

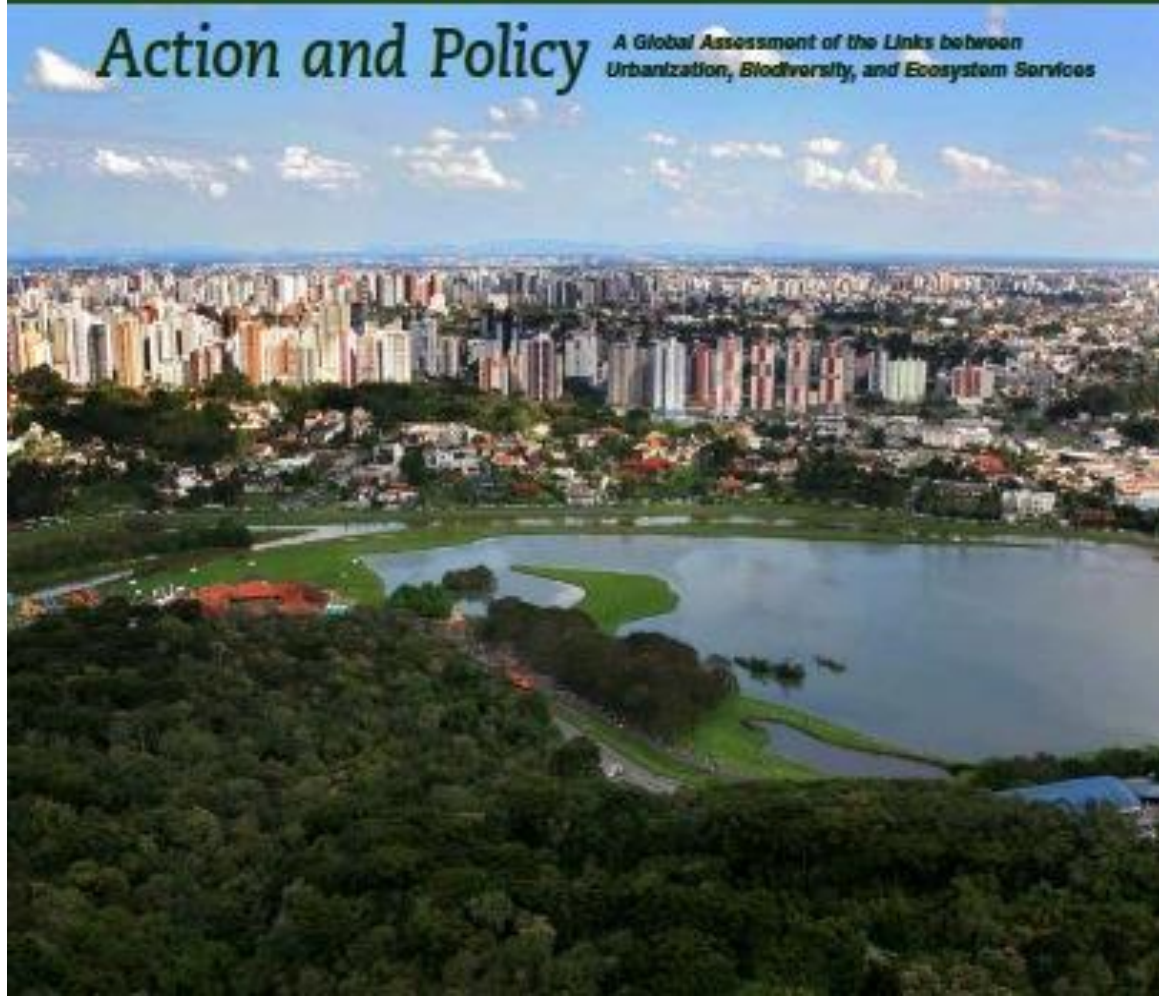


Landscape solutions for urban resilience

**Thomas Elmqvist
Stockholm Resilience Centre**

Cities and Biodiversity Outlook

Action and Policy A Global Assessment of the Links between
Urbanization, Biodiversity, and Ecosystem Services



Ban Ki Moon:

“The principal message is that urban areas must offer better stewardship of the ecosystems on which they rely”

