Soil Chemistry Relationship Analysis

Lucile Verrot
Sharon Parkinson
Svetlana Blkhina
Haiyan Lu

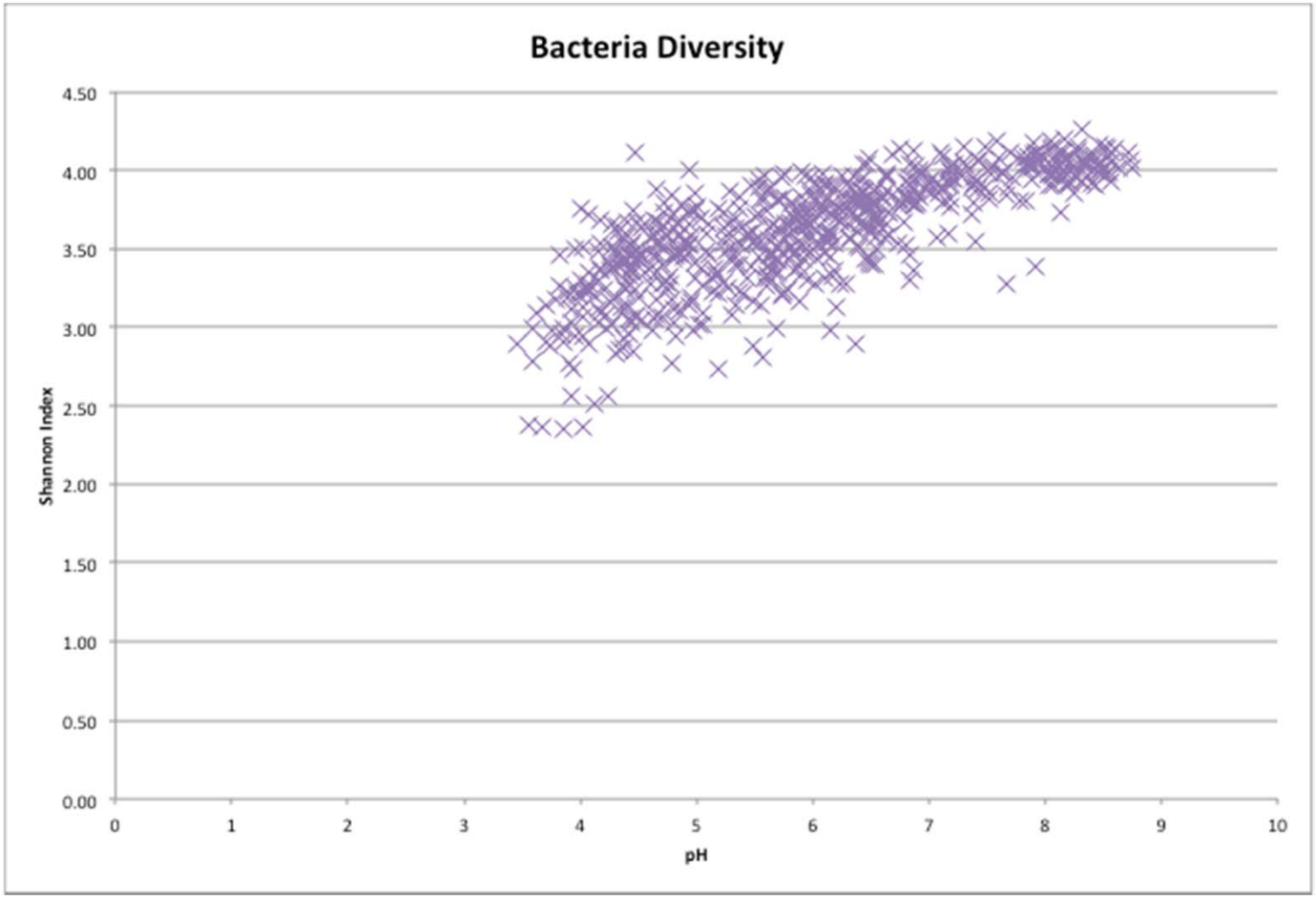
Group Discussion and Data Interpretation

- Discussed possible trend in soil chemistry and potential causal factors
- Validated statistical evaluation reported

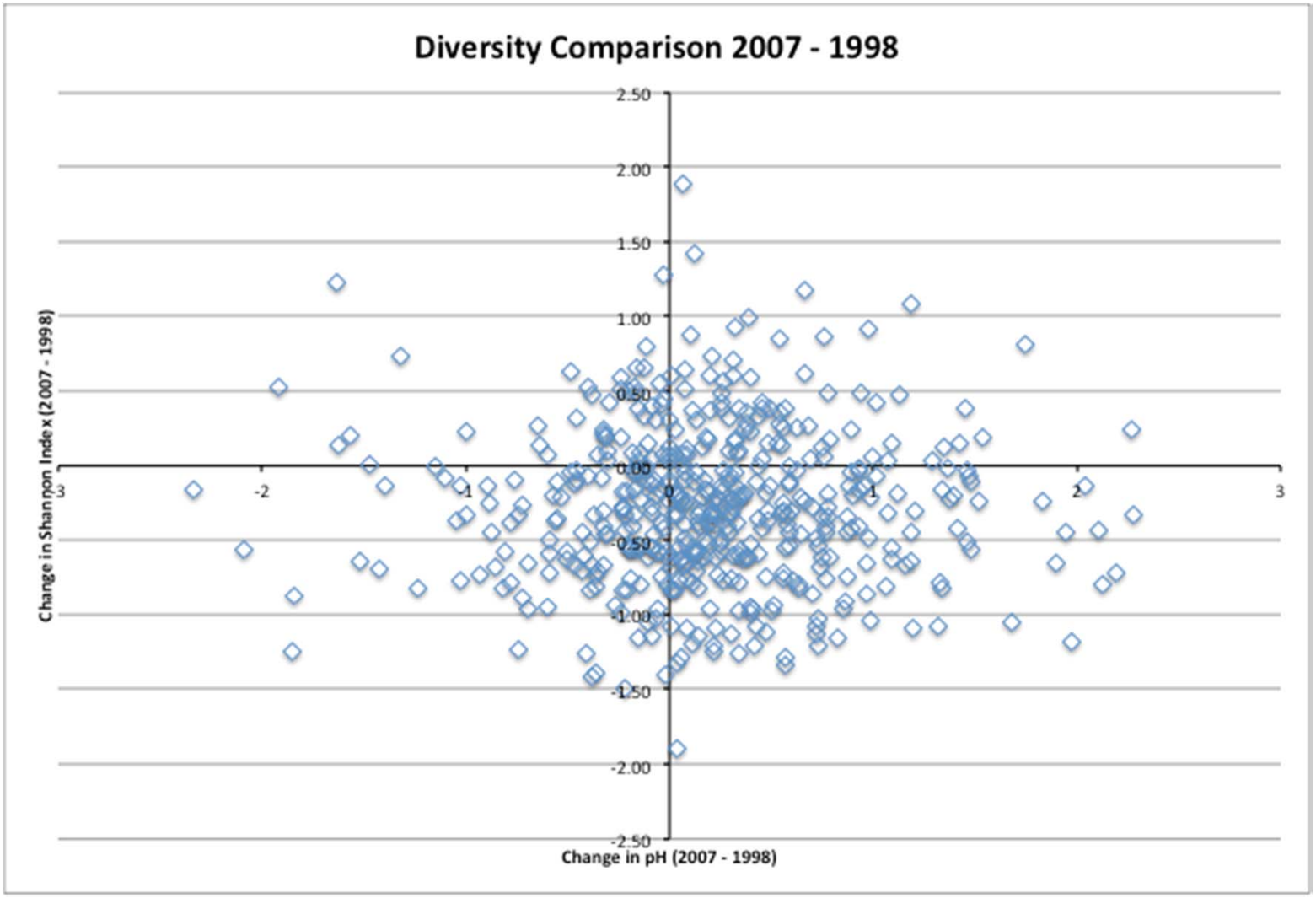
Diversity relationship to soil chemistry

- Does soil chemistry influence diversity?

Bacteria diversity relationship to pH



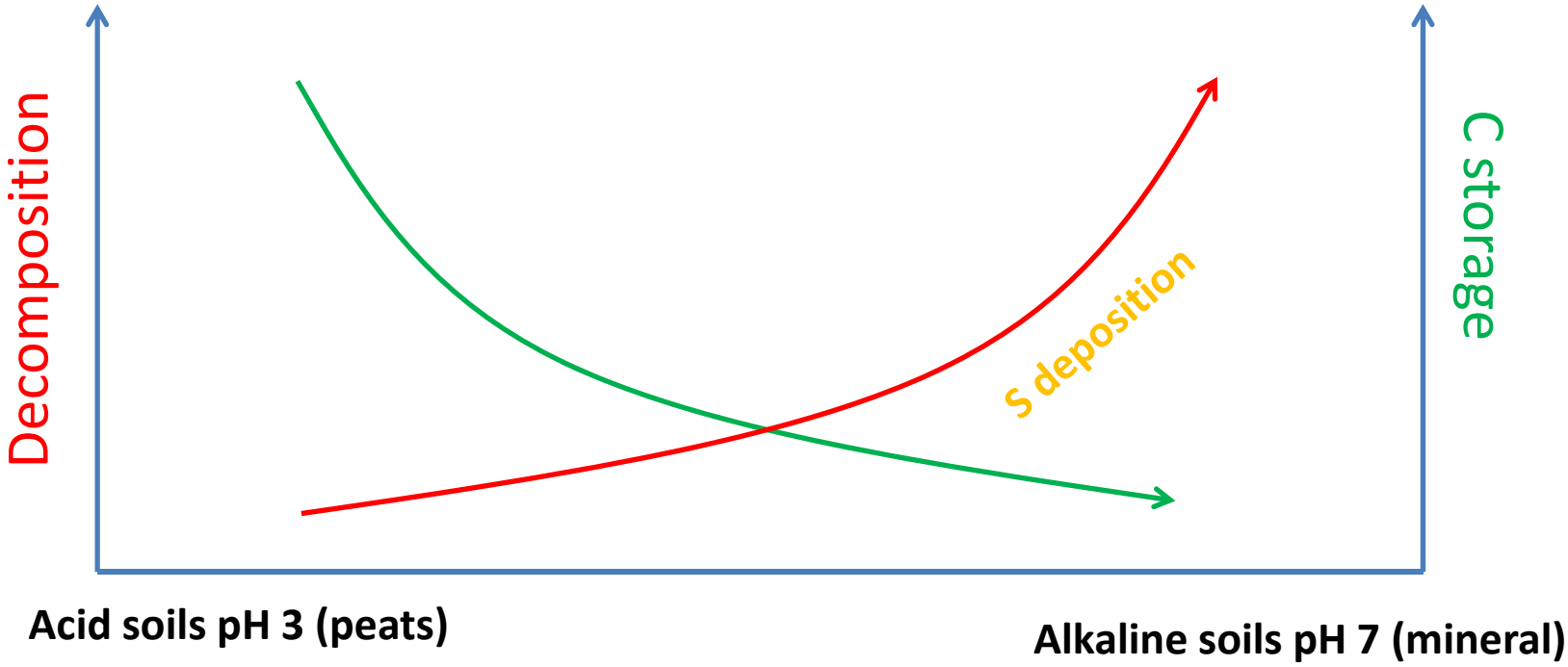
Change in invertebrate diversity vs change in pH



