

Curriculum Vitae of Heinz Müller-Schärer (September 2015)

Département de Biologie / Ecologie et Evolution
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Born Thun/BE, Switzerland; Sept. 5, 1954
Nationality Swiss, Georgian



PROFESSIONAL PREPARATION

1991 Habilitation in Herbivore Biology, University of Basel (Hugh Rowell & Steve Stearns)
1984 PhD in Biology, University of Bern and CABI Europe-Switzerland at Delémont, CH
1980 MSc in Biology, University of Bern, CH

RESEARCH INTERESTS

My main research interests are ecological and evolutionary aspects of plant-antagonist interactions, especially in the context of plant invasion and biological control.

APPOINTMENTS

1995-present Professor in Ecology & Evolution, Dep. of Biology, University of Fribourg, Switzerland
2008-2009 Visiting Professor at Institute of Chinese Academy of Sciences and University of Wuhan, China (Jianqing Ding) and University of Marburg, Germany (D. Matthies)
2002-2003 Visiting Professor at University of Marburg, Germany (D. Matthies), Oregon State University, USA (P. McEvoy), and University of Montana (R. Callaway)
1990-1995 Plant ecologist/group leader at the Swiss Federal Research Station, Wädenswil, CH
1986-1990 Assistant professor, Zoological Institute, University of Basel, CH
1985-1986 Research associate (Swiss NSF PostDoc), University of California, Riverside, USA
1979-1984 Project Scientist, CABI Europe-Switzerland at Delémont, CH
1977-1978 Technical assistant in agricultural (Paraguay) and forestry projects (Perú) of the "Swiss Co-operation for Technical and Humanitarian Aid" (now SDA).

CONFERENCES Invited keynote lectures at international conferences / seminars (since 2009):

Taschkent (UZ), Osijek (HR), Prague (CZ), Wuhan (China), Shanghai (China), Marburg (D), Tahoe City, CA (USA), Rennes (F), Tbilisi (Georgia), Pisa (I), Mashhad (Iran), Naples (I), Prague, (CZ), Kaposvar (H), Delémont (CH), Shiraz (Iran), Hawai'i (USA), Ascona, Monte Verita (CH), Amsterdam (NL), Lyon (F), Hangzhou, China, Tbilisi (Georgia), Pontevedra (SP), Samsun (Turkey), Batumi, Tbilisi (Georgia), Jerusalem (ISR), Wuhan, Beijing (China), Berlin (G), Vienna (A), Paris (F), Brussels (B); Stony Brook (NY, USA), Marburg (G), Vertemate con Minoprio (I), Taizhou, China.

SYNERGISTIC ACTIVITIES (only selected ones since 2002)

University of Fribourg

2011-2013 President of the Department of Biology
2010-2013 Member of the local research commission of the Swiss National Science Foundation
2002-2007 President and coordinator of Studies in Environmental Sciences (Universities FR & BE)

National

Member of the Steering committee of the Forum Biodiversity, Swiss Academy of Science (2001-2011)
Member of the "Advisory Board of the Federal Office for the Environment" (2001-present)
Elected annual president 2003 of the Swiss Academy of Science
Member of the commission on Scientific Integrity of the Swiss Academies of Sciences (2006-2012)
Member of the Advisory Board CCES (Comp. Centre Env. & Sustainab.) ETH-Z (2010-present).
Vice-Director of the SNSF National Centre of Competence in Research (NCCR) 'Plant survival in natural and agricultural ecosystems' (2001-2013)

International

External expert of PhD theses (Montpellier F, Lancaster UK, Salamanca E, and Bern, Zürich, ETH-Z, U NE, U Zürich, Dijon F); of habilitation (HDR) (Angers, F); of full professorship (SUNY, NY, USA; ETHZ)
Invited expert for Swiss Ministry of Environment, and for EU agencies (Technical Committee of COST)
Review panel USDA for all overseas stations in Biological Control, USA (2005)
Member of the Steering committee of the Global Invasions Research Coordination Network (financed by the US National Science Foundation, <http://www.invasionsrcn.org/portal>) (2006-2013)
Review panel of the German National Science Foundation (DFG) for a large-scale multi-year research program "Biodiversity Exploratories" (2005-present).
Chairman und national delegate of the EU- COST-FA1203 "Sustainable Management of *Ambrosia artemisiifolia* in Europe (SMARTER), with over 30 countries participating (2012-present)