www.cbobook.org



Global Goals for Sustainable Development

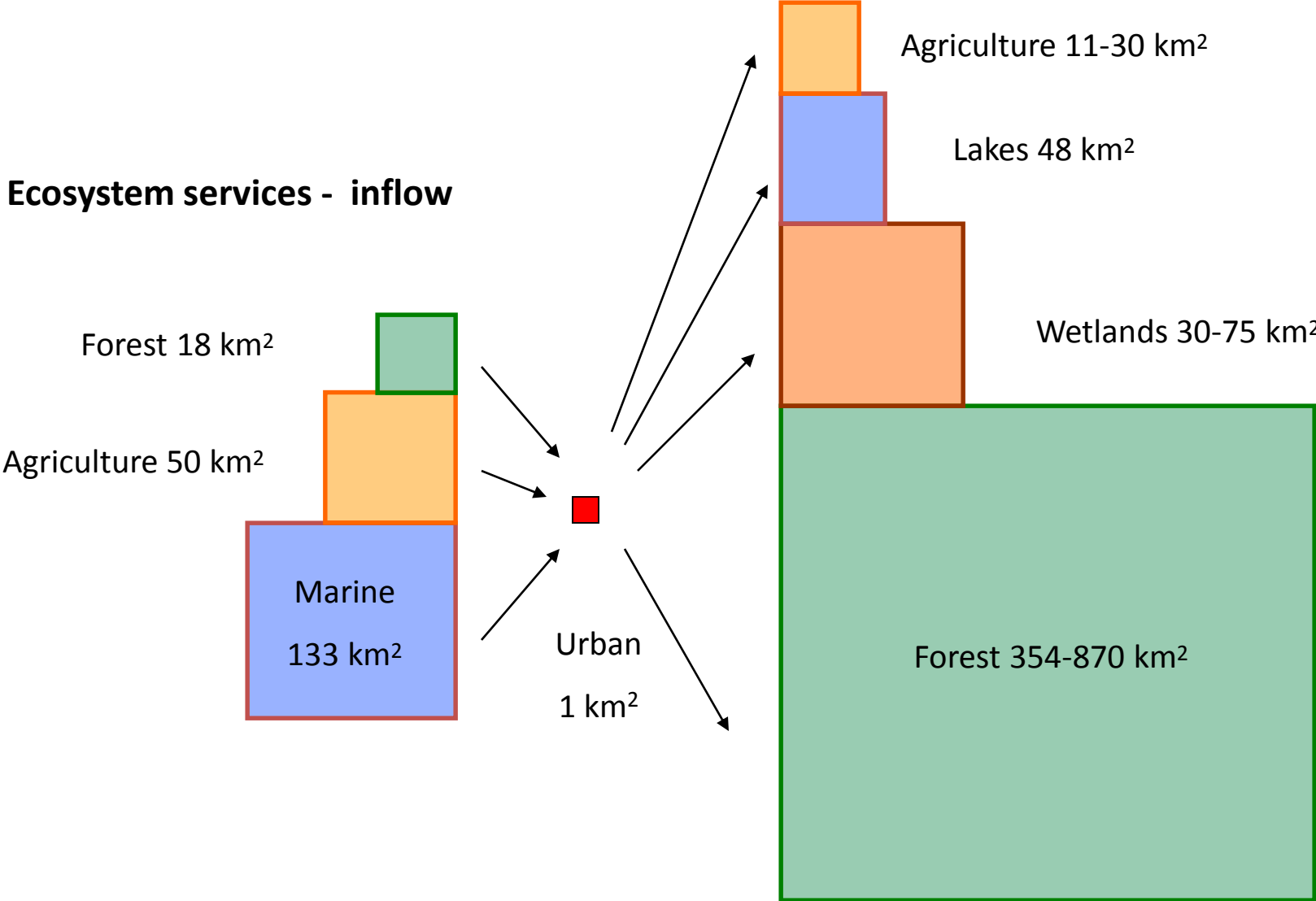
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

- is not only about cities, entails a territorial approach including regional and rural-urban linkages

