

ANDRES FUENTES-RAMIREZ, PHD.

POSTDOCTORAL RESEARCHER

DOB: September 12, 1981

Address: Laboratory of Biometrics, Department of Forests Sciences,
Universidad de La Frontera, Casilla 56-D, Temuco, Chile

Phone: +56 45 259 1043

E-mail: andres.fuentes@ufrontera.cl

ACADEMIC BACKGROUND

- 2015 **PhD Ecology and Evolutionary Biology. Iowa State University. USA.** Thesis: Flammable deserts: Understanding the impacts of fire on arid shrublands in the southwestern deserts, USA – Adviser: Kirk A. Moloney, PhD.
- 2010 **MS Botany. Universidad de Concepción. Chile.** Thesis: *Acacia dealbata* Link invasion (Fabaceae: Mimosoideae): Mechanisms of establishment and impacts on local diversity of plant communities in south-central Chile – Adviser: Anibal Pauchard, PhD.
- 2005 **BS (Profession). Biologist – Management of Natural Resources. Universidad Católica de Temuco. Chile.** Thesis: Assessment of prairies in the high-Andean grasslands of the Alto Biobío National Reserve, Lonquimay, Chile – Adviser: Marcos Gonzalez, MS.
- 1999 **High school, Liceo Camilo Henríquez, Temuco, Chile.**
- 1995 **Elementary and Middle school, Colegio Bautista, Temuco, Chile.**

TEACHING BACKGROUND

- 2017 Lecturer for undergraduate-level classes of Ecology and Ecological Modeling.
- 2016 Lecturer for undergraduate-level class of Ecology and Biometrics.
- 2015 Lecturer for undergraduate-level classes of Ecology and Ecological Modeling.
Invited lecturer for the graduate-level class of Landscape Ecology. Universidad de La Frontera, Chile.
- 2014 Invited lecturer for the Extended Field Trip class. Topic: “Ecological processes in shrubland-dominated areas of the Sonoran Desert, AZ”. Iowa State University, USA.
- 2008 Teaching assistant of Biology and Botany lectures. University of Concepcion, Chile.
- 2007 Lab instructor of the Botany lecture. Catholic University of Temuco, Chile.
- 2006 Instructor of the Biology lecture. Complejo Educacional Collipulli (High School), Chile.
- 2005 Professional training in CONAF-Chile at Alto Bio-Bio National Reserve and Conguillio National Park. Participation in the GLORIA (Global Observation Research Initiative in Alpine Environments) project, Chilean section.

RESEARCH BACKGROUND

- Aug 2017 Post-doctoral fellowship with Dr. Thorsten Wiegand in the Department of Ecological Modeling (OESA) at the Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany.
- July 2015 Post-doctoral fellowship with Dr. Christian Salas at Laboratory of Biometrics, awarded by Vice-Rectoría de Investigación y Postgrado, Universidad de La Frontera, Temuco, Chile.
- Jan 2015 Post-doctoral fellowship with Dr. Brian Wilsey at Iowa State University. Project: “C-cycling in native vs. non-native dominated systems”, Ames, Iowa, USA.
- 2010-2014 Research assistant (as PhD student) on the Department of Defense’s Strategic Environmental Research and Development Program (SERDP) grant: “Understanding and combating the fire-enhancing impact of non-native annuals in desert scrub through the tools of population and landscape ecology.” Project N° RC-1721, PIs: Kirk Moloney & Claus Holzapfel.
- 2008-2010 Research assistant (as MS student) on the FONDECYT grant: “Spread patterns, effects on fire regime and impacts on biodiversity of an invasive tree (*Acacia dealbata*) and an invasive shrub (*Teline monspessulana*).” Project N° 1070488, PI: Anibal Pauchard Cortes.
- Aug-2009 Internship in the Centre of Excellence for Invasion Biology (CIB) with Dr. David M. Richardson and Dr. John R. Wilson at Stellenbosch University, Stellenbosch, South Africa.

GRANTS

- 2015-2018 Using the forest fires of the China Muerta National Reserve as a natural laboratory for assessing their ecological impacts. FONDECYT Initiation into Research N° 11150487. PI Andres Fuentes-Ramirez. (This grant is equivalent to NSF funding in the USA).

PUBLICATIONS

In preparation

Fuentes-Ramirez A., Salas C., Urrutia J. & Santibañez P. Short-term effects of high-severity wildfires on plant communities of *Araucaria-Nothofagus* forests (*submitted*).

