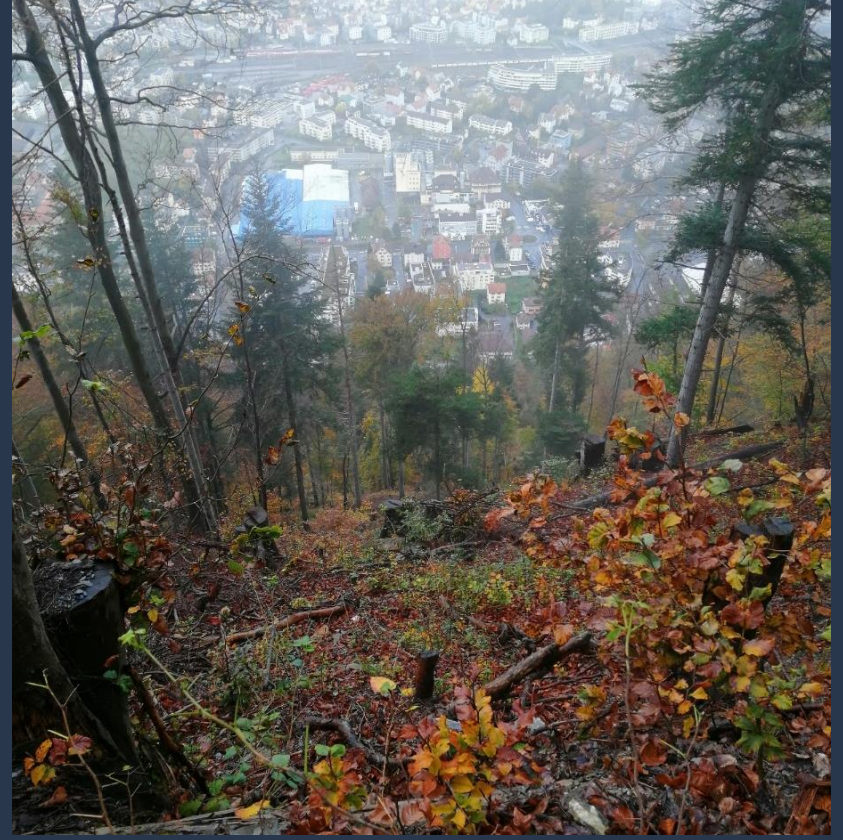


The impact of global change on the protective effect of forests – a review

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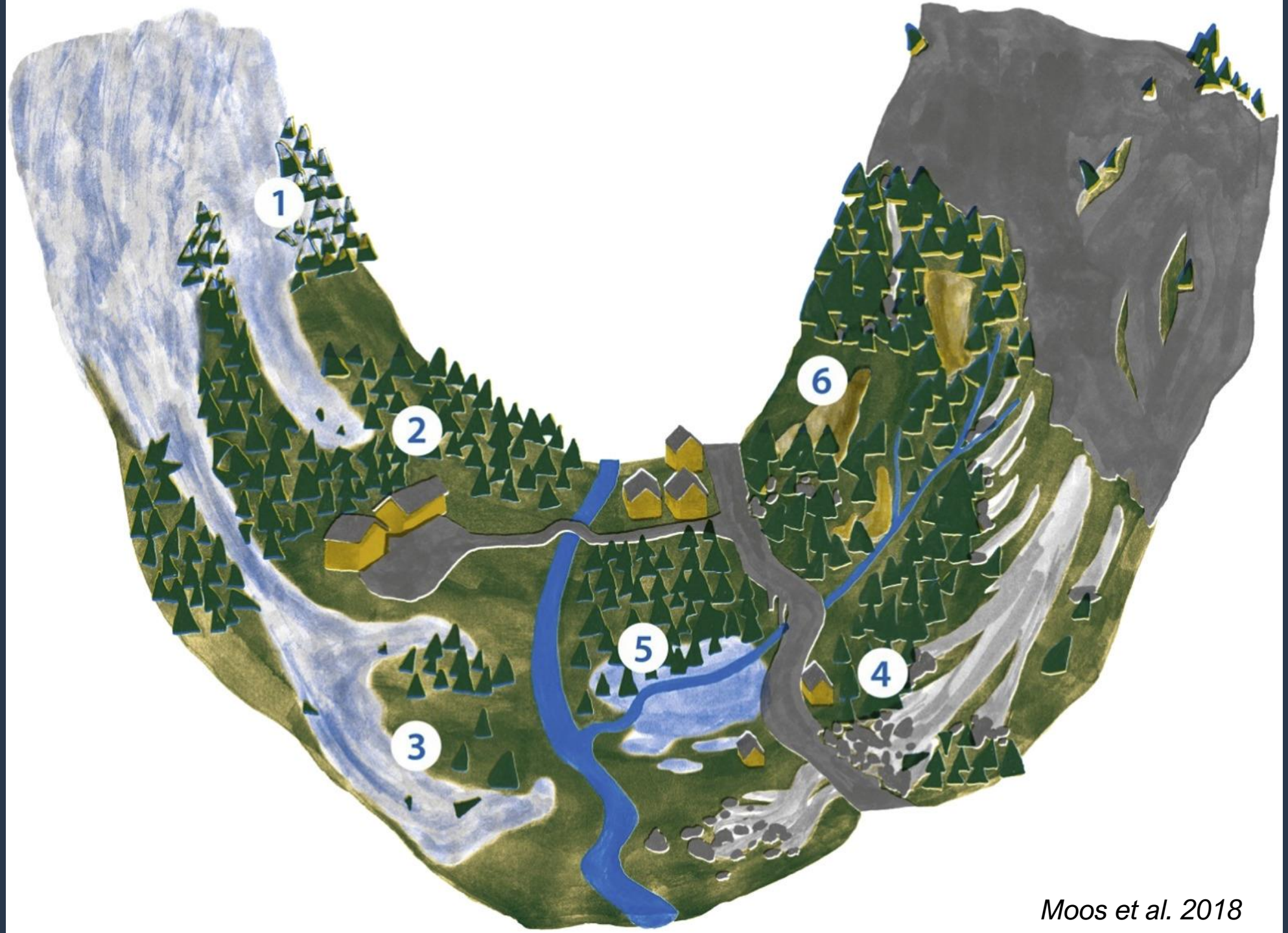
Bern University of Applied Sciences



