

Topography and surface processes in borderline ecotones.



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Problem definition

Changes of vegetation borderlines different landscape areas:

→ Product of climate-, environment- and anthropogenic factors

→ Allow to compare spatial & time related processes

→ How do systems react in 100 years – influence of Global climate and environmental change?

Climate change

Temperature

Percipation

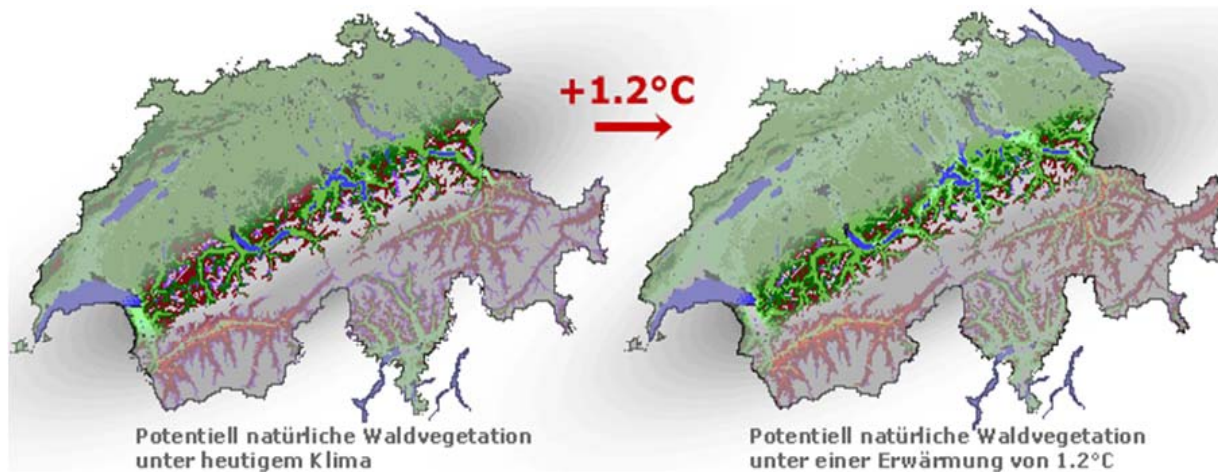
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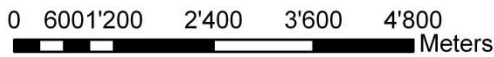
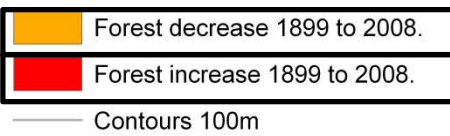
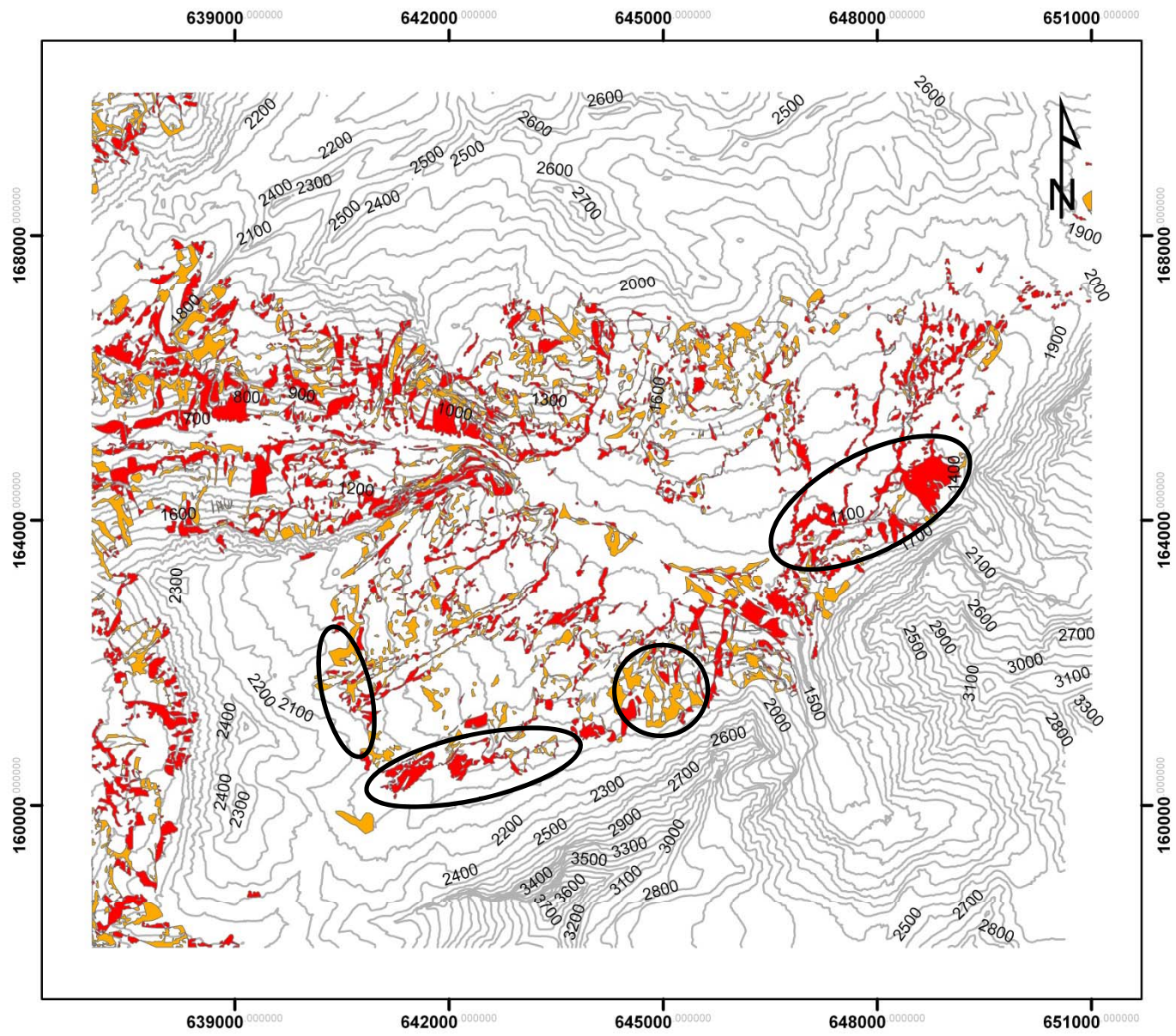
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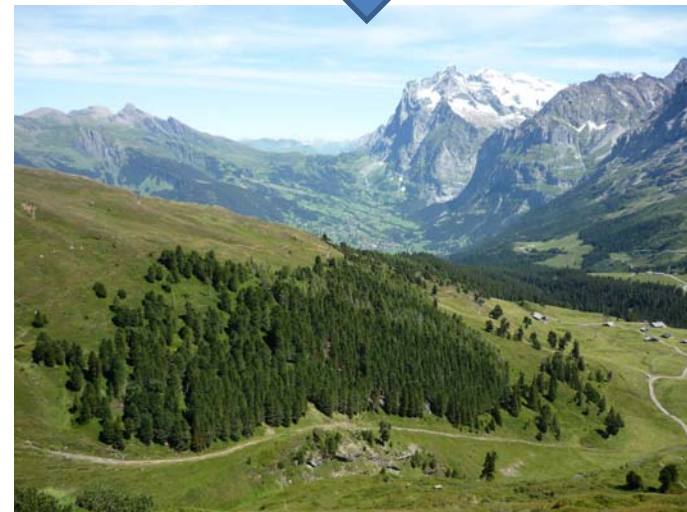
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Landscape processes