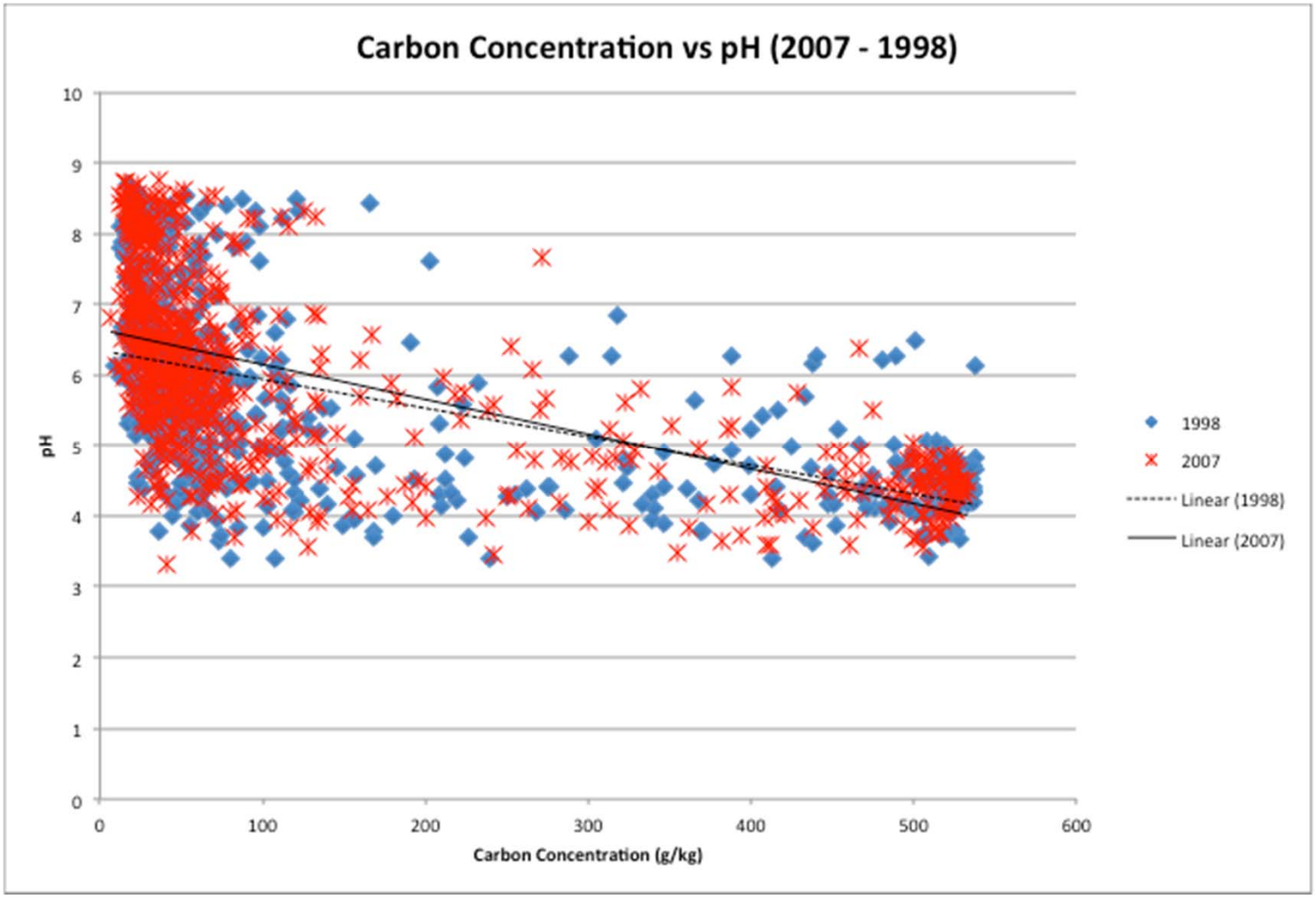
Evaluation of soil chemistry trends (2007 – 1998)

- Soil carbon and pH relationship
- Change in soil carbon and pH relationship
- Change in soil carbon and phosphorus
- Change in soil carbon and nitrogen

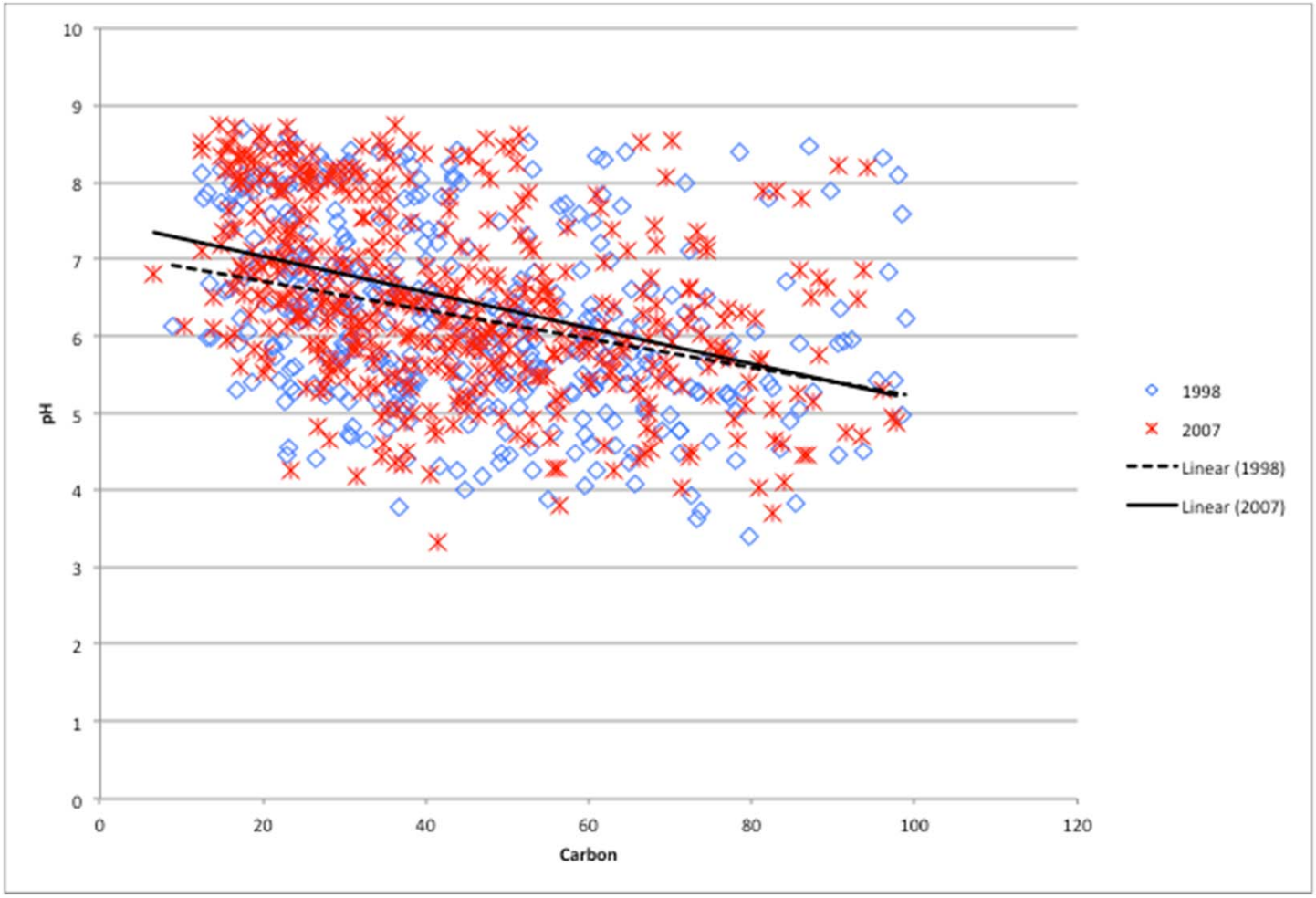
pH, C storage, decomposition



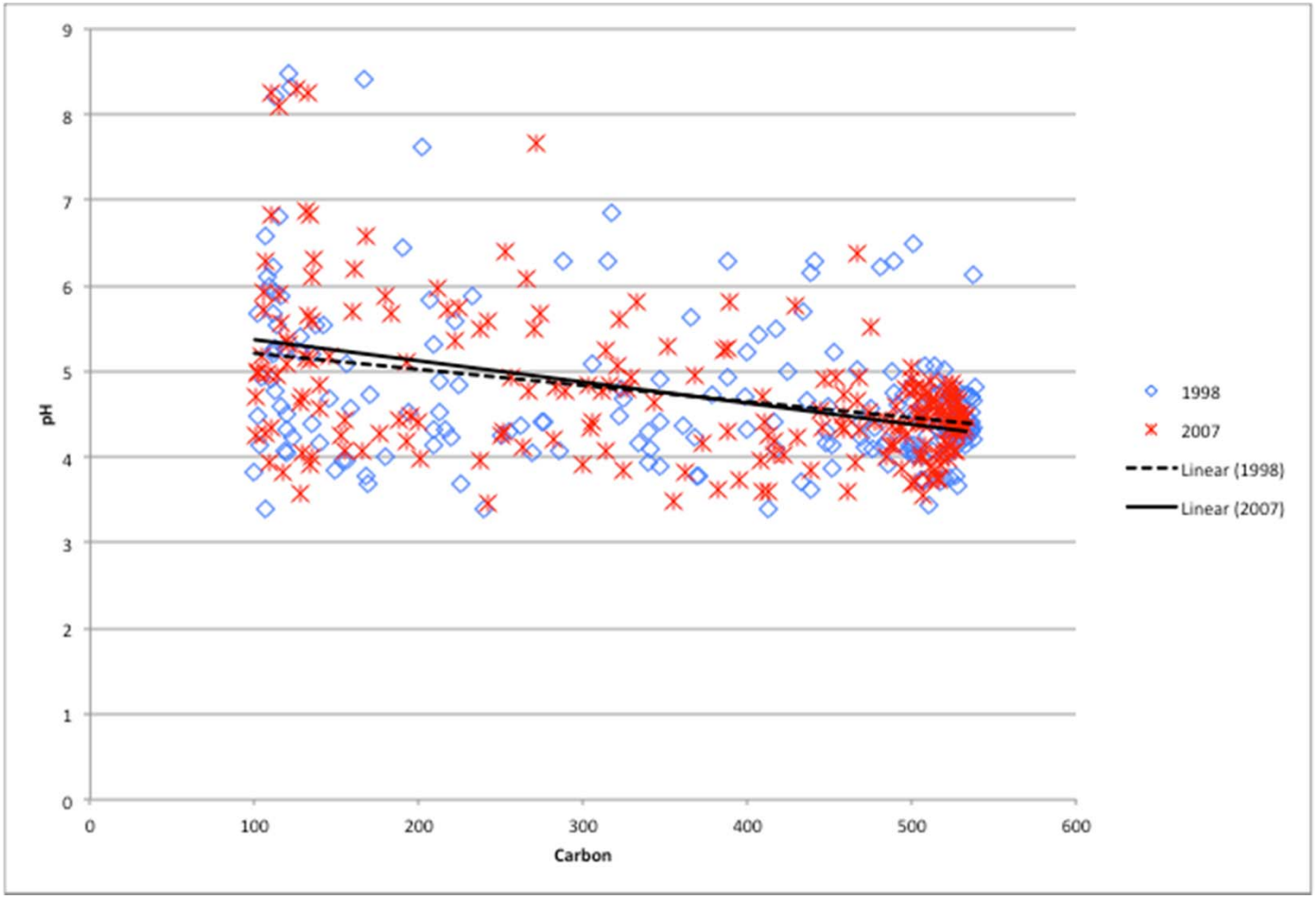
Change in carbon and pH for different soil types



