

New Zealand RS&T Curriculum Vitae Template

PART 1

1a. Personal details				
Full name	<i>Title</i> Dr	<i>First name</i> Christopher	<i>Second name(s)</i> Evan	<i>Family name</i> Buddenhagen
Present position		Post-doctoral fellow		
Organisation/Employer		AgResearch		
Country where organisation is based		New Zealand		
Contact Address		AgResearch Limited		
		Ruakura		
		Private Bag 3123 Hamilton	Post code	3240
Work telephone		Mobile	+64 220194084	
Email		chris.buddenhagen@agresearch.co.nz		
Personal website (if applicable)		http://agresearch.co.nz https://orcid.org/0000-0002-3016-1054		

1b. Academic qualifications

2016, PhD, Ecology and evolution, Florida State University

1995, MSc, Botany, University of Auckland

1c. Professional positions held

01/2018-present, Post-Doctoral Fellow, AgResearch, Hamilton, New Zealand

08/2016 – 12/2017, Post-Doctoral Associate, University of Florida, Department of Plant Pathology, USA

06/2011 – 05/2016, Herbarium Curator, Florida State University, USA

08/2010 – 06/2016, Teaching Assistant, Florida State University, USA

04/2009 – 08/2010, Project Manager-Plant Ecologist SWCA Environmental Consultants Hawaii, USA

12/2006 – 04/2009, Hawaii Invasive Species Council Coordinator, Research Corp. of Hawaii/Department of Land and Natural Resources, Hawaii, USA

12/2005 – 12/2006, Field Operations Supervisor, Puu Kukui Preserve, Maui Land and Pineapple Company, Hawaii, USA

08/2001 – 10/2005, Research Scientist, Charles Darwin Research Station, Galapagos, Ecuador

08/1997 – 04/2001, Weed Ecologist/Botanist, Department of Conservation, New Zealand

1d. Present research/professional speciality

Weed control, invasive species, risk assessment, evolutionary biology, plant systematics.

1e. Total years research experience

22 years

1f. Professional distinctions and memberships (including honours, prizes, scholarships, boards or governance roles, etc)

2014 – FSU's Robert K. Godfrey Endowment Award for Botany \$700: Phylogenomics and systematics of Rhynchosporae (Cyperaceae).

2013 – Doctoral Dissertation Improvement Grant National Science Foundation \$19,110: "Extending anchored phylogenomics into plants with a case study of beaksedge (tribe Rhynchosporae; Cyperaceae) diversification in the New World."

2012 – Florida Native Plant Society \$1500: "Genetic resources for identifying beaksedges (Rhynchospora) and understanding their diversity in Florida and the Coastal Plain"

2011 – FSU's Robert K. Godfrey Endowment Award for Botany \$700 Phylogeography, taxonomy and character evolution in Rhynchosporae (Cyperaceae).

2009 – Contracted to write a Global Environmental Facility a proposal for invasive species capacity building for South Pacific Regional Environment Programme (SPREP) & UNEP: \$50,000 Participants were governments from Tonga, Cook Islands, Samoa, Niue, PNG, Kiribati, Palau, Federated States of Micronesia, Solomon Islands, Marshall Islands and Vanuatu.

2000 – Waitakere City Council, Auckland, New Zealand: Contracted to write a Weed Strategy for the Waitakere City Council (\$5,000).

NZRSTCV-092009

1995 – Auckland Regional Council \$35,000: Setting up a monitoring program to detect the response of forests to Australian brush tailed possum control.

