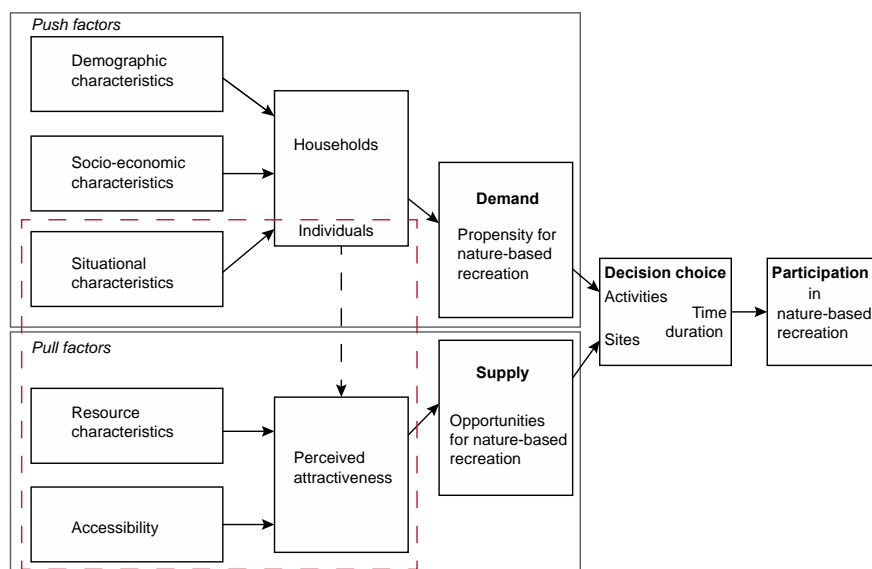# How well can nature-based recreation be mapped using landscape attributes?
Insights from the Netherlands

Samantha S.K. Scholte, Michiel N. Daams, Hans Farjon, Frans J. Sijtsma, Astrid J.A. van Teeffelen, Peter H. Verburg

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Mapping opportunities for recreation: depends on perceived attractiveness
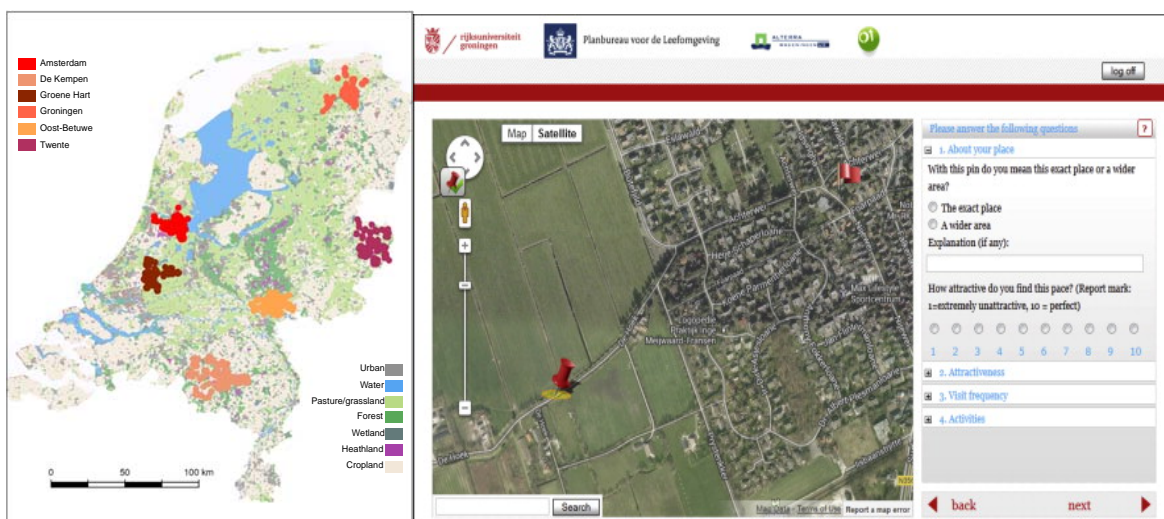

Pigram (1983)

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In this study we…

- (a) examine the extent to which **different landscape attributes** explain the **spatial variability** in **perceived attractiveness**
- (b) explore differences between respondents from distinct geographical regions, and
- (c) focus both on local and national scale.