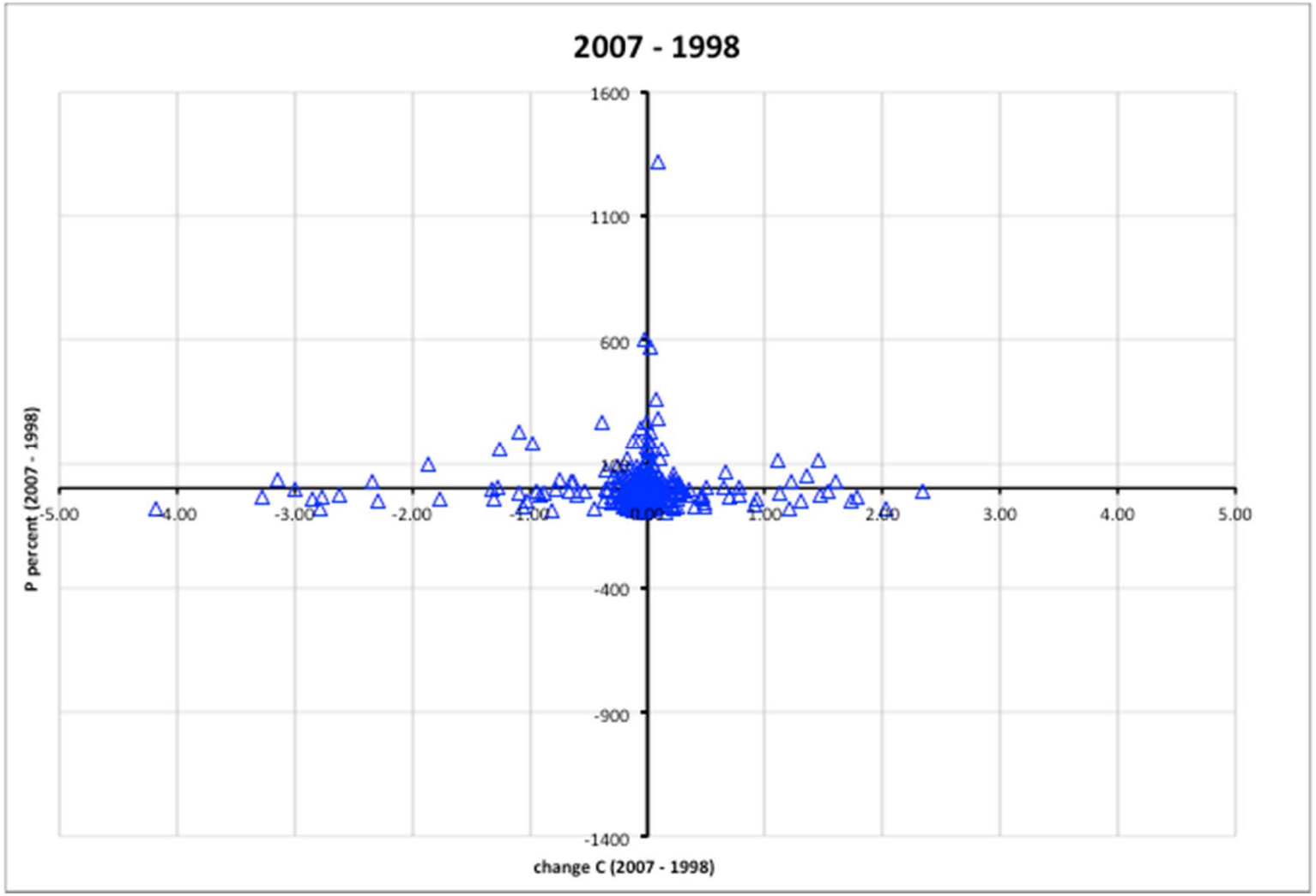
Low organic soils



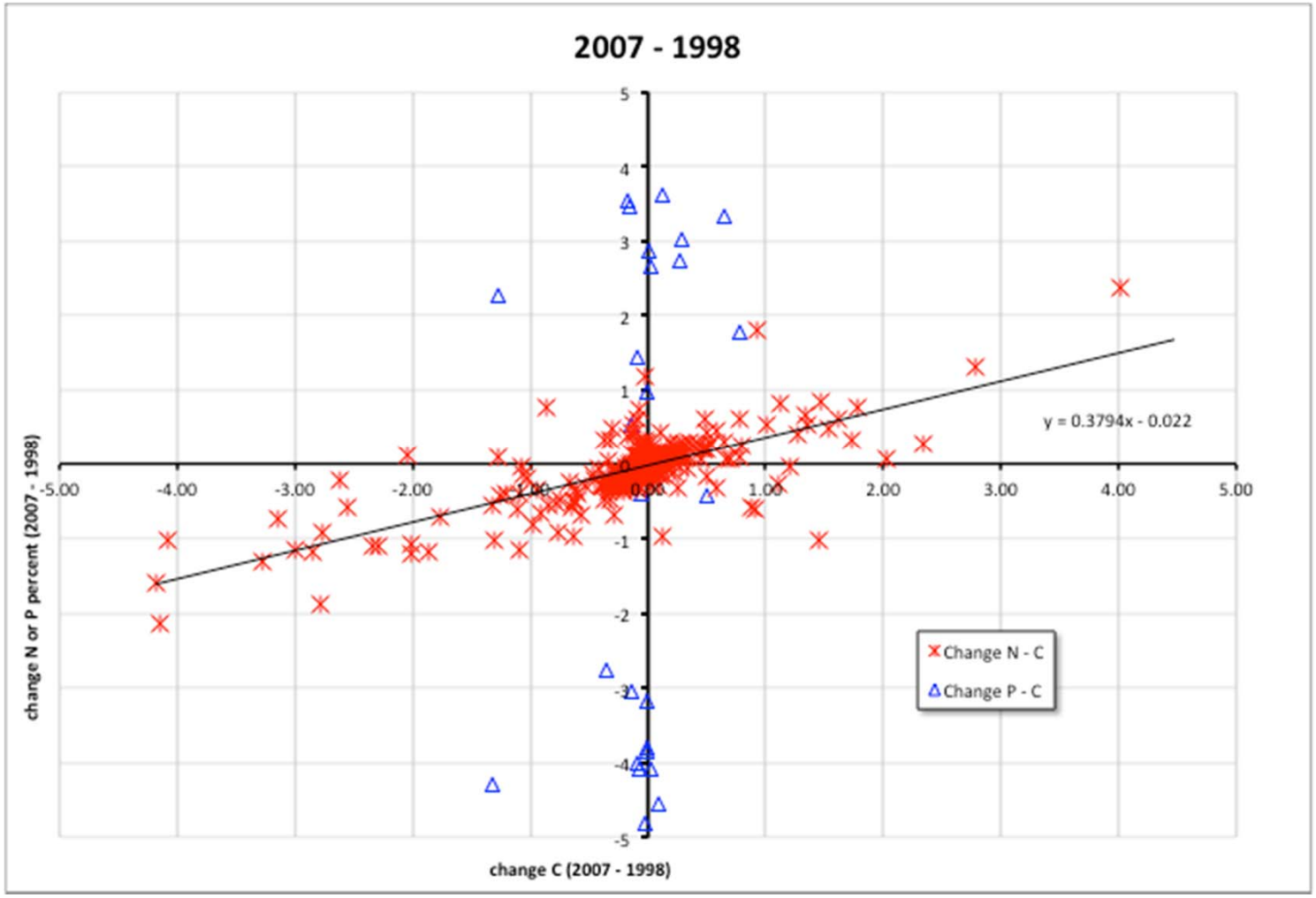
High organic soils



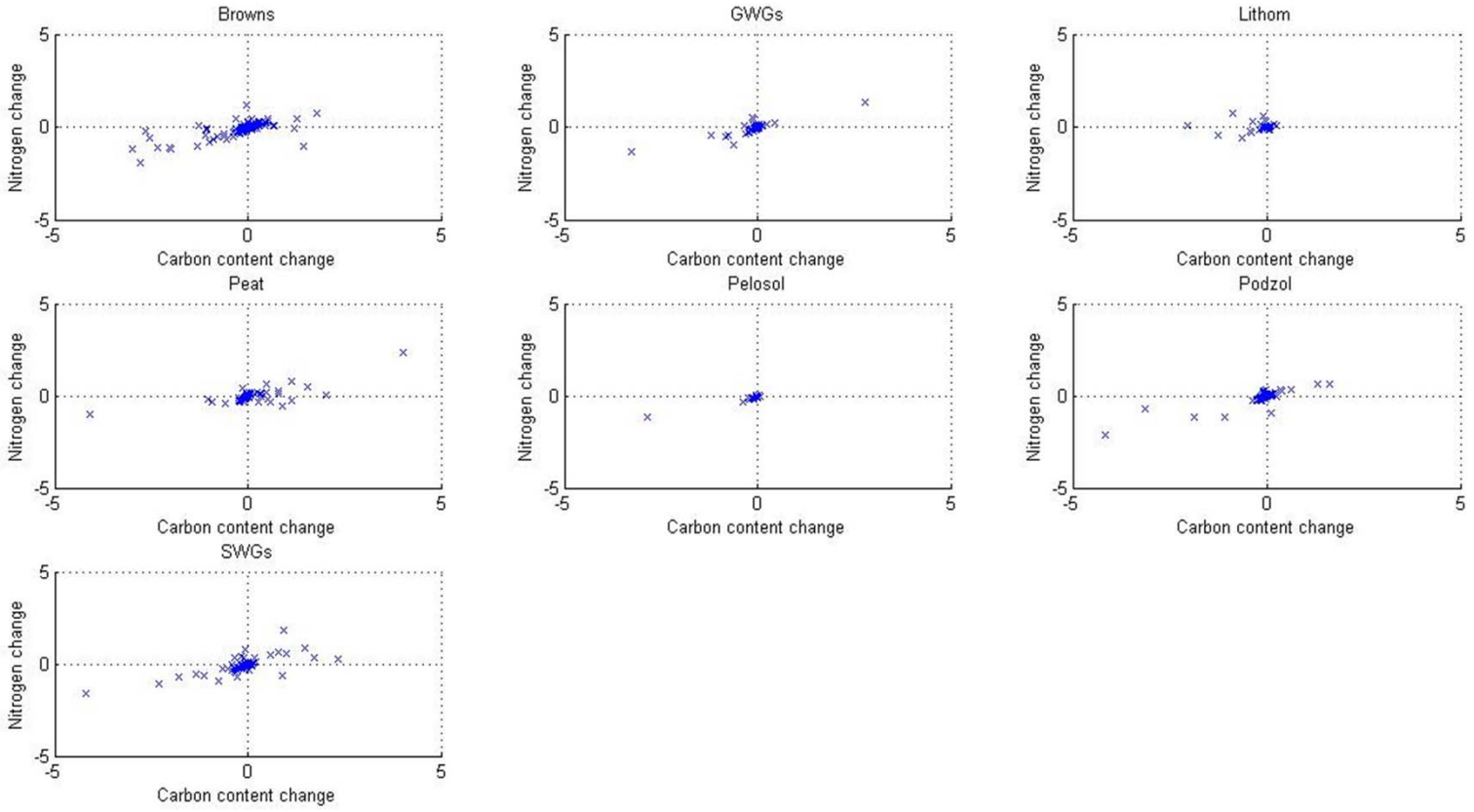
Change in carbon vs change in phosphorus