Salas C., Altamirano A., Fuentes-Ramirez A., Yaitul V. & Gregoire T. A study on the statistical effects of unbalanced data when fitting logistic regression models in ecology (*submitted*).

Checinska A., Polley H.W., Fuentes-Ramirez A., Hofmockel K. & Wilsey B. Mycorrhizal colonization rates, but not their impact on plants, is higher in exotic than native plant species in Texas grasslands (*submitted*).

Fuentes-Ramirez A., Barrientos M., Almonacid L., Arriagada C. & Salas C. Short-term increase of microorganisms and nutrients in soils affected by high-severity wildfires in *Araucaria-Nothofagus* forests (*submitted*).

Bannister J., Vargas R., Ovalle J., Acevedo M., Fuentes-Ramirez A., Donoso P., Promis A. & Smith-Ramirez C. We want to restore but we can't: Bottlenecks for the restoration of natural forests in Southern Chile (*in progress*).

Lazzaro L., Lorenzo P., Coppi A., Giuliani C., González L., Pauchard A., Foggi B. & Fuentes-Ramirez A. *Acacia dealbata* impacts in Mediterranean areas worldwide: phylogenetic loss in novel plant communities' assemblages (*in progress*).

Published

2016 Altamirano A., Cely J.P., Etter A., Miranda A., Fuentes-Ramirez A., Acevedo P., Salas C. & Vargas R. The invasive species *Ulex europaeus* shows high dynamism in a fragmented landscape of south-central Chile. **Environmental Monitoring and Assessment** **188 (8): 495.**

Fuentes-Ramirez A., Veldman J.W., Holzapel C. & Moloney K.A. 2016. Spreaders, igniters, and burning shrubs: Plant flammability explains novel fire dynamics in grass-invaded deserts. **Ecological Applications** **26: 2311-2322.**

2015 Fuentes-Ramirez A., Schafer J.L., Mudrak E.L., Schat M., Parag H.A., Holzapel C. & Moloney K.A. Spatio-temporal impacts of fire on soil nutrient availability in *Larrea tridentata* shrublands of the Mojave Desert, USA. **Geoderma** **260: 126-133.**

Fuentes-Ramirez A., Mudrak E.L., Caragea P.C., Holzapel C. & Moloney K.A. Assessing the impact of fire on the spatial distribution of *Larrea tridentata* in the Sonoran Desert, USA. **Oecologia** **178: 473-484.**

2014 Mudrak E.L., Schafer J.L., Fuentes-Ramirez A., Holzapel C. & Moloney K.A. Predictive modeling of fine-scale spatial patterns of soil nutrients associated with fertility islands in the Mojave and Sonoran deserts, USA. **Landscape Ecology** **29: 491-505.**

- 2012 García R.A., Fuentes-Ramírez A. & Pauchard A. Effect of two nitrogen-fixing invasive plant species on soil chemical properties in south-central Chile. **Gayana Botanica 69: 189-192.**
- 2011 Gibson M.R., Richardson D.M., Marchante E.M., Marchante H.S., Rodger J.C., Stone G.N., Byrne M., Fuentes-Ramírez A., George N., Harris C., Johnson S.D., Le Roux J.J., Murphy D., Pauw A., Prescott M.N. & Wandrag E. Reproductive biology of Australian *Acacia* species: important mediator of invasiveness? **Diversity and Distributions 17: 911-933.**
- Fuentes-Ramírez A., Pauchard A., Cavieres L.A. & García R.A. Survival and growth of *Acacia dealbata* vs. native trees across an invasion front in south-central Chile. **Forest Ecology and Management 261: 1003-1009.**
- Fuentes-Ramírez A., Pauchard A. & Hauenstein E. Floristic composition of the Andean grasslands in the Alto Bio-Bio National Reserve and its relationship with cattle grazing. **Gayana Botanica 68: 27-38.**
- 2010 Fuentes-Ramírez A., Pauchard A., Marticorena A. & Sánchez P. Relationship between the invasion of *Acacia dealbata* Link (Fabaceae: Mimosoideae) and the plant species richness in the south-central Chile. **Gayana Botanica 67:176-185.**
- 2007 Jara-Seguel P. & Fuentes-Ramírez A. Chromosome counts in *Philesia magellanica* J.F. Gmel (Liliales: Philesiaceae). **Gayana Botanica 64: 242-244.**

BOOK CHAPTERS

- 2017 Salas C., Fuentes-Ramírez A., Donoso P.J., Soto D. & Matus C. Crecimiento de bosques secundarios y adultos de *Nothofagus* en el centro-sur de Chile. **Silvicultura en Bosques Nativos, 2º Edición.** Donoso & Promis, Editores.

