

# *Curriculum Vitae*

## *Franz Essl*



Name, title: Franz Essl, Mag. Dr. PD  
Date and place of birth: January 14<sup>th</sup>, 1973; Linz  
Current address: 1180 Vienna, Martinstrasse 26/1  
Language skills: German (native), English (fluent),  
Spanish (fluent), French (basic), Russian  
(basic)

### ***Habilitation (Venia docendi), PhD and master theses***

- 6/2013** Habilitation for Botany (Biogeography): “*Diversity and biogeography of alien and endemic species: the interplay of natural and anthropogenic factors*”
- 11/2002** **PhD** at the University of Vienna (“*Distribution, ecology and impact of alien plant species in Austria*”)
- 07/1997** **Master of Science** (“*Vegetation ecology and landscape history of the Jaidhaus valley in the Upper Austrian Alps*”)

### ***Work positions***

- 5/2013–on-going Ass.-Prof. Post Doc Position** at the Division of Conservation, Vegetation and Landscape Ecology (University Vienna, Austria) (Prof. S. Dullinger)
- 9/2003–on-going Senior scientist** at the Department for Nature Conservation and Biodiversity, Austrian Environment Agency
- 9/1999–6/2003 Junior scientist** at the Umweltdachverband (National coordination bureau of Austrian Nature Conservation Organisations)

### ***Research visits***

- 1/2013–4/2013 Research visit** as research associate at the Centre of Excellence for Invasion Biology (Stellenbosch University, South Africa) (Prof. D.M. Richardson)
- 1/2009–4/2009 Research visit** as distinguished visiting scientist at the National Centre for Advanced Bio-Protection Technologies (Lincoln-University, New Zealand) (Prof. P.E. Hulme)
- 3/2005–5/2005 Research visit** at the Institute for Nature Conservation (BfN) (Bonn, Germany)

### ***Third party funding & successful grant applications (on-going & completed)***

1. *AlienScenarios; Models and Scenarios of biological invasions in the 21<sup>st</sup> century*, project (involving 6 project partners) funded by the Biodiversa and Belmont Forum call 2018 on “Biodiversity Scenarios” (PI, 2019-2022, 1,050,000 €)
2. *The Global Naturalized Alien Flora (GloNAF) database: understanding patterns and drivers of global plant invasions*, bilateral project funded by the Austrian (FWF) and German (DFG) Science Foundations (PI Austrian project part, 2018-2021, 359,000 €)

3. *The Global Alien Flora Database*, bilateral project funded by the Austrian (FWF) and German (DFG) Science Foundations (PI Austrian project part, 2015-18, 220,000 €)
4. *Who Is Next? The next wave of plant invasions caused by horticulture?*, Biodiversa-project co-funded by the Austrian, the French and the German Science Foundations (work package lead, 2014-16, 200,000 €)
5. *Improving Alien species Distribution knowledge by Integrating Data Across Scales (iADIDAS)*: funded by the Flexpool-Programme (<https://www.idiv.de/research/flexpool.html>) of the German Centre for Integrative Biodiversity Research (iDiv) (Co-PI, 2017-2019, 150,000 €)
6. *Land Use, climate change and BIODiversity in cultural landscapes: Assessing feedbacks and promoting land-use strategies towards a viable future (LUBIO)*, funded by the Austrian Academy of Sciences (Global Change Programme) (project partner, 2015-17, 330,000 €)
7. *COST Action Alien Challenge*; funded by the European Union COST-office (work package lead and management committee member, 2014-17)
8. *Adaptation to Interactive Impacts of Climate Change and Nitrogen Deposition on Biodiversity (CCN-Adapt)*, funded by the Austrian Climate and Energy Fund (project partner, 2014-16, 200,000 €)
9. *Spec-Adapt: Climate change driven species migration, conservation networks, and possible adaptation strategies*, funded by the Austrian Climate and Energy Fund (PI, 2012-16, 256,000 €)
10. *Climate effects on the recent range expansion of ragweed in Central Europe*, funded by the Austrian Climate and Energy Fund (project partner, 2011-13, 180,000 €)
11. *Range dynamics of ragweed (Ambrosia artemisiifolia) under the influence of climate change in Austria*, funded by the Austrian Academy of Sciences (Global Change Programme) (project partner, 2010-12, 90,000 €)
12. *Climate change impacts on biodiversity in Central Europe - a synthesis*, funded by Springer Publisher, the Austrian Ministry of Science, the German Federal Institute for Nature Conservation, the Swiss BAFU, and the Federal Government of Austria (PI, 2009-2013, 80,000 €)
13. *RagClim - quantitative assessment of the historical climate change impact on fostering the invasion of a highly allergenic weed*, funded by the Austrian Climate Research Programme (project partner, 2011-2013, 130,000 €)
14. *ClimAllergy - Climate change induced invasion and socioeconomic impacts of allergy-inducing plants in Austria*, funded by the Austrian Climate Research Programme (project partner, 2010-12, 120,000 €)
15. *MoorClim – climate change impact on Austrian mires*, funded by the Austrian Federal Forests and the Federal Government of Austria (PI, 2009-11, 35,000 €)
16. *Focal point of invasive alien species in Austria*, funded by the Austrian Ministry of Environment (PI, 2006-11, 30,000 €)
17. *Red List of endangered habitat types in Austria*, funded by the Austrian Ministry of Environment (PI, 2000-10, 190,000 €)
18. *Global change effects on invasive alien plants in Austria: a comparative case study*, funded by the Austrian Academy of Sciences (project partner, 2008-10, 60,000 €).
19. *Alien species under climate change: impact and risk assessment and projecting future range expansions*, funded by the German Ministry of Environment (Umweltforschungsplan) (PI, 2006-10, 220,000 €)
20. *Distribution, ecology and distribution of Austrian endemic plant and animal species*, funded by the Austrian Ministry of Environment, the Austrian Federal Governments, and the Austrian Federal Forests (PI, 2006-09, 170,000 €)