1994 – Northland Regional Council, Pest Management Scholarship, Possum Impacts and Management in Kohekohe Forests (\$5,000)

1g. Total number of <i>peer reviewed</i> publications and patents	Journal articles	Books, book chapters, books edited	Conference proceedings	Patents
	17	1	1	0

PART 2

2a. Research publications and dissemination
Peer-reviewed journal articles
<ol style="list-style-type: none"> 1. Ribeiro T, Buddenhagen C.E., Thomas W, Souza G, Pedrosa-Harand A. 2017. Are holocentrics doomed to change? Limited chromosome number variation in <i>Rhynchospora</i> Vahl (Cyperaceae). <i>Protoplasma</i>, DOI: 10.1007/s00709-017-1154-4 2. Buddenhagen, C.E., Hernandez Nopsa, J.F., Andersen, K.F., Andrade-Piedra, J., Forbes, G.A., Kromann, P., Thomas-Sharma, S., Useche, P., Garrett, K.A., 2017. Epidemic Network Analysis for Mitigation of Invasive Pathogens in Seed Systems: Potato in Ecuador. <i>Phytopathology</i> 107, 1209–1218. doi:10.1094/PHYTO-03-17-0108-FI. 3. Buddenhagen, Christopher E, W. Wayt Thomas, and Austin R. Mast. 2017. “A First Look at Diversification of Beaksedges (Tribe Rhynchosporae; Cyperaceae) in Habitat, Pollination, and Photosynthetic Features,” <i>Memoirs New York Botanical Garden</i>, 118: 111–24. 4. Gordon, D.R., Flory, S.L., Lieurance, D., Hulme, P.E., Buddenhagen, C., Caton, B., Champion, P.D., Culley, T.M., Daehler, C., Essl, F. and Hill, J.E., 2016. Weed risk assessments are an effective component of invasion risk management. <i>Invasive Plant Science and Management</i>, 9(1), pp.81-83. 5. Buddenhagen C, Tye A. 2015. Lessons from successful plant eradications in Galapagos: commitment is crucial. <i>Biological Invasions</i> 17(10): 2893–2912. 6. Chimera, C. G., Buddenhagen, C. E., & Clifford, P. M. (2010). Biofuels: the risks and dangers of introducing invasive species. <i>Biofuels</i>, 1(5), 785-796. 7. Gordon, D. R., B. Mitterdorfer, P. C. Pheloung, S. Ansari, C. Buddenhagen, C. Chimera, C. C. Daehler, W. Dawson, J. S. Denslow, A. LaRosa, T. Nishida, D. A. Onderdonk, F. D. Panetta, P. Pysek, R. P. Randall, D. M. Richardson, N. Tshidada, J. G. Virtue, and P. A. Williams. 2010. Guidance for addressing the Australian Weed Risk Assessment questions. <i>Plant Protection Quarterly</i> 25:56-74. 8. Guézou, A., M. Trueman, C. E. Buddenhagen, S. Chamorro, A. M. Guerrero, P. Pozo, and R. Atkinson. 2010. An Extensive Alien Plant Inventory from the Inhabited Areas of Galapagos. <i>PLoS ONE</i> 5:e10276. 9. Buddenhagen C.E., Chimera C., Clifford P. 2009. Assessing Biofuel Crop Invasiveness: A Case Study. <i>PLoS ONE</i> 4(4): e5261. doi:10.1371/ journal.pone.0005261 10. Guerrero, A. M., P. Pozo, S. Chamorro, A. Guezou, and C. E. Buddenhagen. 2008 Baseline data for identifying potentially invasive plants in Puerto Ayora, Santa Cruz Island, Galápagos. <i>Pacific Conservation Biology</i>. 14(2):93-107 11. Guezou, A., P. Pozo, and C. Buddenhagen. 2007. Preventing Establishment: An Inventory of Introduced Plants in Puerto Villamil, Isabela Island, Galapagos. <i>PLoS ONE</i> 2:e1042 12. Renteria, J.R. & C. Buddenhagen. 2006 Invasive plants in the <i>Scalesia pedunculata</i> forest at Los Gemelos, Santa Cruz, Galapagos. <i>Galapagos Research</i> 64:31-35 13. Buddenhagen, C. 2006 The successful eradication of two blackberry species <i>Rubus megalococcus</i> and <i>R. adenotrichos</i> (Rosaceae) from Santa Cruz Island, Galapagos, Ecuador. <i>Pacific Conservation Biology</i> 12: 272-278 14. Buddenhagen, C. & Jewell, K.J. 2006. Invasive plant seed viability after processing by some endemic Galapagos birds. <i>Ornitologia Neotropical</i> 17:73-80. 15. Buddenhagen, C.E. & Yáñez, A.P. 2005. The cost of red quinine <i>Cinchona pubescens</i> Vahl. control on Santa Cruz Island, Galapagos, Ecuador. <i>Galapagos Research</i> 63:32-36 16. Buddenhagen, C.E., J. L. Rentería, M. Gardener, S. R. Wilkinson, M. Soria, P. Yáñez, A. Tye, and R. Valle. 2004. The Control of a Highly Invasive Tree <i>Cinchona pubescens</i> in Galapagos. <i>Weed Technology</i> 18:1194-1202. 17. Buddenhagen, C.E. & Ogden J. 2003. Growth and survival of <i>Dysoxylum spectabile</i> (Meliaceae) seedlings in canopy gaps. <i>New Zealand Journal of Botany</i> 41: 179-183.
Peer reviewed books, book chapters, books edited

