



Curriculum vitae

PD Dr. Janine Bolliger

Swiss Federal Research Institute WSL, Department of Landscape Dynamics, Zürcherstrasse 111, CH-8903 Birmensdorf, Switzerland, Tel. +41 44 739 23 93, E-mail: janine.bolliger@wsl.ch,
URL: <http://www.wsl.ch/info/mitarbeitende/bolliger/>

Education and positions

- 2008** **Habilitation** at the Dept. of Environmental Sciences, ETHZ (Prof. H. Bugmann): "Assessing land characteristics in a changing environment"
- Since 2006** **Associate Researcher**, Department of Landscape Dynamics, WSL, Birmensdorf, Switzerland
- 2001-2006** **Postdoctoral Fellow**, Department of Landscape Dynamics, Department of Forest Inventories, WSL, Birmensdorf, (Dr. H. Lischke, Prof. Dr. F. Kienast)
- 1999-2001** **Postdoctoral Fellow**, Department of Forest Ecology and Management University of Wisconsin-Madison, Madison WI, USA (Prof. Dr. D. J. Mladenoff)
- 1996-1999** **PhD** in Landscape Ecology, University of Bern, Switzerland, Swiss Federal Research Institute WSL, Birmensdorf, Switzerland: "Modelling tree-species occurrence in a changing environment" (Prof. Dr. F. Kienast, WSL, Prof. Dr. B. Ammann, University of Bern)
- 1994-1996** **Research Assistant**, Swiss Federal Research Institute WSL, Birmensdorf, Switzerland
- 1994** **Master**, Ecophysiology and System's Ecology, University of Basel, Switzerland (Prof. C. Körner)

Students and postdocs

- Postdoc: Robert Pazur (2015-2017), supervisor
- Postdoc: Bronwyn Price (2013-2014), supervisor
- Postdoc: Andrea Vaupel (2012-2014), co-supervisor
- Postdoc: Daniela Keller (2012-2013), supervisor
- Postdoc: Gwenaëlle Le Lay (2009-2011), supervisor
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- PhD: Maarten van Strien, ETHZ (2009-2013), co-supervisor
- PhD: Sima Fakheran, University of Zürich (2006-2008), co-supervisor
- PhD: Sölvi Wehn, University of Trondheim (2008), external supervisor
- PhD: Andreas Kelager, Copenhagen University (2015), external supervisor
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- Master: Michaela Amherd, D-USYS ETHZ (2017), supervisor
- Master: Pierre Cothureau, D-USYS ETHZ (2016), supervisor
- Master: Ramon Müller, University of Zürich, (2015-2016), co-supervisor
- Master: Greg Churko, D-BIOL ETHZ (2016), supervisor
- Master: Gaetano Paganini, D-USYS ETHZ (2016), supervisor
- Master: Max Schmid, D-BIOL ETHZ (2014), co-supervisor
- Master: Manuel Frei, D-USYS ETHZ (2014), supervisor
- Master: Dorena Nagel, D-BIOL ETHZ (2013), supervisor
- Master: Stephanie Burkart, D-USYS ETHZ (2013), supervisor

Master: Lisette Senn, D-USYS ETHZ (2012), supervisor
Master: Regula Hodler, D-USYS ETHZ (2010), supervisor
Master: Christophe Bornand, University of Basel (2009), co-supervisor
Master: Roberto Pellegrini, University of Basel (2009), co-supervisor

Grants (past 5 yrs)

- **HiFlow-CMA: coupling a hydrological model with land-use change to assess flood risks** (PI M. Huttenlau, AlpS, co-PI: **J. Bolliger**, WSL), 90'000Euro, 2016-2017
- **Genetic monitoring: feasibility assessment for the action plan of the Swiss Biodiversity Strategy** (PI F. Gugerli, co-PI **J. Bolliger**, 40kFr, funded by WSL)
- **Kreuzkörte im Suhretal, AG** (PI **J. Bolliger**, 4kFr, Basler Stiftung für biologische Forschung, 12kFr Naturschutzfachstelle Kt. Aargau, 2013)
- **Free to download: spatially explicit scenarios of land-use change for Switzerland** (PI **J. Bolliger**, 85kFr, funded by WSL)
- **GeneMig**: CCES project (PI **J. Bolliger**, 1000 kCHF, 2012-2014) <http://www.cces.ethz.ch/projects/sulu/genemig>
- **GeneReach**: CCES project for extension (PI **J. Bolliger**, 200 kCHF, 2012-2013)
- **ENHANCE**: CCES project (PI **J. Bolliger**, 1600 kCHF, 2008-2012) <http://www.cces.ethz.ch/projects/sulu/ENHANCE>
- **RestorAlps**: landscape genetics of high-mountain lakes (pre-project in 2012 in collaboration with Fachhochschule Geneva: 100kFr), PI B. Oertli, co-PI **J. Bolliger**