21. *Monte-Carlo simulations for predicting the climate change driven range expansion of the allergenic common ragweed (*Ambrosia artemisiifolia* L.) in Austria*, funded by the Austrian Academy of Sciences (Global Change Programme) (PI, 2007-09, 60,000 €)
22. *EU 6<sup>th</sup> framework project ALTER-net* ([www.alter-net.info](http://www.alter-net.info)), funded by the EC (project partner, 2005-09)
23. *SEBI 2010: Developing and streamlining European biodiversity indicators*, funded by the European Environmental Agency (project partner, 2006-08)
24. *EU 6<sup>th</sup> framework project DAISIE - Developing Alien Species Inventories for Europe*, funded by the EU (lead of the Austrian project partner, 2005-08)
25. *Guidelines for assessing the conservation status of habitats and species of the EC habitats directive*, funded by the Austrian Federal Governments (project partner, 2006-09)
26. *Austrian action plan on invasive alien species*, funded by the Austrian Ministry of Environment (PI, 2003-04, 25,000 €)
27. *National inventory of alien species in Austria*, funded by the Austrian Ministry of Environment (PI, 2001-02, 40,000 €)

### ***Most important international collaborators during the last 5 years***

- Prof. Sven Bacher, University of Fribourg (Fribourg, Switzerland)
- Dr. C. Capinha, University of Lisbon (Lisbon, Portugal)
- Prof. H. Haberl, Institute of Social Ecology (Vienna, Austria)
- Prof. P.E. Hulme, Lincoln University (Christchurch, New Zealand)
- Prof. J. Jeschke, Free University Berlin (Berlin, Germany)
- Prof. H. Kreft, University of Göttingen (Göttingen, Germany)
- Prof. I. Kühn, Umweltforschungszentrum UFZ (Halle, Germany)
- Prof. P. Pyšek, Czech Academy of Sciences (Prague, Czech Republic)
- Prof. D.M. Richardson Stellenbosch University (Stellenbosch, South Africa)
- Dr. H. Seebens, BiK-F (Frankfurt, Germany)
- Prof. M. van Kleunen, University of Konstanz (Konstanz, Germany)
- Dr. M. Winter, Synthesis Center sDiv (Leipzig, Germany)

