

MULTI-ELEMENT COMPOSITION OF WETLAND SOILS ALONG VERTICAL PROFILES

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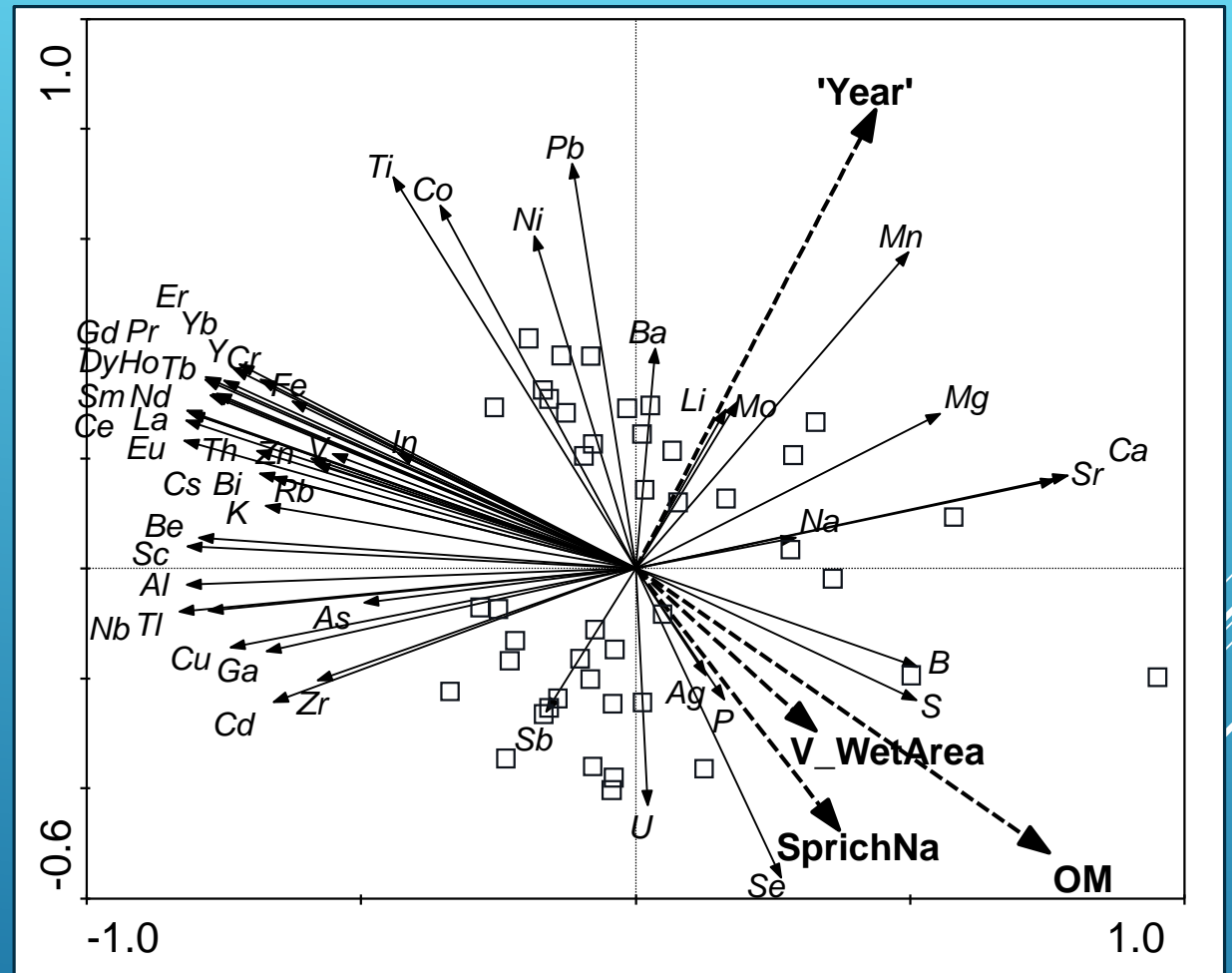
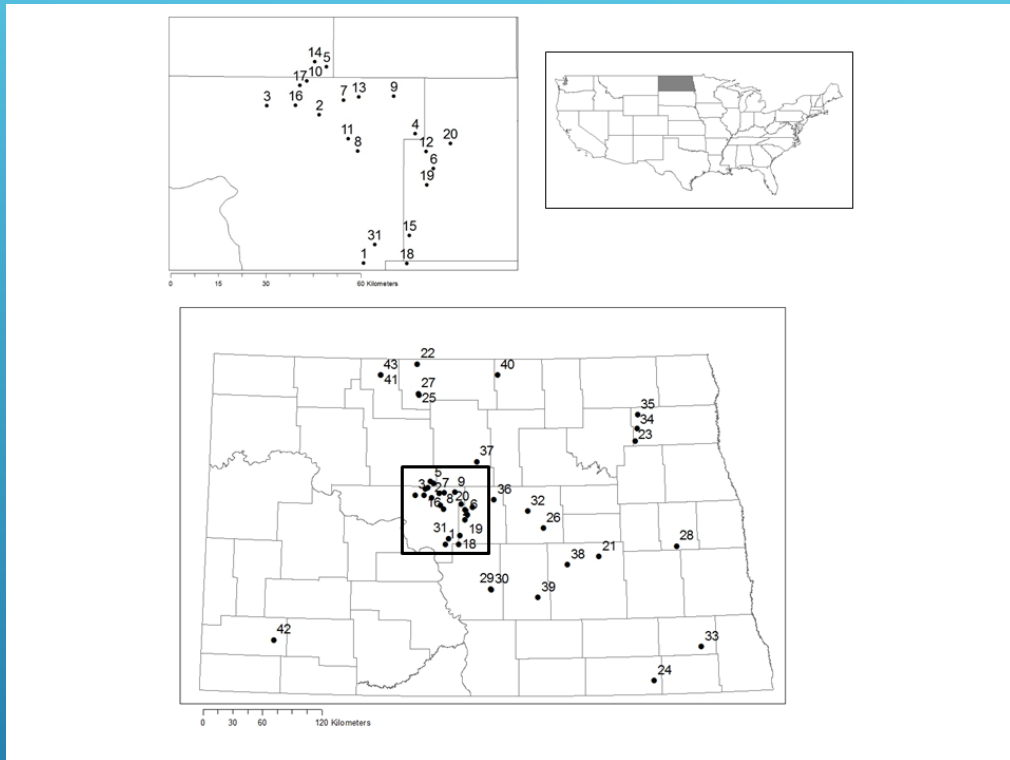
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People: past and present members of the Wet Ecosystem Research Group, Dr. Shawn DeKeyser, Dr. Christina Hargiss