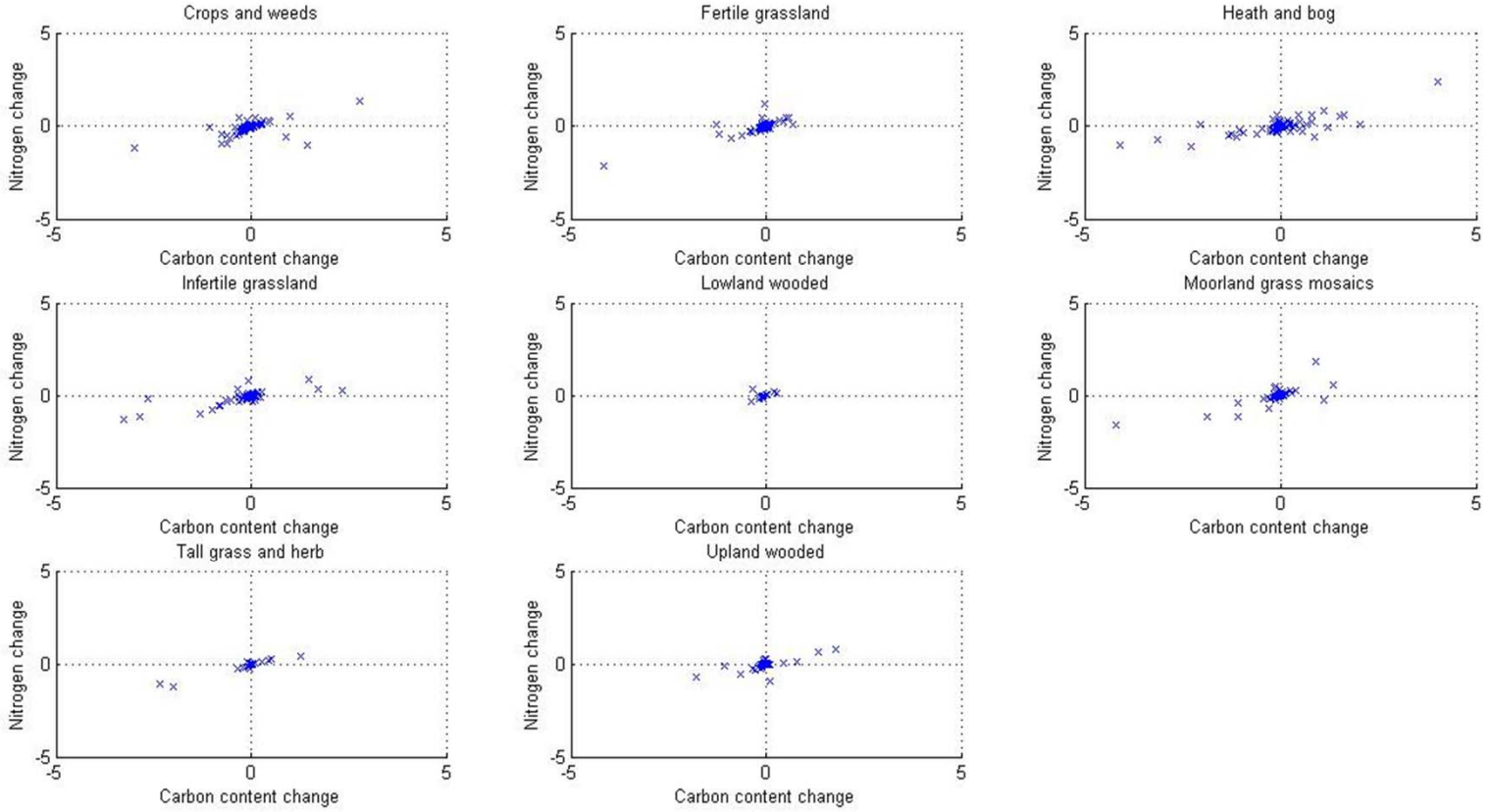
Change in carbon vs change in nitrogen



Soil type


Browns
GWGs
Lithom
Peat
Pelosol
Podzol
SWGs
Nitrogen change
Carbon content change
5
0
-5

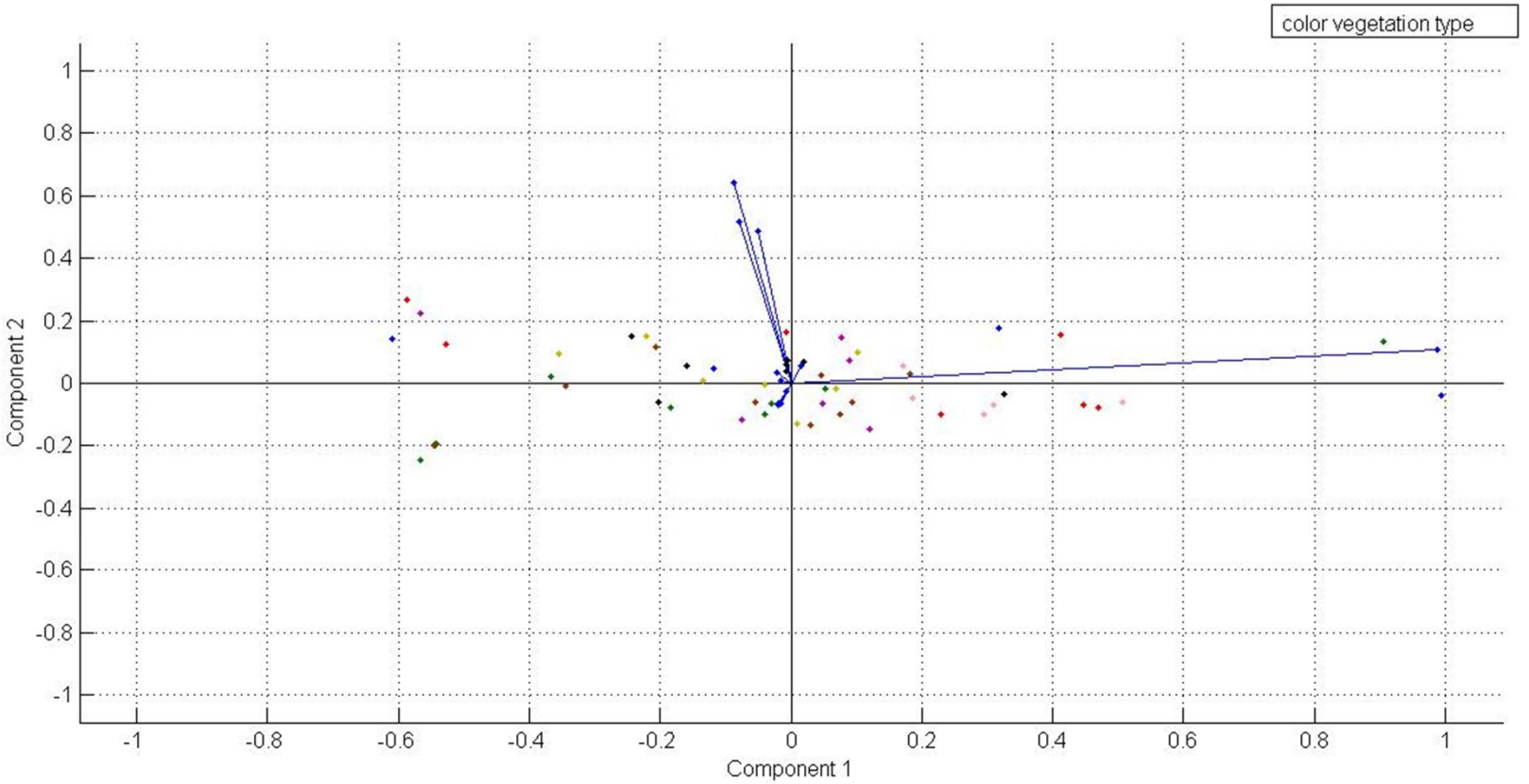
vegetation


Crops and weeds
Fertile grassland
Heath and bog
Infertile grassland
Lowland wooded
Moorland grass mosaics
Tall grass and herb
Upland wooded
Nitrogen change
Carbon content change
5
0
-5

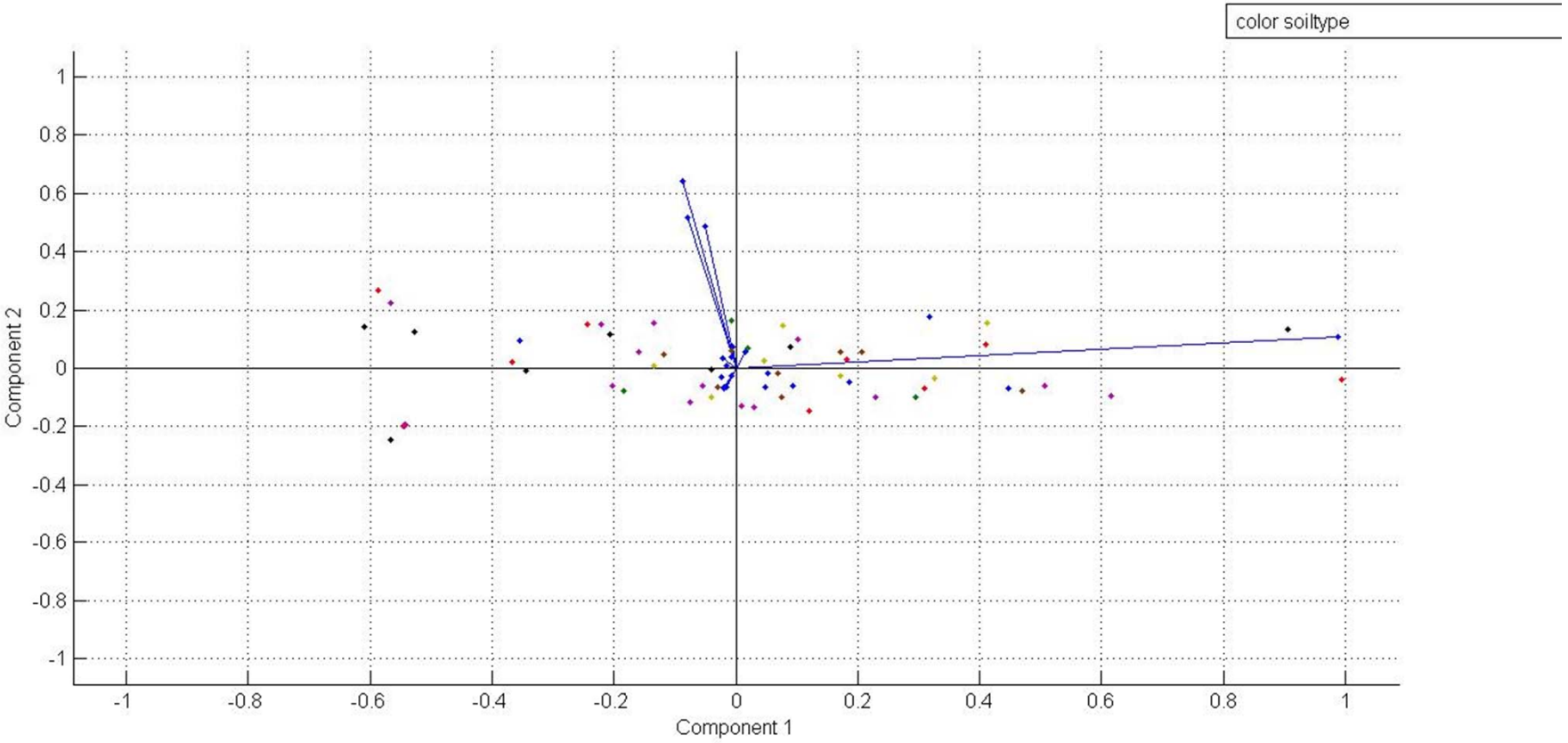
Open Question

- Change in vegetation type
- Linked with my research:
  - Changes over the past century in the seasonality of the precipitation in Sweden in the carbon storage rate and vegetation

