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Cultural ecosystem services: an empirical approach across european landscapes and beyond

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► To cite this version:

Maxime Lenormand, Sandra Luque. Cultural ecosystem services: an empirical approach across european landscapes and beyond. ALTER-Net conference. Nature and society: synergies, conflicts, trade-offs, May 2017, Ghent, Belgium. pp.21. hal-02606273

HAL Id: hal-02606273

<https://hal.inrae.fr/hal-02606273v1>

Submitted on 6 Jul 2020

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Cultural Ecosystem Services

*An Empirical approach across European landscapes
and beyond*

Maxime Lenormand | Irstea, France

Sandra Luque | Irstea, France

ALTER-Net conference

Nature and Society: synergies, conflicts, trade-offs

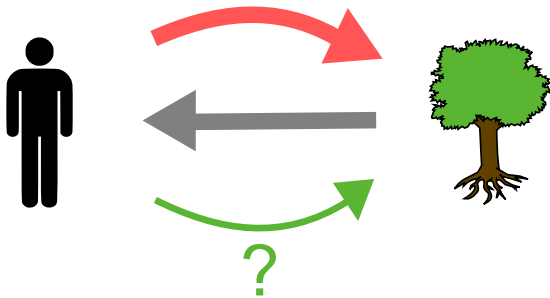
Thursday 4 May 2017



ALTER-Net High Impact Actions



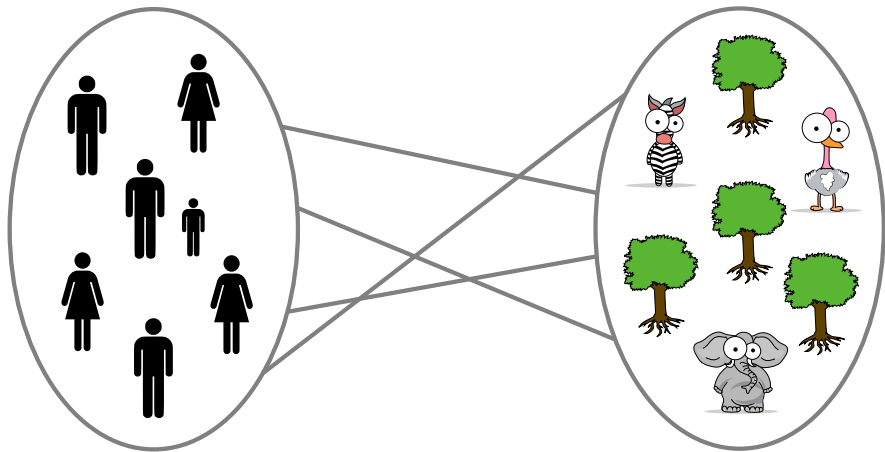
Cultural ecosystem services



"Nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences"

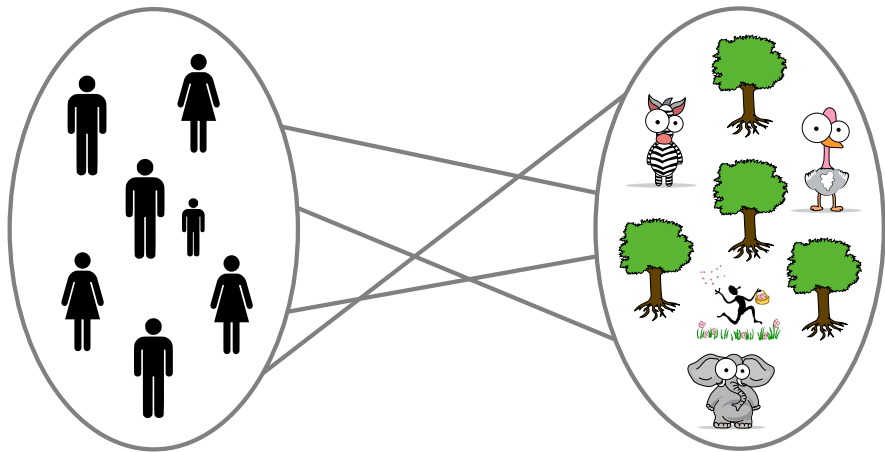
Millennium Ecosystem Assessment (2005) *Ecosystems and Human Well-Being: Synthesis*. Island Press, Washington.

