

# Dr. Martina Lena Hobi

Group Leader

Stand Dynamics and Silviculture Group  
Swiss Federal Research Institute WSL  
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## Research Interests

I have specialized in the analysis of the processes underlying long-term forest dynamics using a combination of terrestrial, dendroecological and remote sensing data.

## Education

- 02/2010 – 05/2013 Ph. D. in Environmental Sciences ETH Zurich conducted at the Swiss Federal Institute for Forest, Snow and Landscape Research WSL  
Ph. D. Thesis "Structure and disturbance patterns of the largest European primeval beech forest revealed by terrestrial and remote sensing data" under the supervision of Prof. Harald Bugmann (Forest Ecology, ETHZ), Brigitte Commarmot (Stand Dynamics and Silviculture, WSL) and Christian Ginzler (Remote Sensing, WSL)
- 10/2005 – 11/2010 Certificate of Teaching Ability at the Upper High School level in Environmental Education ETH Zurich
- 10/2006 – 10/2008 Master of Science in Environmental Sciences ETH Zurich with specialization in Forest and Landscape Management  
Master's Thesis "Growth reactions of beech, Scots pine and black pine after a forest fire" (in German) under the supervision of Dr. Christof Bigler (Forest Ecology, ETHZ) and Dr. Andreas Rigling (Forest dynamics, WSL)
- 10/2003 – 09/2006 Bachelor of Science in Environmental Sciences ETH Zurich with specialization in Forest and Landscape Management

## Professional Experience

- since 06/2017 Group leader – Stand Dynamics and Silviculture group, WSL, Switzerland
- 05/2015 – 04/2017 Postdoctoral fellow – SILVIS Lab, Department of Forest and Wildlife Ecology, University of Wisconsin-Madison, USA
- 06/2014 – 03/2015 Research associate – Remote Sensing Group, WSL, Switzerland
- 06/2013 – 05/2014 Research associate – Stand Dynamics and Silviculture group, WSL, Switzerland
- 02/2010 – 05/2013 Doctoral student – Stand Dynamics and Silviculture group, WSL, Switzerland
- 11/2008 – 01/2010 Scientific and teaching assistant – Forest Ecology group, ETH Zurich, Switzerland
- 08/2007 – 10/2008 Internship in environmental conservation – Swiss Federal office of waste, water, energy and air (AWEL)
- 10/2006 – 06/2008 Junior assistant – Forest Ecology group, ETH Zurich (part time work)

## Publications

### ISI-papers

- 11 **Hobi ML**, Dubinin M, Graham CH, Coops NC, Clayton MK, Pidgeon AM, & Radeloff VC. 2017. A comparison of the Dynamic Habitat Indices derived from different MODIS products as predictors of avian species richness. *Remote Sensing of Environment* 195: 142-152.
- 10 Zenner EK, Peck J, **Hobi ML** & Commarmot B. 2016. Validation of a classification protocol: meeting the prospect requirement and ensuring distinctiveness when assigning forest development phases. *Applied Vegetation Science* 19: 541-552.
- 9 Peck J, Commarmot B, **Hobi ML** & Zenner E. 2015. Should reference conditions be drawn from a single 10 ha plot? Assessing representativeness in a 10,000 ha old-growth European beech forest. *Restoration Ecology* 23: 927-935.
- 8 Petritan IC, Commarmot B, **Hobi ML**, Petritan AM, Bigler C, Abrudan IV & Rigling A. 2015. Structural patterns of beech and silver fir suggest stability and resilience of the virgin forest Sinca in the Southern Carpathians, Romania. *Forest Ecology and Management* 356: 184-195.
- 7 **Hobi ML**, Ginzler C, Commarmot B & Bugmann H. 2015. Gap pattern of the largest primeval beech forest of Europe revealed by remote sensing. *Ecosphere* 6: art76.
- 6 Ginzler C & **Hobi ML**. 2015. Countrywide stereo-image matching for updating digital surface models in the framework of the Swiss National Forest Inventory. *Remote Sensing* 7: 4343-4370.
- 5 **Hobi ML**, Commarmot B & Bugmann H. 2015. Pattern and process in the largest primeval beech forest of Europe (Ukrainian Carpathians). *Journal of Vegetation Science* 26: 323-336.
- 4 Zenner EK, Peck JE, **Hobi ML** & Commarmot B. 2015. The dynamics of structure across scale in a primeval European beech stand. *Forestry* 88: 180-189.
- 3 Dymytrova L, Nadyeina O, **Hobi ML** & Scheidegger C. 2014. Topographic and forest-stand variables determining epiphytic lichen diversity in the primeval beech forest in the Ukrainian Carpathians. *Biodiversity and Conservation* 23: 1367-1394.
- 2 **Hobi ML** & Ginzler C. 2012. Accuracy assessment of digital surface models based on WorldView-2 and ADS80 stereo remote sensing data. *Sensors* 12: 6347-6368.
- 1 Trotsiuk V\*, **Hobi ML**\* & Commarmot B. 2012. Age structure and disturbance dynamics of the relic virgin beech forest Uholka (Ukrainian Carpathians). *Forest Ecology and Management* 265: 181-190. (\*co-first authors)