PCA by soiltype&vegetationtype



PCA by soiltype&vegetationtype



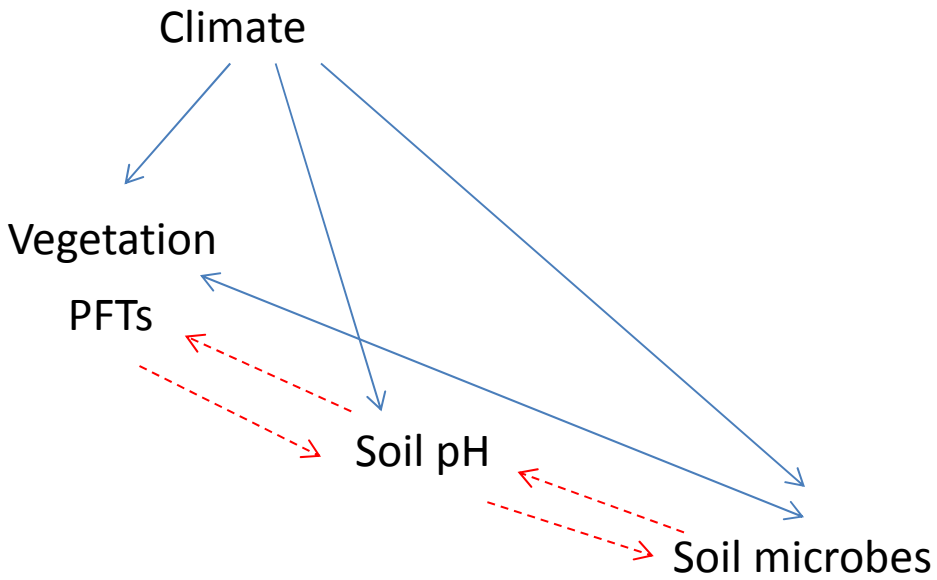
Do translocated experiment tell the truth? Is it necessary to get some idea of the differences between long-term experiment at fix site and translocated experiment? If it is, how to do it?

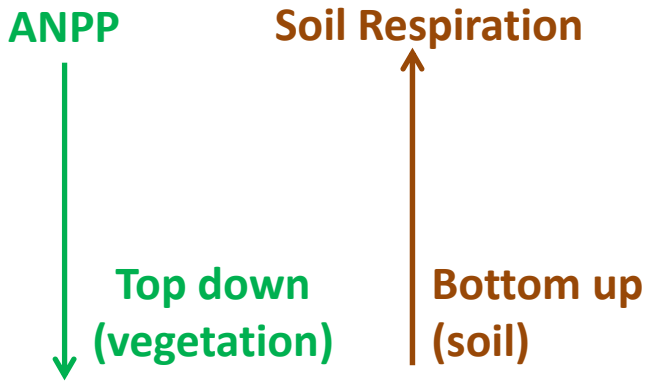
SOC quality, Ågren and Bosatta[30] suggested that decomposition rates should vary less when analysed across environments with different 'native' temperatures than when a soil is perturbed away from its native temperature. Our model makes the opposite prediction (see Methods). Both remain to be tested.

Knorr, W. and Prentice, I. C. and House, J. I. and Holland, E. A.
Long-term sensitivity of soil carbon turnover to warming
Nature,2005

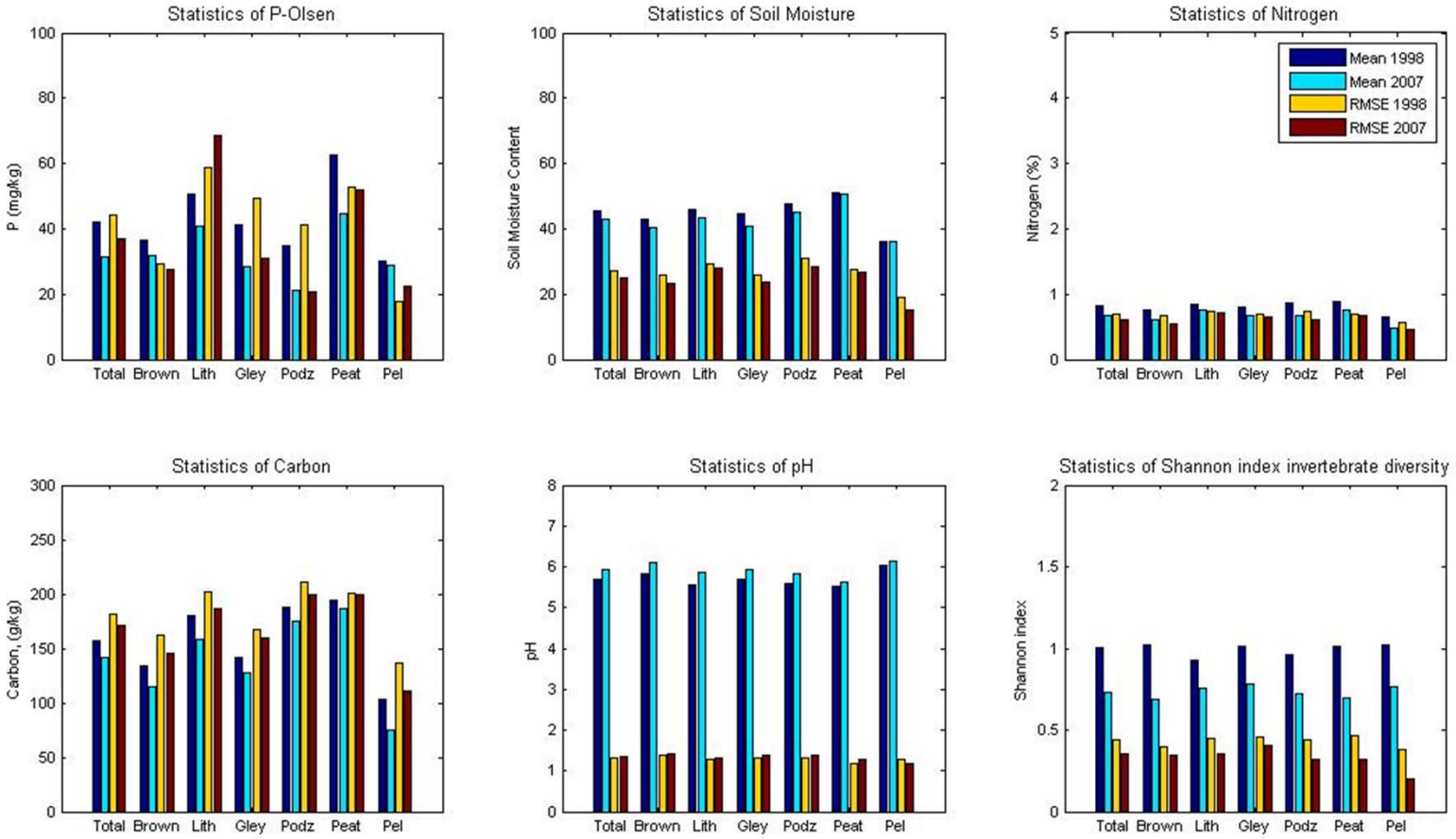
Is there any experiments have been done or some idea about how to do it?

Does pH drive microbial diversity patterns or the other way around?



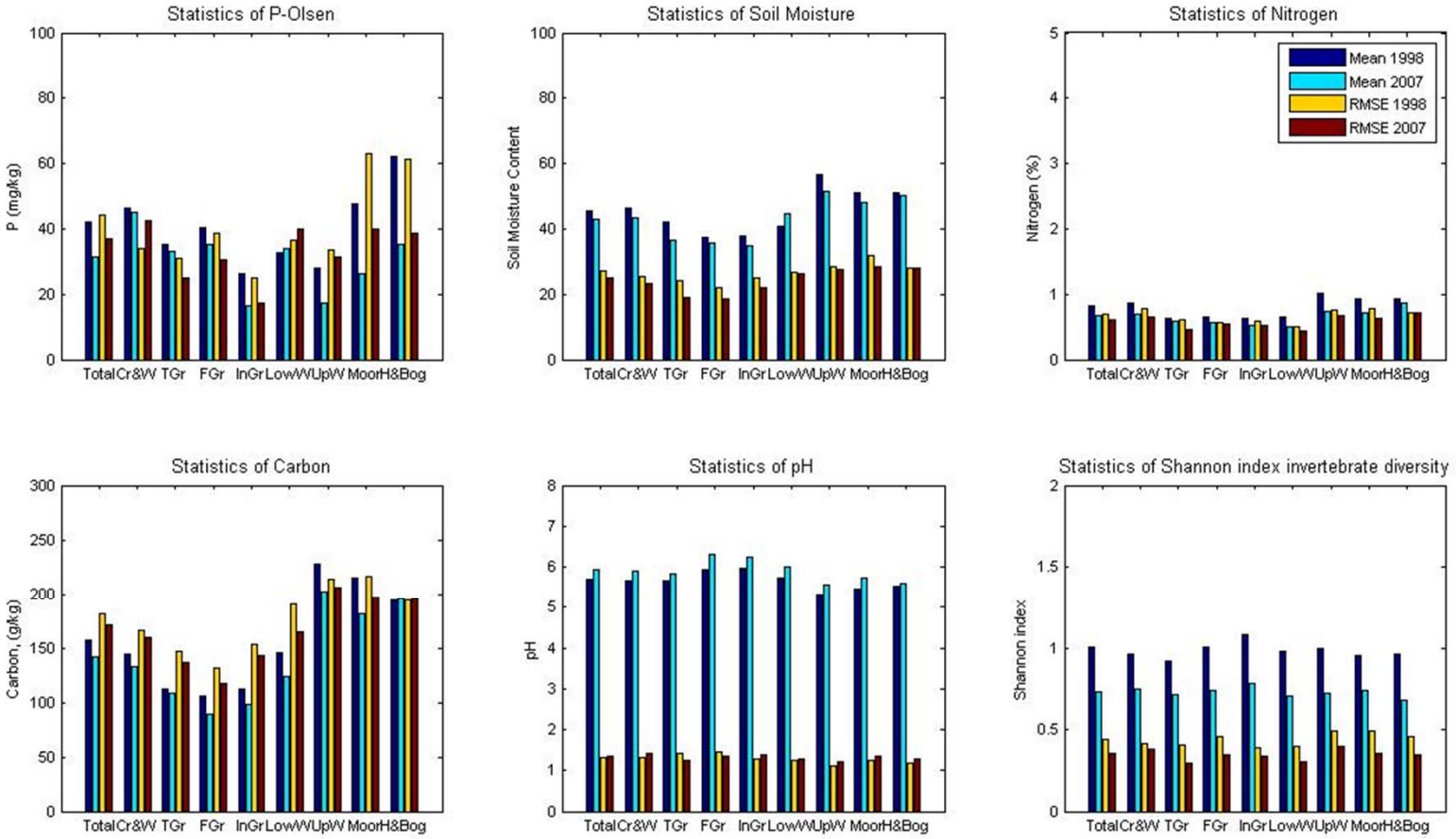


Statistics of P, C,N, pH, Soil Moisture and Shannon index categorised by soil types