### ***Member in international research initiatives***

*The Global Alien Flora (GloNAF)-initiative* (<https://glonaf.org>): The GloNAF-initiative was established in 2011 with the aim to establish the first truly global alien plant species database. It consists of 8 core team members (including me) and 5 institutions, and a network of associated partners for specific

research questions. The unique GloNAF 1.0 database has been recently finished and released, and currently contains 13,168 naturalized alien plant species, corresponding to 3.9% of the extant global vascular flora. Several publications based on this database have been published (van Kleunen et al. 2015, *Nature*; Dellinger et al. 2015, *New Phytologist*; Seebens et al. 2015, *Global Change Biology*). Two associated projects (projects no #1 and #2, above) have been funded. Recently, we expanded the GloNAF database by adding global alien distribution of further taxonomic groups (birds, mammals, reptiles, amphibians, ants, spiders, molluscs), as we aim for biogeographic-macroecological analyses



of cross-taxonomic alien species richness worldwide (Dawson et al. 2017, Nature Ecology and Evolution).

*The Global Database of Alien Species First Records*: This initiative, which started in 2013, aims to establish a database of first record of alien species in countries or islands of all taxonomic groups worldwide which subsequently was used to analyse spatio-temporal patterns of alien species introductions. The initiative is coordinated by H. Seebens and me, in close collaboration with data providers and the GloNAF-initiative. The database has been finished, two manuscript (Seebens et al. 2017, 2018) have been written, and a third one is in preparation.

*Mountain Invasion Research Network (MIREN, <http://www.mountaininvasions.org/>)*: The aim of MIREN is to understand the effects of global change on species' distributions and biodiversity in mountainous areas. MIREN has expanded its initial focus on non-native plant invasions to consider more generally species redistribution under different drivers of global change, including biological invasions, climate change and land-use change. MIREN performs observational and experimental studies along elevation gradients to evaluate and quantify the processes and mechanisms that are shaping mountain plant communities at regional to global scales.

*The Global Plant Endemism Project*: This initiative was started in 2013 with the aim to establish a first global database on the diversity of endemic vascular plant species. The core team (including me) consists of 12 members and 10 institutions. The first version of the database has been recently finished currently covering >90% of the terrestrial global area, and analyses are underway.

*The Global Urban Biological Invasions Consortium (GUBIC, <https://cubes-labs.com/gubic>)*: This initiative brings together a group of invasion scientists with the aim to advance the understanding of the role of biological invasions and their management in urban environments.

### ***Organisation of international congresses and symposia***

*Macroecology in space and time*, 19<sup>th</sup> to 21<sup>st</sup> April 2017, Vienna, Austria

*Alien species and climate change*, 24<sup>th</sup> April 2009, Vienna

*4<sup>th</sup> European Conference on Biological Invasions, Neobiota - from Ecology to Conservation*, 28<sup>th</sup> to 30<sup>rd</sup> September 2006, Vienna

### ***Scientific boards of international congresses and symposia***

*The Human Role in Biological Invasions*, 15<sup>th</sup> to 18<sup>th</sup> September 2018, Vodice, Croatia

*Biological Invasions – new directions in invasion biology*, 4<sup>th</sup> to 7<sup>th</sup> September 2018, Dun Laoghaire, Ireland

*Biological Invasions – interactions with environmental change*, 10<sup>th</sup> to 14<sup>th</sup> September 2016, Vianden, Luxembourg

*Biological Invasions: From understanding to action*, 3<sup>rd</sup> to 8<sup>th</sup> November 2014, Antalya, Turkey

*Biological Invasions in a Changing World - from Science to Management*, 14<sup>rd</sup> to 17<sup>th</sup> September 2010, Copenhagen, Denmark

*Neobiota – towards a synthesis*, 23<sup>rd</sup> to 26<sup>th</sup> September 2008, Prague, Czech Republic

### ***Organiser of scientific workshops***

*Increasing understanding of invasion dynamics through citizen science*: Prague, January 2020; in collaboration with J. Pergl (Czech Academy of Sciences, Czech Republic), and J. Jeschke (Free University Berlin, Germany)

*The macroecology of alien species: patterns, drivers and consequences of global biotic exchange, Annual Symposium of the British Ecological Society (BES)*: Durham University, July 2017; in collaboration with W. Dawson (Durham University, UK), P. Pyšek (Czech Academy of



Sciences, Czech Republic), M. Winter (sDiv, Germany) and M. van Kleunen (University of Konstanz, Germany)

*Scenario planning and alternative futures of biological invasions world-wide*: October 2016, Vienna; in collaboration with N. Roura-Pascua (University of Girona, Spain), W. Rabitsch (Environment Agency Austria), and B. Leung (McGill-University, Canada)