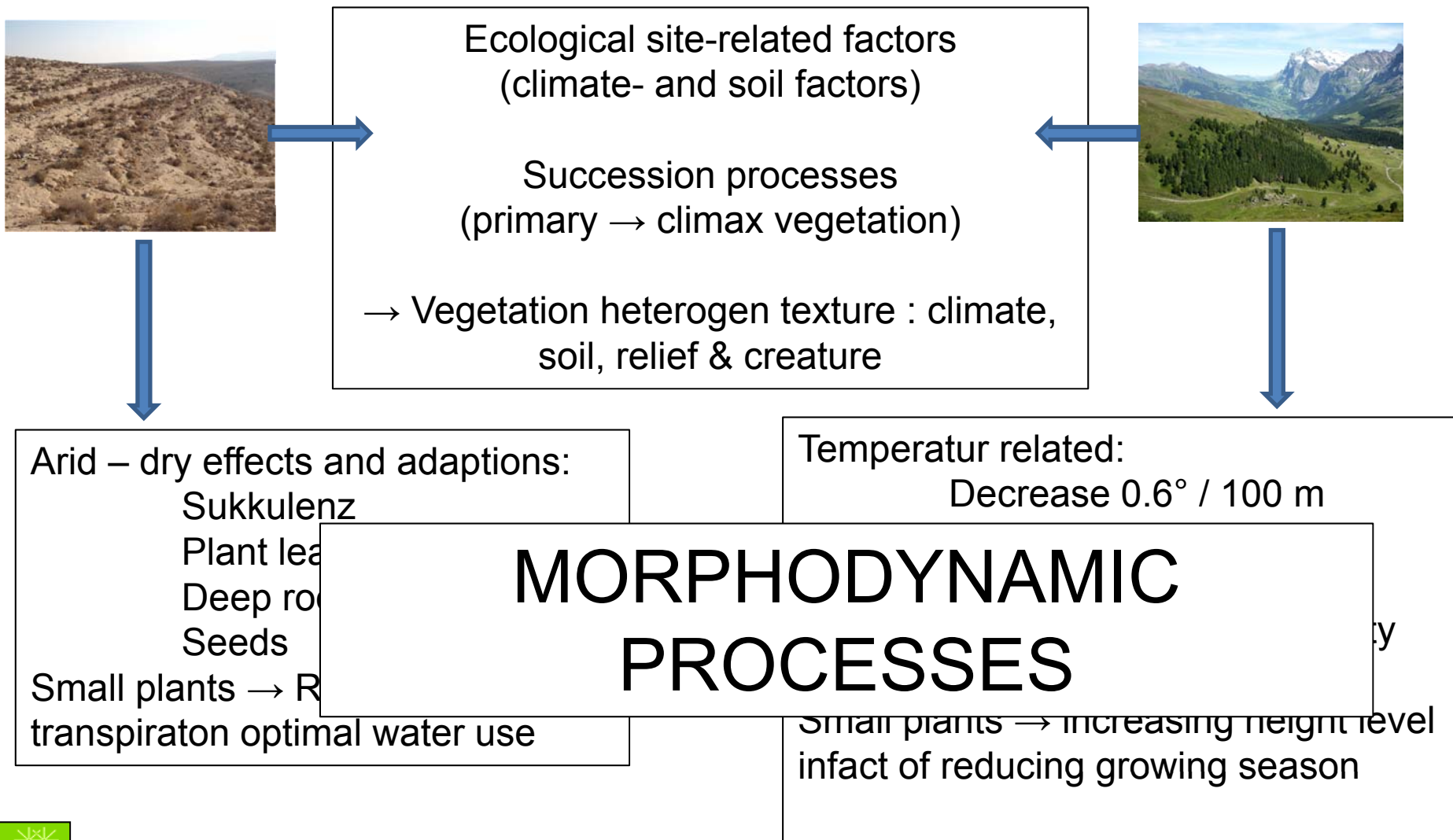




Introduction to Study areas

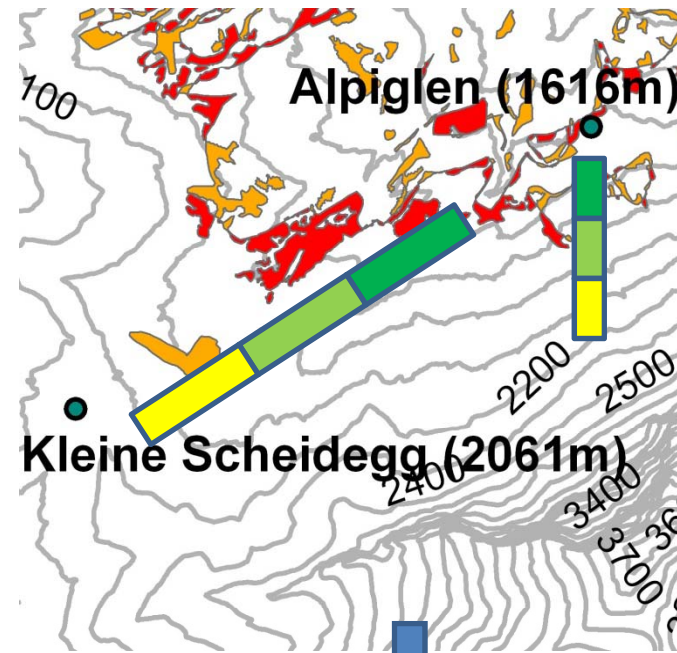
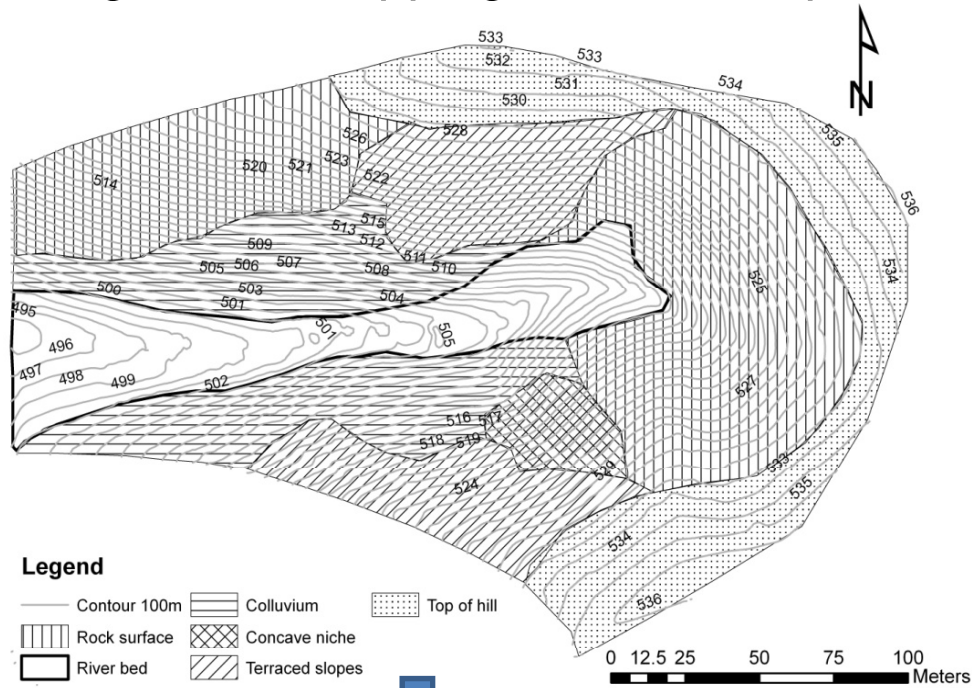


