Extracted from Passive Acoustic Recordings. *Animals* 13,241. <https://doi.org/10.3390/ani13020241>

53. Marucco, F., Boiani, M. V., Dupont, P., Milleret, C., Avanzinelli, E., Pilgrim, K., Schwartz, M.K., **von Hardenberg, A.**... & Bischof, R. (2023). A multidisciplinary approach to estimating wolf population size for long-term conservation. *Conservation Biology*, e14132.
54. Doss, E. M., Jouffroy, M., Rey, B., Cohas, A., **von Hardenberg, A.**, & Smith, T. E. (2023). Technical validation and a comparison of two methods to quantify individual levels of glucocorticoids in Alpine marmot hair. *MethodsX*, 102418.
55. Panaccio, M., Brambilla, A., Bassano, B., Smith, T., & **von Hardenberg, A.** (2024). Monitoring wildlife population trends with sample counts: A case study on the Alpine ibex (*Capra ibex*). *Wildlife Biology* e01162, <https://doi.org/10.1002/wlb3.01162>

Research reports

1. Marucco F., E. Avanzinelli, M. V. Boiani, A. Menzano, S. Perrone, P. Dupont, R. Bischof, C. Milleret, **A. von Hardenberg**, K. Pilgrim, F. Bisi, G. Bombieri, S. Calderola, S. Carolfi, C. Chioso, U. Fattori, P. Ferrari, L. Pedrotti, D. Righetti, M. Tomasella, F. Truc, P. Aragno, V. La Morgia, P. Genovesi (2022) *La popolazione di lupo nelle regioni alpine Italiane 2020-2021. Relazione tecnica dell'Attività di monitoraggio nazionale nell'ambito del Piano di Azione del lupo ai sensi della Convenzione ISPRA-MITE e nell'ambito del Progetto LIFE 18 NAT/IT/000972 WOLFALPS EU.* (The population of wolves in the Italian Alpine Regions 2020-2021. Technical Report for the National Wolf Action Plan. ISPRA-MITE, LIFE project 18 NAT/IT/000972 WOLFALPS EU.) https://www.isprambiente.gov.it/it/attivita/biodiversita/monitoraggio-nazionale-del-lupo/file-monitoraggio/report-nazionale-lupo-regioni-alpine-20_21.pdf.