Science management

Boards

- Research Commission WSL
- Landscape Ecology, Editorial Board
- Diversity & Distributions, Editorial Board
- GAIA: Editorial Board for SAGUF Forum Notes
- SAGUF: Executive Board
- SAGUF: Advisory Board

Scientific events

- 2015: Annual meeting in conservation genetics. Holderegger R., Segelbacher G., Hochkirch A. **Bolliger J.**, Gugerli F., Widmer A., Zachos F., Balkenhol N. http://www.wsl.ch/dienstleistungen/veranstaltungen/veranstaltungskalender/conservation_genetics
- 2015: Landscape genetics, symposium, IALE Portland, USA, **Bolliger J.**, Wang I., Epps C., Balkenhol N.
- 2013: Landscape genetics, symposium, IALE Europe, Manchester, UK. **Bolliger J.**, Lander T., Balkenhol N.
- 2008: Landscape multifunctionality, symposium, IALE Europe, Salzburg, A. **Bolliger J.**, Kienast F.
- 2003: Complexity of landscape modelling, symposium IALE, Darwin, Australia. **Bolliger J.**, Lischke H.

Teaching

- **Master student course "Advanced Landscape Research"**, D-USYS ETHZ, **Bürgi, Bolliger, Hunziker, Gimmi, WSL**
- **Summer school "Land-system science for analysing dynamic landscapes: data, tools and models"** **Bolliger, Tobias, Kienast, Verburg et al.**
- **Winter school "Landscape Genetics"**, D-BIOL ETHZ, **Holderegger, Bolliger, Gugerli, WSL**

Associations

- IALE Europe
- IALE International
- SAGUF

Publications

H-Index: 15 (May 2016)

Complete list of publications:

http://www.wsl.ch/dienstleistungen/publikationen/suche_DE?fulltext_search=bolliger%2Cj.&publikationsjahr=&search=Go

Scientific publications, peer-reviewed

1. **Bolliger, J.**, Schmatz, D. R., R., P., Ostapowicz, K. & Psomas, A. 2017. Reconstructing forest change between 1880 and 2010 in the Swiss Alps using ensemble modelling. *Regional Environmental Change*, in press.
2. Huber, N., Hergert, R., Price, B., Zäch, C., Hersperger, A. M., Pütz, M., Kienast, F. & **Bolliger, J.** 2017. Renewable energy sources: conflicts and opportunities in a changing landscape. *Regional Environmental Change*, in press.
3. Egli, T., **Bolliger, J.** & Kienast, F. 2017. Evaluating ecosystem service trade-offs with wind electricity production in Switzerland. *Renewable and Sustainable Energy Reviews*, 67, 863–875.
4. Kienast, F., Huber, N., Hergert, R., **Bolliger, J.**, Segura-Moran, L. & Hersperger, A. M. 2017. Conflicts between decentralized renewable electricity production and landscape services – a spatially-explicit quantitative assessment for Switzerland. *Renewable and Sustainable Energy Reviews*, 67, 397–407.
5. Frei, M., Csencsics, D., Brodbeck, S., Schweizer, E., Bühler, C., Gugerli, F., **Bolliger J.** 2016. Combining landscape genetics, radio-tracking and long-term monitoring to derive management implications for Natterjack toads (*Epidalea calamita*) in agricultural landscapes. *Journal of Nature Conservation* 32: 22-34.
6. Burkart, S., Gugerli, F., Senn, J., Kuehn, R., **Bolliger J.** 2016. Evaluating the functionality of expert-assessed wildlife corridors with genetic data: setting priorities for management measures in roe deer (*Capreolus capreolus*). *Basic and Applied Ecology* 17: 52-60.
7. Keller, D., Holderegger, R., Van Strien, M. J., **Bolliger J.** 2015. How to make landscape genetics beneficial for conservation management? *Conservation Genetics*, 16, 503-512.
8. Le Lay, G., Angelone, S., Flory, C., Holderegger, R., **Bolliger J.** 2015. Increasing pond density to maintain a patchy habitat network of the European tree frog (*Hyla arborea*). *Journal of Herpetology*, 49, 217-221.
9. Price, B., Kienast, F., Seidl, I., Ginzler, C., Verburg, P. H., **Bolliger, J.** 2015. Future landscapes of Switzerland: risk areas for urbanisation and land abandonment. *Applied Geography*, 57, 32-41.
10. Helfenstein J., Clalüna A., Bauer L., **Bolliger J.**, Kienast F. 2014. Landscape ecology meets landscape science. *Landscape Ecology* 29: 1109-1113.
11. Home, R., Angelone, S., Hunziker, M., **Bolliger, J.** 2014. Public preference for ecosystem enhancing elements in agricultural landscapes in the Swiss lowlands. *Journal of Integrative Environmental Sciences* 11: 93–108.
12. Maggini, R., Lehmann, A., Zimmermann, N.E., **Bolliger J.**, Schröder B., Foppen R., Schmid H., Beniston, M., Zbinden, N., Jenni, L. 2014. Assessing the vulnerability of Swiss breeding birds to climate and land-use change. *Diversity and Distributions* 19: 1366-1379.
13. **Bolliger, J.**, Lander, T, Balkenhol, N. 2014. Landscape genetics since 2003: status, challenges and future directions. *Landscape Ecology* 29:361–366.
14. Van Strien, M.J., Keller, D., Holderegger, R., Ghazoul J., Kienast F., **Bolliger J.** 2014. Landscape genetics as a tool for conservation planning: predicting the effects of landscape change on gene flow. *Ecological Applications* 24: 327–339.