Alpine & arid vegetation

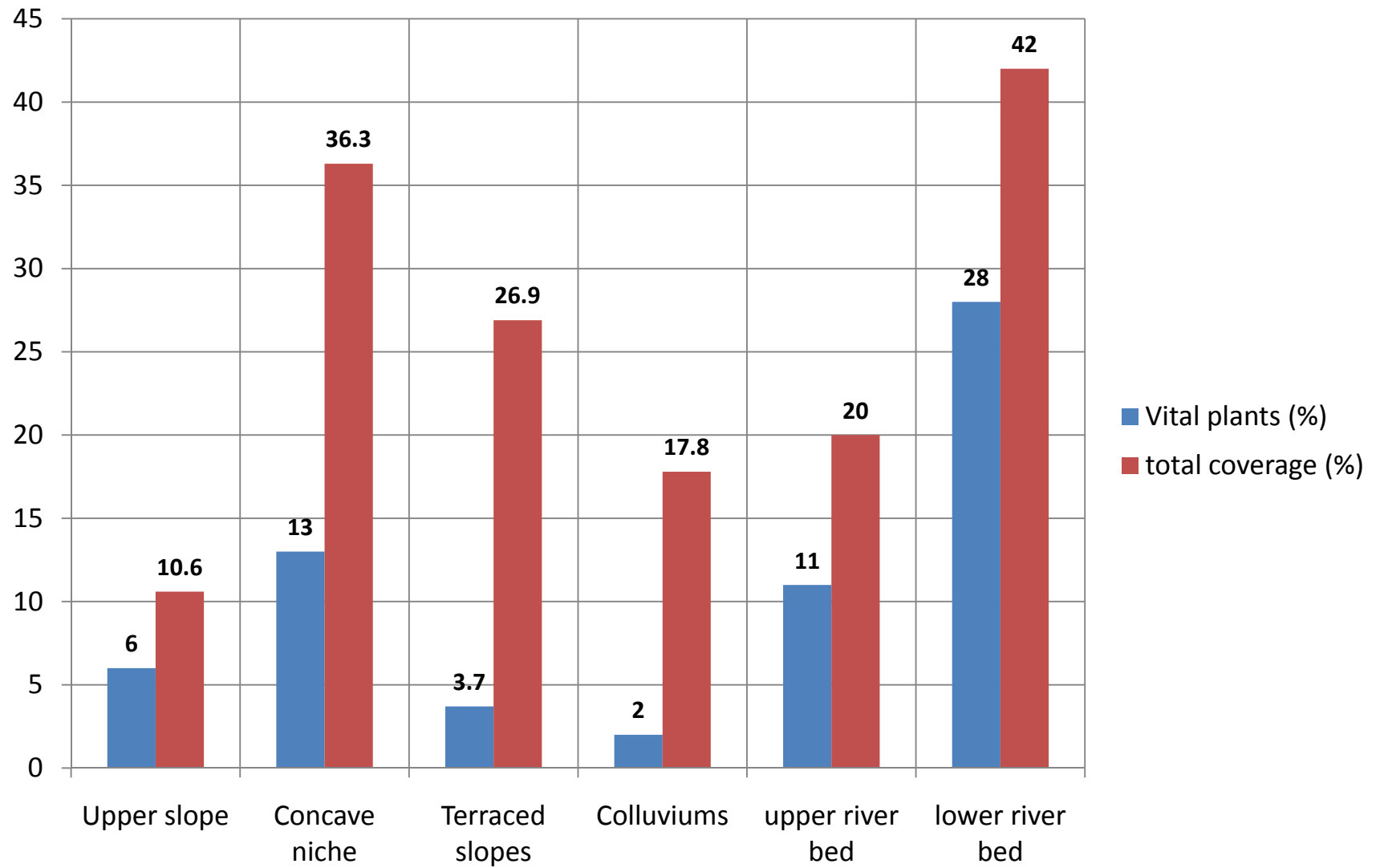