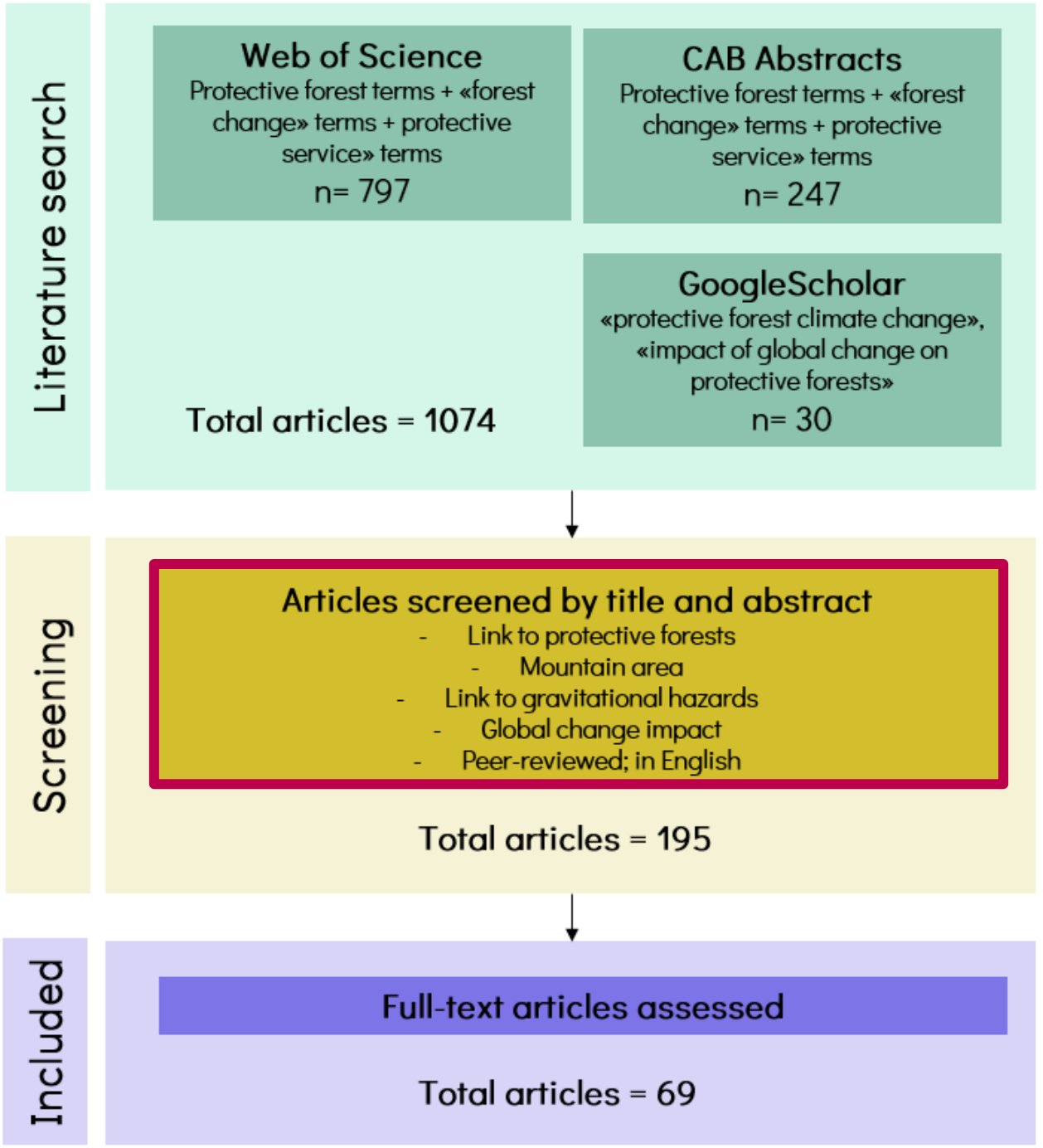
Moos et al. 2018

airoa-1-2/

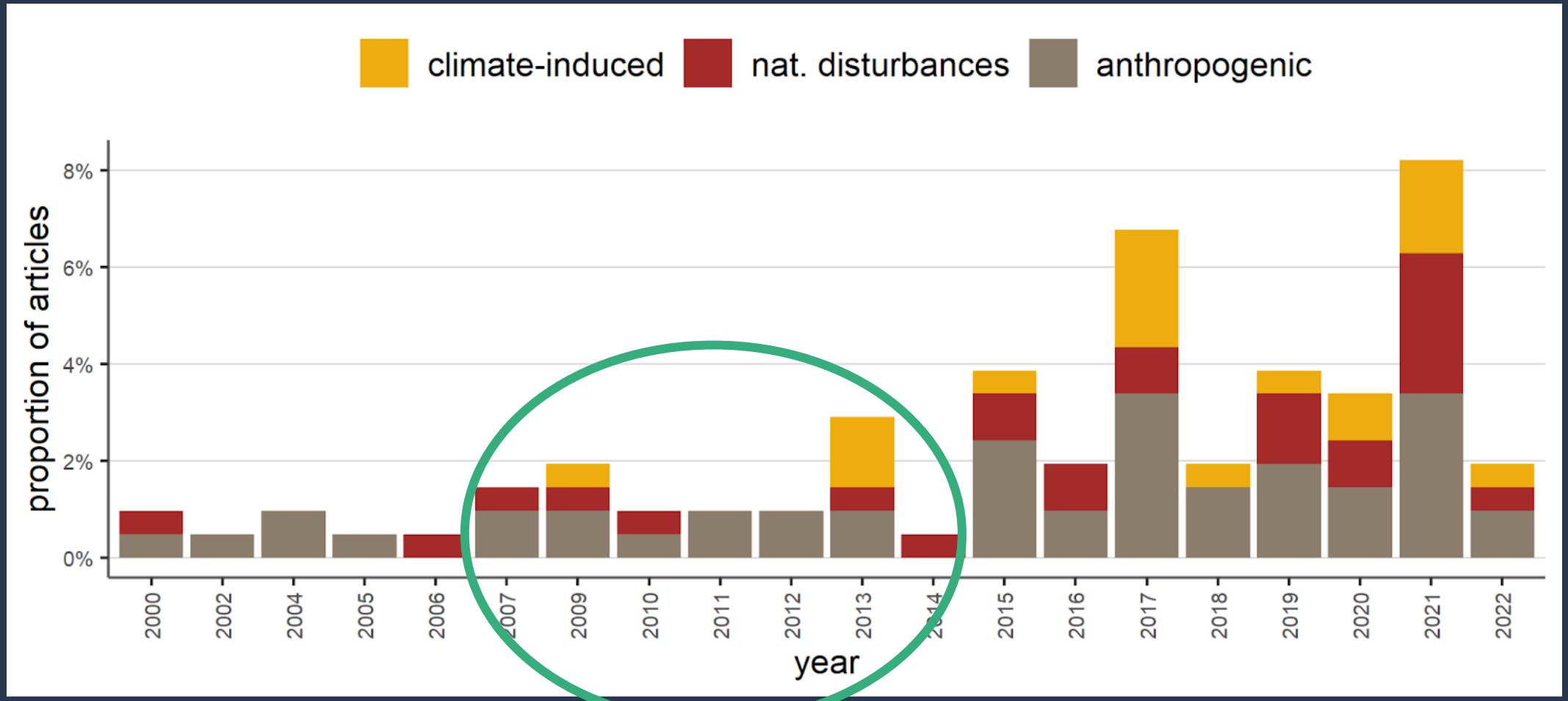
Quantitative review on the impacts of climate-driven or anthorpogenic changes on protective forests and their implications for natural hzarad risks in mountain areas