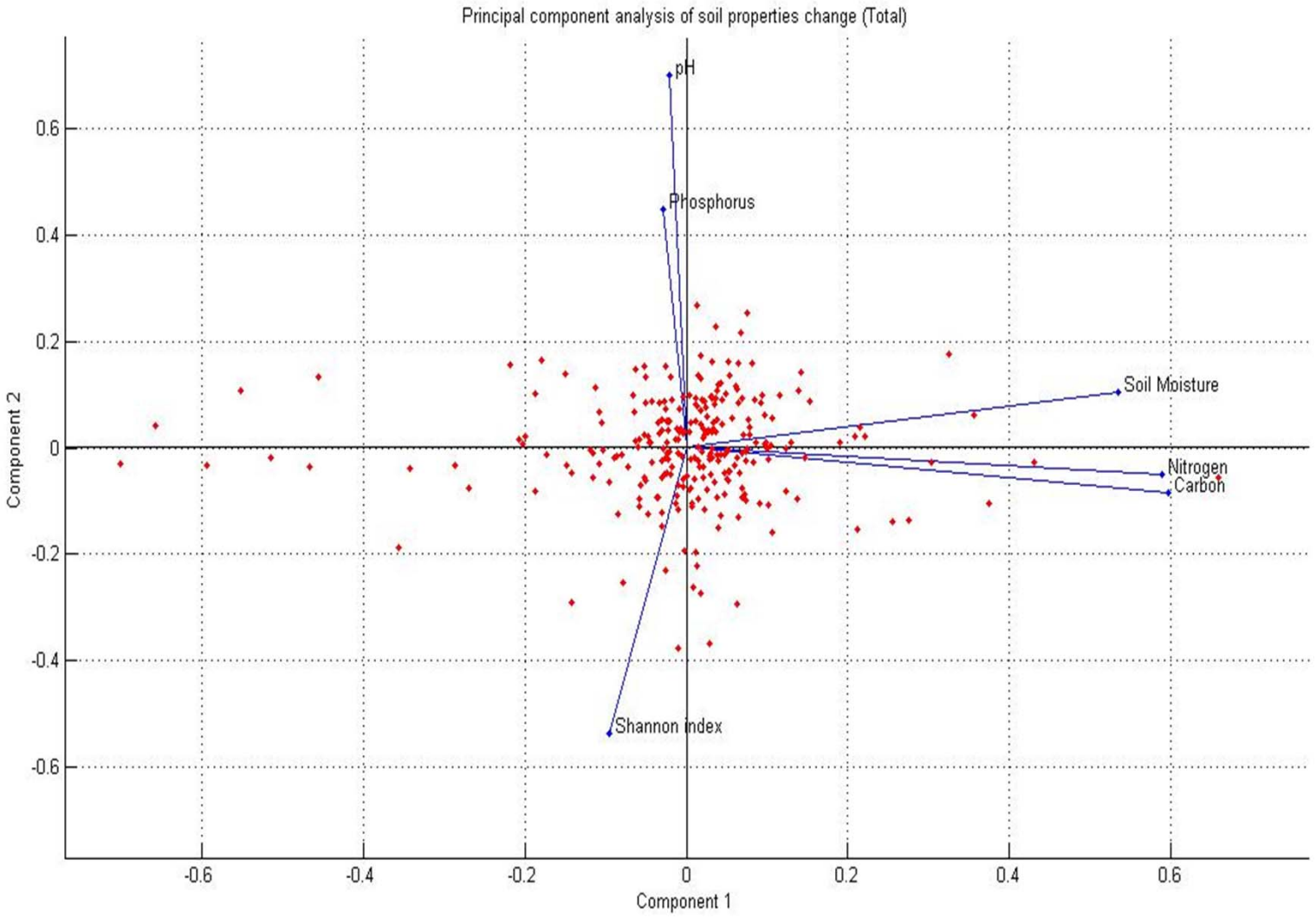
Brown - Brown soils, Lith - Lithomorphic soils, Gley – Gley soils, Podz - Podzolic soils, Peat - Peat soils, Pel – Pelosol soils

Statistics of P, C,N, pH, Soil Moisture and Shannon index categorised by vegetation types



C&W- Crops/weeds , TGr - Tall grassland/herb, FGr – Fertile grass, InGr - Infertile grass , LowW - Lowland wooded , UpW – Upland wooded , Moor - Moorland grass/mosaic, H&Bog - Heath/bog

Principal component analysis of soli properties change



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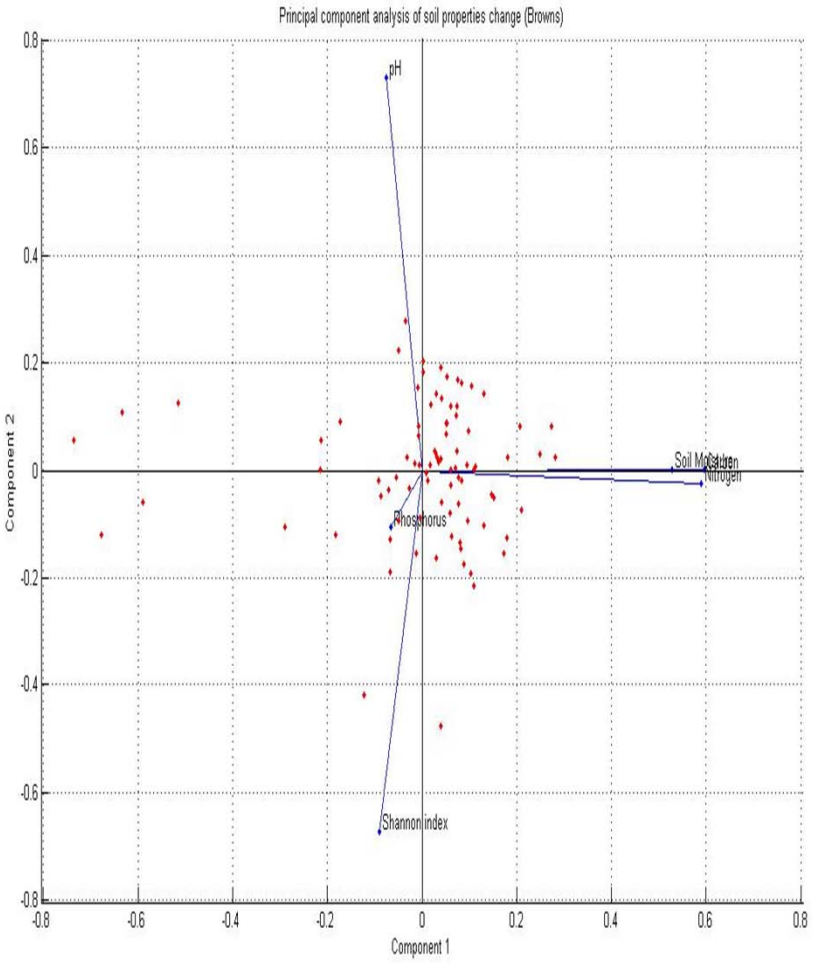

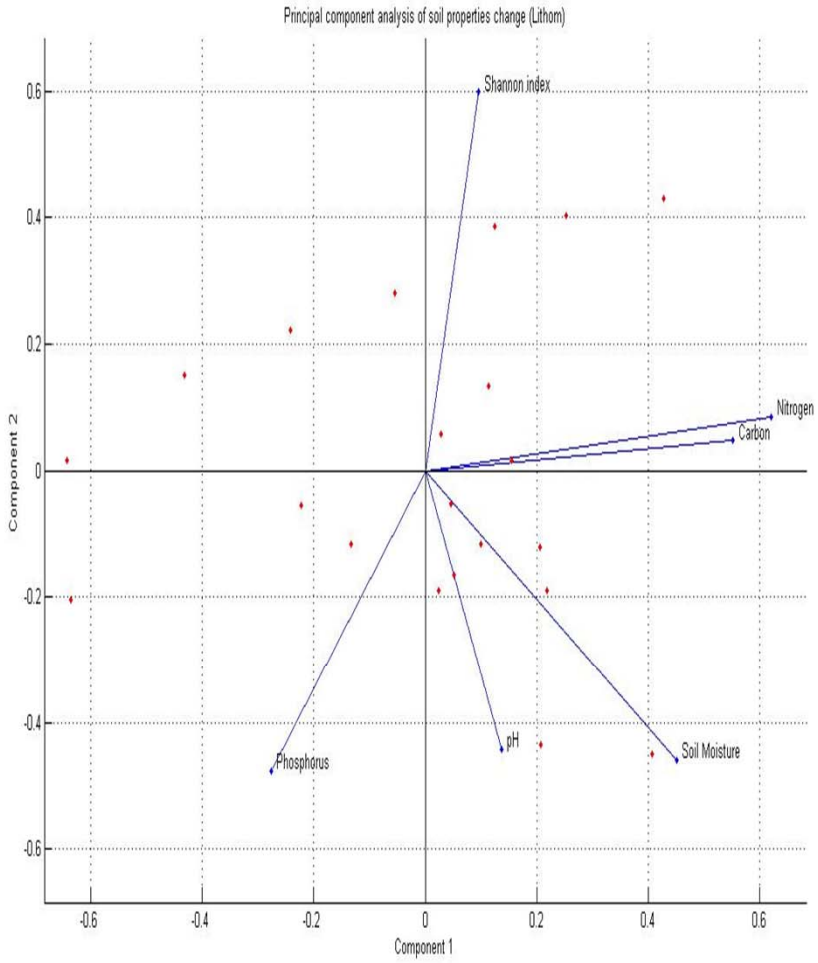

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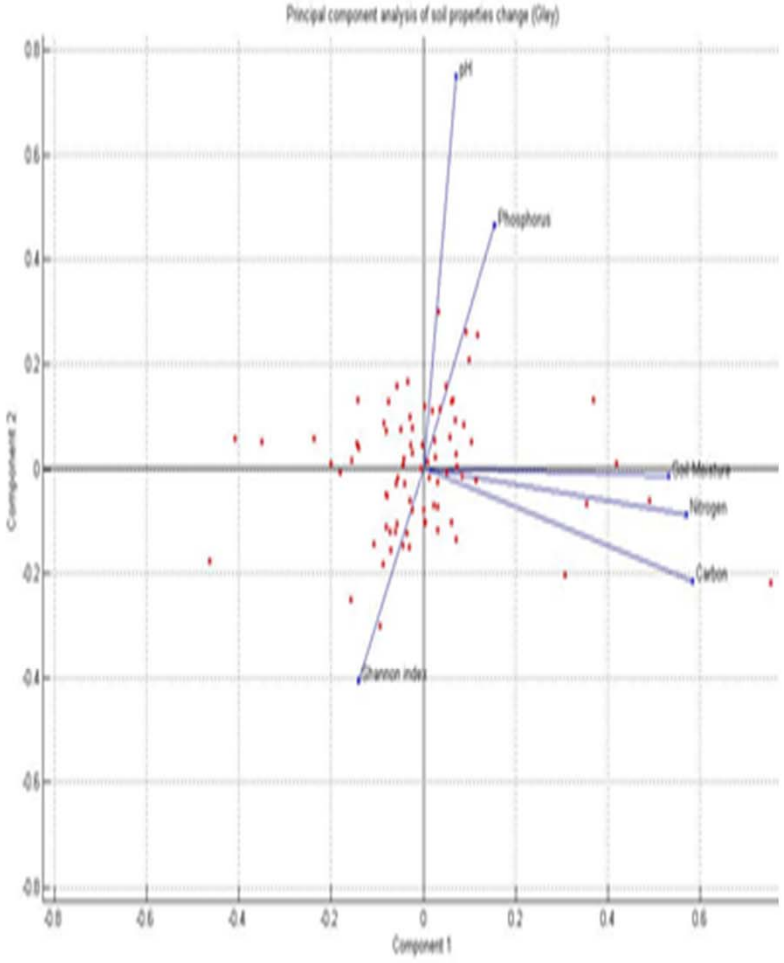