### Book chapters

- 3 **Hobi ML**, Commarmot B, Iseli R & Korol M. 2013. Planning and management of the field survey. In: Commarmot B, Brändli U-B, Hamor F & Lavnyy V. (eds.). *Inventory of the largest primeval beech forest in Europe - A Swiss-Ukrainian scientific adventure*. Swiss Federal Research Institute WSL, Birmensdorf, Switzerland.
- 2 Abegg M, **Hobi ML**, Kaufmann E & Lanz A. 2013. Data management and statistical evaluation. In: Commarmot B, Brändli U-B, Hamor F & Lavnyy V. (eds.). *Inventory of the largest primeval beech forest in Europe - A Swiss-Ukrainian scientific adventure*. Swiss Federal Research Institute WSL, Birmensdorf, Switzerland.
- 1 Commarmot B, Abegg M, Brändli U-B, **Hobi ML**, Korol M & Lanz A. 2013. Main results. In: Commarmot, B., Brändli U-B, Hamor F & Lavnyy V. (eds.). *Inventory of the largest primeval beech forest in Europe - A Swiss-Ukrainian scientific adventure*. Swiss Federal Research Institute WSL, Birmensdorf, Switzerland.

### Outreach articles

- 2 Ginzler C. & **Hobi ML**. 2016. Das aktuelle Vegetationshöhenmodell der Schweiz: spezifische Anwendungen im Waldbereich. *Schweizerische Zeitschrift für Forstwesen* 167:128-135.

- 1 Ginzler C & **Hobi ML**. 2015. Erstellung eines landesweiten digitalen Oberflächenmodelles aus operationellen Stereo-Luftbildern. *Geomatik Schweiz* 9: 332-335.

