

Jochen Jaeger, PhD

Measuring urban sprawl in Montreal and assessing the potential to increase connectivity of natural areas to promote biodiversity

Jochen Jaeger, Associate Professor,
Department of Geography, Planning and Environment,
Landscape Ecology and Environmental Impact Assessment Lab

Abstract: Urban sprawl has many negative consequences on the environment, including biodiversity, which has made it a topic of great debate. We developed a new metric of urban sprawl called Weighted Urban Proliferation (*WUP*) and applied it to Montreal and Quebec City. It is suitable as an indicator in monitoring systems of biodiversity (pressure indicator) and as a tool for scenario assessment. Urban sprawl in Quebec City has increased 11-fold between 1971 and 2011, and more than 29-fold between 1971 and 2011 on the Island of Montreal. Urban sprawl in Montreal has never before increased as fast as it has increased in the last 20 years and is increasing today. We are currently conducting a project on urban sprawl in Europe and its driving forces in collaboration with the European Environment Agency. We recently developed a measure of connectivity of natural areas in cities, which is now included as one of 23 indicators of the City Biodiversity Index (CBI) of the CBD, also called Singapore Index, and applied it to Montreal and Lisbon. Our study of Meadowbrook as an example demonstrates that there is a large potential for increasing connectivity in Southwest Montreal. Developing Meadowbrook would strongly reduce this potential.

Bio

Jochen A.G. Jaeger received his PhD in Environmental Sciences from the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland. He worked as a postdoctoral fellow at Carleton University in Ottawa 2001-2003 and again in Zurich at the ETH 2003-2007. He joined the Department of Geography, Planning and Environment at Concordia University in Montreal in 2007. He is working in the fields of landscape ecology, road ecology, urban sprawl, ecological modeling, environmental indicators, environmental impact assessment, and trans-disciplinary research concepts. His lab is currently investigating the effectiveness of wildlife passages along a major highway in Quebec, the role of uncertainties in environmental impact assessment in Canada, and drivers of urban sprawl in Europe. His research team received the IENE Project Award 2011 for their project "*Landscape Fragmentation in Europe*" from the *Infra Eco Network Europe* (IENE) in 2011.



Website: <http://gpe.concordia.ca/faculty-and-staff/jjaeger/>