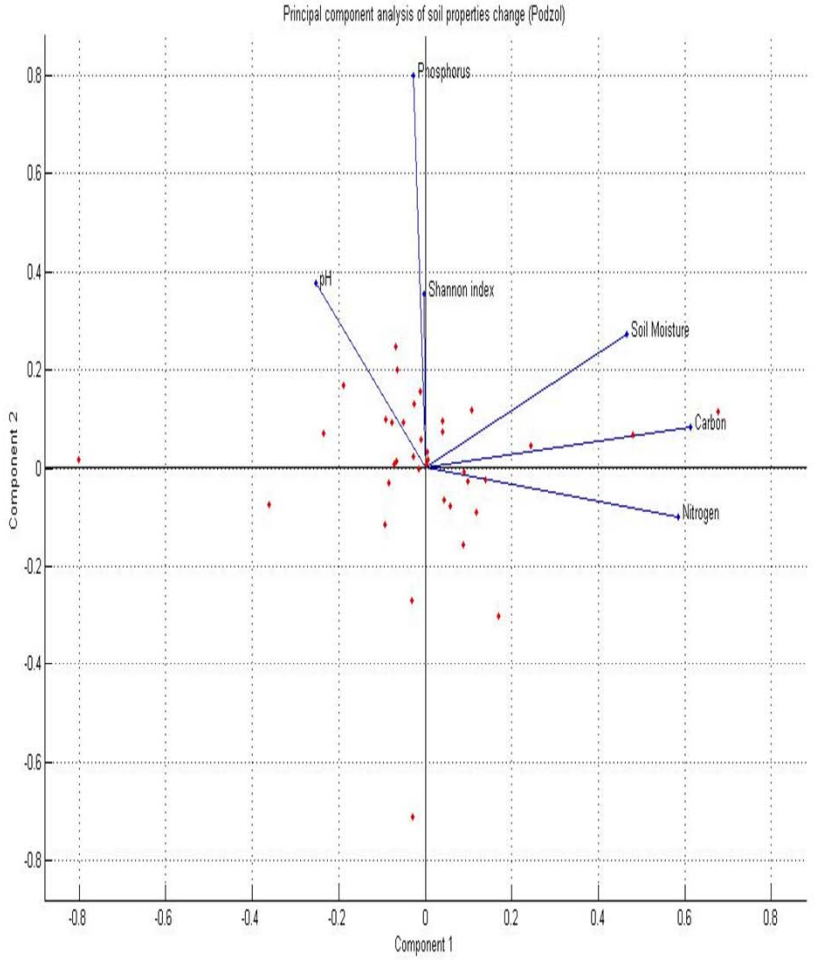

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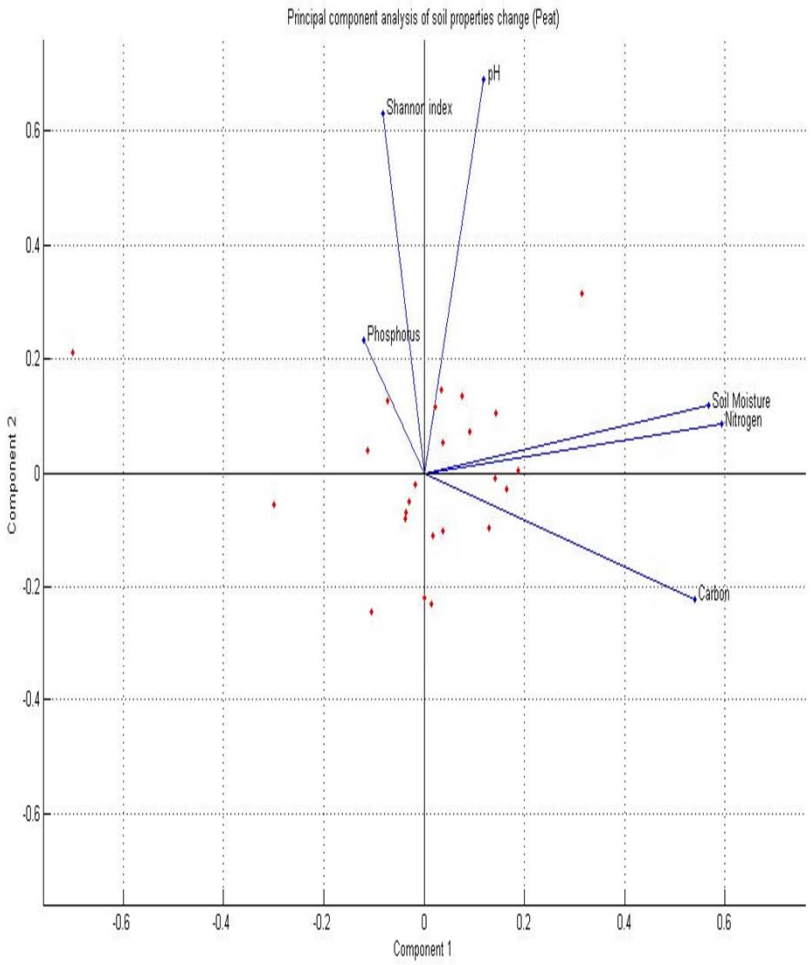
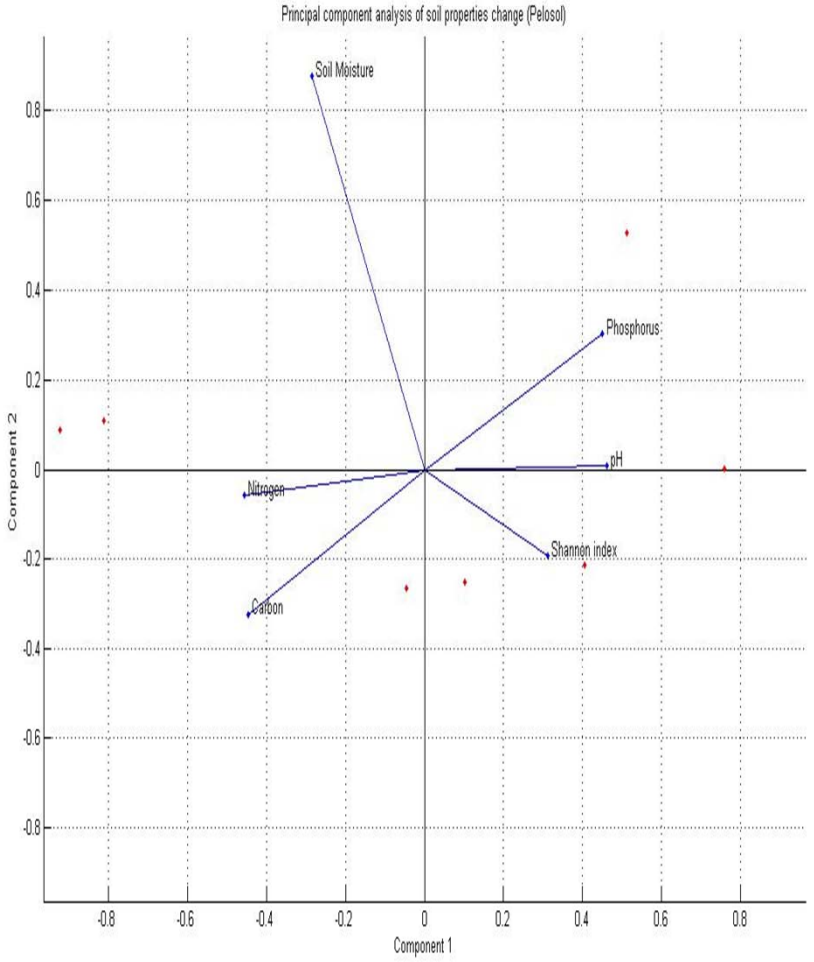
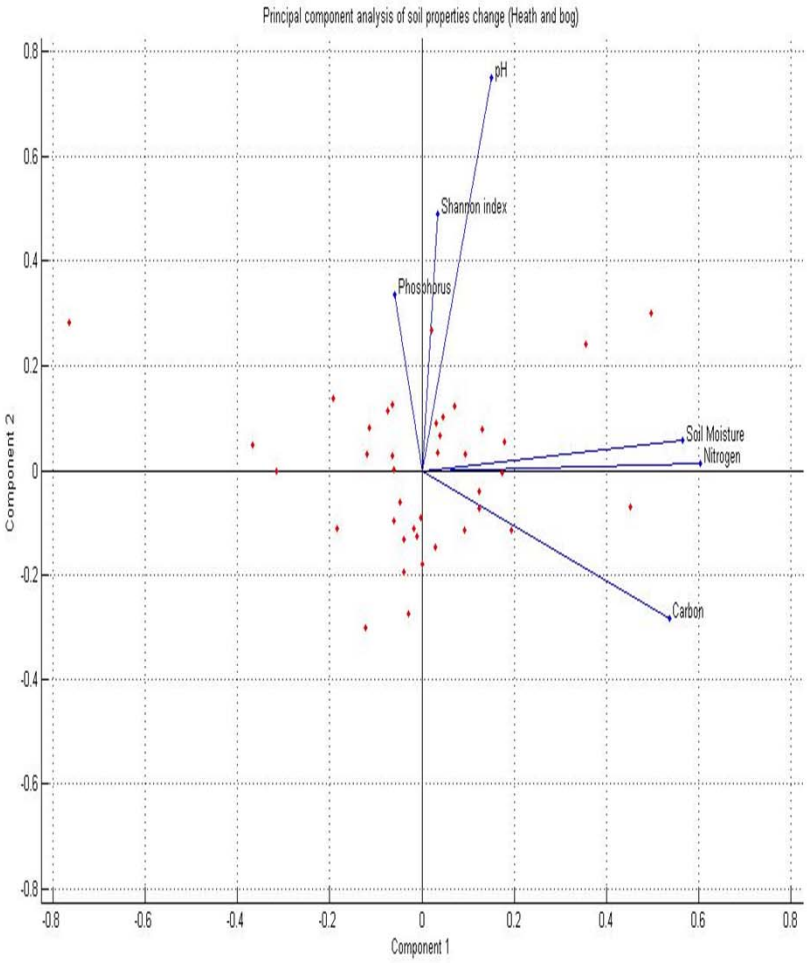
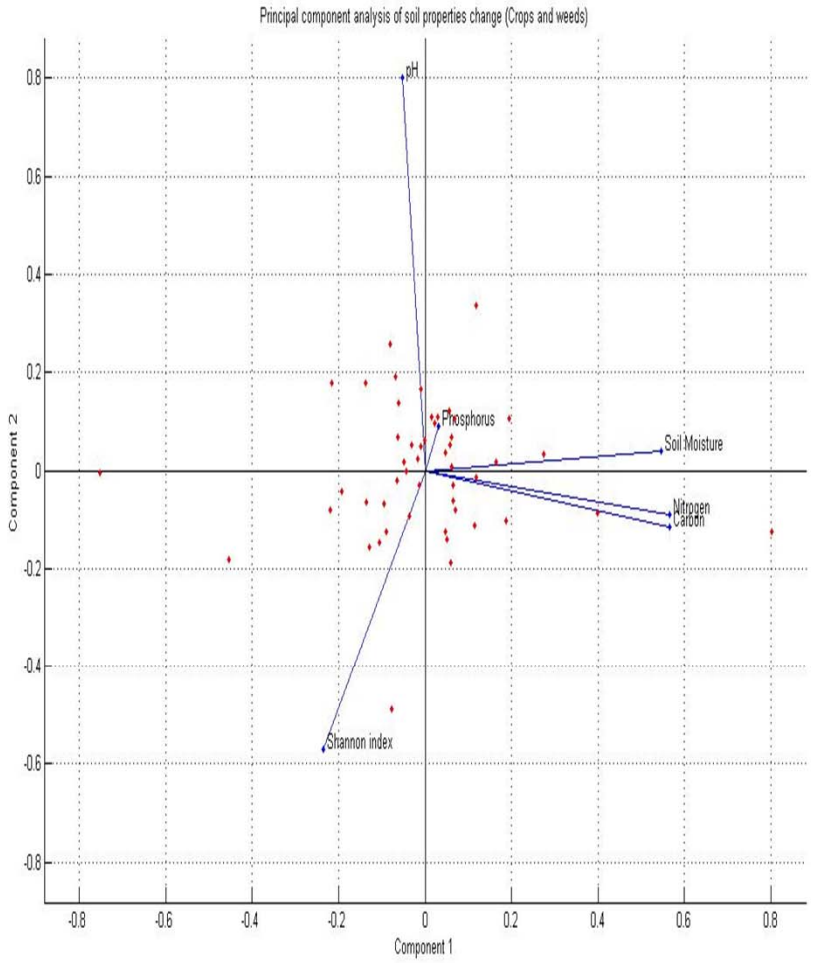




