

# TIMOTHY F. SEIPEL

Dept of Land Resources and Environmental Science  
728 Leon Johnson Hall, Montana State University  
Bozeman, Montana, USA 59717

## EDUCATION

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- 2011 *ETH-Zurich Swiss Institute of Technology Zurich*  
PhD in Environmental Science, Dissertation: "Distribution and Demographics of Non-native Plant Species in Mountainous Regions"  
Advisor: Professor Peter Edwards
- 2006 *Montana State University- Bozeman*  
MS in Plant Science, Dissertation: "Plant Species Diversity in the Sagebrush Steppe of Montana"  
Advisor: Professor Matthew Lavin
- 2003 *Montana State University-Bozeman*  
BS in Biology

## PROFESSIONAL EXPERIENCE

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### 2012 - present Post-doctoral researcher, Rew Lab, Montana State University Bozeman

As a post-doc I am examining patterns of native and non-native diversity in mountain ecosystems around the world. In addition I am working the response of vegetation to fire and bison grazing on the Northern Great Plains.

### 2012 Independent Environmental Consultant, Bozeman Montana, USA

As a vegetation consultant, I manage and execute projects that deal with monitoring vegetation response to prescribed fire and grazing, weed management, and database development.

### 2008-2011 Doctoral Student. ETH-Zurich, Zurich, Switzerland

PhD student in plant ecology associated with the MIREN (Mountain Invasion Research Network). My thesis examined patterns and processes of plant invasion in mountains at multiple scales. Projects ranged from global analysis of invasion patterns in mountains

around the world to source-sink dynamics of non-native populations in the upper reaches of the Rhine River in Switzerland.

2007 Botanist. Center for Invasive Plant Management Bozeman, Montana, USA

Half-time employment as a technical botanist, developing botanically correct weed plastic models. Other duties include participating in outreach, serving on committees, and educating people about introduced species on grazing lands in Montana.

2007-2006 Contributing Editor. Off the Grind Magazine Whitefish, Montana, USA

Editor for a sports magazine that deals with outdoor recreation in western Montana sports include: backcountry skiing, mountaineering, and adventure travel. As a contributing editor responsibilities were contribution of photographs, editorial writing, and reporting on local environmental issues.

2004-2006 Graduate Research Assistant. Montana State University-Bozeman

Field work was carried out as part of the research for my Master's degree in the shrub steppe ecosystem of Montana. Three intact native field sites were sampled intensely to record relative species abundance and estimate plant species diversity. This work was supported by the World Wildlife Fund and Montana Noxious Weed Trust Fund.

2000-2002 Botanical Field Assistant. Montana State University-Bozeman

Three summers of field work collecting plant species abundance data in alpine vegetation on mountain tops in Yellowstone National Park, USA. Duties included identification and recognition of all plants species encountered, collection of frequency data for all herbaceous, graminoid and bryophyte species. Additionally, an inventory of lichen species on cliff edges with different geologic substrates was done. The job involved wilderness travel, mountaineering, and technical rope work.

2000-2003 Research Lab Technician. Plant Ecology Lab, Montana State University

Duties included data entry, statistics, soil analysis, monitoring and execution of bio-control and greenhouse experiments, and identification of plants specimens.

**TEACHING EXPERIENCE**

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2012 Instructor, Montana State University

Taught senior and graduate level course on biodiversity survey methods. The course emphasized completing the scientific process and had two components. The first was a weeklong field component where students did hands on data collection. The second component concentrated on data analysis, writing and communication of the project.

2004-2006 Graduate Teaching Assistant. Montana State University-Bozeman

Two semesters teaching the scientific method to introductory biology students using inquiry based learning. This required relating concepts of science, and scientific thinking to non-science majors while they designed individual experiments.

2004-2006 Graduate Teaching Assistant. Montana State University-Bozeman

Two semester teaching identification of the Rocky Mountain flora, the lab course concentrated on technical botany needed to identify common plants of Montana.

**PEER REVIEWED PUBLICATIONS**

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Kueffer, C., McDougall, K., Alexander, J., Daehler, C., Edwards, P.J., Haider, S., Milbau, A., Parks, C., Pauchard, A., Reshi, Z.A., Rew, L., Schroder, M. & **Seipel, T.** (2013) Plant invasions into mountain protected areas: assessment, prevention and control at multiple spatial scales. In: Alien Plant Invasions in Protected Areas: A Global Assessment (ed. by D.M.R. L.C. Foxcroft, P. Pyšek & P. Genovesi). Springer, New York, in press.