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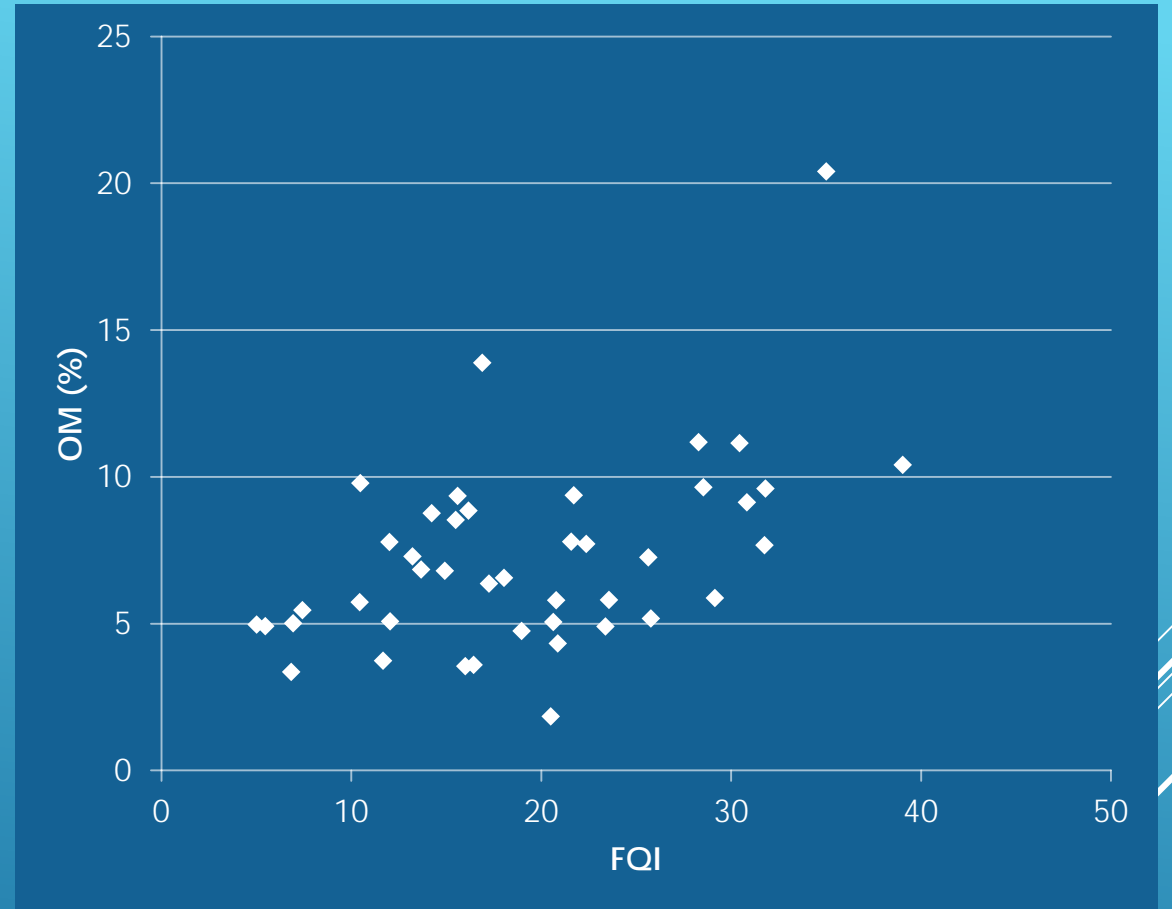
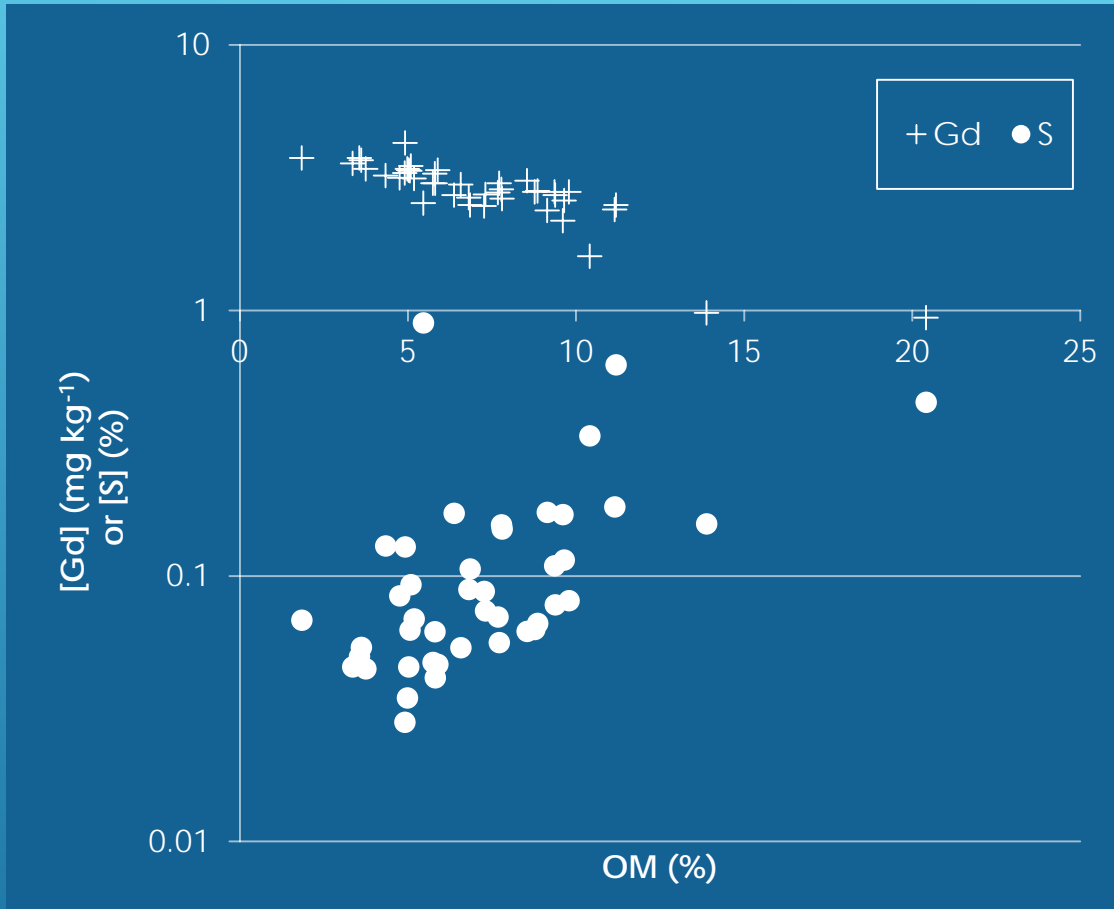
- ▶ Disturbances of wetland soils in the region due to agricultural activities change the element composition of the top soil
 - ▶ Are such changes evident throughout the vertical profile?
 - ▶ If so, to what depth do differences prevail?
 - ▶ Can this information be used for management of wetlands, and determination of potential for restoration?