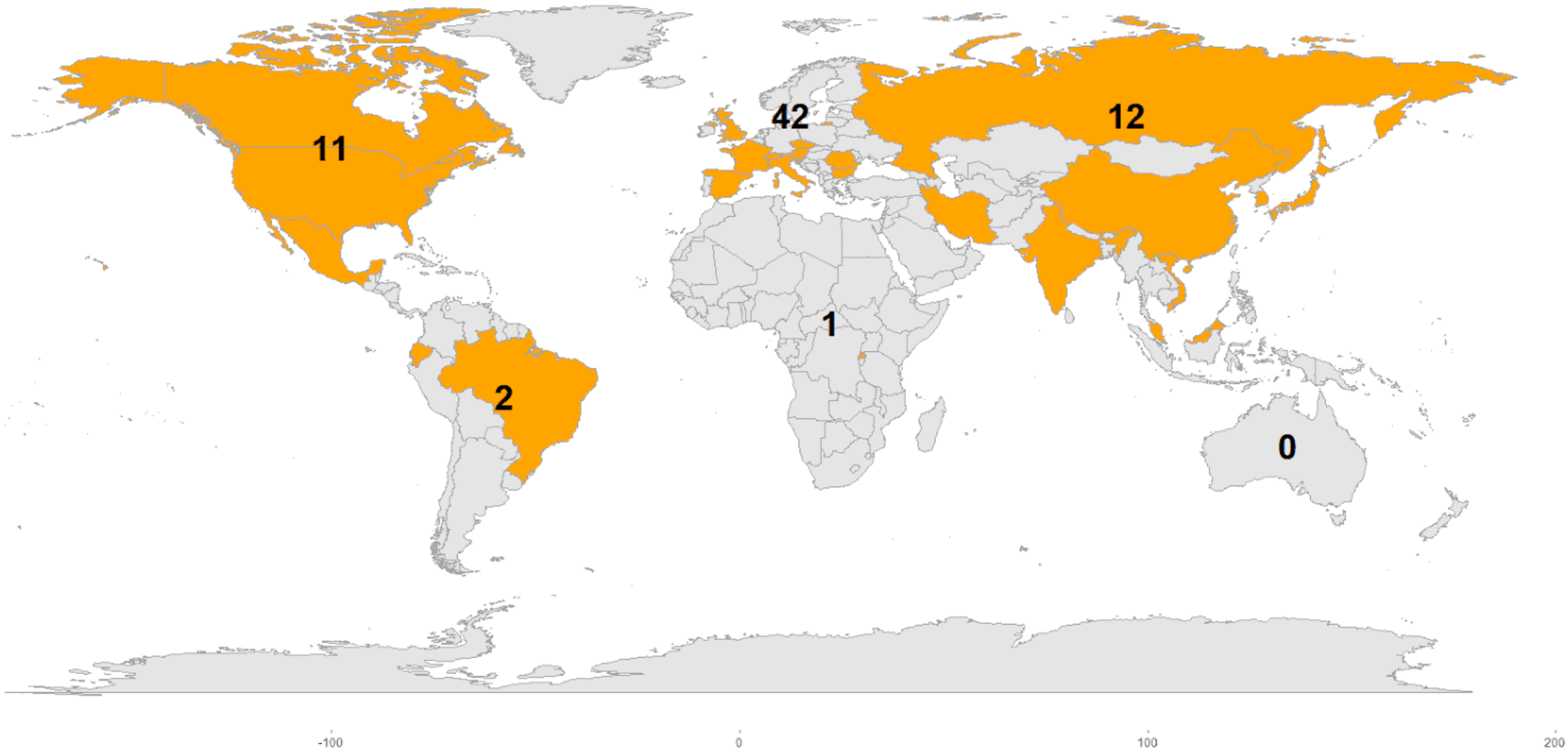
Method

- Climate-induced forest change
- (Changing) natural disturbances
- Anthropogenic forest change