Pollnac F., **Seipel T.**, Repath C., & Rew L. (2012) Plant invasions and resistance of native vegetation: patterns at the landscape and local scales along roadways in the mountainous region of the Greater Yellowstone Ecosystem. *Biological Invasions*, 14, 1753-1763

**Seipel, T.**, Kueffer, C., Rew, L.J., Daehler, C.C., Pauchard, A., Naylor, B.J., Alexander, J.M., Edwards, P.J., Parks, C.G., Arevalo, J.R., Cavieres, L.A., Dietz, H., Jakobs, G., McDougall, K., Otto, R. & Walsh, N. (2012) Processes at multiple scales affect non-native plant species richness and similarity in mountains around the world *Global Ecology and Biogeography*, 21, 236–246.

Alexander, J., Küffer, C., Daehler, C. C., Edwards, P.J., Pauchard, A., **Seipel, T.**, & MIREN Consortium (2011) Assembly of non-native floras along elevational gradients explained by directional ecological filtering. *Proceedings of the National Academy of Sciences (PNAS)*, 108(2), 656-661.

Pauchard, A. B., Kueffer, C., Dietz, H. R., Daehler, C. C., Alexander, J., Edwards, P. J., Arevalo, J. R. N., Cavieres, L. A., Guisan, A., Haider, S., Jakobs, G., McDougall, K., Millar, C. I., Naylor, B. J., Parks, C. G., Rew, L. J. & **Seipel, T.** (2009) Ain't no mountain high enough: plant invasions reaching new elevations. *Frontiers in Ecology and the Environment*, 7, 479-486.

**PEER REVIEWED PUBLICATIONS- IN REVIEW (AVAILABLE UPON REQUEST)**

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**Seipel T.**, Alexander J.M., Daehler C. C., Rew L. J., Edwards P. J., Dar P. A., McDougall K., Naylor B., Parks C., Reshi Z. A., Schroder M., and Kueffer C. (in review) Home and

away: Performance of *Verbascum thapsus* along environmental gradients in its native and non-native ranges.

Lavin, M., Brummer T., **Seipel T.**, Maxwell B., & Rew L. The Intermountain Flora sets the stage for a community phylogenetic analysis of plant biodiversity in the sagebrush steppe of western North America. *Accepted Dec 2011*

**Seipel T.**, Kueffer C., Alexander J. M., & P J. Edwards (in review). Monitoring the dynamics of stability: stable elevational range limits of non-native plants despite high population turnover.

#### MISCELLANEOUS PUBLICATIONS

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**Seipel T.** (2010). Pre-adapted or Plastic: How non-native plant species establish in mountains around the world. *Mountain Research Initiative (MRI) News* no. 4 May 2010

McDougall, K., Haider, S., **Seipel, T.**, Küffer, C., MIREN Consortium (2009) Spread of non-native plant species into mountains: now is the time to act. *Mountain Forum Bulletin* July 2009, 23-25.

**Seipel T.** and, M. Lavin. (2006). A Guide to the Common Plants of APF land in South Phillips County Montana. *World Wild Life Fund*

**Seipel T.** (2006) Plant Species Diversity in the Sagebrush Steppe of Montana. Masters thesis. Montana State University. <http://etd.lib.montana.edu/etd/2006/seipel/SeipelT1206.pdf>

#### PRESENTATIONS AND POSTERS

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**Seipel T.** (2010) Global Change and the World's mountains Perth Scotland 26-30 September 2010. Accepted presentation, Biogeographic comparisons of non-native plant invasions in mountains: processes at multiple spatial scales influence richness and similarity

**Seipel T.**, Alexander J. M., Kueffer C., and P. J. Edwards. (2010) Global Mountain Biodiversity Assessment Chandolin, Switzerland July 2010. Accepted presentation titled, Biogeographic distributions of non- native plants in mountains

**Seipel T.**, MIREN Workshop 2008, Charlottes Pass, Australian Alps, Australia. Status of the MIREN survey in eight mountain regions around the world

Pollnac F., **Seipel T.**, Repath C., and L. Rew. (2008). International Weed Science Society Congress, Vancouver, B.C. June 24, 2008 poster session. Effects of Abiotic and Biotic Factors on the Occurrence and Establishment on Non-Indigenous Plant Species.

**Seipel T.**, and L. Rew. (2007). Yellowstone, USA: Roadside Surveys for Non Native Plants. Invited presentation at the 3<sup>rd</sup> meeting of MIREN. Tenerife, Canary Islands, Spain.

Johnson M., and **T. Seipel**. (2007). Western Society of Weed Science Conference Portland Oregon, USA. Poster presentation titled, Invasive Plant Species Technology Transfer, and the 2006 Tamarisk Research Conference

**Seipel T.**, B. Maxwell, and M. Lavin. (2006). Western Society of Weed Science Conference Reno, Nevada USA. Presentation of a paper titled, Plant Diversity and Invasion of Sagebrush Steppe

**Seipel T.**, B. Maxwell, and M. Lavin. (2005). Western Society of Weed Science Conference Vancouver, British Columbia Canada. Presentation of a paper titled, Plant Diversity and Invasion of Sagebrush Steppe