*The 3<sup>rd</sup> GloNAF core team meeting*: Vienna, June 2016: towards a synthesis on the macroecology and biogeography of plant invasions world-wide

*Horticulture, forestry and plant invasions*: Prague, March 2016; in collaboration with J. Pergl (Czech Academy of Sciences, Czech Republic), K. Dehnen-Schmutz (Coventry University, UK), and M. van Kleunen (University of Konstanz, Germany)

### ***Participation in scientific workshops (selection)***

*InvaCost: the economic costs of biological invasions*: November 2019, Paris, organized by F. Courchamp and C. Diagne

*Types and sources of uncertainty in invasive species science*: September 2019, Ljubljana, organized by M. de Groot

*Understanding long-term dynamics of biological invasions (<https://indynet.de/>), 3<sup>rd</sup> annual workshop*: February 2018, Freie Universität Berlin, organized by J. Jeschke

*Biological invasions: challenges for science and society*: September 2017, University of Fribourg; organized by S. Bacher

*Understanding long-term dynamics of biological invasions (<https://indynet.de/>), 2<sup>nd</sup> annual workshop*: February 2017, Freie Universität Berlin, organized by J. Jeschke

*Comparing European impact risk assessments for invasive species*: September 2015, Seville, Spain; co-organized by P. González-Moreno, M. Vilà and M. Kenis (CABI)

*Biosecurity in Mountains and Northern Ecosystems*: May 2015, Flen, Sweden; co-organized by the MIREN-consortium and the Mountain Research Initiative

*Alien species and impacts of human health*: April 2015, Wallingford, UK; organized by H. Roy (CEH)

*Understanding the long-term effects of biological invasions*: February 2015, Berlin; co-organized by F. Ruland and J. Jeschke (Freie Universität Berlin)

*Developing methods for quantifying socio-economic impacts of alien species*: September 2014, Limassol, Cyprus; co-organized by J. Jeschke (Freie Universität Berlin), S. Bacher (University of Fribourg), T. Blackburn (University College London) and K. Martinou (University of Limassol)

*Developing novel tools for assessing the environmental impacts of alien species*: Leipzig, July 2013; organized by S. Kumschick (Stellenbosch University)

*Ecological novelty in the Anthropocene*: September 2011, Monte Verità, Switzerland; organized by C. Kueffer (ETH Zürich)

*Risk assessment and biological invasions: where do we stand, what is needed?*: April 2011, Girona, Spain; organized by N. Roura-Pascual (University of Girona, Spain)

### ***List of scientific talks (selection)***

*#invited presentations*

*\*invited keynote lectures*

*\*Macroecology and plant invasions: time for a synthesis?* EMAPi 15, September 2019, Prague

*\*Trends and consequences of biological invasions in the Anthropocene*: 7<sup>th</sup> Balkan Botanical Congress, September 2018, Novi Sad

*#The big picture: the great reshuffling of species in the Anthropocene*: Seminar at the University Innsbruck, March 2018, Innsbruck