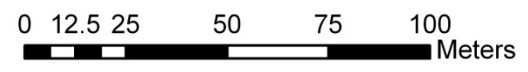
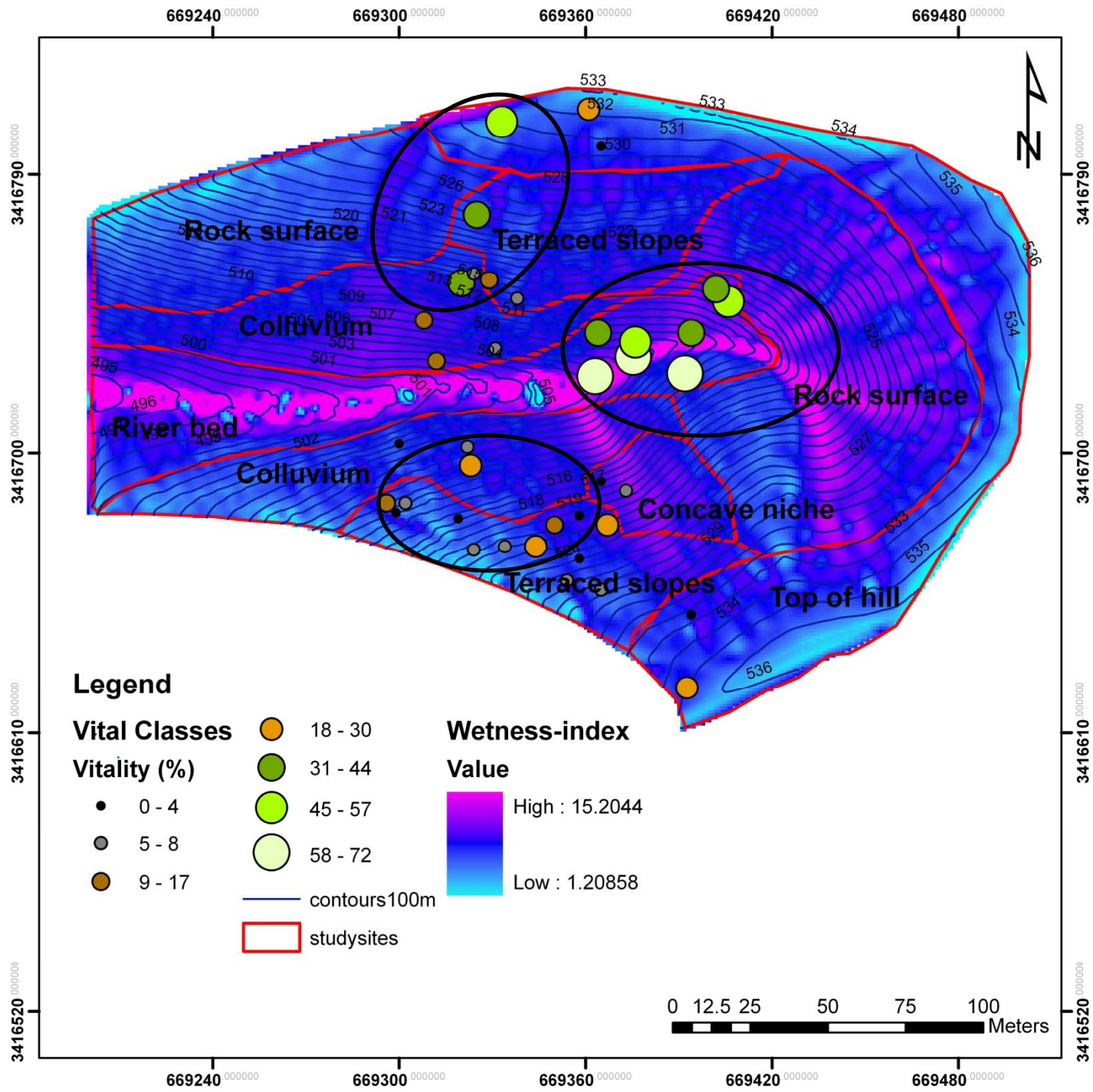
Analyzing methods

