Innovative Ansätze zum Wassermanagement in der Landwirtschaft

Potentiale von Agroforst und Keyline Design

Landwirtschaftstag 2022 im Naturpark Stechlin - Ruppiner Land

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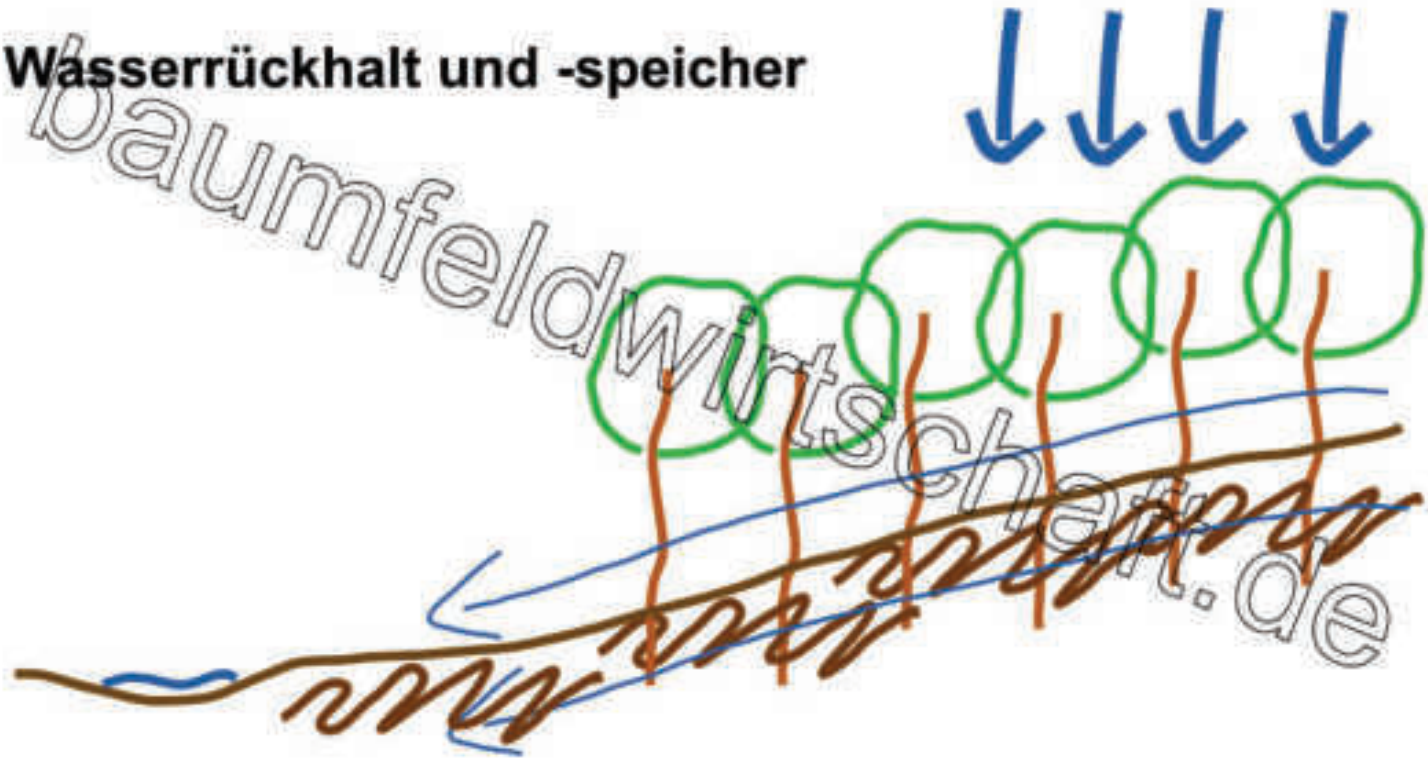