COLLABORATORS & OTHER AFFILIATIONS

Supervision of students and research associates

38 MSc and 19 PhD students so far; 16 Post-Doc fellows stayed in my research group at the University of Fribourg, most of them financed through my grants (1995-2013)

National and International collaborative projects (recent and presently running)

SCOPES (through the Swiss NSF), with Georgia on Plant Invasions (David Kikodze) (2002-2009)
North-South Institute, ETH-Zürich, with Kenia on "*Prosopis* invasions" (Walter O. Ogutu) (2005-2008).
SNSF-NCCR project on "Evolution and spread of invasive plants" (<http://www2.unine.ch/nccr>)
with Jorge Vivanco (Colorado State Univ.) on gene expression studies of 2x and 4x taxa
with Ray Callaway/John Maron on the population dynamics of *Centaurea stoebe* in Europe and US
with Siegbert Melzer (U Leuven, Belgium) on functional genomics and the evolution of perenniality
with Nuria Garcia-Jacas and Alfonso Susanna (Bot. Inst. Barcelona) on phylogenetic relationships

FUNDING (since 2001, and only grants > € 10'000 are listed)

- Swiss National Science Foundation, research grant (2001-2004) € 225'000
- National Centre of Competence in Research on Plant Survival, SNSF, (2001-2005) € 750'000
- EU-Tlinks, EU funded research programme, BBW, (2001-2005) € 320'000
- National Research Programme on Alps (NFP-48), SNSF research grant (2002-2005) € 215'000
- Research grant with Eastern Europe, (Georgia) SNSF SCOPES (2001-2004) € 40'000
- National Centre of Competence in Research on Plant Survival, SNSF, (2005-2009) € 210'000
- Research grant with Eastern Europe, (Georgia) SNSF SCOPES (2006-2009) on "Checklist of alien and invasive plants of Georgia" € 55'000
- British Petroleum Georgia (2008-2014) on *Ragweed*: its distribution and management € 80'000
- National Centre of Competence in Research on Plant Survival, SNSF, (2009-2013) € 150'000
- Federal Office for the Environment on invasive plants (2009-2010; 2013-2017) € 100'000
- Swiss National Science Foundation, research grant (2009-2012) € 375'000
- CTI on biological control of *Rumex* spp. (co-applicant) (2010-2013) € 520'000
- COST FA 1203 SMARTER (PI and Action Chair) (2013-2017) € 7200'000.
- Swiss State Secretariat for Education, Research and Innovation (2014-2017) € 150'000
- Federal Office for Agriculture (2014-21015) € 40'000

TEACHING

Regular lectures, practical courses and excursions in: general ecology, plant ecology, plant population, biology, ecology and evolution of plant-antagonist interactions, systematics of flowering plants, biological weed control, biological invasions, experimental design and statistics.

Invited MSc course in Naples, Italy (2006, 2009), Tbilisi, Georgia (2005-2008) and Wuhan, China (2008) on "Plant Invasions and Biological Control"

Invited Doctoral school course in New Delhi, India (2006) and Rennes, France (2009), Iran (2009), Vienna (Guest Professor; 2014) on Biological Invasions, and in Taschkent, Usbekistan (2008) on "Experimental Design and Analyses".

PUBLICATIONS (past five years only, 2011-2015)

By September 2015, Heinz Müller-Schärer authored or co-authored 132 publications in internationally refereed journals with 3956 citations, h-index = 33 (25 since 2010) (google scholar), cf. <http://www.unifr.ch/ecology/groupmueller/publications> for full list of publications.

Original research articles

Augustinus BA, Guarino MF, Colombo F, Citterio S, Schaffner U, Müller-Schärer H, Gentili R. 2015. Nuove segnalazioni di *Ambrosia artemisiifolia* e *Ophraella communa* in valtellina (Alpi Centrali, Lombardia). «NATURA BRESCIANA» Ann. Mus. Civ. Sc. Nat. Brescia, 2015, 39: 237.