### Presentations at Conferences and Meetings

- 29 Lévesque M, Andreu-Hayles L, Smith WK, Williams AP, **Hobi ML** & Pederson N. Tree-ring isotopes record biome-scale net primary productivity. EGU 2018, Vienna, Austria, April 8-13 2018. (Presentation).
- 28 Pederson N, Lévesque M, Williams AP, **Hobi ML**, Smith WK & Andreu-Hayles L. Inferring biome-scale net primary productivity from tree-ring isotopes. AGU Fall Meeting. New Orleans, LA, December 11-15 2017. (Presentation).
- 27 Brang P, Abegg M, Brändli U-B, Björnson Gurung A, Bürgi A, Commarmot B, Ginzler C, **Hobi ML**, Lachat T, Seidl I & Stillhard J. Cooperation in Forest Research Ukraine-Switzerland. 10<sup>th</sup> Anniversary since the inscription of the UNESCO world heritage property "Primeval Beech Forests of the Carpathians and the Ancient Beech Forests of Germany": history, status and problems of the integrated management system implementation. Rakhiv UA, September 26-29, 2017. (Presentation).
- 26 Zarnetske PL, Dahlin KM, Record S, Costanza JK, Finley AO, Gaddis K, Grady JM, **Hobi ML**, Latimer AM, Malone S, Ollinger S, Pettorelli N, Pau S, Read QD, Turner W & Wilson AM. Connecting biodiversity, geodiversity, and remote sensing across scales. Ecological Society of America Annual Meeting. Portland, Oregon USA, August 6-11, 2017. (Presentation).
- 25 Record S, Zarnetske PL, Dahlin KM, Costanza JK, Finley AO, Gaddis K, Grady JM, **Hobi ML**, Latimer AM, Malone S, Ollinger S, Pettorelli N, Pau S, Read QD, Turner W & Wilson AM. Connecting biodiversity, geodiversity, and remote sensing across scales. NASA Biodiversity and Ecological Forecasting Team Meeting. Washington DC, USA, May 23-25, 2017. (Presentation).
- 24 Pidgeon A, Graves R, Latimer C, Gorzo J, Henschell MA, Schilke P, **Hobi ML**, Pfeiffer M, A. Shipley A, Hannah A, Zuckerberg B, Radeloff V. Rising novelty and homogenization of bird communities in the U.S. North American Ornithological Conference VI. Washington, D.C., USA, August 16-20, 2016. (Presentation)
- 23 **Hobi ML**, Dubinin M, Pidgeon AM, Coops NC & Radeloff VC. Remote sensing of biodiversity and conservation: Predicting bird species richness in the United States using the Dynamic Habitat Index based on MODIS satellite data. Ecological Society of America Annual Meeting. Fort Lauderdale, Florida USA, August 7-12, 2016. (Presentation)
- 22 **Hobi ML**, Dubinin M, Pidgeon AM, Coops NC & Radeloff VC. Remote sensing of biodiversity and conservation: The Dynamic Habitat Indices as predictors of avian species richness. North American Congress for Conservation Biology. Madison, Wisconsin USA, July 17-20, 2016. (Presentation)
- 21 Dubinin M, Suttidate N, **Hobi ML**, Kolesov D, Pidgeon AM, Coops NC & Radeloff VC. MODIS-based Global Dynamic Habitat Indices and their relationship with species richness globally. North American Congress for Conservation Biology. Madison, Wisconsin USA, July 17-20, 2016. (Poster)
- 20 Allen AM, **Hobi ML**, Radeloff VC, Kindberg J, Ericsson G. & Singh NJ. Predicting herbivore densities using remote sensing and citizen science. North American Congress for Conservation Biology. Madison, USA, July 17-20, 2016. (Presentation)
- 19 Razenkova E, Dubinin M, **Hobi ML**, Bragina E, Pidgeon A. & Radeloff VC. Assessing the dynamic habitat indices as predictors of mammal abundances in Russia. North American Congress for Conservation Biology. Madison, Wisconsin USA, July 17-20, 2016. (Poster)
- 18 Radeloff VC, **Hobi ML**, Dubinin M, Suttidate N, Razenkova E, Borisov B, Brooks TM, Clayton M, Coops N, Graham T, Ives AR, Kuemmerle T, Pidgeon A & Rondinini C. Testing the Dynamic Habitat Indices from MODIS for biodiversity and conservation. NASA MODIS Science Team Meeting. Silver Spring MD USA, June 7-10, 2016. (Presentation)

