Applying the response and effect trait framework to wetland restoration ecology

Saras Windecker
PhD Candidate
University of Melbourne

http://red6747.pbworks.com/f/1276193746/Wetlands_(Moscow,_Russia).jpg

Ecosystem Services

- Contaminant and sediment filtration
- Flood attenuation
- Habitat
- Groundwater recharge

Overall Aim

- To establish the link between wetland plant traits and ecological functions, to maximise services.

Vive la différence: plant functional diversity matters to ecosystem processes

Sandra Díaz and Marcelo Cabido

Functional Ecology 2002
16, 545–556

ESSAY REVIEW

Predicting changes in community composition and ecosystem functioning from plant traits: revisiting the Holy Grail

S. LAVOREL* and E. GARNIER

Let the concept of trait be functional!

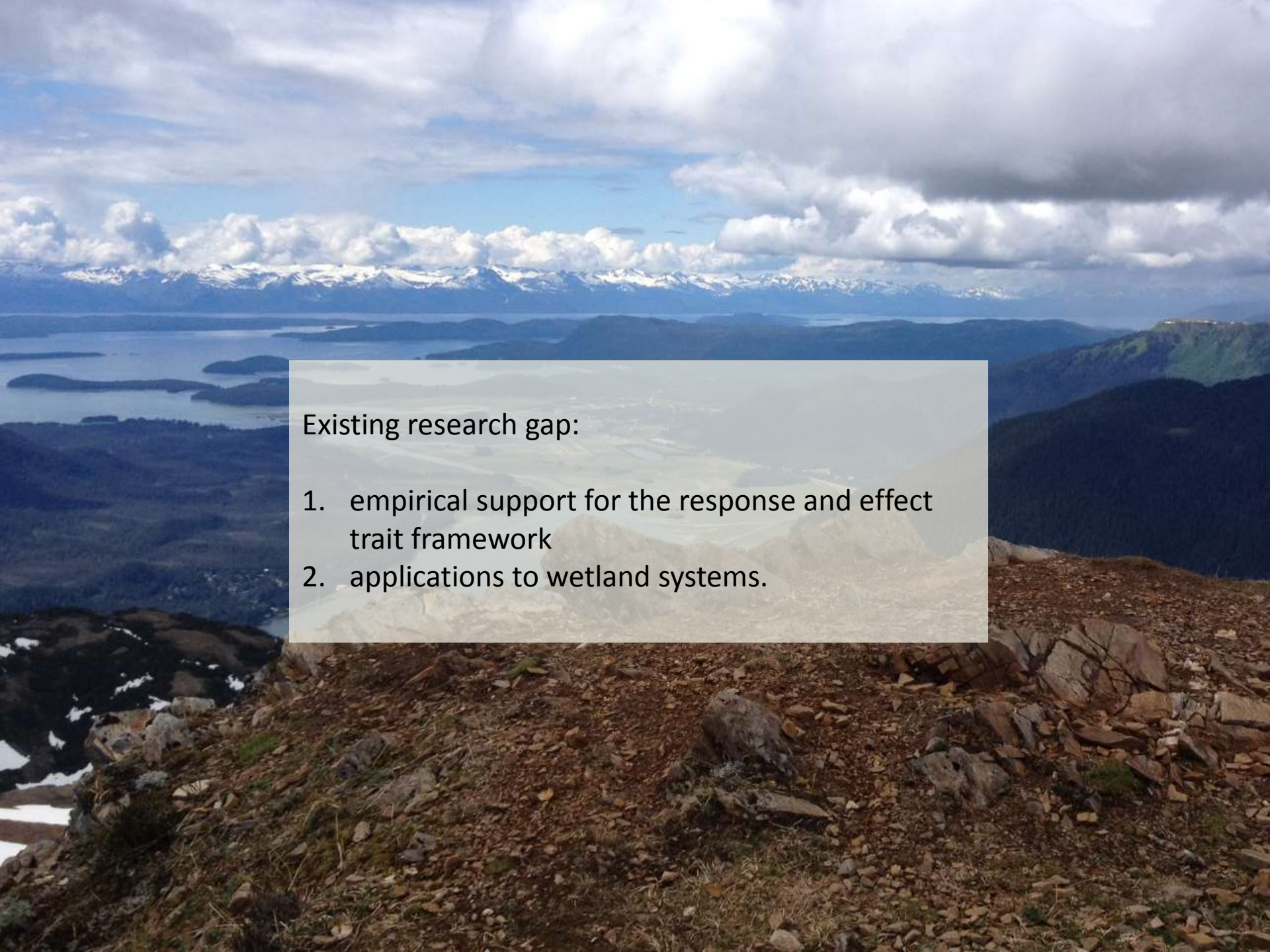
Cyrille Violle, Marie-Laure Navas, Denis Vile, Elena Kazakou, Claire Fortunel, Irène Hummel and Eric Garnier

Cyrille Violle (cyrille.violle@cefe.cnrs.fr), Marie-Laure Navas, Denis Vile, Elena Kazakou, Claire Fortunel, Irène Hummel and Eric Garnier, CNRS, Centre d'Ecologie Fonctionnelle et Evolutive, UMR 5175, 1919, Route de Mende, FR-34293 Montpellier Cedex 5, France. – MLN also at: Montpellier Supagro, 2 Place Viala, FR-34060 Montpellier Cedex 1, France. DV also at: Dépt de Biologie, Univ. de Sherbrooke, Sherbrooke (QC), Canada, J1K2R1.

Global Change Biology (2008) **14**, 1125–1140, doi: 10.1111/j.1365-2486.2008.01557.x

Scaling environmental change through the community-level: a trait-based response-and-effect framework for plants

KATHARINE N. SUDING*, SANDRA LAVOREL†, F. S. CHAPIN III‡, JOHANNES H. C. CORNELISSEN§, SANDRA DÍAZ¶, ERIC GARNIER‖, DEBORAH GOLDBERG**, DAVID U. HOOPER††, STEPHEN T. JACKSON‡‡ and MARIE-LAURE NAVAS§§



Existing research gap:

1. empirical support for the response and effect trait framework
2. applications to wetland systems.

Part 1: Artificial Mesocosm Experiments

- To test the response and effect trait framework in wetland plants
- And identify traits for target functions

Part 2: A Meta-analysis

Structural and Functional Loss in Restored Wetland Ecosystems

David Moreno-Mateos[1,2]*, Mary E. Power[1], Francisco A. Comín[3], Roxana Yockteng[4]

1 Integrative Biology Department, University of California at Berkeley, Berkeley, California, United States of America, **2** Jasper Ridge Biological Preserve, Stanford University, Woodside, California, United States of America, **3** Department of Conservation of Biodiversity and Ecosystem Restoration, Pyrenean Institute of Ecology – CSIC, Zaragoza, Spain, **4** UMR CNRS 7205, Muséum National d'Histoire Naturelle, Paris, France

Moreno-Mateos et al 2014

- Restored v. reference wetlands (n = 621)
- Examined over time
- Biological structure, driven by plant data, ave. 26% lower in restored

- Can traits better quantify the impact of restoration on ecosystem functioning?

Please get in touch!

Saras Windecker
@smwindecker
saraswindecker.wordpress.com
windeckers@student.unimelb.edu.au
Quantitative and Applied Ecology Group
School of BioSciences
University of Melbourne

Thank you to my supervisors
Dr. Jane Catford
University of Melbourne
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University of Minnesota
Dr. Peter Vesk
University of Melbourne

National Environmental Research Program

NERP Environmental Decisions Hub

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