Welche Landschaft bietet

Hochwasserschutz

Dürreschutz

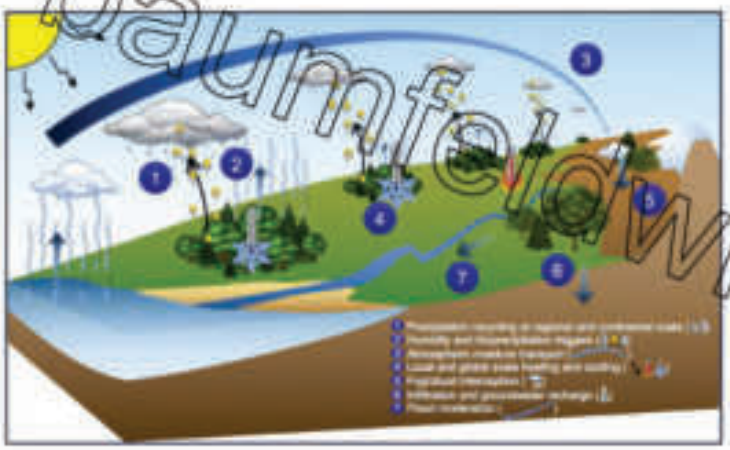
Bodenschutz

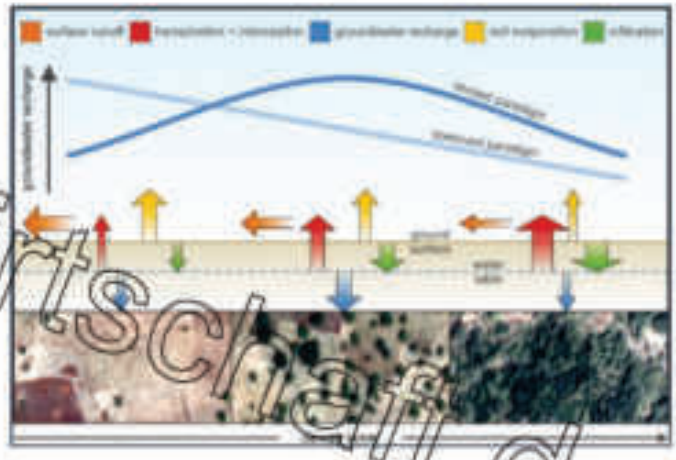
Gewässerschutz

Klimaschutz

+ Produktivität?

Wolken, Regen und Kühlung…





Gehölzlandschaften tragen regional und kontinental zur Wolkenbildung bei.
Lichte Gehölzstrukturen maximieren die Grundwasserneubildung[19]

Ökologisches Modell:
„halboffene Wald-Weide-Landschaft“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Bäume in der Landwirtschaft