Bonini M, Šikoparija B, Prentovic M, Cislighi G, Colombo P, Testoni C, Grewling L, Lommen S, Müller-Schärer H, Smith M. 2015. Brief communication: A follow-up study examining airborne Ambrosia pollen in the Milan area in 2014 in relation to the accidental introduction of the ragweed leaf beetle *Ophraella communa*. *Aerobiologia*, in press.

Bonini M, Šikoparija B, Prentovic M, Cislighi G, Colombo P, Testoni C, Grewling L, Lommen S, Müller-Schärer H, Smith M. 2015. Is the recent decrease of airborne Ambrosia pollen in the Milan area due to the accidental introduction of the ragweed leaf beetle *Ophraella communa*? *Aerobiologia*, [in press](#).

Essl F, Biro K, Brandes D, Broennimann O, Bullock, J, Chapman D, Chauvel B, Dullinger S, Fumanal B, Guisan A, Karrer G, Kazinczi G, Kueffer Ch, Laitung B, Lavoie C, Leitner M, Moser D, Müller-Schärer H, Petitpierre B, Richter R, Schaffner U, Smith M, Starfinger U, Vautard R, Vogl G, von der Lippe M, Follak S. 2015. Biological Flora of the British Isles: *Ambrosia artemisiifolia*. *Journal of Ecology*, 103: 1069–1098

Sun Y, Müller-Schärer H, Maron JM, Schaffner U. 2015. Bio-geographic effects on early establishment of an invasive alien plant. *American Journal of Botany*, 104:1-5.

Sun Y, Müller-Schärer H, Maron JM, Schaffner U. 2015. Origin matters: diversity affects the performance of alien invasive species but not of native species. *The American Naturalist*, 185:725-736.

Thalmann DJK, Kikodze D, Khutsishvili M, Kharazishvili D, Guisan A, Broennimann O and Müller-Schärer H. 2014. Areas of high conservation value in Georgia: present and future threats by invasive alien plants. *Biological Invasions*, 17:1041-1054.

Müller-Schärer H, Lommen S. 2014. EU-COST Aktion über „Nachhaltige Bekämpfung von *Ambrosia artemisiifolia* in Europa“ (COST FA1203-SMARTER): Chancen und Herausforderungen. *Julius-Kühn-Archiv*, 445:148-155.

Mráz P, Tarbush E and Müller-Schärer H. 2014. Drought tolerance and plasticity in the invasive *Centaurea stoebe* s.l. (Asteraceae): effect of populations stronger than those of cytotype and range. *Annals of Botany*, 289-299.

Sun Y, Müller-Schärer H and Schaffner U. 2014. Plant neighbours rather than soil biota determine impact of an alien plant invader. *Functional Ecology*, 28: 1545- 1555.

Müller-Schärer H, Lommen STE, Rosellini M, Bonini M, Boriani M, Bosio G, Schaffner U. 2014. The ragweed leaf beetle has successfully landed in Europe: fortunate coincidence or threat? *Weed Research*, 54: 109-119.

Broennimann O, Mráz P, Petitpierre B, Guisan A and Müller-Schärer H. 2014. Contrasting spatio-temporal climatic niche dynamics during the eastern and western invasions of spotted knapweed in North America. *Journal of Biogeography*, 41: 1126-1136.

Boriani M, Calvi M, Taddei A, Tantardini A, Cavagna B, Spadoni Andreani F, Montagna M, Lommen S, Müller-Schärer H. 2013. *Ophraella communa* segnalata in Italia su *Ambrosia*, *L'Informatore agrario* 34, 2. (in Italian)

Sun Y, Collins AR, Schaffner U and Müller-Schärer H. 2013. Dissecting impact of plant invaders: do invaders behave differently in the new range? *Ecology* 94, 2124–2130.

Hahn MA, Lanz T, Fasel D and Müller-Schärer H. 2013. Increased seed survival and seedling emergence in a polyploid plant invader. *American Journal of Botany* 100, 1555-1561.

Hahn MA and Müller-Schärer H. 2013. Cytotype differences modulate eco-geographical differentiation in the widespread plant *Centaurea stoebe*. *Ecology* 94, 1005–1014.