15. Oertli B, Ilg, C, Angélibert S, **Bolliger J.**, Crovadore J, Demierre E, Julliand, C, Finger-Stich A, Forré C, Frossard P-A, Lefort F, Mayencourt M, Piantini U, Schmid S. 2014. Freshwater biodiversity under warming pressure in the Alps: a methodological framework for prioritization of restoration areas for small waterbodies. *Eco Mont* 6: 19-32.
16. Aavik, T., Holderegger R., **Bolliger J.** 2013. The structural and functional connectivity of the grassland a. plant *Lychnis flos-cuculi*. *Heredity* 1-8.
17. Keller, D., van Strien M.J., Herrmann, M., **Bolliger J.**, Edwards, P. J., Ghazoul J., Holderegger R. 2013. Is functional connectivity in common grasshopper species affected by fragmentation in an agricultural landscape. *Agriculture, Ecosystems & Environments* 175: 39-46.
18. **Bolliger J.**, Edwards, T. C. Jr, Eggenberg S., Ismail S., Seidl I., Kienast F. 2011. Balancing forest-regeneration probabilities and maintenance costs in dry grasslands of high conservation priority. *Conservation Biology* 25(3): 567-576.
19. **Bolliger J.**, Keller D., Holderegger R. 2011. When landscape variables do not explain migration rates: an example from an endangered dragonfly (*Leucorrhinia caudalis*). *European Journal of Entomology* 108: 327–330.
20. **Bolliger J.**, Bättig M., Gallati J. Kläy A. Stauffacher M., Kienast F. 2011. Landscape multifunctionality: a powerful concept to identify effects of environmental change. *Regional Environmental Change* 11: 203-206.
21. **Bolliger, J.**, Le Lay G., Holderegger R. 2010. Landscape Genetics. How landscapes affect ecological processes. *GAIA*19(3): 238 – 240.
22. Soliva R., **Bolliger J.** Huziker M. 2010. Differences in preferences towards potential future landscapes in the Swiss Alps. *Landscape Research* 35(6): 671-696.
23. **Bolliger J.** Kienast F. 2010. Landscape Functions in a Changing Environment. *Landscape Online* 22: 1-5. DOI:10.3097/LO.201022
24. Kienast, F., **Bolliger J.**, De Groot R., Potschin, M. Haines-Young R. 2009. A methodological framework for integrated assessment of land-use change on landscape functions and sustainability. *Environmental Management* 44(6): 1099-1120.
25. Lütolf, M., **Bolliger J.**, Guisan A., Kienast F. 2009. Scenario-based assessment of future land use change on butterfly species distributions. *Biology and Conservation* 18(5): 1329-1347.
26. **Bolliger, J.**, Hagedorn F., Leifeld J., Böhl J., Soliva R., Kienast F. 2008. Carbon pool changes under various scenarios of potential future land-use change in a mountainous region (Switzerland). *Ecosystems* 11: 895-907.
27. Moser WK, **Bolliger J.**, Bragg D, Hansen MH, Hatfield MA, Nigh T, Schulte L. 2008. National resource surveys as a tool for understanding landscape change: Examples from 19th and 21st centuries. Chapter 9 in: Laforteza, R, Chen J, Sanese G, Crow TR. *Patterns and processes in forest landscapes: Multiple use and sustainable management*. New York: Springer. p. 149-166.
28. Mladenoff, D.J., Schulte, L.A., **Bolliger J.** 2008. Broad-scale change in the Northern Forests: From past to present pp 61-73. In: Waller D.J. *The Vanishing Past: Ecological Change in Wisconsin*. pp 507
29. Dormann C. F., McPherson J. M., Araújo M. B., Bivand R., **Bolliger J.**, Carl G., Davies R. G., Hirzel A., Jetz W., Kissling W. D., Kühn I., Ohlemüller R., Peres-Neto P. R., Reineking B., Schröder B., Schurr F. M., Wilson R. 2007. Methods to account for spatial autocorrelation in the analysis of species distributional data: an overview. *Ecography* 30: 609-628.
30. Bergamini A., Stofer S., **Bolliger J.**, Scheidegger C. 2007. Searching indicators for epiphytic crustose lichen diversity: The role of macrolichens and environmental variables. *The Lichenologist* 39(5): 475-489.
31. Steck C., Bürgi M., **Bolliger J.**, Kienast F. 2007. Conservation of grasshopper diversity in a changing environment. *Biological Conservation* 138: 360-370.
32. **Bolliger J.**, Bergamini A., Stofer S., Scheidegger C, Kienast F. 2007. Predicting the potential spatial distributions of epiphytic lichen species at the regional scale. *The Lichenologist* 39 (3): 279-291.
33. **Bolliger J.**, Kienast F., Soliva R., Rutherford, G. N. 2007. Spatial sensitivity of species habitat distribution patterns to scenarios of land-use change (Switzerland). *Landscape Ecology* 22: 773-789.
34. Lischke H., **Bolliger J.**, Seppelt R. 2007. Dynamic spatio-temporal models. In Kienast, F., Ghosh, S., Wildi, O. (eds.): *A changing world: challenges for landscape research*. Springer Landscape Series. pp. 273-296.