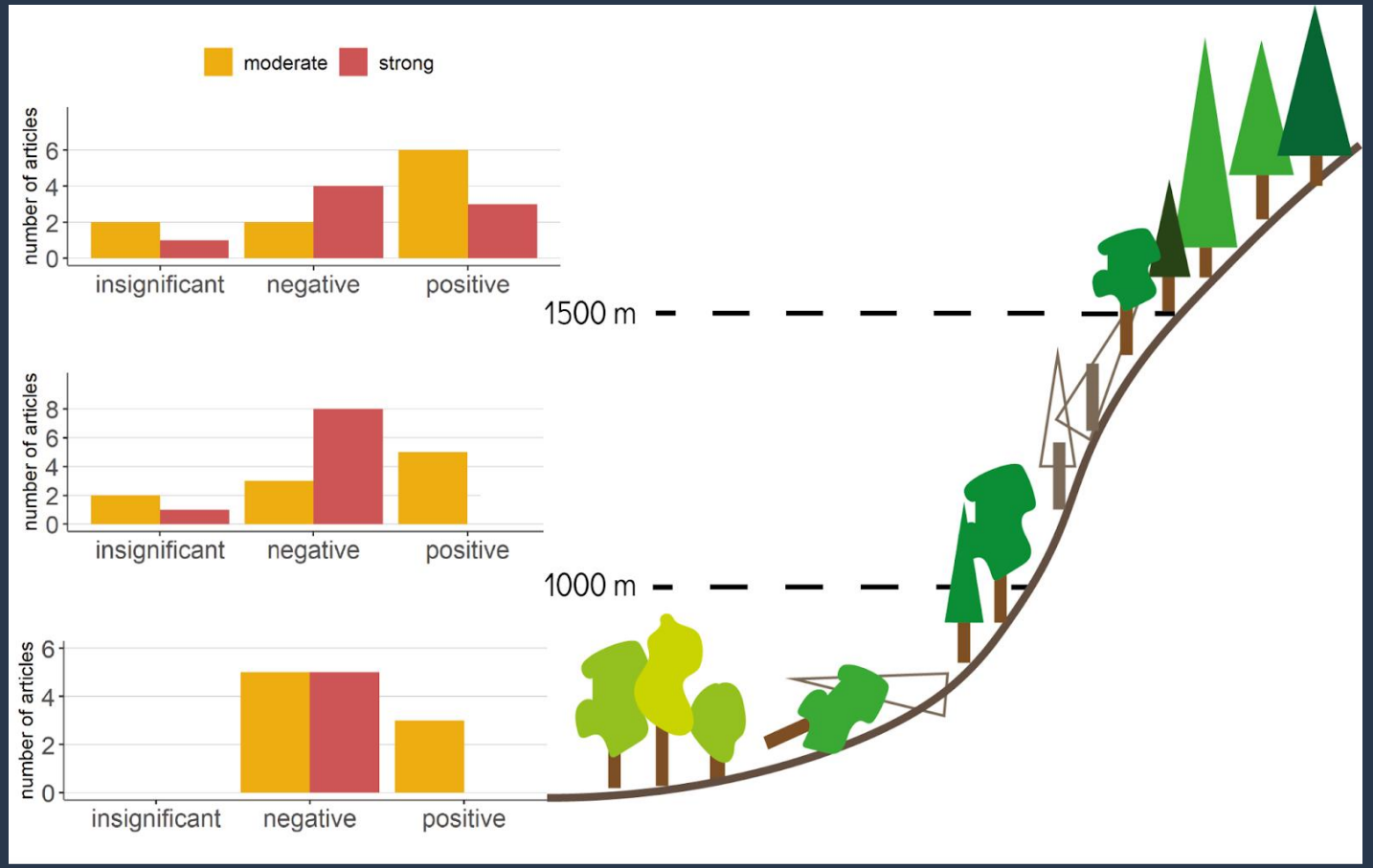
Results

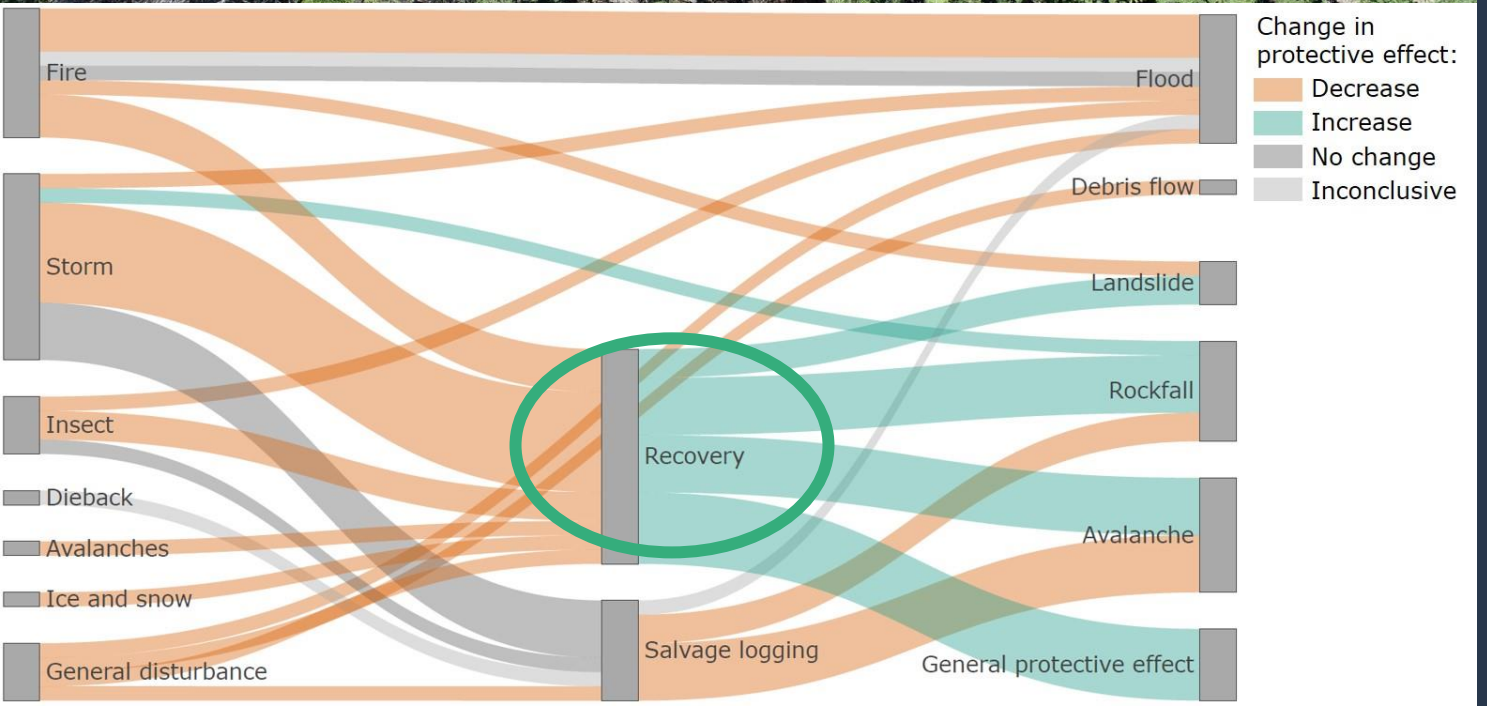

climate-induced
nat. disturbances
anthropogenic
proportion of articles
8%
6%
4%
2%
0%
2000
2002
2004
2005
2006
2007
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
year


11
42
12
2
1
0
-100
0
100
200

Climate-induced changes depend strongly on the altitude and the scenario.