Maron JL, Waller LP, Hahn MA, Diaconu A, Pal RW, Müller-Schärer H, Klironomos JN and Callaway RM. 2013. Effects of soil fungi, disturbance, and propagule pressure on exotic plant recruitment and establishment at home and abroad. *Journal of Ecology* 101, 924-932.

- Collins AR, Thalmann D and Müller-Schärer H. 2013. Cytotypes of *Centaurea stoebe* found to differ in root growth using growth pouches. *Weed Research* 53, 159-163.
- Asadi G, Ghorbani G, Karimi J, Bagheri A, and Mueller-Schaerer, H. 2013. Host impact and specificity of tortoise beetle (*Cassida rubiginosa*) on Canada thistle (*Cirsium arvense*) in Iran, *Weed Technology*, 27, 405-411.
- Eschen R, Müller-Schärer H and Schaffner U. 2013. Plant interspecific differences in arbuscular mycorrhizal colonization as a result of soil carbon addition. *Mycorrhiza* 23, 61-70.
- Hahn MA, van Kleunen M and Müller-Schärer H. 2012. Increased phenotypic plasticity to climate may have boosted the invasion success of polyploid *Centaurea stoebe*. *PLoS ONE* 7 (11) e50284
- Hahn MA, Buckley YM and Müller-Schärer, H. 2012. Increased population growth rate in invasive polyploid *Centaurea stoebe* in a common garden. *Ecology Letters* 15, 947-954.
- Mráz P, Španiel S, Keller A, Bowmann G, Farkas A, Šingliarová B, Rohr RP, Broennimann O and Müller-Schärer H. 2012. Anthropogenic disturbance as a driver of microspatial and microhabitat segregation of cytotypes of *Centaurea stoebe* and cytotypic interactions in secondary contact zones. *Annals of Botany* 110, 615-627.
- Mráz P, Garcia-Jacas N, Gex-Farby E, Susanna A, Barres L and Müller-Schärer H. 2012. Allopolyploid origin of highly invasive *Centaurea stoebe* s.l. (Asteraceae). *Molecular Phylogenetics and Evolution*, 62, 612-623.
- Collins AR and Müller-Schärer H. 2012. Influence of plant phenostage and ploidy level on oviposition and feeding of two specialist herbivores of spotted knapweed, *Centaurea stoebe*. *Biological Control* 60: 148-153.
- Collins AR, Naderi R and Müller-Schärer H. 2011. Competition between cytotypes changes across a longitudinal gradient in *Centaurea stoebe* L. (Asteraceae). 2011. *American Journal of Botany*, 98: 1935–1942.
- Callaway RM, Waller LP, Diaconu A, Pal, R, Collins AR, Mueller-Schaerer H, Maron JL. 2011. Escape from competition: neighbors reduce *C. stoebe* performance at home but not away. *Ecology* 92:2208–2213.
- Gerber, E, Schaffner U, Gassmann A, Hinz, HL, Seier M and Müller-Schärer H. 2011. Prospects for biological control of *Ambrosia artemisiifolia* in Europe: learning from the past. *Weed Research*, 51, 559-573.
- Simberloff D. et al. 2011. Non-natives: 141 scientists object. *Nature (Correspondence)* 475, 36.
- Treier UA and Müller-Schärer, H. 2011. Differential effects of historical migration, glaciations, and human impact on the genetic structure and diversity of the mountain pasture weed *Veratrum album* L. *Journal of Biogeography*, 38, 1776–1791.
- Schaffner U, Ridenour WM, Wolf VC, Bassett T, Caroline Müller C, Müller-Schärer H, Sutherland S, Lortie CJ, and Callaway RM. 2011. Plant invasions, generalist herbivores, and novel defense weapons. *Ecology* 92 (4), 829-835.
- Mráz P, Bouchier R, Treier U, Schaffner U, Müller-Schärer H. 2011. Polyploidy in phenotypic space and invasion context: a morphometric study of *Centaurea stoebe*. *International Journal of Plant Sciences* 172 (3), 386-402.
- Thébault A, Gillet F, Müller-Schärer, H and Buttler A. 2011. Polyploidy and invasion success: trait trade-offs in native and introduced cytotypes of two Asteraceae species. *Plant Ecology* 212, 315-325.