- 17 **Hobi ML**, Dubinin M, Pidgeon AM, Ives AR, Coops NC, Graham CH & Radeloff VC. The Dynamic Habitat Indices based on MODIS as predictors of avian species richness. NASA Biodiversity and Ecological Forecasting Team Meeting. Silver Spring MD USA, May 3-6, 2016. (Poster)
- 16 Radeloff VC, **Hobi ML**, Dubinin M, Suttodate N, Razenkova E, Borisov B, Brooks TM, Clayton M, Coops N, Graham T, Ives AR, Kuemmerle T, Pidgeon A & Rondinini C. Developing and testing the Dynamic Habitat Indices from Terra and Aqua MODIS data for biodiversity and conservation science. NASA Biodiversity and Ecological Forecasting Team Meeting. Silver Spring MD USA, May 3-6, 2016. (Presentation)
- 15 Allen MA, **Hobi ML**, Radeloff VC, Kindberg J, Wallin K, Ericsson G. & Singh J. Predicting densities of migratory herbivores with dynamic habitat indices. Space – The final frontier for biodiversity monitoring? London UK, April 29, 2016. (Poster)
- 14 Radeloff VC, Brooks TM, Coops NC, **Hobi ML**, Kuemmerle T, Pidgeon AM, Rondinini C & Suttodate N. 2015. The Dynamic Habitat Index derived from three decades of MODIS and AVHRR data and its relationship to global patterns on mammal species richness. The 36<sup>th</sup> International Symposium on Remote Sensing of Environment. Berlin, Germany, May 11-15, 2015. (Presentation)
- 13 **Hobi ML**, Zellweger F & Ginzler C. Nation-wide image matched point clouds for biodiversity assessments in Switzerland. ForestSAT 2014. Riva del Garda, Italy, November 4-7, 2014. (Presentation)
- 12 Petritan IC, Commarmot B, **Hobi ML** & Petritan AM. 2014. Structure and regeneration patterns of an old-growth beech-silver fir forest in the Southern Carpathians, Romania. The 9th IUFRO International Conference on Uneven-Aged Silviculture. Future Concepts in Uneven-Aged Silviculture for a Changing World. Birmensdorf, Switzerland, June 16-19, 2014. (Poster)
- 11 Zenner EK, **Hobi ML** & Commarmot B. 2014. Convergence of development phases in a multi-aged primary European beech forest at small scales. The 9th IUFRO International Conference on Uneven-Aged Silviculture. Future Concepts in Uneven-Aged Silviculture for a Changing World. Birmensdorf, Switzerland, June 16-19, 2014. (Presentation)
- 10 **Hobi ML** & Commarmot B. Strukturmerkmale des Buchenurwaldes Uholka-Shyrokyi Luh auf verschiedenen räumlichen Skalen. GfÖ AK Waldökologie. Göttingen, Deutschland, April 8-9, 2014. (Presentation)
- 9 **Hobi ML**, Commarmot B, Ginzler C & Bugmann H. 2013. Natural Disturbance Regime of the Largest European Primeval Beech Forest. ClimTree. Zurich, Switzerland, September 1-5, 2013. (Poster)
- 8 **Hobi ML**, Ginzler C, Commarmot B & Bugmann H. 2013. Natural disturbances in the primeval beech forest of Uholka-Shyrokyi Luh: a canopy gap assessment based on WorldView-2 stereo satellite images. Primeval Beech Forests 2013. L'viv, Ukraine, June 2-9, 2013. (Presentation)
- 7 Zenner EK, Commarmot B & **Hobi ML**. 2013. Structural Complexity of the Uholka Virgin Beech (*Fagus sylvatica* L.) Forest across time, space and scale. Primeval Beech Forests - Reference Systems for the Management and Conservation of Biodiversity, Forest Resources and Ecosystem Services. 2013. L'viv, Ukraine, June 2-9, 2013. (Presentation)
- 6 Trotsiuk V, **Hobi ML**, Commarmot B, Svoboda M & Myklush S. 2013. Growth increase with tree age: Is this accepted for beech trees in the primeval forest? Primeval Beech Forests - Reference Systems for the Management and Conservation of Biodiversity, Forest Resources and Ecosystem Services. 2013. L'viv, Ukraine, June 2-9, 2013. (Presentation)
- 5 Dymytrova L, Nadyeina O, **Hobi ML** & Scheidegger C. 2013. Environmental and forest-stand variables determining epiphytic lichen diversity in a primeval beech forest of the Carpathian Biosphere Reserve. Primeval Beech Forests - Reference Systems for the Management and Conservation of Biodiversity, Forest Resources and Ecosystem Services. 2013. L'viv, Ukraine, June 2-9, 2013. (Presentation)

## Curriculum Vitae – Dr. Martina L. Hobi

- 4 **Hobi ML** & Ginzler C. Accuracy assessment of WorldView-2 digital surface models over three different land cover types. High resolution satellite imagery - the magnifying glass for science. Hi-Res 2012. Bern, Switzerland, November 8-10, 2012. (Presentation)
- 3 **Hobi ML**, Ginzler C, Commarmot B & Bugmann H. Forest structure analysis of a virgin beech forest in the Ukrainian Carpathians: a WorldView-2 canopy height model combined with terrestrial inventory data. ForestSAT 2012. Corvallis, Oregon USA, September 11-14, 2012. (Presentation)
- 2 **Hobi ML**, Trotsiuk V & Commarmot B. 500-jährige Buchen - Altersstruktur im ukrainischen Urwald Uholka. Montagskolloquium für die Praxis - Highlights aus 50 Jahren Forschung in Naturwaldreservaten. ETH Zürich, November 14, 2011. (Presentation)
- 1 **Hobi ML**, Trotsiuk V & Commarmot B., 2011. Age structure and growth patterns in a virgin beech forest in the Ukrainian Carpathians. The 9th International Beech Symposium. Dresden, Germany, September 12-17, 2011. (Poster)