CONFERENCE PRESENTATIONS (AS SPEAKER)

- 2016 Fuentes-Ramírez A., Veldman J., Holzapfel C. & Moloney K. Spreaders, igniters and burning shrubs: Plant flammability explains novel fire dynamics across the landscape. 2016. **1º Congreso Latinoamericano IUFRO de Ecología del Paisaje. Temuco, Chile.**
- Lazzaro L., Lorenzo P., Coppi A., Giuliani C., González L., Pauchard A., Fuentes-Ramírez A., B. Foggi. *Acacia dealbata* impacts in Mediterranean areas worldwide: phylogenetic loss in novel plant communities' assemblages. **9º Conferencia Internacional de Invasiones Biológicas NEOBIOTA. Vianden, Luxemburgo (poster).**

Fuentes-Ramirez A., Santibañez P., & Barrientos M. Assessing fire severity effects on the vegetation of temperate forests of *Araucaria-Nothofagus* in southern Chile. 2016. **101th ESA Annual Meeting. Fort Lauderdale, FL, USA.**

Fuentes-Ramirez, A. Un año después del fuego: evaluación del impacto del fuego en ecosistemas naturales de *Araucaria-Nothofagus* en la R.N. China Muerta. 1° **Congreso de Áreas Silvestres Protegidas SNASPE. Temuco, Chile.**

Fuentes-Ramirez, A. Impactos del fuego sobre la regeneración en bosques de *Araucaria-Nothofagus* en La Araucanía. 2° **Workshop de Restauración Ecológica Lago Chaiguata, Parque Tantauco, Chiloé.**

Fuentes-Ramirez, A. Impactos del fuego sobre la regeneración de plantas en bosques de la Reserva Nacional China Muerta. 1° **Seminario de Restauración Ecológica Post-Incendios Forestales en La Araucanía Andina. Temuco, Chile.**

2015 Fuentes-Ramirez, A., Moloney K. & Holzapfel C. Interactions between fire and invasive plant species and their impacts on desert ecosystems of North America. **22th Annual Meeting of the Chilean Society of Ecology. Olmué, Chile.**

2014 Fuentes-Ramirez A., Schafer J., Mudrak E., Schat M., Haines C., Parag H., Holzapfel C. & Moloney K. Short and long term impacts of fire on soil nutrients in *Larrea tridentata* shrublands in the Mojave Desert. **99th ESA Annual Meeting. Sacramento, CA, USA.**

2013 Fuentes-Ramirez A., Mudrak E., Holzapfel C. & Moloney K. Impact of wildfires on the spatial pattern of *Larrea tridentata* in the Sonoran and Mojave deserts, southwestern USA. **98th ESA Annual Meeting. Minneapolis, MN, USA.**

2010 Fuentes-Ramírez A., Pauchard A., Cavieres L. & Marticorena A. Mechanisms and impacts of tree invasions: *Acacia dealbata* (Mimosaceae) in the native forest of south-central of Chile. **6th Southern Connection Congress. Bariloche, Argentina.**

2009 Fuentes-Ramirez A., Pauchard A. & Cavieres L. *Acacia dealbata* (Mimosaceae) invasion inside native forests: survival and growth of seedlings. **16th Annual Conference of the Chilean Society of Ecology. Valdivia, Chile.**

Fuentes-Ramirez A., Esquivel J., Aguayo M. & Novoa C. Invasion of *Acacia dealbata* in Chile: patterns and impacts. **1st Workshop about Biological Invasions (organized by CONAMA and LIB). Santiago, Chile.**

Fuentes-Ramirez A., Pauchard A. & Marticorena A. Species richness and abundance in an invasion gradient of *Acacia dealbata* (Mimosaceae) in the central-south region of Chile. **10th International Conference of the Ecology and Management of Alien Plant Invasions (EMAPI 10). Stellenbosch, South Africa.**

2008 Fuentes-Ramirez A., Castro M., Cid N., García R., Langdon B. & Echeverría C. Patterns and processes of the landscape in the Nahuelbuta mountains: a multi-scale approach. **15th Annual Conference of the Chilean Society of Ecology. Pucón, Chile.**