35. **Bolliger J.**, Wagner H., Turner M. G. 2007. Identifying landscape patterns in space and time. In Kienast, F., Ghosh, S., Wildi, O. (eds.): A changing world: challenges for landscape research. Springer Landscape Series. pp. 177-194.
36. Lischke H., Zimmermann N. E., **Bolliger J.**, Rickebusch S, Löffler T. J. 2006. TreeMig: Simulating dynamic forest patterns on the stand and landscape scale. *Ecological Modelling* 199: 409-420.
37. **Bolliger J.**, Lischke H., Green D. G. 2005. Spatially dynamic models in landscape ecology: generic and process-oriented approaches. *Ecological Complexity* 2: 108-115.
38. **Bolliger J.** 2005. Modelling complex forest landscapes with a generic model. 2005. *Ecological Complexity* 2: 131-149.
39. **Bolliger J.**, Mladenoff D. J. 2005. Quantifying spatial classification uncertainties of the historical landscape of Wisconsin (USA). *Ecography* 28: 141-156.
40. **Bolliger J.**, Schulte L. A., S. N. Burrows, T. A. Sickley, Mladenoff D. J. 2004. Assessing ecological restoration potentials of Wisconsin (USA) using historical landscape reconstructions. *Restoration Ecology* 12 (1) 125-143.
41. **Bolliger J.**, Sprott J.C., Mladenoff D.J. 2003. Self-organization and complexity in historical landscape patterns. *Oikos* 100: 541-553
42. Sprott J. C.; **Bolliger J.**, Mladenoff D. J., 2002. Self-organized criticality in forest-landscape evolution. *Physics Letters A* 297(3-4): 267-271.