INTRODUCTION



PREVIOUS RESEARCH

Yellick AH, Jacob DL, DeKeyser ES, Hargiss CLM, Meyers LM, Ell M, Kissoon-Charles LT, Otte ML (in press). Multi-element composition of soils of seasonal wetlands across North Dakota, USA. Environmental Monitoring and Assessment. doi: 10.1007/s10661-015-5013-5.



PREVIOUS RESEARCH

- ▶ Can differences in chemical composition provide information about
 1. levels of past disturbance (How deep? How long ago?)
 2. management requirements (Keep as-is? Restore?)

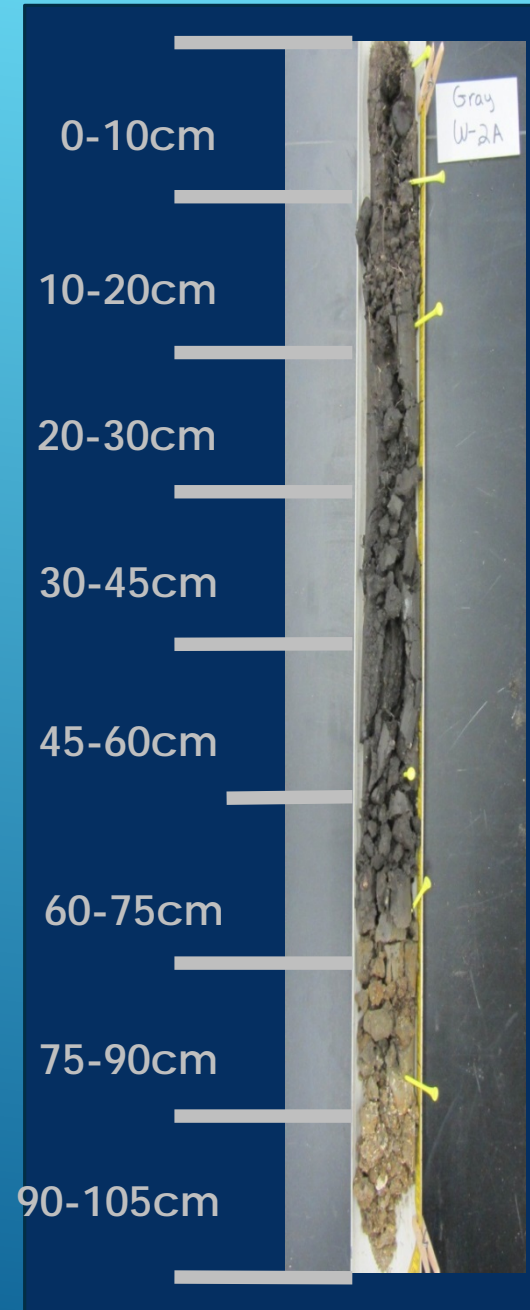
QUESTIONS ARISING FROM RESEARCH

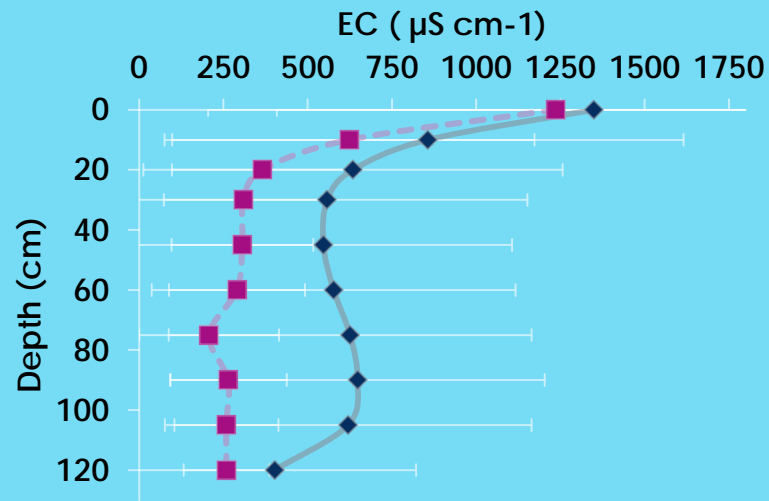
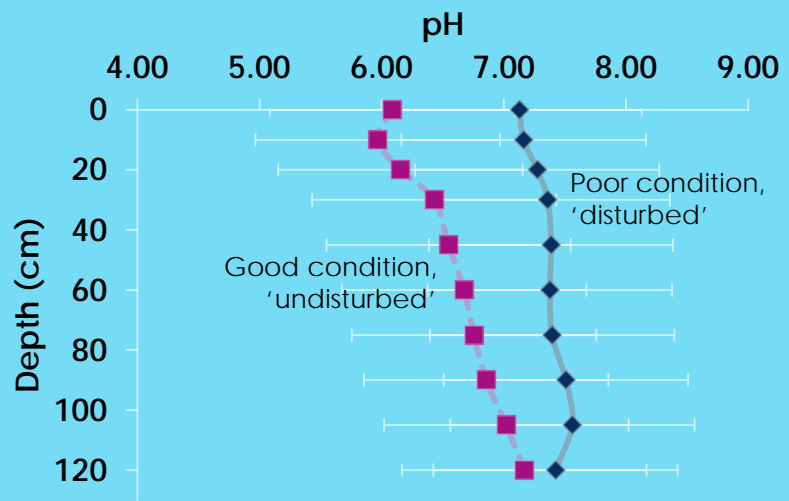
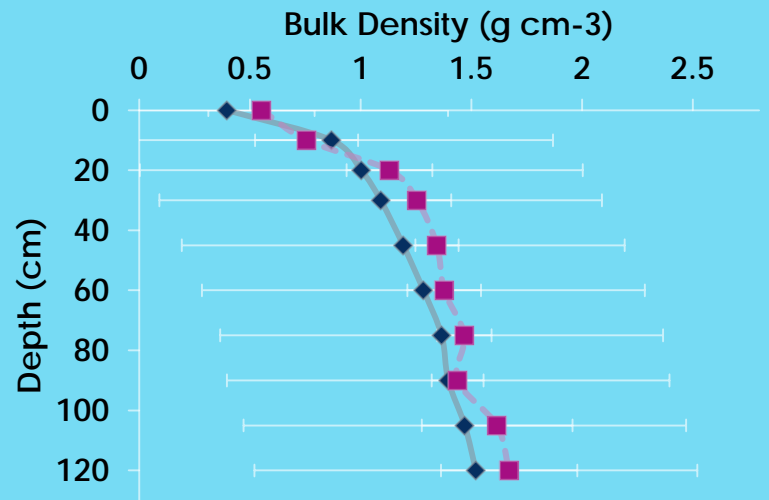
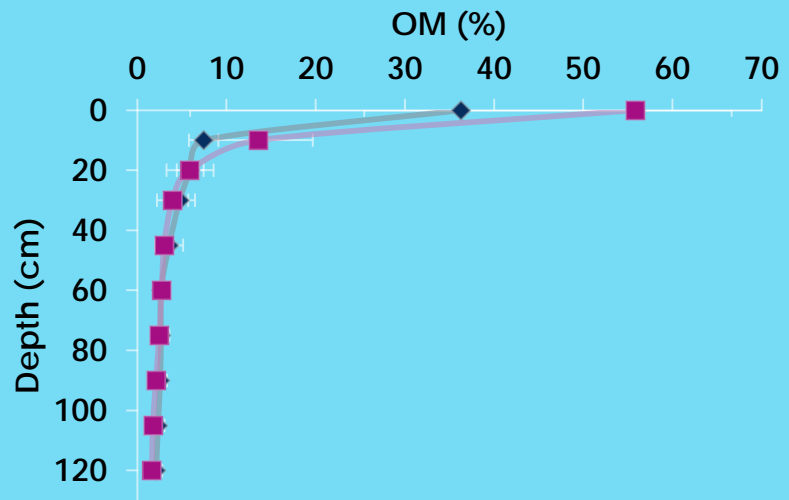
A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against the blue background.