Fuentes-Ramírez A. & Pauchard A. Floristic composition of high-Andean grasslands in the Alto Bio-Bio National Reserve, Lonquimay, Chile. **20th Annual Conference of Chilean Society of Botany. Olmué, Chile.**

2004 Fuentes-Ramirez A., Jara-Seguel P. & Palma-Rojas C. Descripción del cariotipo de *Alstroemeria presliana* ssp. *australis* (Alstroemeriaceae). **37th Annual Conference of the Chilean Society of Genetics. Vina del Mar, Chile.**

2003 Fuentes-Ramirez A., Jara-Seguel P. & Palma-Rojas C. El cariotipo de *Alstroemeria schizanthoides* y su relación citogenética con otras especies del género *Alstroemeria*. **32nd Argentinean Conference of Genetics and 36th Annual Conference of the Chilean Society of Genetics. Huerta Grande, Cordoba, Argentina.**

SCHOLARSHIPS & AWARDS

2015 Post-doctoral scholarship by Vice-Rectoría de Investigación y Postgrado, Universidad de La Frontera, Chile

2012 Finch Fund. Financial support for undergraduate and graduate students for conducting research in botany. Department of Ecology, Evolution and Organismal Biology (EEOB). Iowa State University.

2012 EEOB Grants for graduate students providing funding for research. Department of Ecology, Evolution and Organismal Biology (EEOB). Iowa State University.

2010 Scholarship for conducting Doctoral studies. Beca Chile-CONICYT, Ministry of Education, Chile.

2008 Scholarship for conducting Master studies. Beca CONICYT, Ministry of Education, Chile.

THESIS COMMITTEE

Adviser:

Graduate level

Paola Arroyo. Master Program of Manejo de Recursos Naturales. Universidad de La Frontera, 2017.

Pablo Santibañez. Master Program of Manejo de Recursos Naturales. Universidad de La Frontera, 2016.

Undergraduate level

Marcia Barrientos. Bachelor Program of Ingeniería en Recursos Naturales, Universidad de La Frontera, 2016.

Co-Adviser:

Crimilda Lagos. Master Program of Manejo de Recursos Naturales. Universidad de La Frontera, 2017.

Camilo Matus. Bachelor Program of Ingeniería en Recursos Naturales, Universidad de La Frontera, 2016.

Carolina Lutz. Bachelor Program of Biología en Gestión de Rec. Nat., Universidad Católica de Temuco, 2009.

Natalia Uribe. Bachelor Program of Biología en Gestión de Rec. Nat., Universidad Católica de Temuco, 2009.

MEMBERSHIP IN SCIENTIFIC SOCIETIES

Ecological Society of America (ESA)

Sociedad de Ecología de Chile (SOCECOL)

PEER REVIEWER FOR INTERNATIONAL JOURNALS

Biological Invasions, Landscape Ecology, Forest Ecology and Management, Revista Chilena de Historia Natural, Gayana Botánica, Soil Research, Forest Systems, Land Degradation & Development.

MEMBER OF EDITORIAL COMMITTEES

Associated Editor for Plant Ecology & Diversity (impact factor 2016=2.10)

SOFTWARE

System administration on MS Windows (and MS Office) and Linux (terminal programming),

Advanced R – Statistical computing package, Advanced Programita – Spatial pattern analysis,

Basic GIS – Geographical information system

Basic C++ and NetLogo – Agent-based modeling environments.

FOREIGN LANGUAGES

Advanced aural comprehension in English for reading, speaking, listening and writing.

REFERENCES

Christian Salas, PhD. Department of Forestry Sciences, Universidad de La Frontera, Casilla 54-D, Temuco, Chile. Phone: (+56) 45 232 5658; E-mail: christian.salas@ufrontera.cl

Kirk A. Moloney, PhD. EEOB Department, 251 Bessey Hall, Iowa State University, Ames, IA 50011, USA. Phone: (+1) 515 294 6415; E-mail: kmoloney@iastate.edu

Claus Holzapfel, PhD. Department of Biological Sciences, 408 Boyden Hall, Rutgers University, Newark, NJ 07102, USA. Phone: (+1) 973 353 5385; E-mail: holzapfe@andromeda.rutgers.edu

Anibal Pauchard, PhD. Laboratorio de Invasiones Biologicas, Facultad de Ciencias Forestales, Universidad de Concepcion, Casilla 160-C, Concepcion, Chile. Phone: (+56) 41 2204934; E-mail: pauchard@udec.cl