speichern 130 Gt CO_2

x3 = +260 Gt

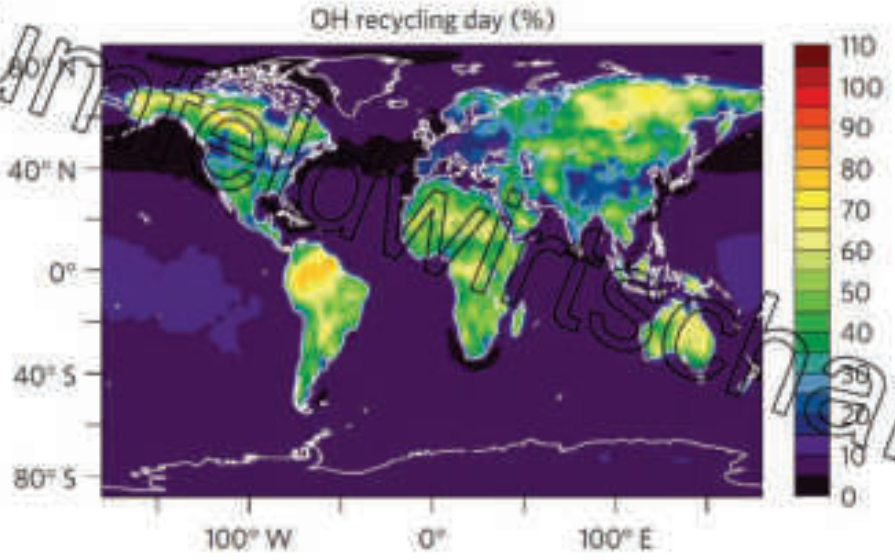
x10 = +1.200 Gt

x100 = +12.000 Gt

C-Speicherung im Boden x4

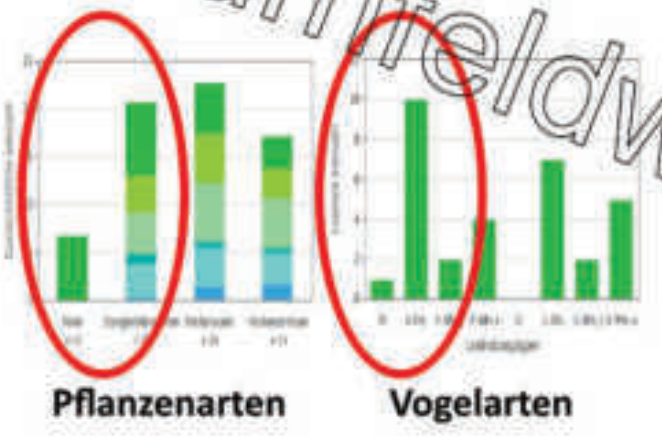
(7;8)

Isopren und THG-Abbau



Taraborrelli, D., M. G. Lawrence, J. N. Crowley, T. J. Dillon, S. Gromov, C. B. M. Groß, L. Vereecken, and J. Lelieveld. 'Hydroxyl Radical Buffered by Isoprene Oxidation over Tropical Forests'. Nature Geoscience 5, no. 3 (March 2012): 190–93. https://doi.org/10.1038/ngeo1405.

Biodiversität in Agroforstsystemen

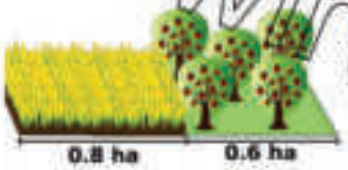


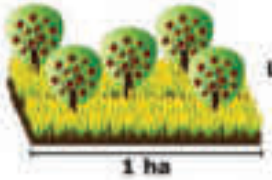
Quelle: (17)

Produktivität – Beispiele aus Brandenburg:

LER = 2,0 bis 2,9 (13)

Steigerung Getreideertrag 16% (18)





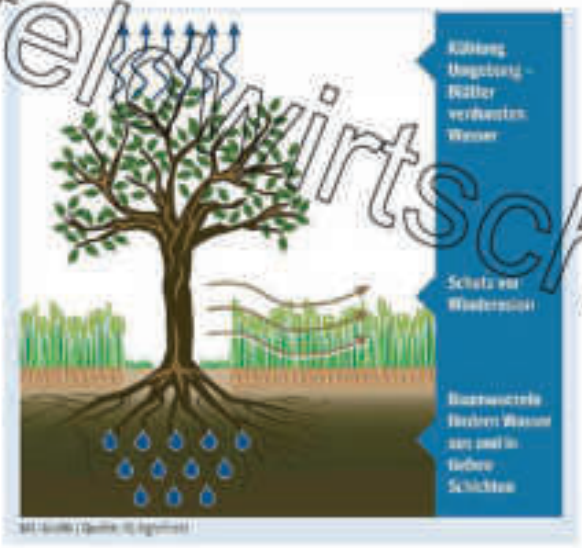
$$LER = \frac{4t/ha}{5t/ha} + \frac{9t/ha}{15t/ha}$$