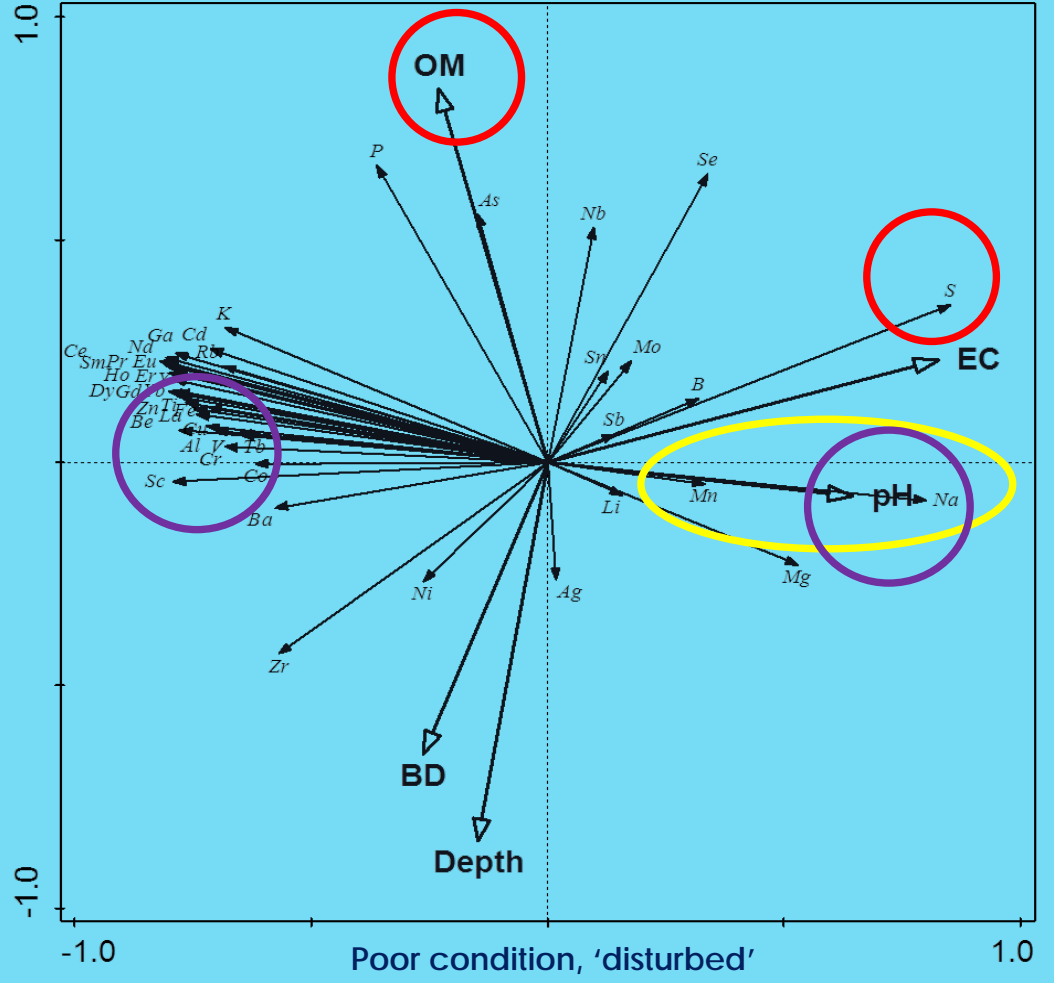
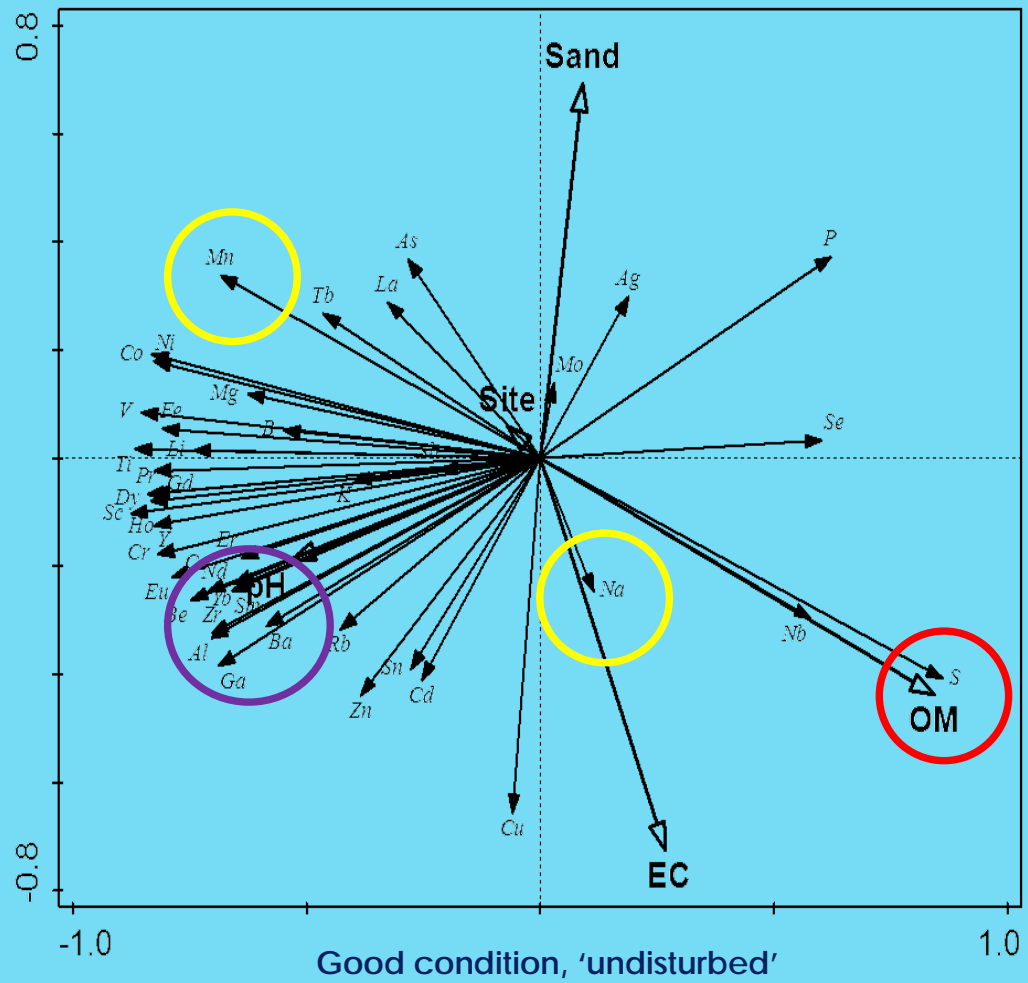