Most studies modeling-based.





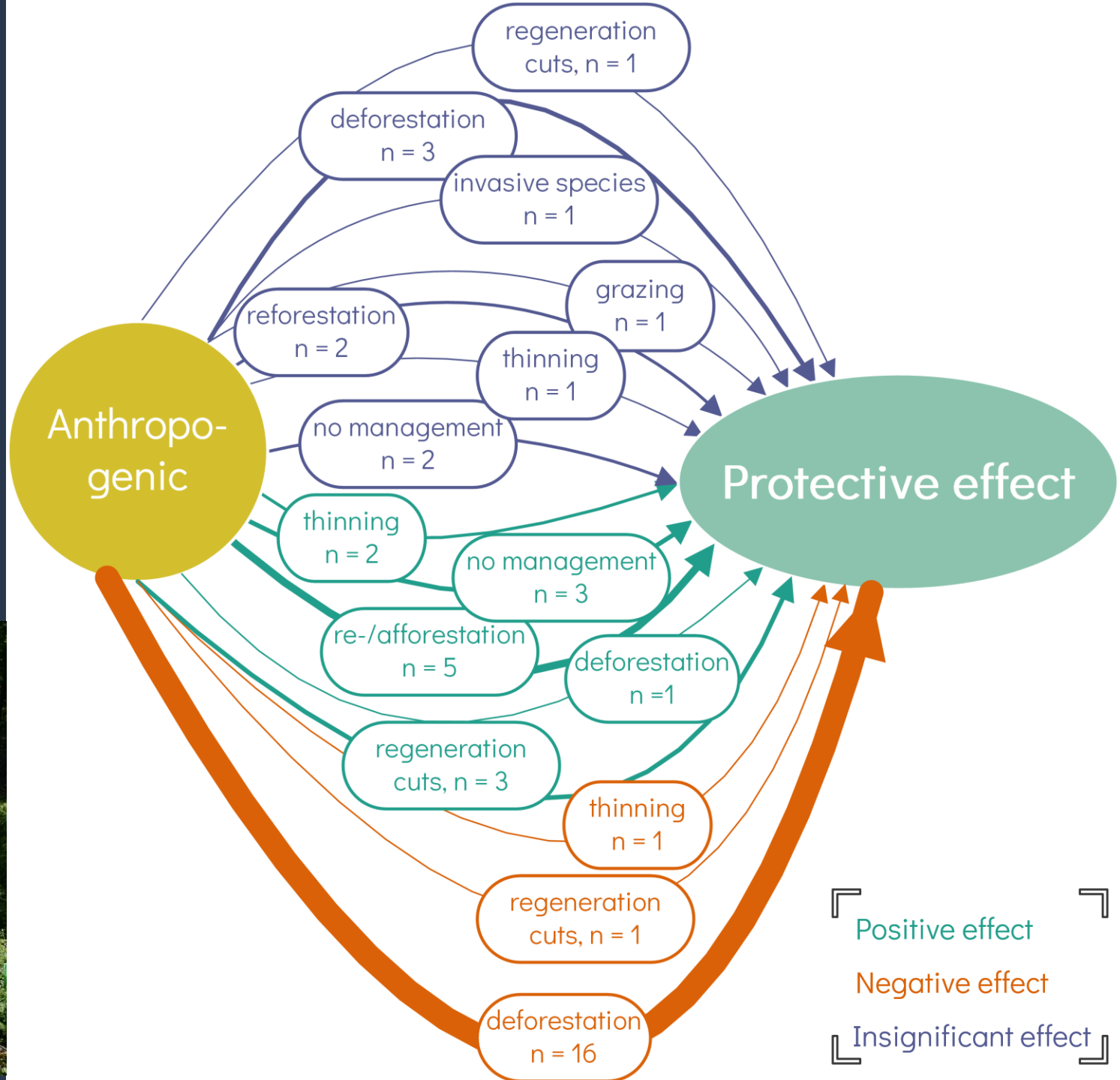
Protective effect **decreases** after **disturbances**