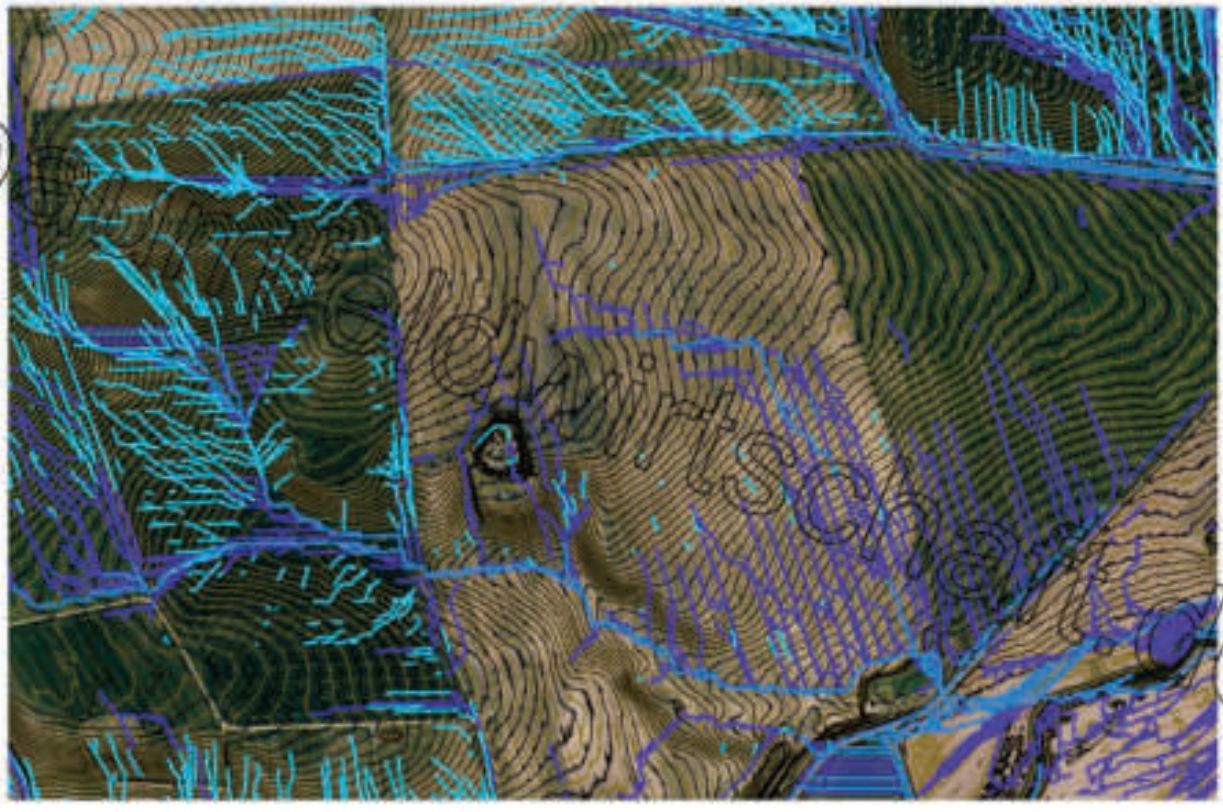
$$= 0.8 + 0.6$$

$$= 1.4$$

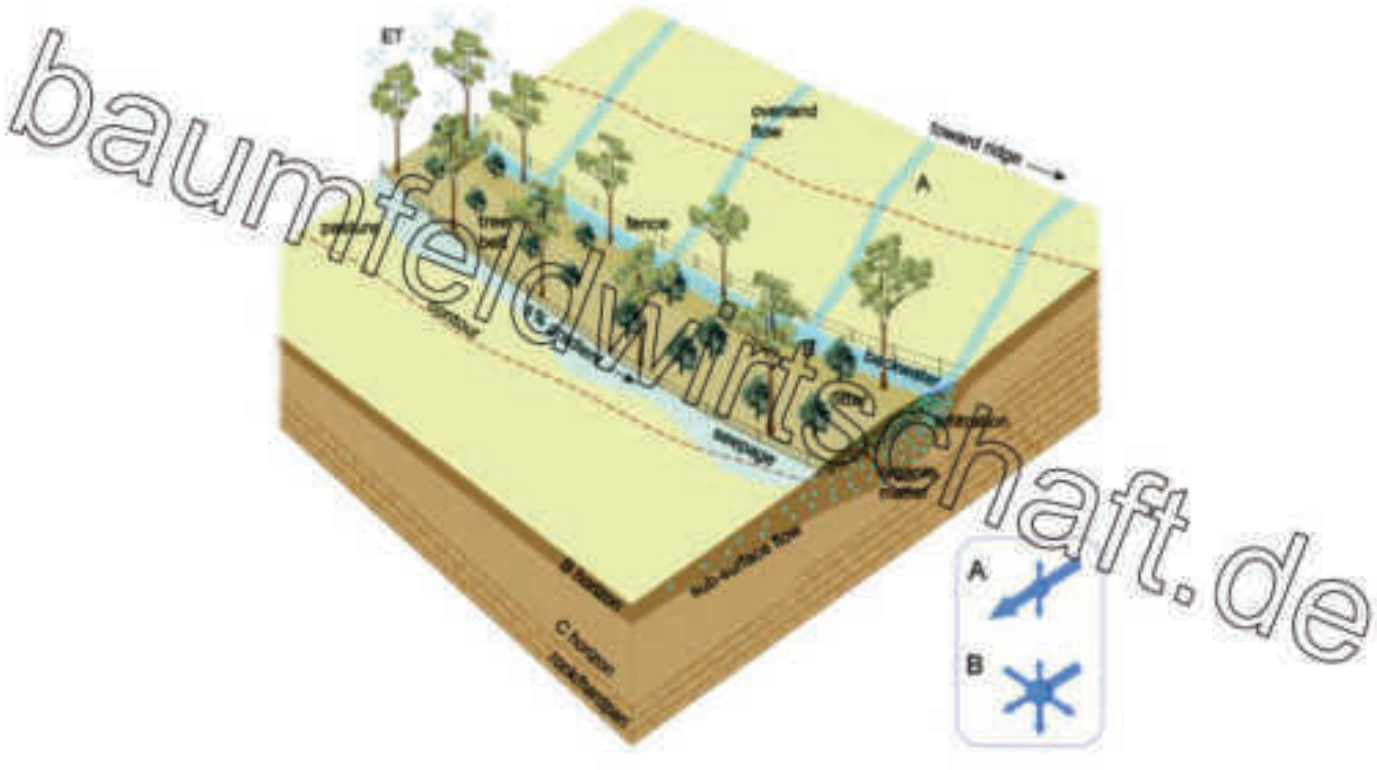
Wasserrückhalt:

Verminderter Verdunstungsstress(18)





Keyline-Strukturen:
Mehrwert für Hochwasser- und Dürreschutz

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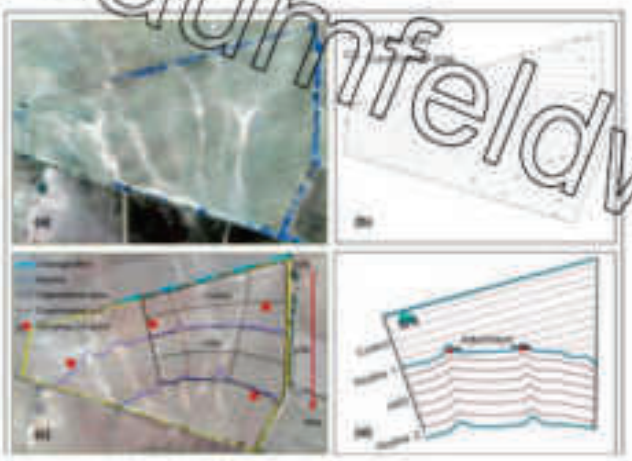
Erosionsschutz mit Keyline-Strukturen