Spatio-temporal network



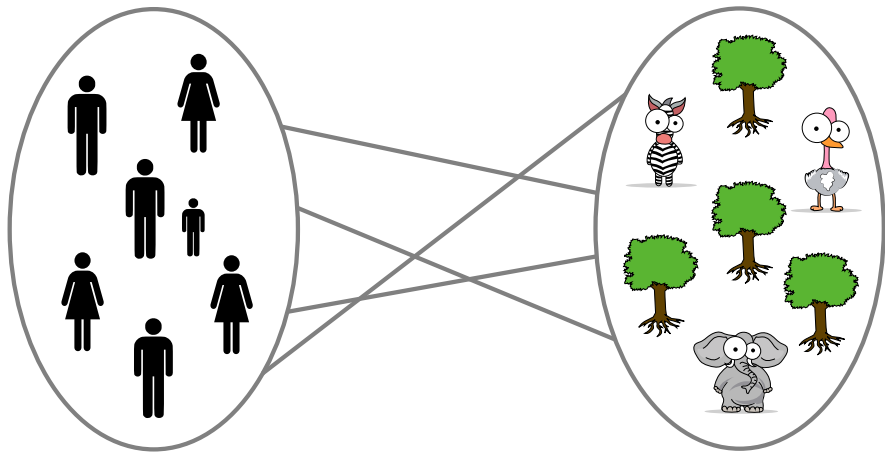
Δ_t Time window

Spatio-temporal network



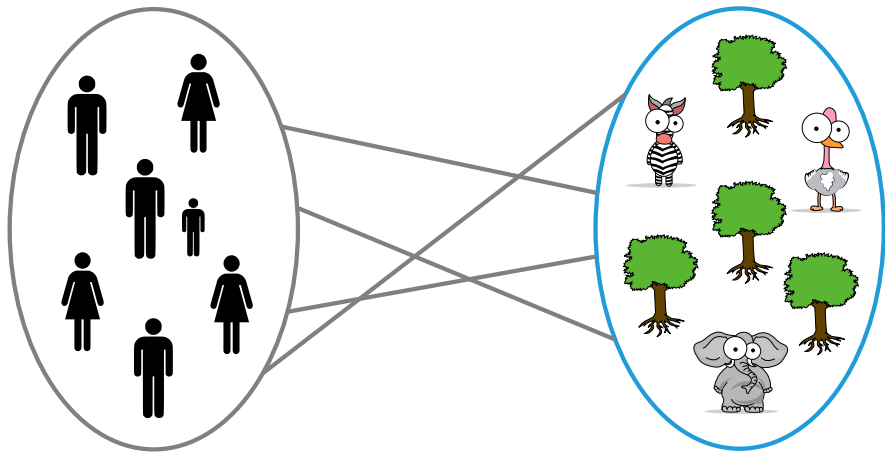
Δ_t Time window

Spatio-temporal network



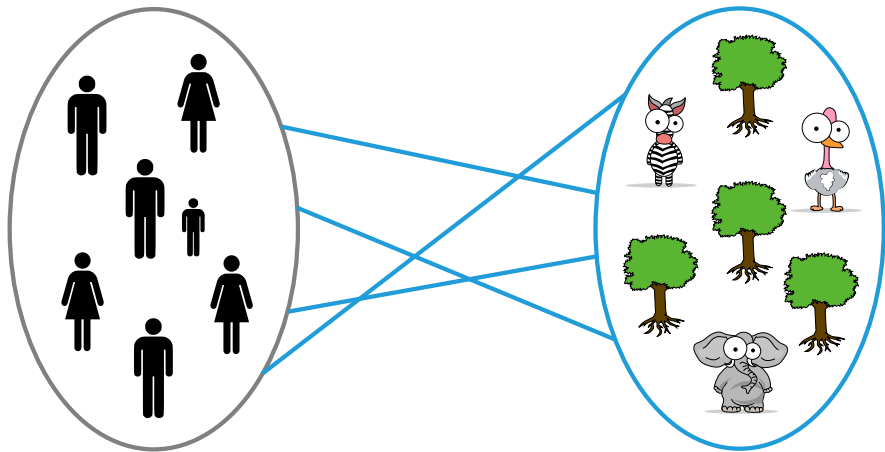
Δ_t Time window

Spatio-temporal network



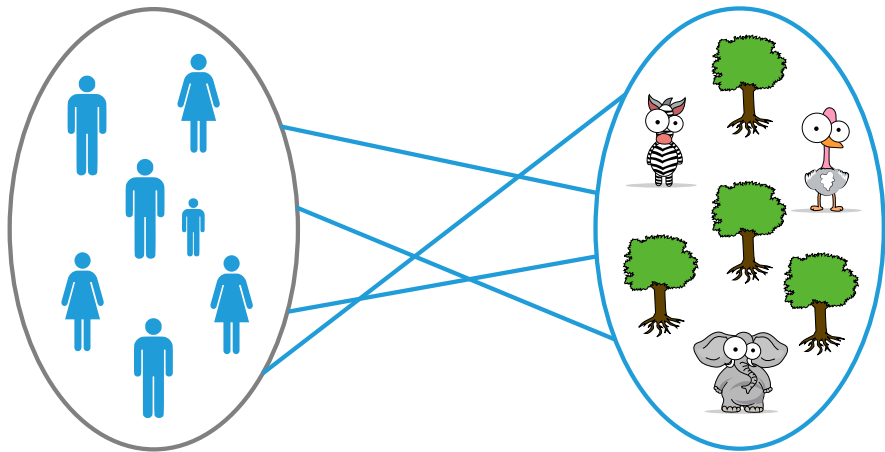
Δ_t Time window

Spatio-temporal network



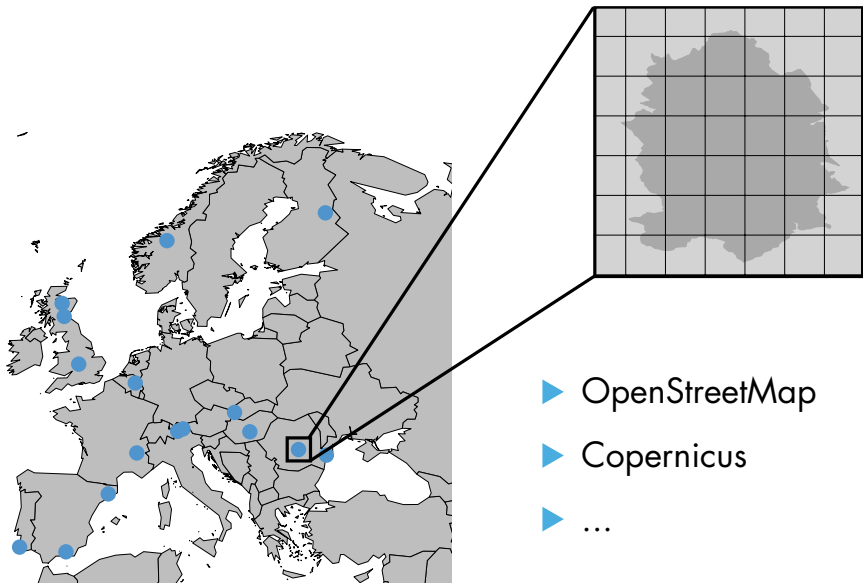
Δ_t Time window

Spatio-temporal network




Δ_t Time window


Ecosystems



Modeling CES flows using Flickr

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 eMammal [+ Follow](#)

PRO eMammal 219 Followers • 3 Following 206,458 Photos Joined 2010

Photostream

Albums

Favorites

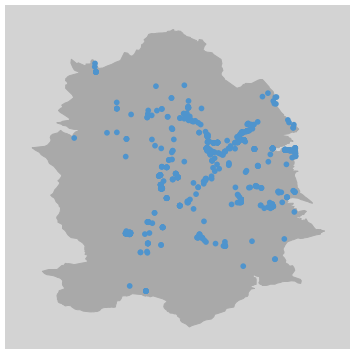
Groups

More ▾



Cultural ecosystem services

From **100,000** to **17,500** photos

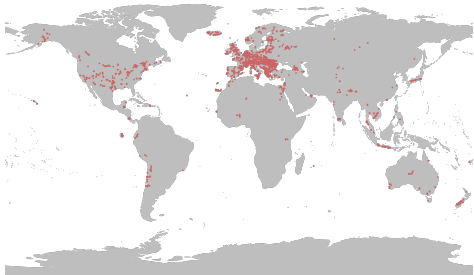


Every Flickr photos has been classified and validated following the Common International Classification of Ecosystem Services