Urban dependence on ecosystems

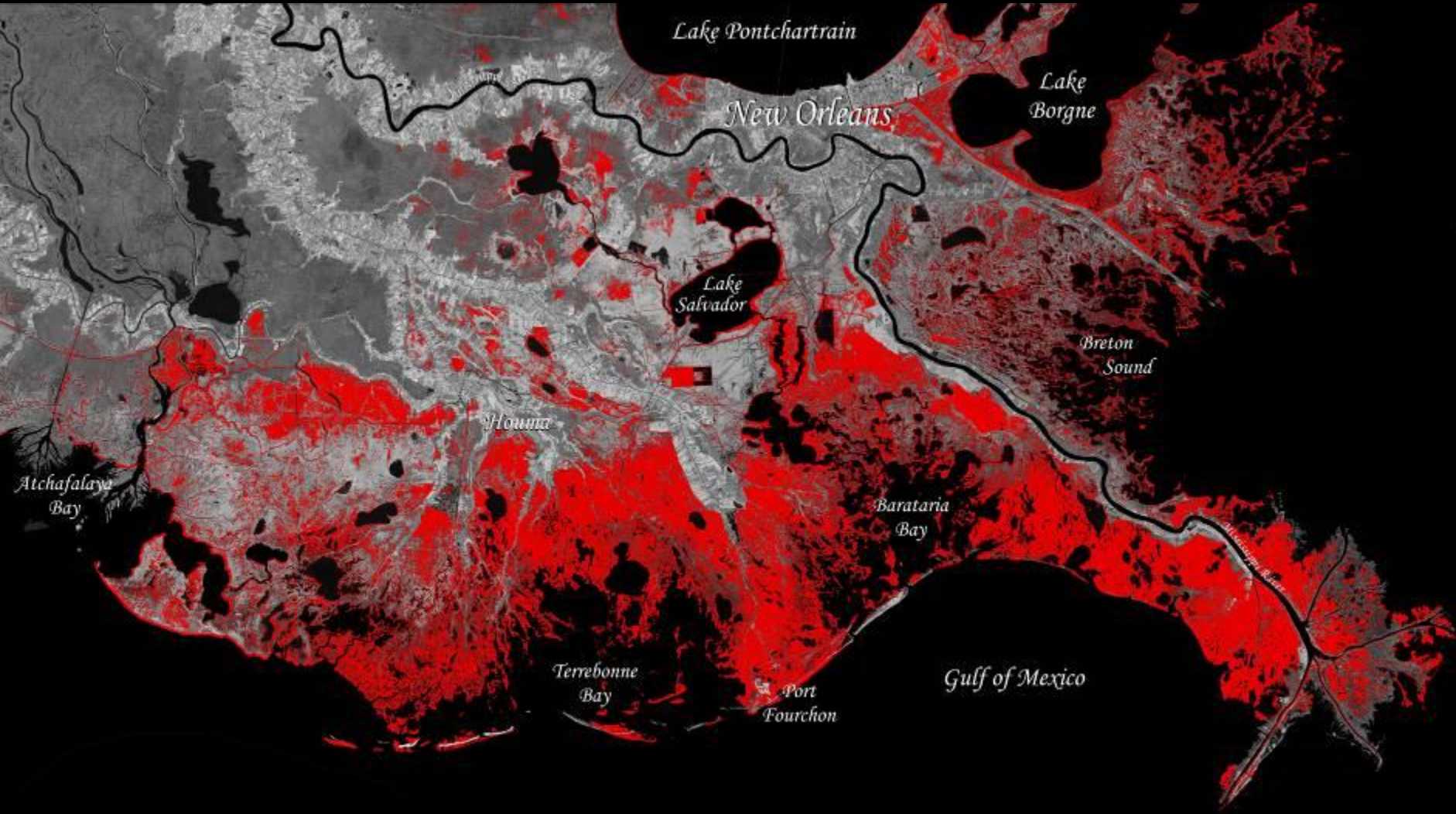
Ecosystem services - outflow

Ecosystem services - inflow



Folke et al 1997

Restoration of wetlands in southern Louisiana

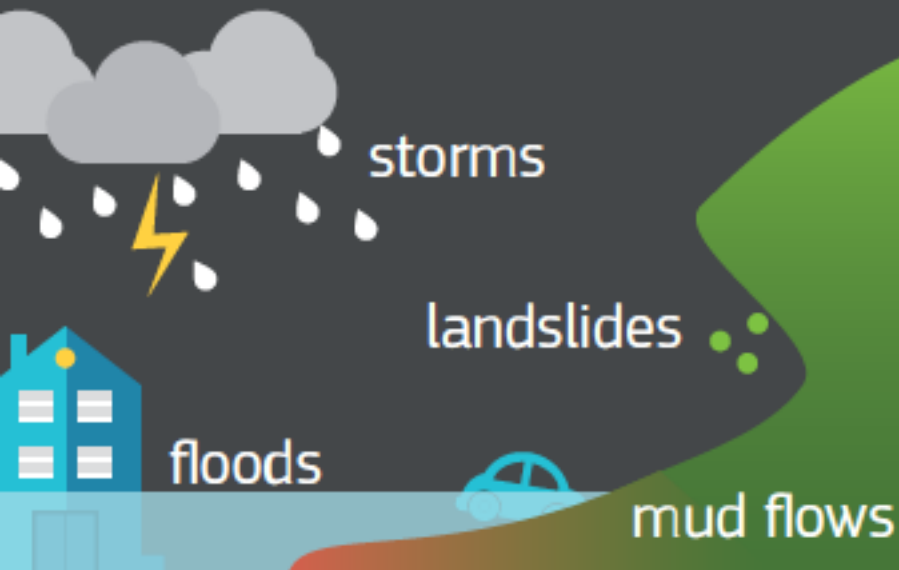


Every km of wetland reduce wave height by 1 m

Wetland/water conversions 1932-present

1980-2010

**EUROPE LOST
€300 billion** due to



There is high confidence that these losses will increase in the long term

A one percent increase in size of green infrastructure, which includes wetlands and forests is estimated to bring 6.5 percent reduction in economic loss caused by flooding in studied cities. (KEI 2011)



Insurance Value of Green Infrastructure in and Around Cities

Tom L. Green,^{1*} Jakub Kronenberg,² Erik Andersson,³ Thomas Elmqvist,³
and Erik Gómez-Baggethun^{4,5}



Insurance value

- 1) the physical risk reduction capacity of an ecosystem (e.g. area of upstream land/number of downstream properties protected)
- 2) the capacity to sustain risk reduction (i.e. the resilience of the ecosystem)

Green et al 2016