Land-system science for analysing dynamic landscapes: data, tools and models

Summer School July 3 to 8, 2022

Filzbach Glarus-Nord, Switzerland
Landscape Research Center WSL
CDE, University of Bern

You will develop an integrated understanding of land system science and landscape assessment. You learn to use state-of-the-art data, tools, and models for spatial analyses as well as improve your ability to build strong connections between scientific understanding and the communities of practice and policy that govern and manage the use of land.

Land systems are the result of human interactions with the natural environment and increasingly research is being done on land systems from different disciplinary perspectives as well as from an interdisciplinary perspective. The complexity of these processes increasingly challenges planners, environmental agencies and policy makers towards achieving sustainable land use. In this summer school the students learn how science can support practitioners in their decisions on sustainable land-use/landscape development. They develop skills in **data** processing (remote sensing, 2D, 3D), apply a range of **models** (ranging from statistical models to cellular automata), and learn about methods for **stakeholder involvement** (e.g. landscape visualisation, participatory mapping, social network analysis). Topics addressed include urbanisation, land abandonment, ecosystem service mapping, conservation management, socio-economic development as well as conflict assessment between different land-use interests.

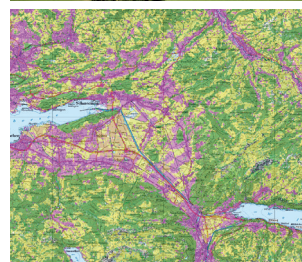|	
PhD students and Postdocs from any topic of land use research are welcome	The summer school addresses PhD students and Postdocs from natural and social sciences who want to become familiar with data, methods and tools from land use research. Students from universities all over the world are encouraged to apply. The maximum number of participants is 25. The course language is English.
Content and Format	The summer school starts with a field trip to the case study region with presentations by local stakeholders. The next three days are each dedicated to data, models, and translating modelling results for practical application (stakeholder involvement). On the last day, the students present the results of their group work during the week. The classes include short introductory lectures and extensive practical exercises. During the exercises, the students get individual advice from their teachers. Throughout the week, the students have the chance to get personally involved with senior scientists.
Date and Location	The summer school takes place from **Sunday, July 3, until Friday, July 8, 2022.** The venue is the Seminarhotel Lihn (www.lihn.ch) in Filzbach (Glarus Nord, Switzerland), which can be reached by public transport every hour within 80 minutes from Zurich main station.
Costs	The participation fee is CHF 700. The fee covers costs for the field trip, accommodation and meals at the Seminarhotel Lihn. The fee does not cover any travel expenses to and from Seminarhotel Lihn.
Registration	Please fill in the online application form until **January 31st, 2022** at www.wsl.ch/summerschool2022 Further upload a **motivation letter** and a **1-page short CV** including your personal skills. Applications will be evaluated according to their fitting to the research topic, the applicants' interdisciplinary interest, their evidence of academic quality, and their expected benefits from this summer school.
Corona virus prevention	Covid19 certificate is required for all participants!
Contact	PD Dr. Janine Bolliger Swiss Federal Research Institute WSL janine.bolliger@wsl.ch Tel. +41-44-739 23 93

Lecturers

Janine Bolliger has conducted several modelling studies on impacts of land change in Switzerland. Her research particularly focuses on connectivity in a spatial context.

Silvia Tobias has led several inter- and transdisciplinary research programs on urban and landscape development. She is a specialist in research at the science–practice interface and in outreach activities

Felix Kienast is Professor for Landscape Ecology at ETH Zurich and a specialist in landscape studies that link physical and socio-economic properties of landscapes. He was involved in several recreation studies, urban sprawl and landscape service modelling and is responsible for the Swiss landscape-monitoring program.

Christian Ginzler has a long year experience in remote sensing and photogrammetry. He works on high-resolution spatial data generation for environmental monitoring programs like the National Forest Inventory and the national Biotope monitoring.

Achilleas Psomas is a remote sensing and GIS expert with a background in forestry. He works with time-series of satellite data for modelling vegetation processes and has experience with optimizing sampling design and sampling design methods.

Bronwyn Price works on spatially explicit modeling of land use patterns and processes with particular focus on the use of remote sensing data including satellite imagery, stereo aerial photography and aerial laser scanning (LiDAR). The modeling of 3D landscape connectivity and dynamics of land use intensity and change as well as scenarios of future land use change are also key foci of her research.

Peter Verburg is professor in Environmental Geography at VU University Amsterdam and a visiting professor at WSL, Switzerland. Peter is an expert in land system science working from local case studies to global scale assessments. He is a specialist in dynamic, spatial models of land system change.

Marcel Hunziker is head of the research group „Social Sciences in Landscape Research" at WSL. He has led several national and international research projects on landscape preferences, human-nature relationship, acceptance of nature conservation, and the effect of interventions measures on (recreation) behaviour. Marcel holds a teaching position at ETH Zurich.

Ulrike Wissen Hayek is an expert in developing and implementing GIS-based 3D landscape visualizations and visual-acoustic simulations for participatory landscape and environmental planning.

Albrecht Ehrensperger is Head of Land Resources at the Centre for Development and Environment (CDE) at the University of Berne. He studied geography and anthropology at the University of Bern and received his doctorate in geoinformation systems for sustainable development. He worked for Caritas in Kenya and Somalia before joining the CDE as a research associate.

Kasper Kok is Assistant Professor at Wageningen University and holds a PhD in land use modelling. He develops integrated, multi-scale scenarios, both by linking participatory and model-based knowledge and by combining socio-economic and biophysical factors. He uses scenarios and participatory methods to integrate knowledge systems and discuss trade-offs between social, economic, and environmental issues with a large range of stakeholders.