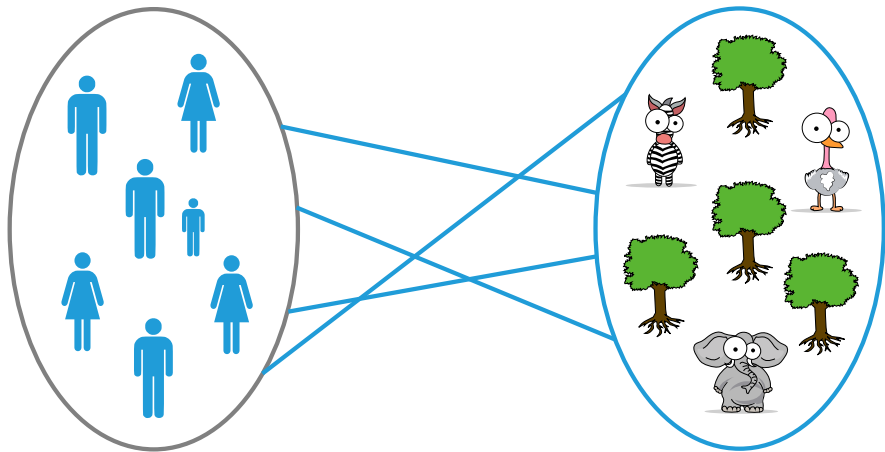
Social systems

14,000 photos taken by **3,000** users



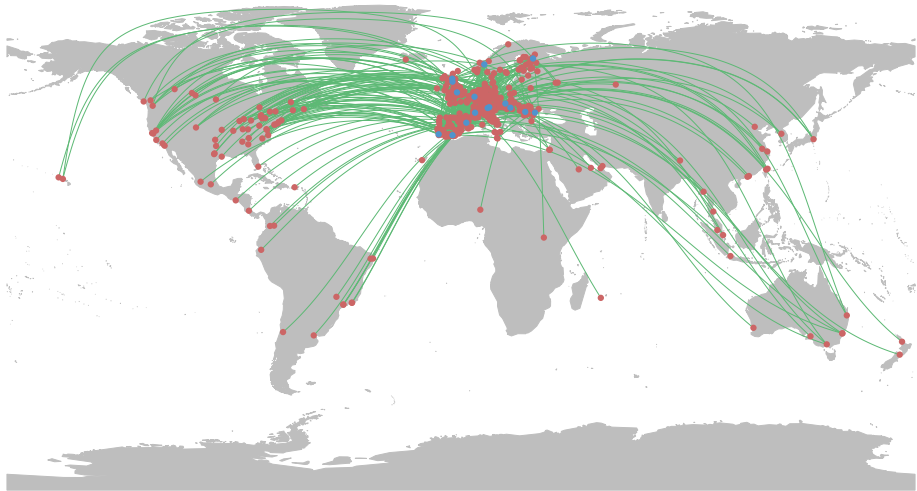
Identification of users' place of residence

Spatio-temporal network



Δ_t Time window

Spatio-temporal network



Conclusion & Perspectives

- ▶ Spatio-temporal network analysis (& modelling)
 - ▶ Multi spatio-temporal scales
 - ▶ Bundles of CES

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**Diversity of spatio-temporal contexts,
individuals and CES**

Conclusion & Perspectives

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**Diversity of spatio-temporal contexts,
individuals and CES**



Resilience planning

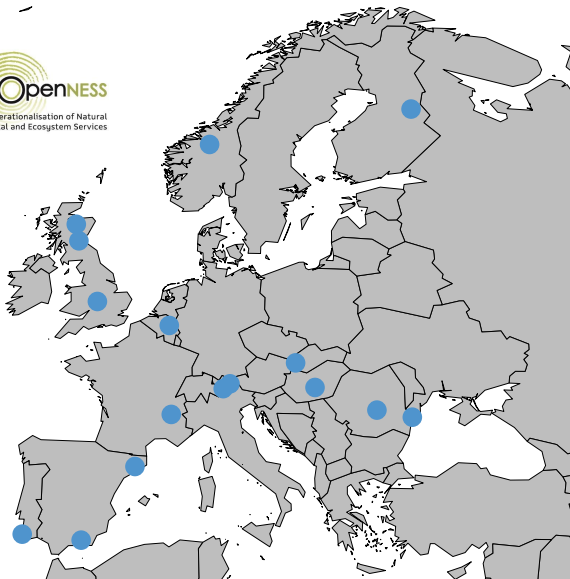
Conclusion & Perspectives

- ▶ Spatio-temporal network analysis (& modelling)
 - ▶ Multi spatio-temporal scales
 - ▶ Bundles of CES

- ▶ Strong emphasis on the biases and uncertainties associated with Flickr data

[ictdataaccuracy.github.io](https://github.com/ictdataaccuracy)

Acknowledgements



maximelenormand.github.io