Hotspotmonitor (HSM): online partcipatory mapping tool

3616 respondents, from 6 regions (3293 valid respondents, 502-586 per region)

Point pattern analyses: three steps

- Kernel density of observed points
- Fit (inhomogeneous) point process models using SpatStat package in R. Variables selected through literature review
- Compare observed with simulated point patterns
  - Kernel densities
  - Look at clustering using Ripley's K (do points cluster beyond variability in landscape attributes?)
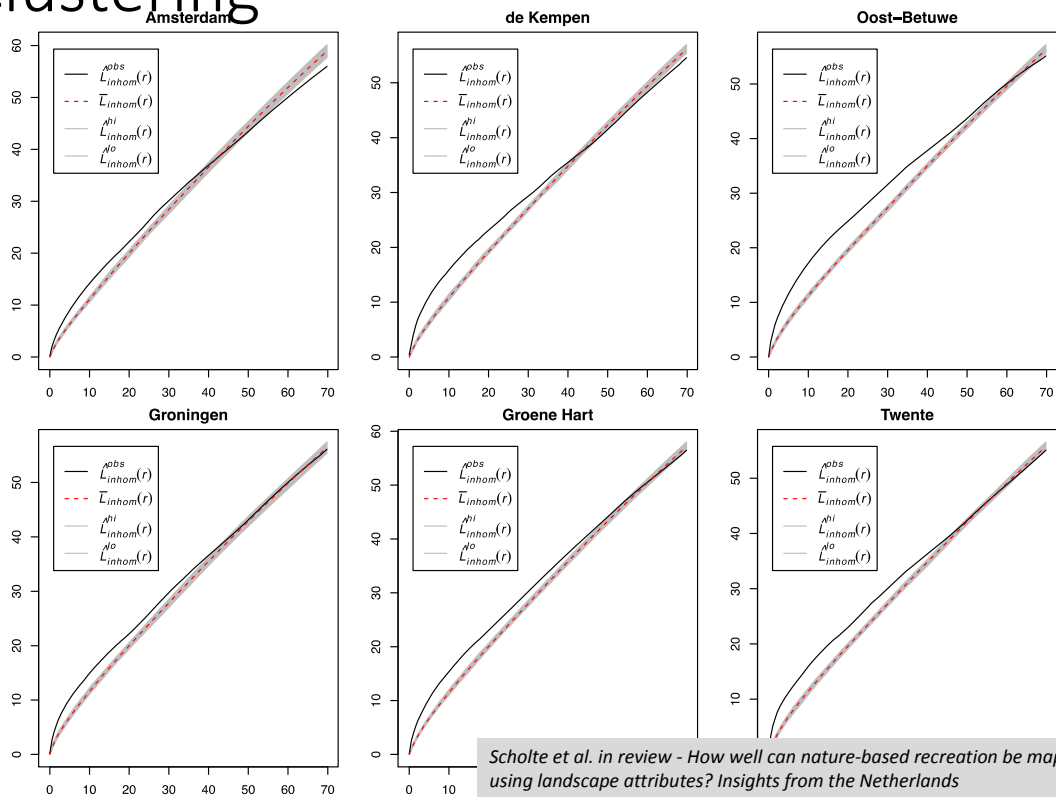 - Residuals