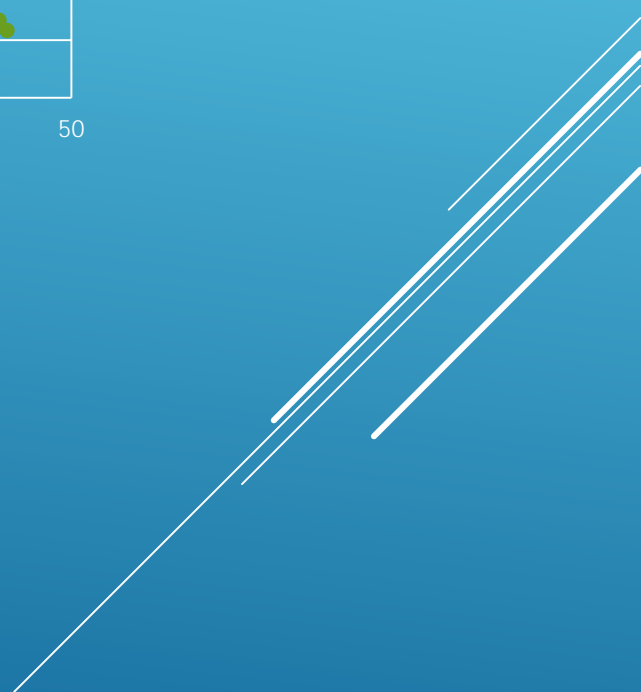
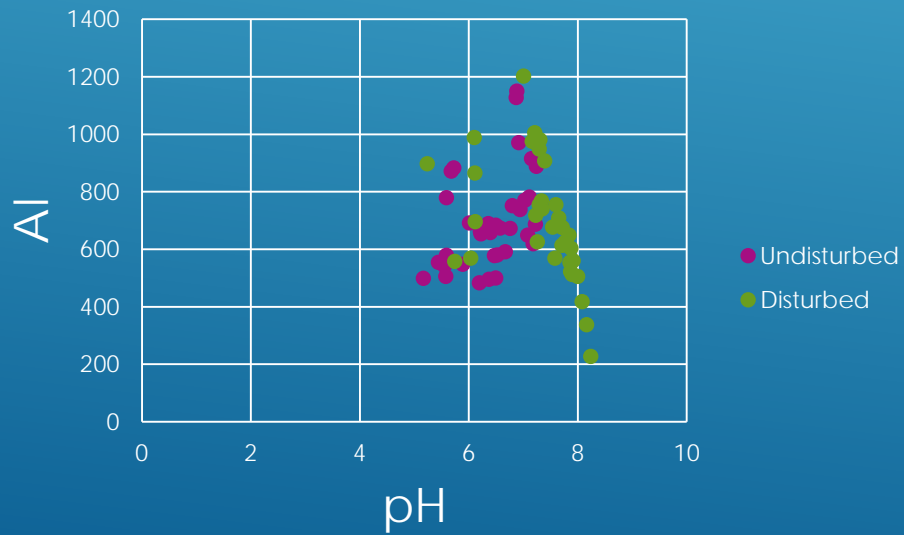
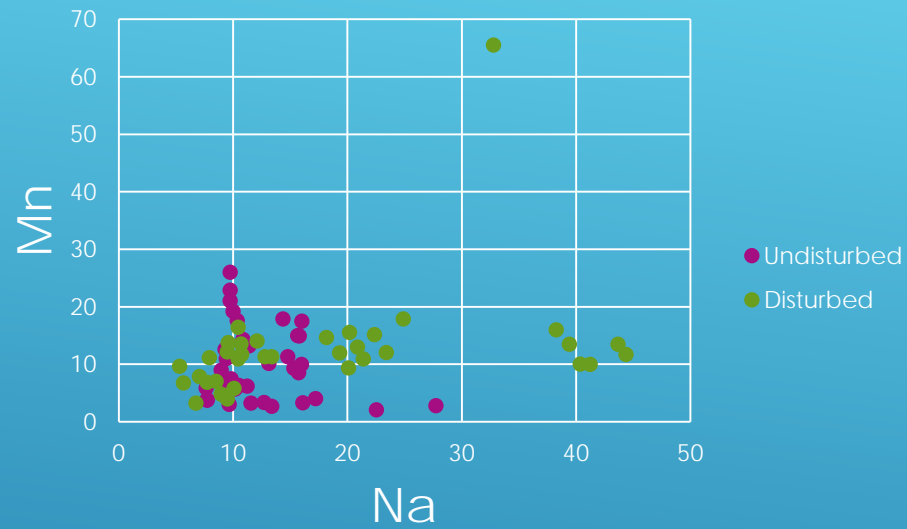
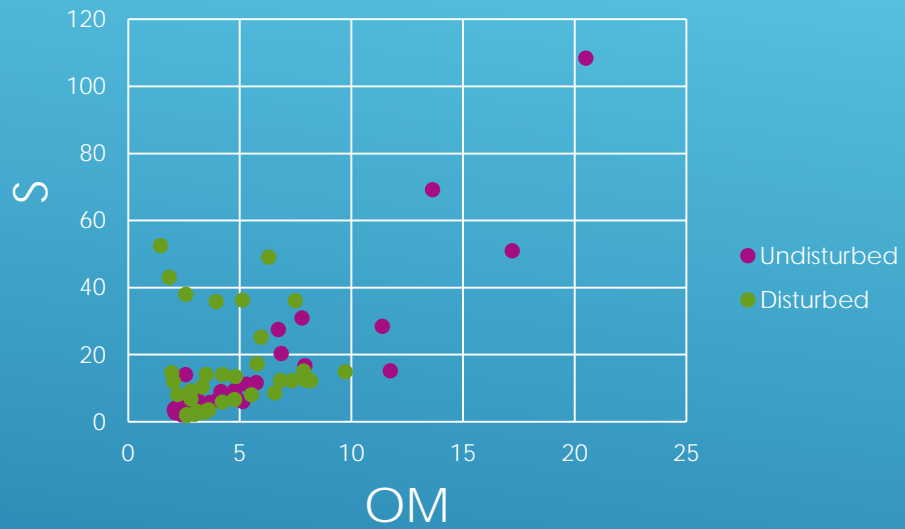
Twelve wetlands
6 of good condition, 'undisturbed'
6 of poor condition, 'disturbed'
Several cores in and around each wetland
Sectioned and analyzed

CURRENT RESEARCH









- Soils of wetlands of 'good' condition show very different characteristics compared to those of wetlands of 'poor' condition
- Wetlands of poor condition in the region are most likely attributed to disturbances associated with agriculture.
- Monitoring of soil profiles in wetlands may provide information about management and restoration potential, and aid in determining success of restoration of wetlands
- Question: What about the relationship with bacterial and fungal biota?

CONCLUSIONS