- \*Living in a novel word: the biogeography, ecology and impacts of alien species: 3rd annual meeting in conservation genetics, February 2018, Vienna*
- #Biologische Invasionen: Fakten, Risiken, Werte, Interessen: forst-gen-ethik, BfW, Vienna, February 2018*
- #Naturschutz, Landnutzung und Klimaschutz: gemeinsam stark, einsam schwach: Ist der Winter noch zu retten? January 2018, Linz*
- #Von verwildernden Gartenpflanzen zu invasiven Neophyten: 10. Weißenstephaner Forum zu Landschaftsarchitektur und Landschaftsplanung, October 2017, Munich*
- The GloNAF-initiative: new insights into the biogeography and macroecology of global plant species invasions: EMAPi 14, Lissabon, September 2017*
- #The macroecology of biological invasions: What global databases tell us (and what likely not): Biological Invasions - Challenges for Science and Society, September 2017, Fribourg, Switzerland*
- #Biologische Invasionen: Stand des Wissens: Dialog Zukunft Pflanzenbau, AGES, Vienna, September 2017*
- #Living in a novel world: The biogeography and macroecology of biological invasions: Kühnelt Lecture, Vienna, March 2017, Vienna*
- Die in Österreich vorkommenden und bisher fehlenden Arten von unionsweiter Bedeutung: 3. Österreichische Neobiota-Tagung, January 2017, Vienna*
- \*The macroecology of biological invasions: what global databases tell us? 2<sup>nd</sup> Croatian Symposium on invasive species, November 2016, Zagreb*
- #Die biologische Globalisierung – neue Arten erobern die Welt: Joanneum, November 2016, Graz*
- The drivers of the level of plant invasions world-wide: Biological Invasions – interactions with environmental change, September 2016, Vianden, Luxemburg*
- #The biogeography and macroecology of biological invasions on islands: what global databases have taught us: Island Biology Conference 2016, July 2016, Azores*
- The limits of adaptation: climate change creates substantial risks for species survival which are irreducible by conservation strategies: Österreichischer Klimatag, April 2016, Graz*
- #The emerging big picture: the macro-ecology and biogeography of biological invasions world-wide: Seminar Lecture at the BIK-F, April 2016, Frankfurt*
- #Invasive Baumarten - eine Standortbestimmung: Invasive Arten im Wald, December 2015, Freiburg, Deutschland*
- #What you see, is not what you get: The role of time and time lags in biological invasions: Seminar at the WSL, December 2015, Zurich*
- #Biologische Invasionen – die globale Homogenisierung in Zeiten des Klimawandels: Wasgauer Gespräche, November 2015, Wasgau*
- Impacts of climate change on urban biodiversity – the role of invasive and non-native species: Nature-based solutions to climate change mitigation and adaptation in urban areas and their rural surroundings: Bonn, November 2015*
- \*Neobiota in Österreich(s) Wäldern) - eine Standortbestimmung: Jahreshaupttagung Forstverein Niederösterreich und Wien, October 2015, Langenlois*
- #The role of time and time lags in understanding biodiversity patterns (and processes): Seminar at the University Stuttgart-Hohenheim, April 2015, Stuttgart*
- The big picture: insights into vascular plant invasions worldwide: Neobiota conference, November 2014, Antalya*
- \*Österreichs Pflanzenwelt im globalen Treibhaus: zu heiß, zu trocken, zu dynamisch?: Österreichische Botanikertagung, September 2014, Graz*

*Die vierte Dimension: Ausmaß und Gründe für verzögerte Invasionen: Österreichische Botanikertagung, September 2012, Innsbruck*

*#Neobiota in Österreich: 5. ÖBf-Expertenforum, September 2012, Vienna*

*#Kosmopoliten und Einsiedler – Neobiota und Endemiten in Österreich: land der vielfalt – zukunftsreich?, October 2010, Vienna*

### ***IPBES-contribution***

*Global Invasive Alien Species Assessment, Chapter 3, Review Editor* (<https://ipbes.net/invasive-alien-species-experts-2019>)

### ***Reviewer for the following journals***

Applied Vegetation Science, Alpine Botany, Aquatic Invasions, Biological Conservation, Biological Invasions, Conservation Biology, Diversity and Distributions, Ecography, Ecology Letters, Environmental Pollution, Flora, Global Ecology and Biogeography, Journal of Applied Vegetation Science, Journal of Biogeography, Journal of Ecology, Journal of Plant Biology, Journal of Nature Conservation, Journal of Vegetation Science, Neobiota, PLoS One, Plant Ecology and Diversity, Preslia, Tuexenia

### ***Reviewer for the following grant agencies***

Austrian Ministry of Agriculture and Environment, Austrian Science Foundation, Canadian Science Foundation, Czech Science Foundation, Flemish Science Foundation, Swiss Science Foundation, ERC Europe

### ***Membership on editorial boards of journals / Associate Editor***

Diversity and Distributions ([www.eu.wiley.com/WileyCDA/WileyTitle/productCd-DDI.html](http://www.eu.wiley.com/WileyCDA/WileyTitle/productCd-DDI.html)) (from 2013 to 2018)

Neobiota ([www.pensoft.net/journals/neobiota](http://www.pensoft.net/journals/neobiota)) (since 2012)

### ***Membership on boards of scientific organizations***

European Working Group on Biological Invasions (<http://www.neobiota.eu/organization/>), Vice President (since 2014)