Vegetation mapping Braun Blanquet at selected study sites

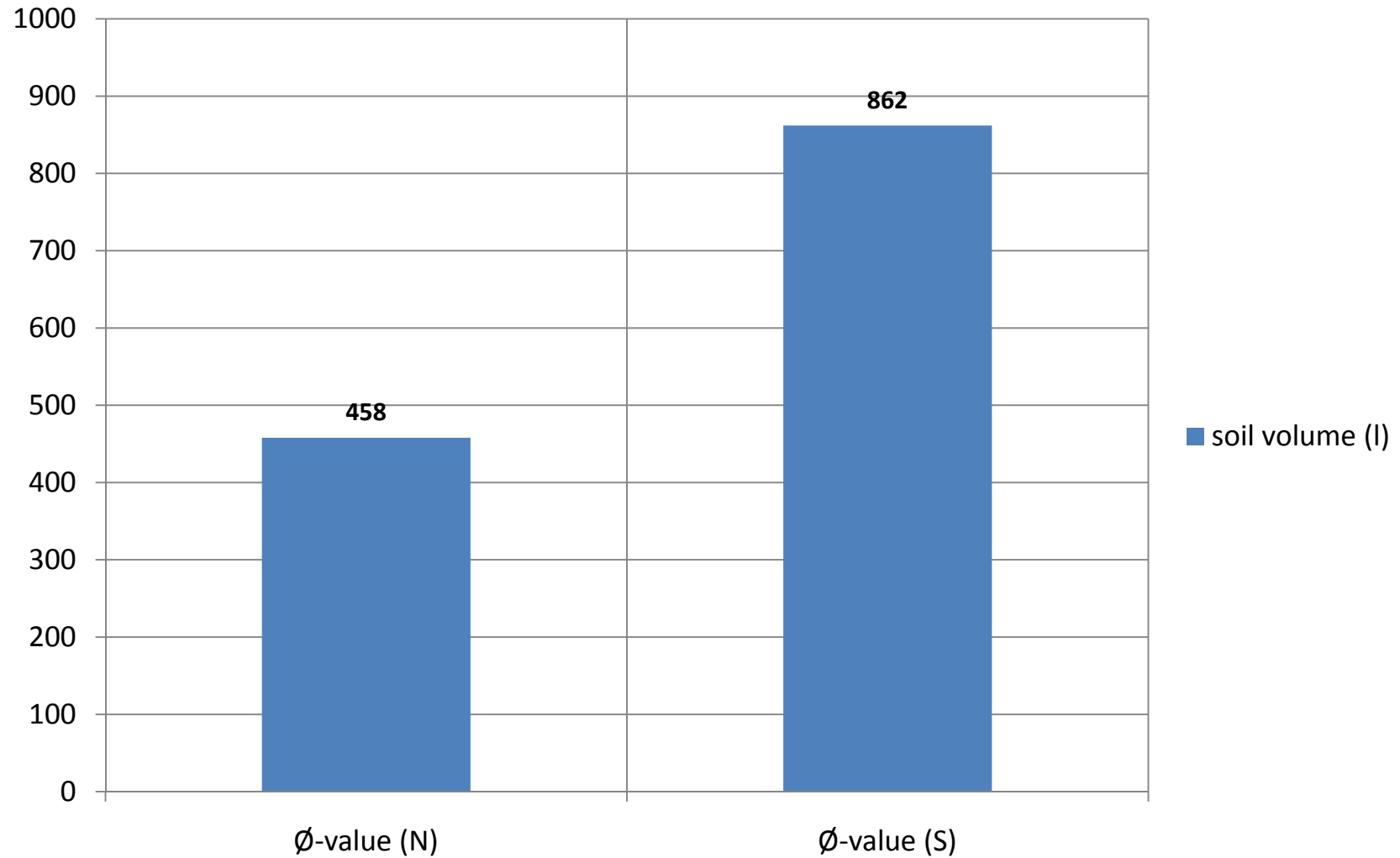


Results Sede Boqer: Plots

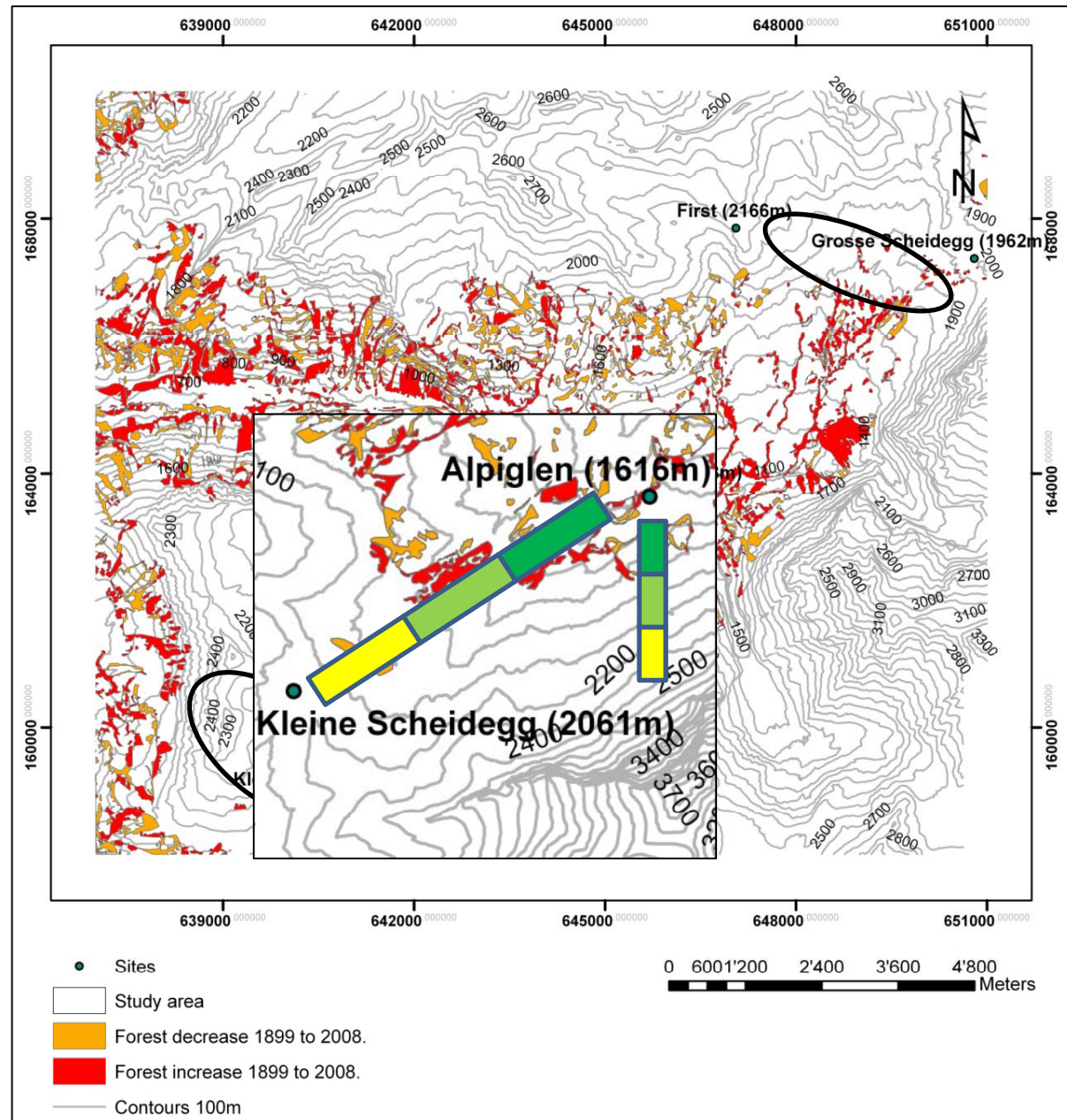




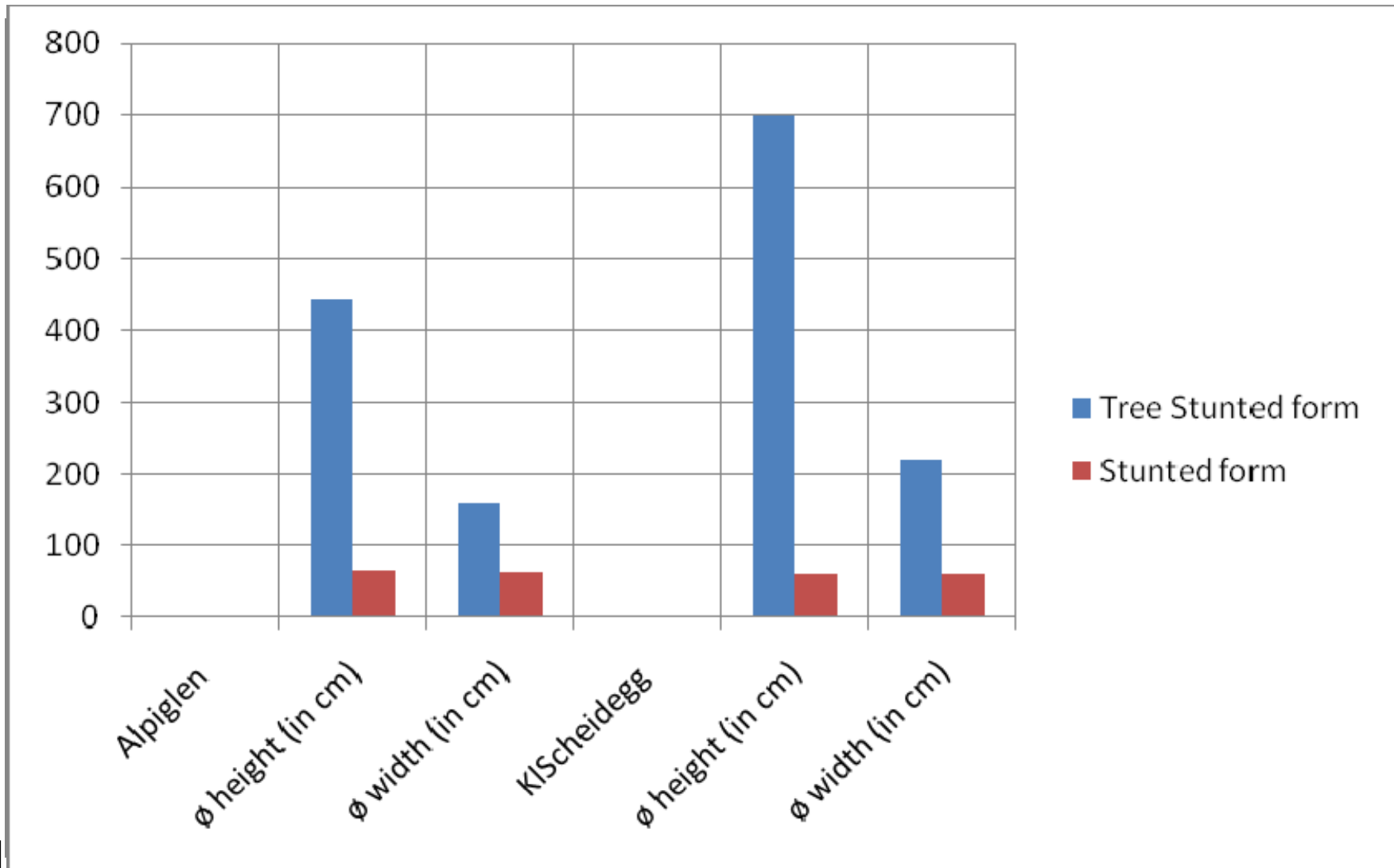
Results Sede Boqer: Micro catchments



Results: Grindelwald

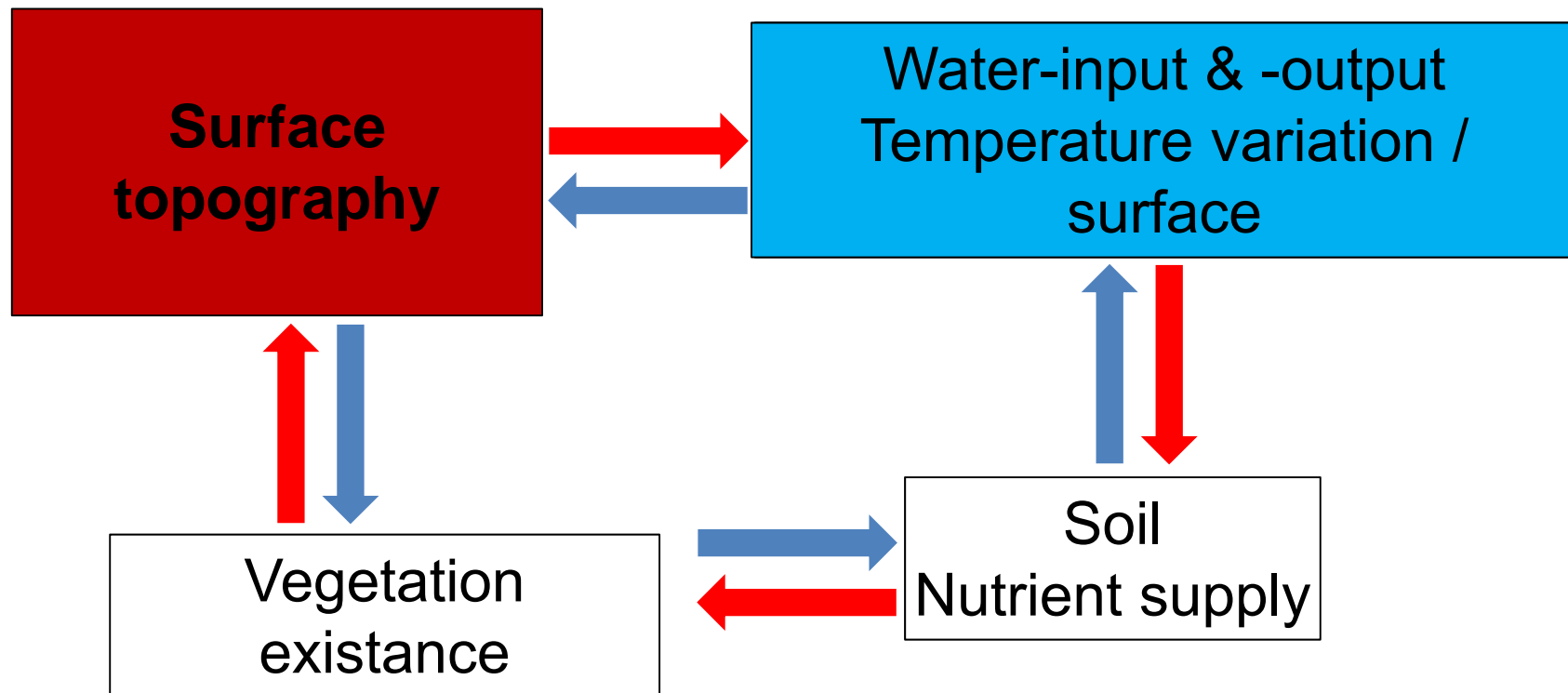


Results: Grindelwald



Discussion

→ Vegetation border lines – Succession processes



Influence of Global Climate change in 100 years → various scenarios:

Scenario 1:
Temperature increase
Increase of precipitation



More vegetated areas
Higher Border lines

Scenario 2:
Temperature increase
Increase of precipitation



More extreme events
Reduction of Border lines

Scenario 3:
Temperature increase
Increase of precipitation



Uncertain direction of
Border line development

Conclusion & outlook

Simple System: linear reaction of border lines to climate change

BUT most landscape systems: complex reaction due to

Change in surface processes

→ dependent on surface properties

Do border lines represent spatial patterns of surface processes that change in response to climate change?



Thank you for your attention!