Recent extension publications

1. Holderegger R., Gugerli F., Bolliger J. 2016. Naturschutzgenetik für die Praxis. *N&L Inside* 2/16: 19.
2. Graf C., Bolliger J., Kienast F. 2016. Wirkungsvoll und attraktive Besucherlenkung in Schutzgebieten. *N&L Inside* 4/16: 22-25.
3. Mueller R. P., **Bolliger J.**, Schmidt, B.R. 2016. Mit Wiederansiedlungen Amphibien fördern: wie beeinflusst diese Massnahme die genetische Vielfalt? *N&L Inside* 2: 25-27.
4. Schmid M., Birrer S., **Bolliger J.**, Csencsics C., Gugerli F. 2015. Monitoring genetischer Vielfalt: Fallbeispiel Schachbrettfalter. *N&L Inside* 1: 19-24.
5. Price B., **Bolliger J.** 2015 Fünf künftige Schweizen. *N&L Inside* 4, 12.
6. **Bolliger J.**, Junge X., Wülser G., Poh, C., Vaupel A., Gugerli, F., & Teilnehmende des GeneMig Workshops. 2015. Herausforderungen und Chancen in der Zusammenarbeit Praxis-Wissenschaft, ein Erfahrungsbericht. *N&L Inside* 2:24-28.
7. Frei M., Csencsics D., Bühler C., Gugerli F., **Bolliger J.** 2014. Wie gut vernetzt sind Vorkommen der Kreuzkröte in einer landwirtschaftlich geprägten Landschaft? *N&L Inside* 4, 16–20.
8. Home R, Angelone S, Hunziker M, **Bolliger J.** 2014. Die öffentliche Wahrnehmung von ökologischen Aufwertungsmassnahmen in Kulturlandschaften des Schweizer Mittellands.
9. Csencsics D., Aavik T., Hedinger, C., Holderegger R., Home R., Keller D., Seidl I., van Strien M. J., Zurbuchen A., **Bolliger J.** 2014. Lebensraumvernetzung in der Agrarlandschaft. Chancen und Risiken. Merkblatt für die Praxis Nr. 53, 8 pages. ISSN 1422-2876
10. Home R., Angelone S., Hunziker M., **Bolliger J.** 2014. Die öffentliche Haltung gegenüber Aufwertungsmassnahmen im Agrarland. *N&L Inside*, in press.
11. **Bolliger J.**, Gugerli F. 2014. Dem Molch ins Maul geschaut. Forscher vergleichen Populationen genetisch. 3sat Nano movie (May 2014) <http://www.3sat.de/page/?source=/nano/natwiss/176774/index.html>
12. **Bolliger J.**, Junge X., Vaupel A., Gugerli F. 2013. Wissenschaft und Praxis im Dialog über Landschaftsgenetik. *N&L Inside* 1/13:16-19.
13. **Bolliger J.** 2012. Nützen neue Trittsteingewässer den Laubfröschen? *Umwelt Aargau* 56:25-26.
14. Zingerli C., Schmid F., **Bolliger J.** 2012. 40 Jahre SAGUF: Zusammen mehr erreichen. *GAIA* 21: 246-248.
15. Zingerli C., Schmid F., **Bolliger J.** 2012. SAGUF: 40 Jahre Impulse für Forschung, Politik und Gesellschaft. *GAIA* 21: 67-68.

Important extension events

Stakeholder workshop 2, GeneMig, 2014, **J. Bolliger**, F. Gugerli, A.Vaupel, X.Junge

Eco.Naturkongress 2014. **J.Bolliger**, F. Gugerli. Der Landschaftszerschneidung entgegenwirken: Bedarf, Instrumente und Umsetzung. <http://www.eco-naturkongress.ch/workshops/der-landschaftszerschneidung-entgegenwirken-bedarf-instrumente-und-umsetzung/>
Stakeholder workshop 1, GeneMig, 2012, **J. Bolliger**, F. Gugerli, A. Vaupel, X. Junge
SAGUF Jubiläumstagung 2012. 40 Jahre Impulse für Forschung, Politik und Gesellschaft . **J. Bolliger**, C. Zingerli, F. Schmid http://sagufv2.scnatweb.ch/downloads/SAGUF_Jubilaeumstagung_2012_Programm_120210.pdf
Landschaftsqualität: Konzepte, Indikatoren und Datengrundlagen. Forum für Wissen, 2010. **J. Bolliger** und S. Raschle. http://www.wsl.ch/dienstleistungen/veranstaltungen/veranstaltungskalender/forum_2010/index_DE

Mueller R. P., Bolliger, J., Schmidt, B.R. 2016. Mit Wiederansiedlungen Amphibien fördern: wie beeinflusst diese Massnahme die genetische Vielfalt? N&L Inside 2: 25-27.

Frei, M. 2015. Kreuzkröten im Landwirtschaftsgebiet. Umwelt Aargau 67: 39-42.

Schmid M., Birrer S., Bolliger J., Csencsics C., Gugerli F. 2015. Monitoring genetischer Vielfalt: Fallbeispiel Schachbrettfalter. N&L Inside 1: 19-24.

Price B., Bolliger J. 2015. Fünf zukünftige Schweizen. N&L Inside 4.