Recovery / Increase
after several decade

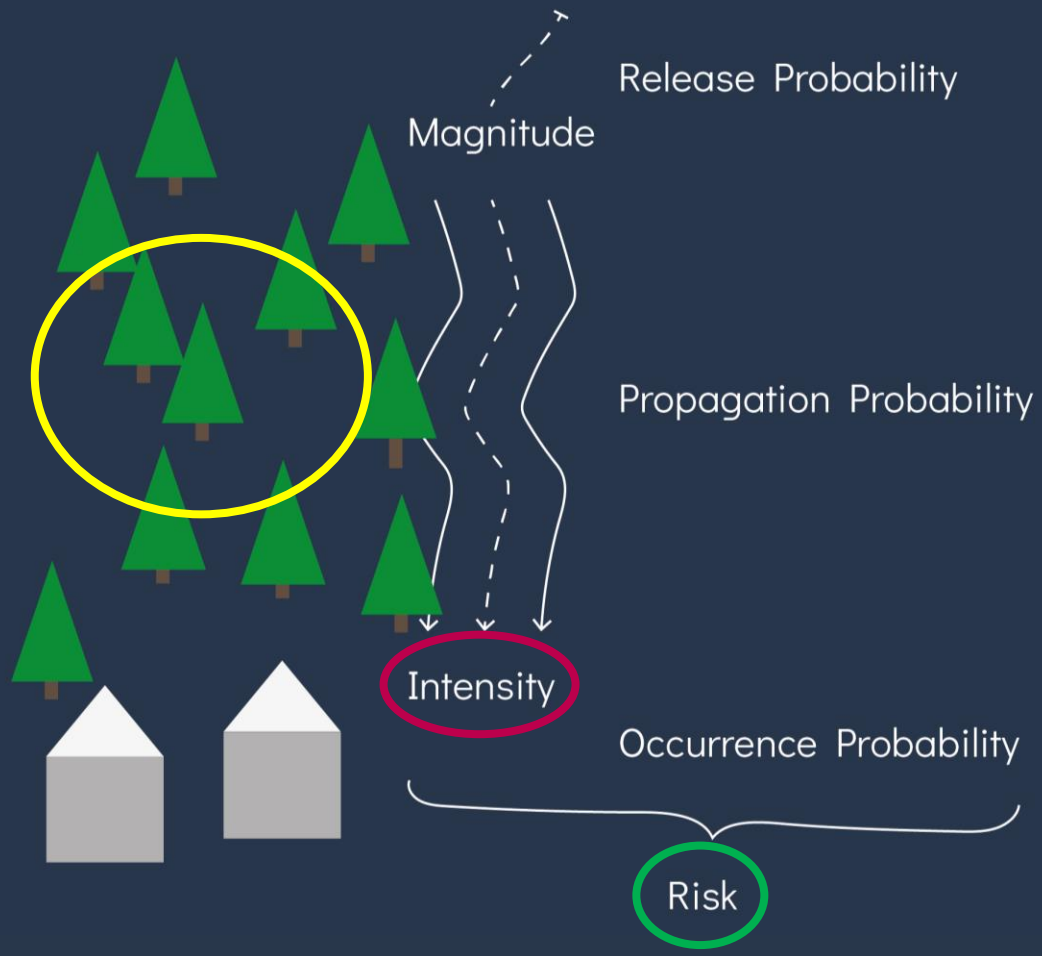
Effect of **forest fires** on **floods** most often addressed

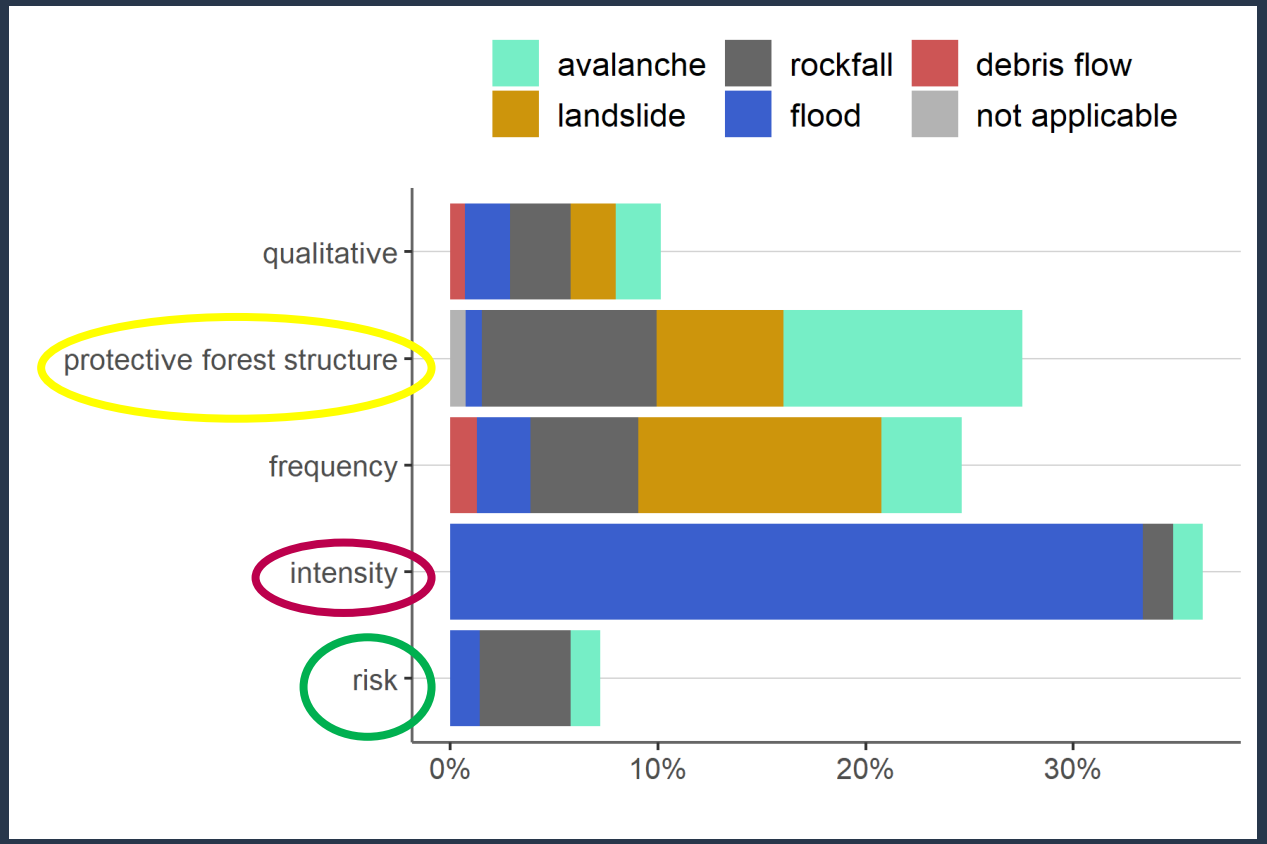
General **negative** effect of deforestation