Principal component analysis of soli properties change categorised by vegetation types





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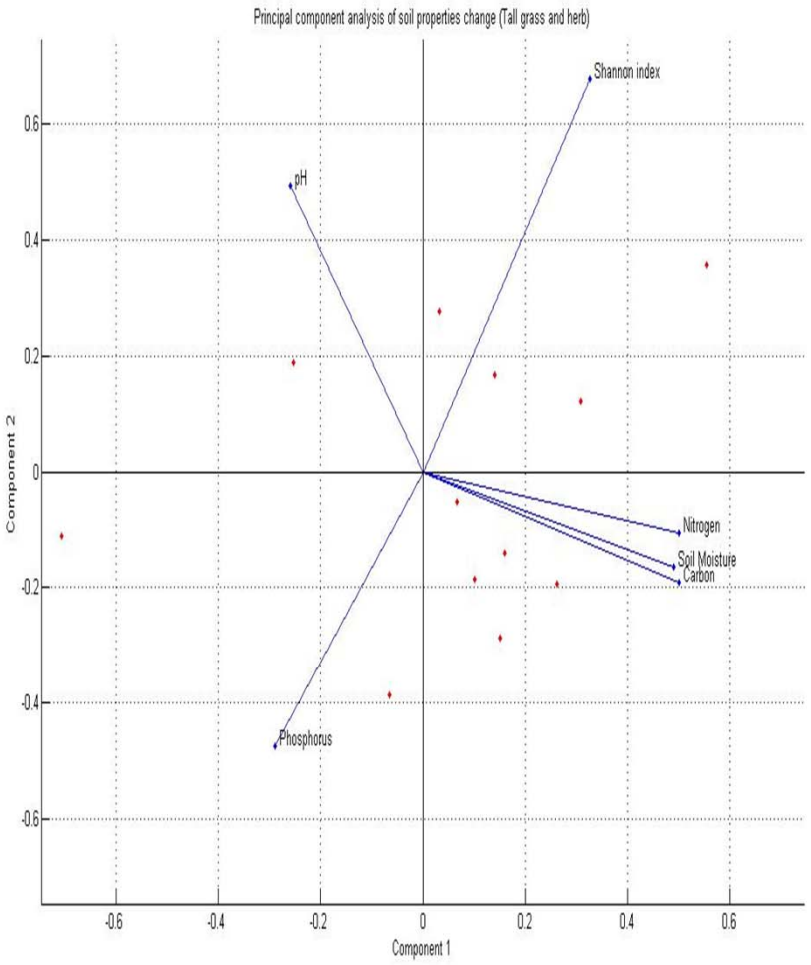

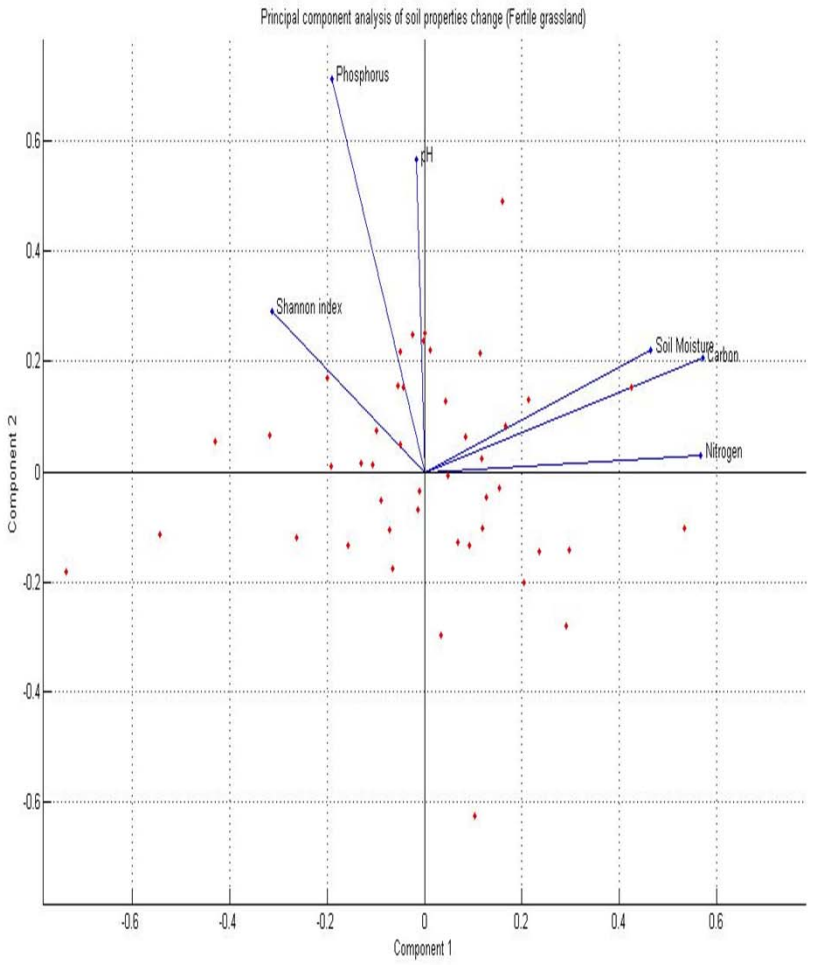

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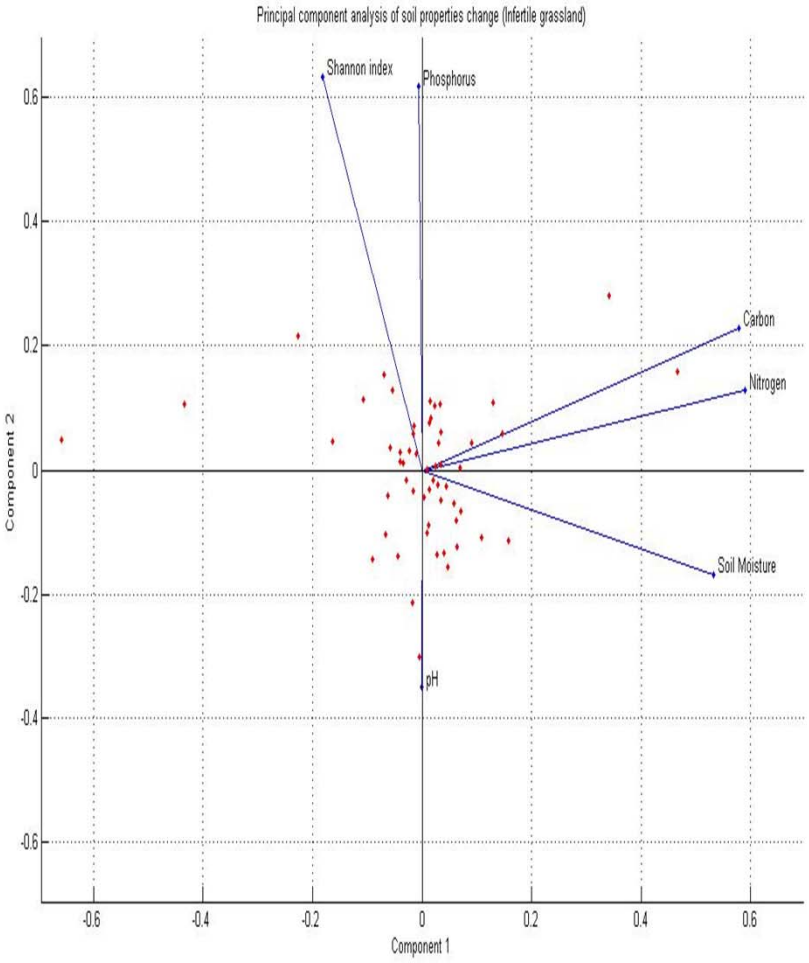

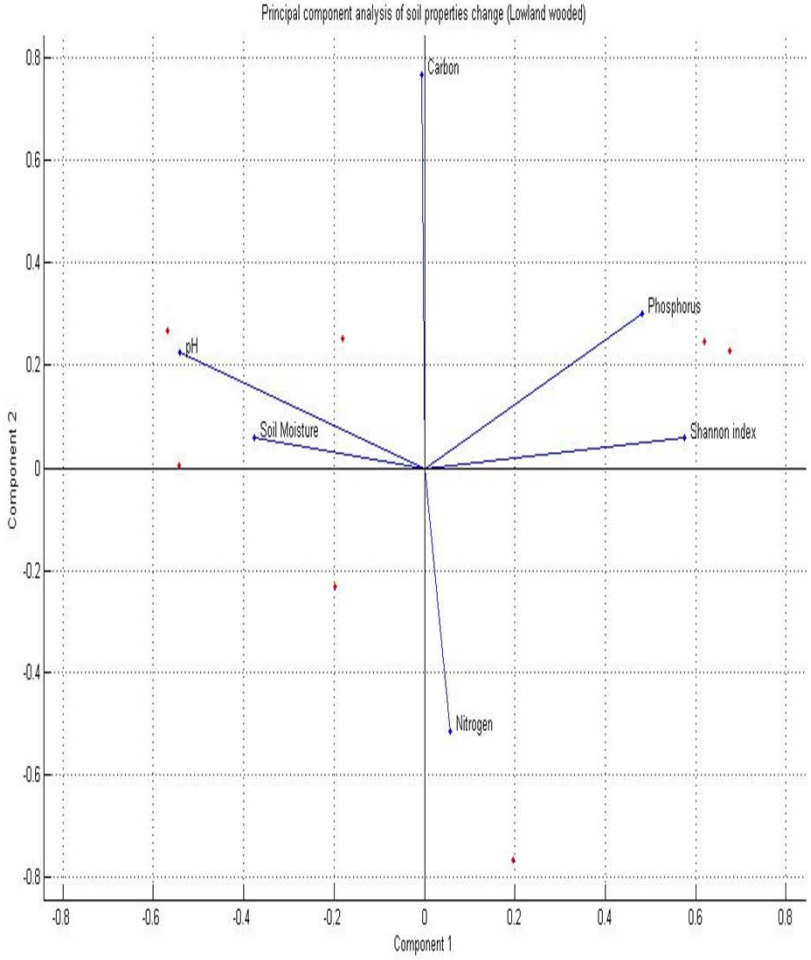

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