Centre for Invasion Biology (Stellenbosch, South Africa) ([http://academic.sun.ac.za/cib/team\\_guest.asp](http://academic.sun.ac.za/cib/team_guest.asp)), Research Associate

Research Centre in Biodiversity and Genetic Resources – CIBIO (Porto, Portugal) (<https://cibio.up.pt/>), Research Associate

IUCN's Commission on Ecosystem Management ([www.iucn.org/about/union/commissions/cem](http://www.iucn.org/about/union/commissions/cem)), Member

IUCN Invasive Species Specialist Group ([www.issg.org/](http://www.issg.org/)), member

MaB National Committee Austria of the Austrian Academy of Sciences ÖAW, Member (<https://www.unesco.at/wissenschaft/der-mensch-und-die-biosphaere/mab-nationalkomitee/>)

NOBANIS - European network on alien invasive species ([www.nobanis.org](http://www.nobanis.org)), board member

NOBIS Austria – Network of Biological Systematics Austria ([www.nobis-austria.at/](http://www.nobis-austria.at/)), board member (since 2011)

Scientific Forum on the EU legislation on Invasive Alien Species ([http://ec.europa.eu/environment/nature/invasivealien/index\\_en.htm](http://ec.europa.eu/environment/nature/invasivealien/index_en.htm)), board member (since 2015)

Österreichischer Biodiversitätsrat (<https://www.biodiversityaustria.at/netzwerk/biodivrat/>), speaker (since 2019)

### ***Media outreach***

I have a strong commitment of communicating scientific results to the general public, and have actively done so in the last years (>15 press releases, >100 articles in national and international newspapers and periodicals, >20 radio broadcasts, and >10 interviews for TV stations in the last three years).

### ***Academic teaching***

Ecological Field Course to the Alps: SS 2020

Ecological Field Course and Excursion to Iran: SS 2019

Ecological Field Course and Excursion in the Mediterranean (Croatia): SS 2018

Lecture “Fundamentals of Biological invasions”: WS 2004/05-2018/19

Seminar for master students of the Divisions of Conservation Biology, Vegetation Ecology and Landscape Ecology and Tropical Ecology and Animal Biology: WS 2018/19

Lecture “Fundamentals of Conservation Biology”: WS 20013/14-2018/19

Lab Internship “Introduction to biodiversity and ecosystem research”: WS 2016/17

Tropical Ecological Field Course and Excursion (Costa Rica): SS 2015

Botanical and Ecological Mediterranean Field Course (Albania, Montenegro): SS 2014

Ecological field trip in the Kvarner (Croatia): SS 1995-2001

### ***Supervised PhD theses***

Alvaro Bayon (external co-supervisor, in collaboration with M. Vilà, Estacion Biologica Donana, Spain) (on-going)

Iwona Dullinger (in collaboration with S. Dullinger, University of Vienna) (on-going)

Michael Glaser (on-going)

Bernd Lenzner (completed) (*national award for outstanding PhD*)

Thomas Mang (co-supervisor, in collaboration with S. Dullinger, University of Vienna) (completed)

Janine Oettel (on-going)

Clemens Pachschwöll (on-going)

Robert Richter (co-supervisor, in collaboration with S. Dullinger and G. Vogl, University of Vienna) (completed)

Anna Schertler (on-going)

### ***Supervised master theses***

Magdalena Bauer (completed)

Michael Braun (completed)

Johannes Braunisch (on-going)

Patricia Contreras (completed)

Ricarda Höfle (completed)

Norbert Helm (co-supervisor, in collaboration with T. Dirnböck, Environment Agency Austria) (completed)

Raphael Höbart (on-going)

Julia Konic (on-going)



Irma Kracke (on-going)  
Johanna Krecke (on-going, in collaboration with C. Schulze)  
Agnes-Maria Preinfalk (on-going)  
Martin Rose (co-supervisor, in collaboration with M. Kiehn, University of Vienna) (completed)  
Lisa Rosenich (on-going)  
Anna Schertler (completed)  
Tobias Schernhammer (completed)  
Verena Schifflleithner (completed)  
Thomas Vorstenbosch (completed)  
Viktoria Valenta (completed)  
Sabrina Wagner (completed)  
Alexandra Wohlmuth (in collaboration with B. Heinze, Austrian Forest Research Centre) (completed)