18. Gardener, Mark R., Mandy Trueman, Chris **Buddenhagen**, Ruben Heleno, Heinke Jäger, Rachel Atkinson, and Alan Tye. 2013. "A Pragmatic Approach to the Management of Plant Invasions in Galapagos." In *Plant Invasions in Protected Areas*, edited by Llewellyn C. Foxcroft, Petr Pyšek, David M. Richardson, and Piero Genovesi, 7:349–74. *Invading Nature - Springer Series in Invasion Ecology*. Springer Netherlands. http://dx.doi.org/10.1007/978-94-007-7750-7_16.

Refereed conference proceedings

1. Ogden J, and **Buddenhagen** C. 1994. Long term forest dynamics and the influence of possums and goats on kohekohe (*Dysoxylum spectabile*) forest in the Kauaeranga Valley, Coromandel Peninsula.- some preliminary results. In O' Donnell CFJ, ed. *Possums as Conservation Pests. Proceedings of a workshop on possums as conservation pests: Department of Conservation*, Wellington, New Zealand.

Patents

NIL

Other forms of dissemination (reports for clients, technical reports, popular press, etc)

Peer reviewed reports and dissertations

1. **Buddenhagen**, C.E. 2016. "A view of Rhynchosporaeae (Cyperaceae) diversification before and after the application of anchored phylogenomics across the angiosperms." Doctoral Dissertation.
2. **Buddenhagen**, C.E. 2015. *Buddleja asiatica* (dog tail) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/10317>
3. **Buddenhagen**, C.E. 2015. *Carex kobomugi* (Asiatic sand sedge) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/112985>
4. **Buddenhagen**, C.E. 2015. *Cinnamomum burmanni* (padang cassia) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/13516>
5. **Buddenhagen**, C.E. 2014. *Christella dentata* (soft fern) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/113279>
6. **Buddenhagen**, C.E. 2014. *Passiflora edulis* (passionfruit) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/38799>
7. **Buddenhagen**, C.E. 2014. *Solanum capsicoides* (cockroach berry) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/110315>
8. **Buddenhagen**, C.E. 2013. *Cyclosorus parasiticus* (parasitic maiden fern) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/120368>
9. **Buddenhagen**, C.E. 2013. *Desmodium incanum* (creeping beggerweed) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/109200>
10. **Buddenhagen**, C.E. 2013. *Setaria parviflora* (knotroot foxtail) for the CABI Invasive Species Compendium <http://www.cabi.org/isc/datasheet/49768>
11. **Buddenhagen**, C.E. 1998. Broom control monitoring at Tongariro National Park. *Conservation Advisory Science Notes*: 300:1-10. Department of Conservation, Wellington, New Zealand.
12. **Buddenhagen**, C.E. 1995. "The effects of possums and other introduced herbivores on *Dysoxylum spectabile* (kohekohe) forests." MSc. Dissertation