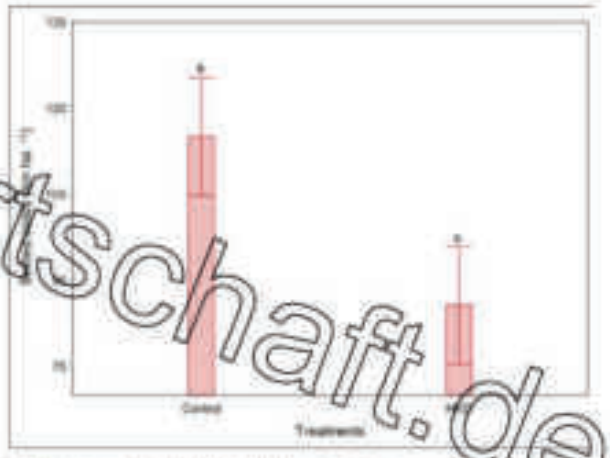
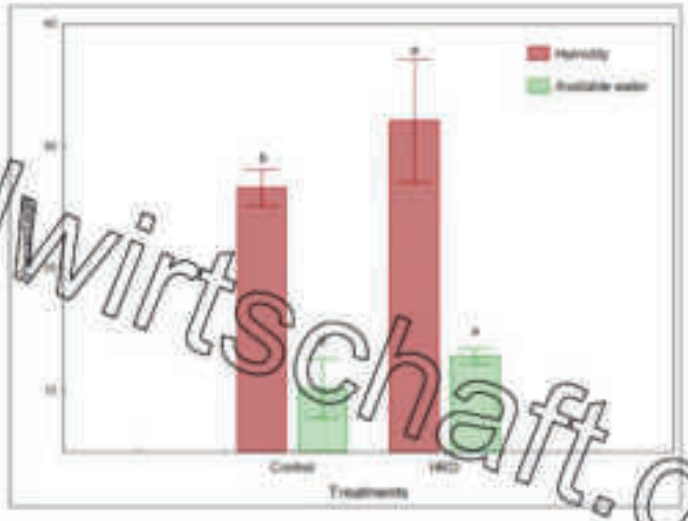


Figure 6. Average of soil eroded in each treatment (n = 10).

Quelle: Ponce-Rodriguez et

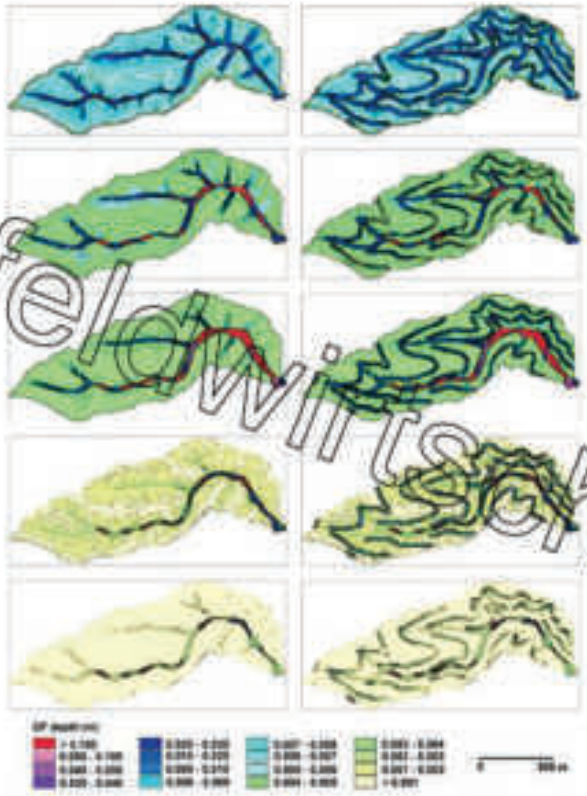
Dürrevorbeugung mit Keyline-Strukturen



Quelle: Ponce-Rodriguez et

Keyline Design:

Zusätzlicher Nutzen für den Wasserrückhalt



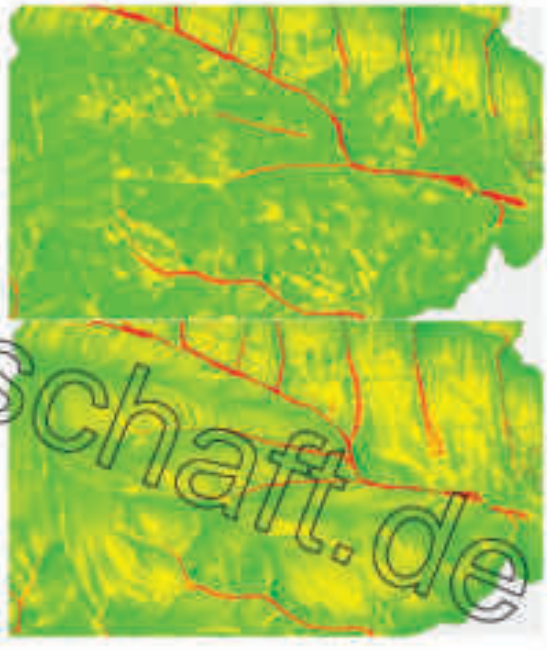
(10)

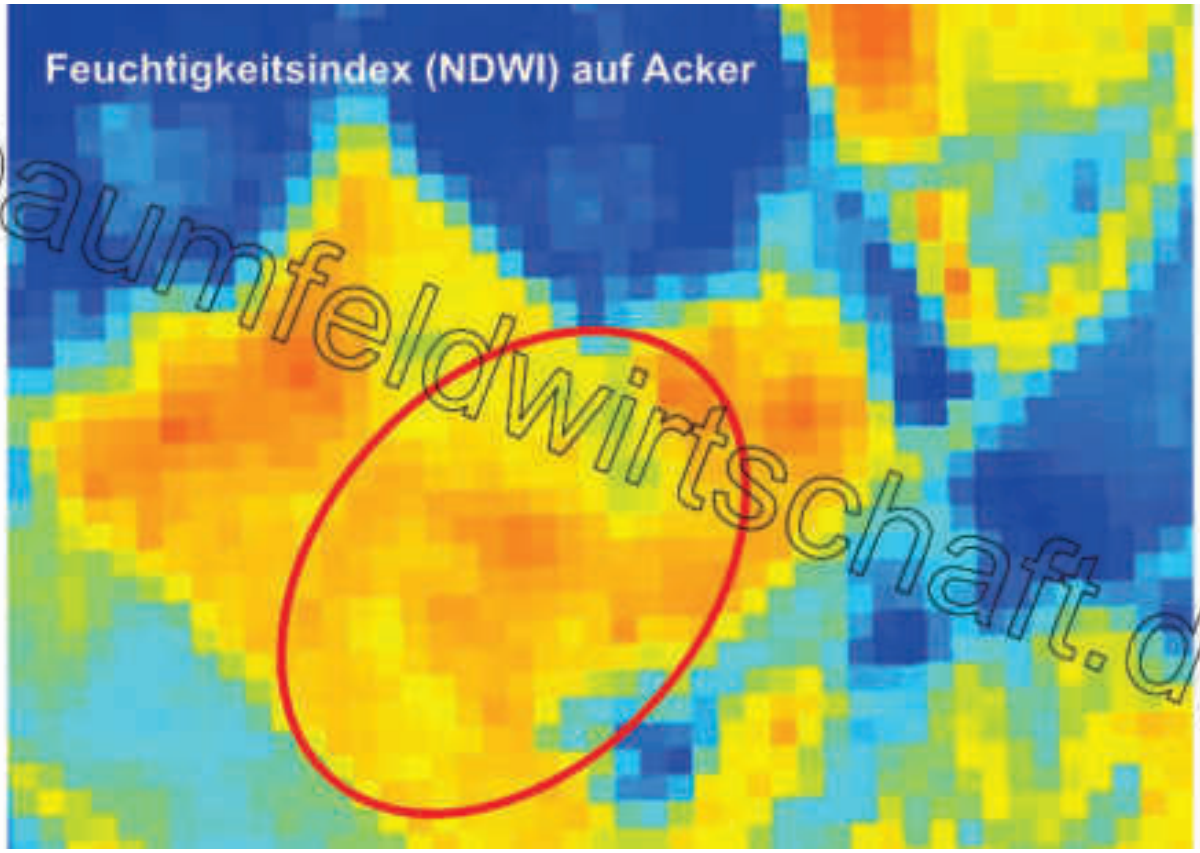
Erste Ergebnisse aus Thüringen:

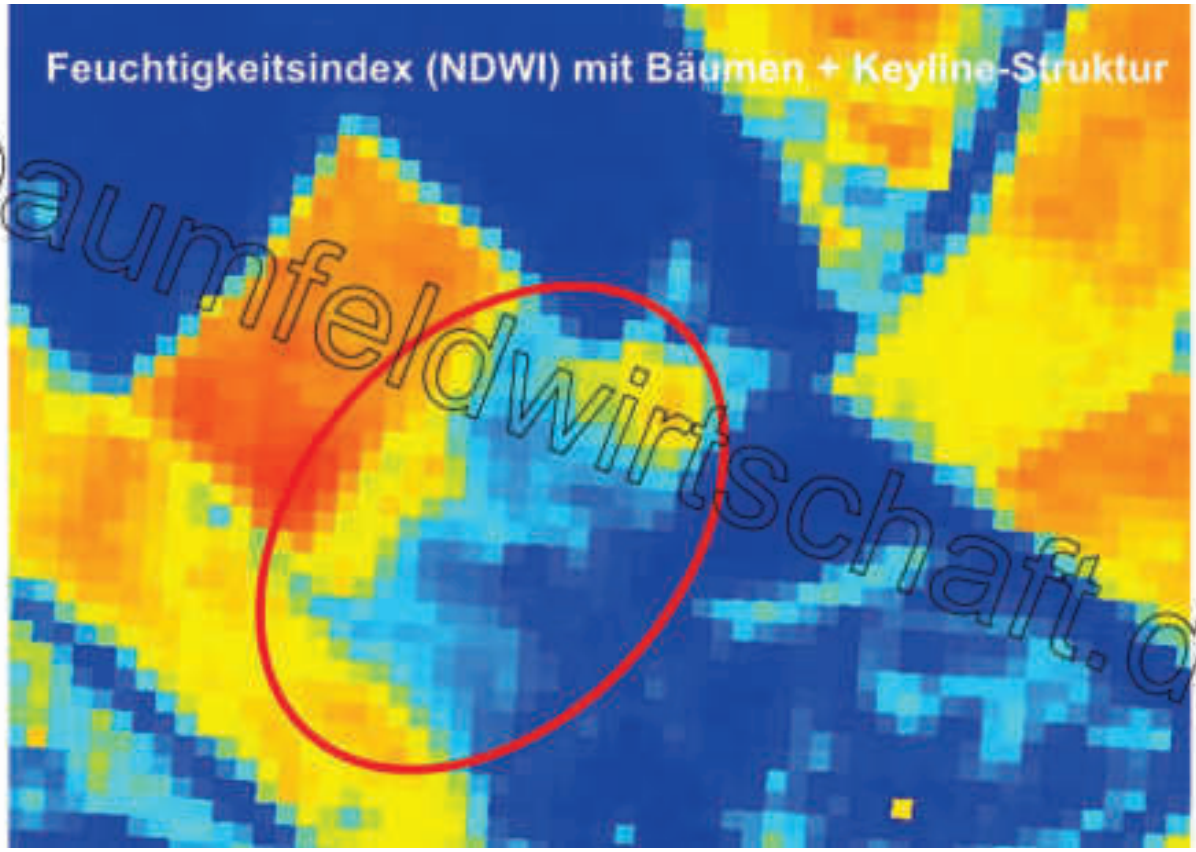
Wasserrückhalt +13%

Hochwasserspitze -20%

Erosion -60%





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