## Research Grants

- 03/2018 WSL internal projects. Experimental Forest Management (EFM) archiving project (EFM-archive) (Co-Investigator, 220,000 CHF)
- 09/2012 WSL internal projects. Spatio-temporal dynamics of the Ukrainian primeval beech forest over various scales. (Co-Investigator, 52,000 CHF)
- 03/2012 Sciex Junior Researchers' Fellowships. MODIST Mortality and disturbances: dendroecological analyses of the main processes shaping the structure of a mixed Abies-Fagus old-growth forest in the southern Carpathians, Romania. (Member of the Swiss Project Team, 80,000 CHF)

## Teaching and Supervision

### *Courses*

Coordination of the field courses "Forest and Landscape" for 20-30 bachelor students and teaching assistant in:

- 6-day field course "Site classification and plant communities" in 2009, 2010 and 2011
- 2-day field course "Forest dynamics" in 2008 and 2009
- 1-day field course "Forest growth and mensuration" in 2009
- 1-day field course "Dendroecology" in 2007, 2008 and 2009

### *Supervised theses*

Roksolana Petrovska. 2017-present. Beech growth, fecundity, and evolutionary stable strategies versus competitors leading to beech dominance. PhD Thesis ETH Zurich.

Elena Razenkova. 2015-2017. Assessing the dynamic habitat indices as a predictor of mammal abundances and population dynamics in Russia. Master's Thesis University of Wisconsin – Madison.

Andrea Grimmer. 2011. Investigation of the deadwood amount and quality in the primeval beech forest of Uholka-Schyrokyi Luh in Ukraine (in German). Bachelor's Thesis ZHAW. 66 pp.

Volodymyr Trotsiuk. 2011. Age structure of the beech dominated primeval forest of Uholka in the Carpathian biosphere reserve (in Ukrainian). Master's Thesis NLTU Lviv Ukraine. 65 pp.

Claudia Meile. 2010. The influence of wind exposition and temperature increase on the growth of tree islands at the forest line (in German). Master's Thesis ETH Zurich. 83 pp.

## Media Coverage

Radiobeitrag SRF1, Echo der Zeit. Solothurnischer Buchenwald bald Teil des Weltnaturerbes?. September 12, 2017

Der Bettlachstock machts aus: Der Bettlachstock soll internationales Naturerbe werden. Solothurner Zeitung Juni 29, 2017.

Ein Urwald im Gleichgewicht: Schweizerisch-ukrainische Forscher enthüllen die Geheimnisse des grössten Buchenurwalds in Europa. Neue Zürcher Zeitung – Forschung und Technik. August 7, 2013.

Die letzten Buchen-Urwälder. St. Galler Tagblatt. September 1, 2010.

Antworten von den letzten Buchen-Urwäldern. Tages-Anzeiger – Wissen. September 2, 2010.

## Service

- Manuscript reviewer for *Plant Ecology*, *Forests*, *Forest Ecology and Management*, *European Journal of Forest Research*, *Remote Sensing*, *Remote Sensing Letters*, *International Journal of Remote Sensing*, *Journal of Biogeography*, *Global Change Biology* and *Journal of Tropical Ecology*
- Co-organization of the international scientific conference “Primeval Beech Forests - Reference Systems for the Management and Conservation of Biodiversity, Forest Resources and Ecosystem Services” in Ukraine 2013 with over 150 participants from whole Europe, USA and Japan
- Co-launching of the PhD support group and a series of PhD events at WSL in 2012
- Public relations of the Forest Ecology group ETH from 2008 to 2009
- Students deputy in the teaching commission of the Department of Environmental Sciences ETH from 2003 to 2008
- Reviewer for conference papers at the North American Congress for Conservation Biology 2016 in Madison, Wisconsin USA.
- Member of Wisconsin Ecology, the Society for Conservation Biology and the Ecological Society of America
- Member of the NASA Biodiversity Working group – Connecting Biodiversity, Geodiversity, and Remote Sensing Across Scales

## Software Skills

ArcGIS, ERDAS, Python, R and SocetSet

## Languages

German	native language
English	fluent spoken and written
French	good spoken and written

Zurich, April 18, 2018