Non-Peer Reviewed Reports

13. **Buddenhagen**, Christopher E, Kelsey F Andersen, *James C Fulton*, and Karen A Garrett. 2017. "Survey Methods for Seed System Network Analysis." *PeerJ Preprints* 5 (February): e2806v1. doi:10.7287/peerj.preprints.2806v1.
14. Rogg, H., **Buddenhagen**, C. & Causton, C. 2003. Experiences and limitations with pest risk analysis in the Galapagos Islands. Pg 117-126. In: *Identification of risks and management of invasive alien species using the IPPC framework*. Proceedings of a workshop in Braunschweig, Germany; 22-26 September 2003 316 pg FAO. <ftp://ftp.fao.org/docrep/fao/008/y5968e/y5968e00.pdf>
15. Timmins, S. M., S. J. Owen, & **Buddenhagen**, C.E. 2000. New Zealand-a weedy paradise. *Wildland Weeds* (Winter edition): 8-12.
16. **Buddenhagen** C.E., Timmins SM, Owen SJ, Champion PD, Nelson W, and Reid VA. 1998. An Overview of weed impacts and trends. Pg 11-21. In: Owen SJ, ed. *Department of Conservation Strategic Plan for Managing Invasive Weeds*. Department of Conservation, Wellington, New Zealand.

2b. Previous research work

Research title: (contributed to) Roots tubers and banana project CGIAR

Principal outcome: Network modelling of potato seed systems to document risk and new methods for use in the agricultural development arena, especially in low-income countries

Principal end-user and contact: international agricultural development agencies and researchers

Research title: Extending anchored phylogenomics into plants with a case study of beaksedge (tribe Rhynchosporaeae; Cyperaceae) diversification in the New World

Principal outcome: Probe kit for angiosperm phylogenetics, new insight into *Rhynchospora* systematics

Principal end-user and contact: taxonomists, systematics community, evolutionary biologists, academics

Research title: Control of Invasive Species in the Galapagos Archipelago

Principal outcome: Demonstration of eradication feasibility for invasive plants, control advice, documentation of risk for introduced plants, introduced plant inventory of 98% of private lands in Galapagos

Principal end-user and contact: Galapagos National Park, Farmers, students

Research title: Extending anchored phylogenomics into plants with a case study of beaksedge (tribe Rhynchosporaeae; Cyperaceae) diversification in the New World

Principal outcome: Probe kit for angiosperm phylogenetics, new insight into *Rhynchospora* systematics

Principal end-user and contact: taxonomists, systematics community, evolutionary biologists, academics

Research title: Impacts of invasive mammals on Kohekohe forests

Principal outcome: Insights into the damage caused by possums and goats in a vulnerable community type

Principal end-user and contact: Regional councils, scientists, Department of Conservation

2c. Describe the commercial, social or environmental impact of your previous research work

1. Raised awareness about the importance of weed control, and management effectiveness monitoring inside of the Department of Conservation
2. Contributed to, facilitated or led writing of strategies for Hawaii Invasive Species Council (invasive species), Hawaii Department of Transportation (vegetation), NZ Department of Conservation (weeds), and Waitakere City Council (weeds).
3. Wrote a \$7 million USD Global Environmental Facility plan (already implemented) for invasive species capacity building for South Pacific Regional Environment Programme (SPREP) & UNEP: Participants were governments from Tonga, Cook Islands, Samoa, Niue, PNG, Kiribati, Palau, Federated States of Micronesia, Solomon Islands, Marshall Islands and Vanuatu.
4. Managed projects that led to successful eradication of weeds from inhabited islands in the Galapagos.
5. Insights into possum impacts on forests in the Waitakeres (and set up of long term study that was continued by others since 1995)
6. Reviewed many books and scientific papers for national and international science journals.

2d. Demonstration of relationships with end-users

1. Developed training programs for vegetation management in consultation with stakeholders in the Hawaii Department of Transportation.
2. Training for statistical analysis at R workshops (students and professional scientists) Wageningen (Roots Tubers and Bananas Project CGIAR), students at Florida State University and the University of Florida.
3. Managed interagency relationships as Hawaii Invasive Species Council Coordinator.