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Kernel density
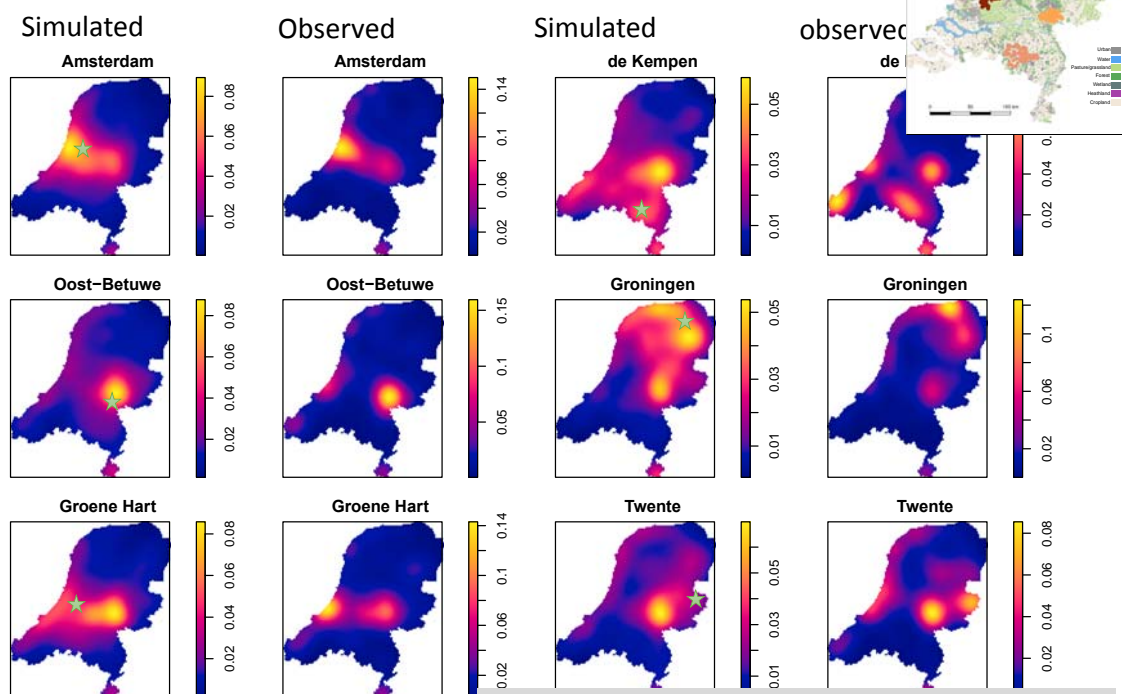
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Clustering

Amsterdam
de Kempen
Oost−Betuwe
Groningen
Groene Hart
Twente

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Figure 8: Plotted smoothed residuals. A difference of zero indicates good model performance, positive values suggest that the model underestimates intensity and negative values suggest that the model overestimates intensity.

Residuals

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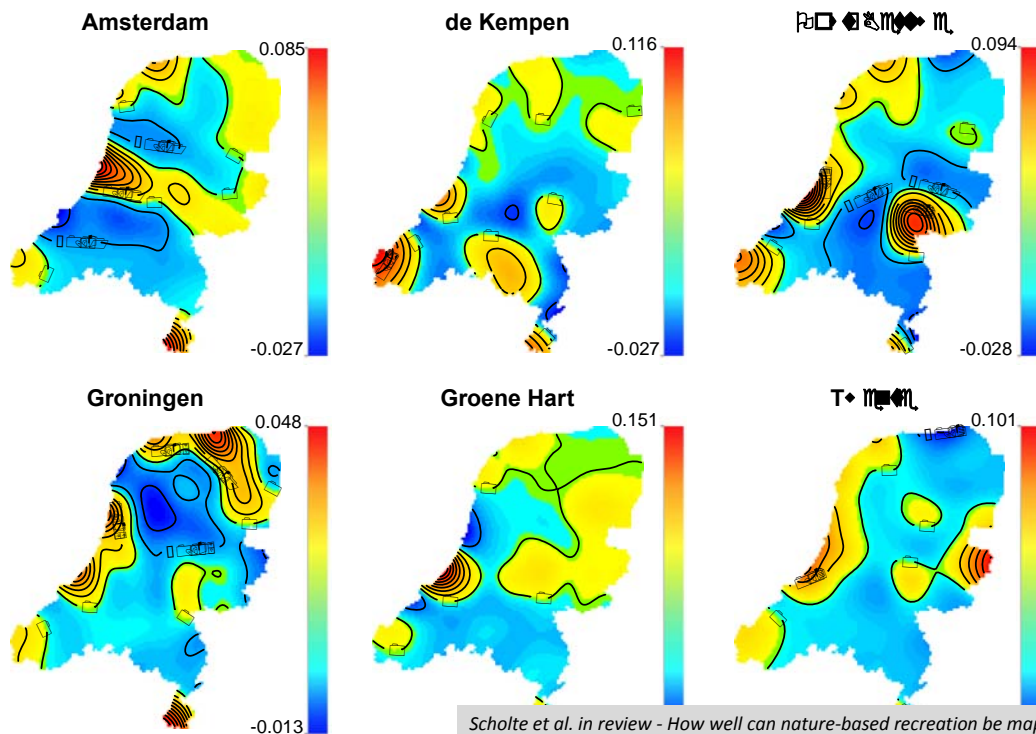
Discussion

- Model underestimates intensities at coast: not equally 'attractive' everywhere
- Model underestimates intensities close to respondents' location of residence: strong distance decay, but likely not linear
- Clustering shows that markers were not randomly distributed after accounting for landscape variability: location matters

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