

# Collaborative Planning of Sponge Measures for Climate Resilience at Landscape Scale: Exploring the Potential of Geodesign

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## SpongeScapes

Aims to accelerate solutions that improve the sponge functioning of the landscapes to enhance climate resilience against hydrometeorological extremes at landscape scale.

## PhD vision

Develop and deploy a geodesign framework utilizing adaptation pathways thinking in landscape planning to address the uncertainty of climate change.

## Key terms

**Geodesign:** "a method which tightly couples the creation of design proposals with impacts simulations informed by geographic contexts and systems thinking and supported by digital technology." (Michael Flaxman, 2010, p.2.)

**Dynamic Adaptive Policy Pathways:** An analytical approach to address climate change uncertainty through (Haasnoot et al., 2013):

- Analysis/exploration of the robustness and flexibility of various options across multiple futures.
- Sequencing actions over time across multiple future scenarios as pathways

## Paper 1

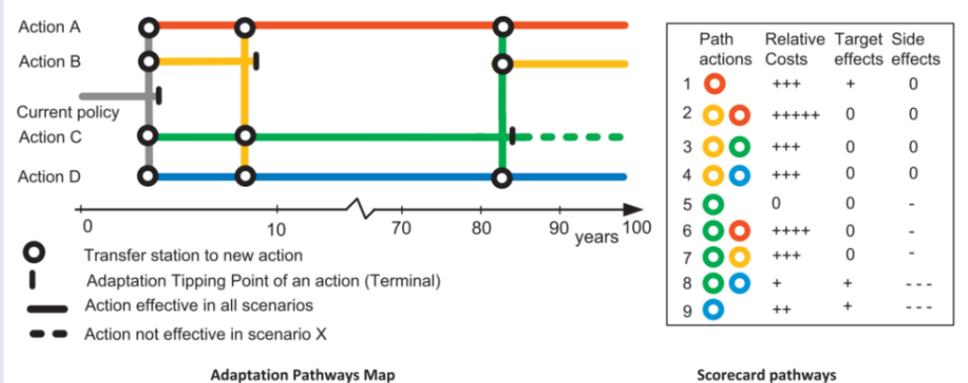
Planning pathways of adaptation to climate change with Geodesign: A systematic literature review of past applications for future integration

## Research question

Which aspects of geodesign have been utilized in adaptation pathways research and how to further integrate it to develop climate change adaptation pathways?

## Preliminary results

- Geodesign full article screening = 30
- Adaptation pathways full article screening = 36



Adaptation pathways map and a scorecard of the costs and benefits (Haasnoot et al., 2013)

## Primary hypotheses

Geodesign could integrate future pathways planning scenarios to adapt to the uncertainty of climate change beyond the point of decision-making for immediate actions.

Keyword search: Geodesign OR Geo-design OR "geo design"

Conditions

- Planning for climate adaptation or climate risk

Geodesign papers in the context of climate risk or adaptation

CAP papers applying elements of geodesign

Keyword search: "Adapt\* Pathway\*"

Conditions

- Applying elements of Geodesign
  - Spatially explicit
  - Digital
  - Participatory

## References

- Flaxman, M. (2010). Geodesign: Fundamental principles and routes forward. *Talk at GeoDesign Summit*.
- Haasnoot, M., Kwakkel, J. H., Walker, W. E., & Ter Maat, J. (2013). Dynamic adaptive policy pathways: A method for crafting robust decisions for a deeply uncertain world. *Global environmental change*, 23(2), 485-498.