Management effects inconclusive



Assessment of protective effect

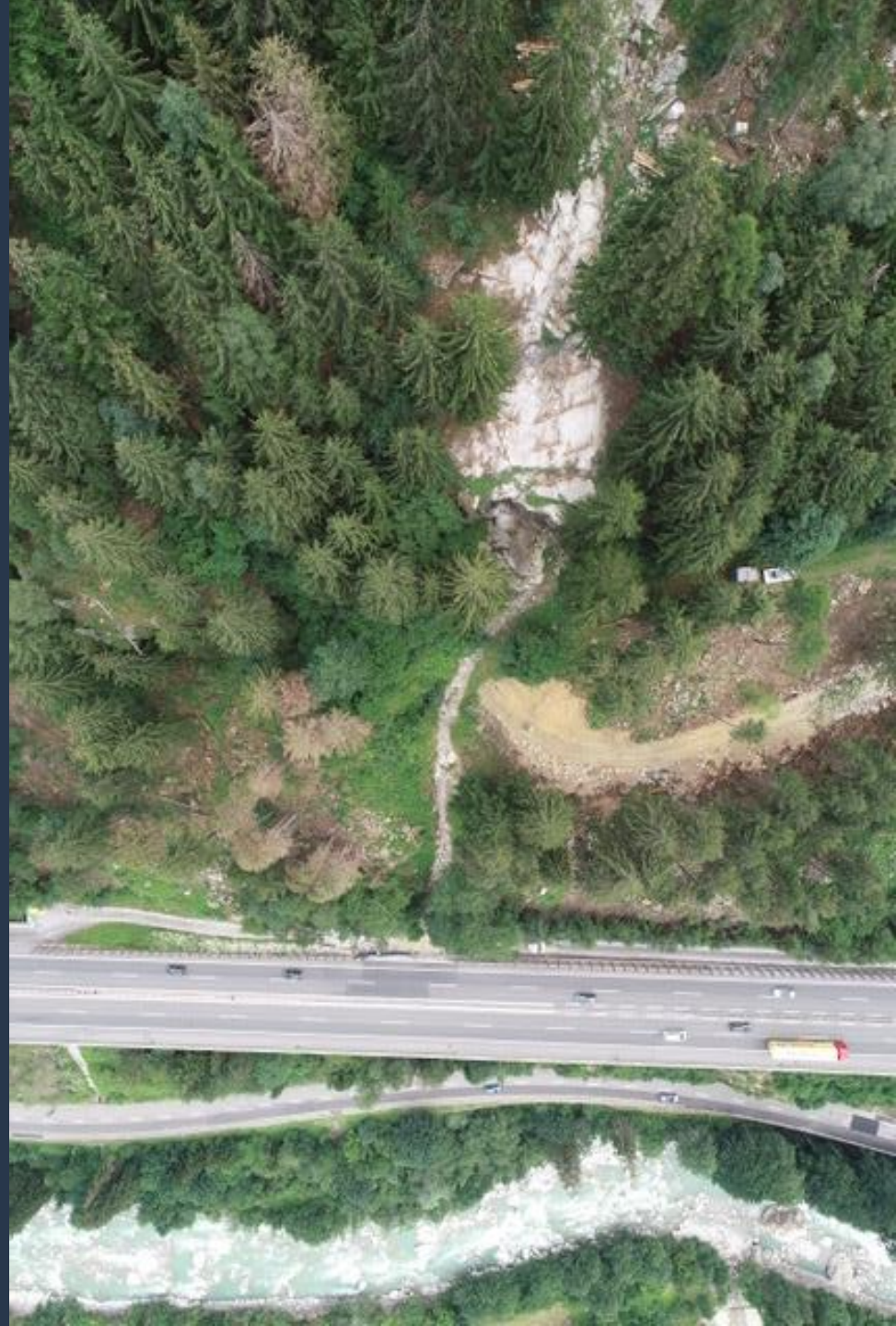




Conclusions

- Geographic bias?
- Missing empirical evidence (at large-scale)
- Link to risk often missing

More data and monitoring required to enable pro-active decision-making



Thank you for your attention!

See our Special Issue in *Frontiers in Forests and Global Change*!

https://www.frontiersin.org/research-topics/42658/impacts-of-global-change-on-protective-forests-in-mountain-areas