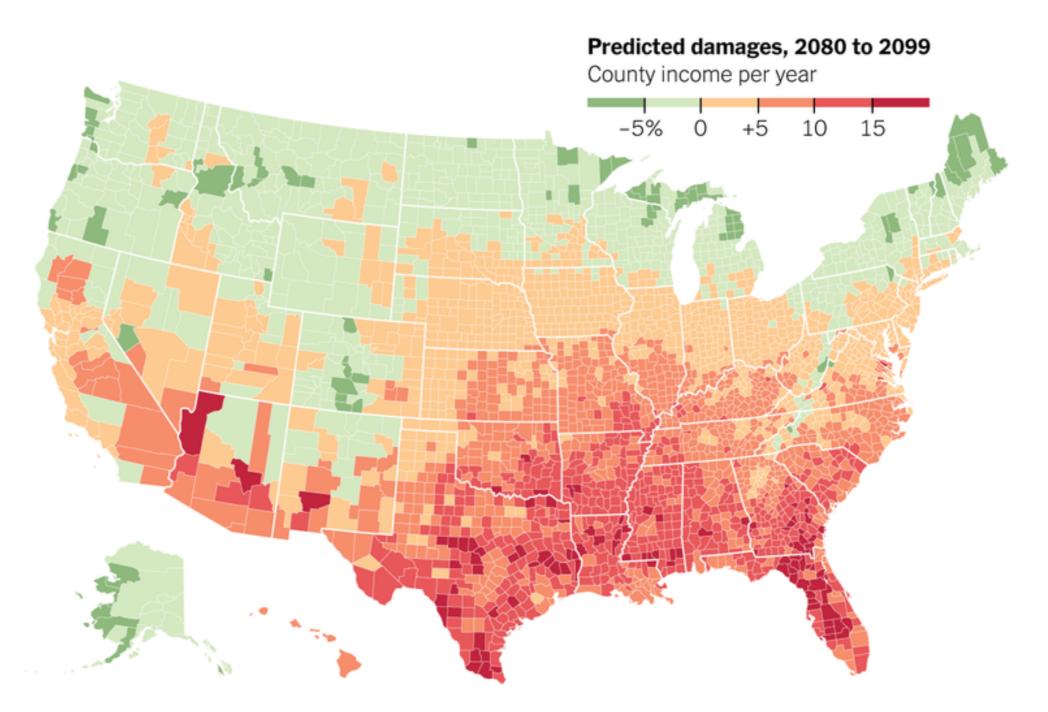
# evidence mapping is an environmental management reproducible solution





# environmental management solution

NATURE | COMMENT





#### Sustainability: Map the evidence

Madeleine C. McKinnon, Samantha H. Cheng, Ruth Garside, Yuta J. Masuda & Daniel C. Miller

09 December 2015

Too many studies go unread. Collate them to enable synthesis and guide decision-making in sustainability, urge Madeleine C. McKinnon and colleagues.



# novelty

map what we know

included human well-being

conservation to people

explicitly addressed research gaps

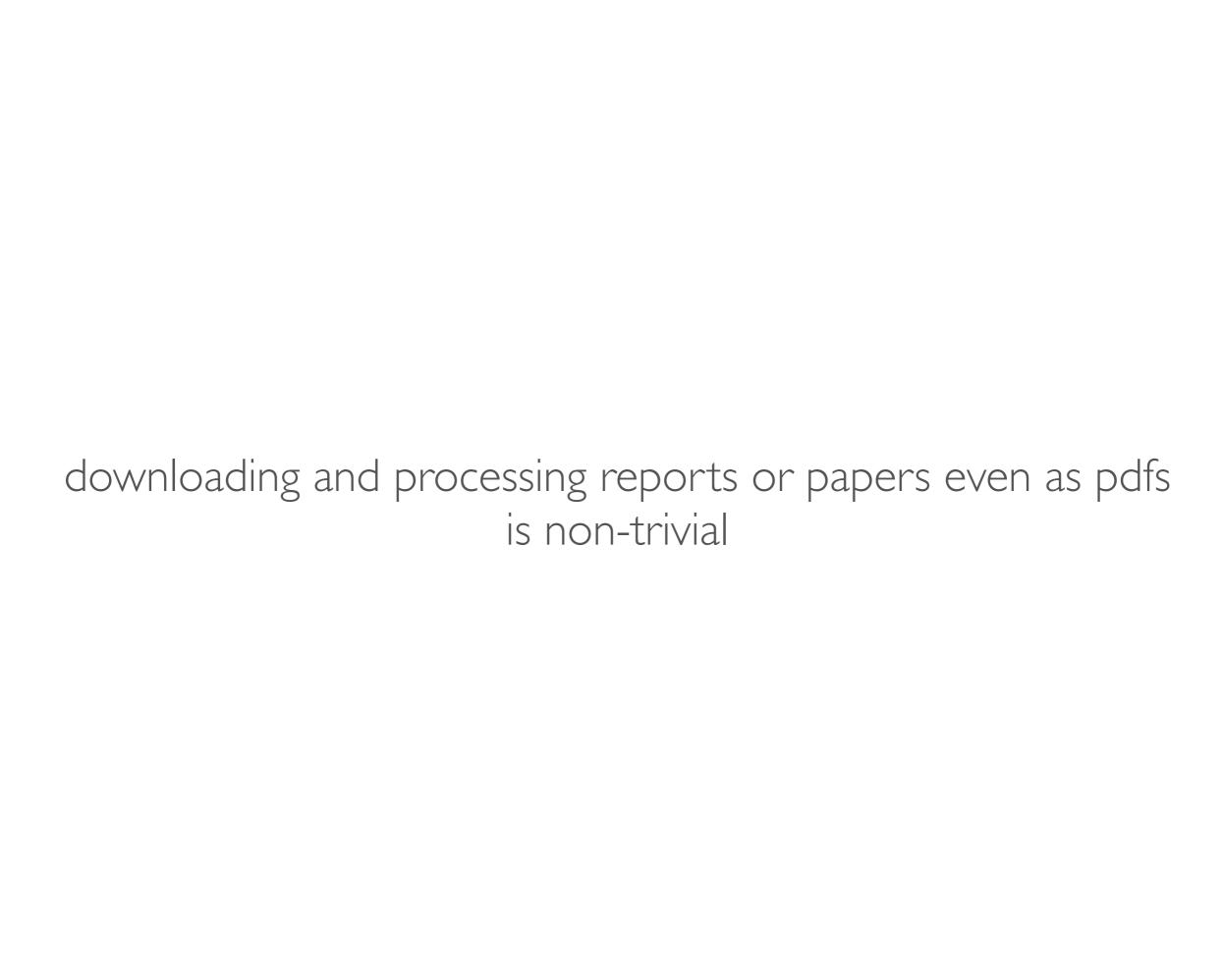
# challenge



information overload



publisher paywalls



#### methods

> 1000 studies documenting links between conservation efforts and human well-being

unique classification of studies to include studies with humans directly

considered the business-as-usual model and hope-for-the-best in the studies

### evidence

many non-comparative studies, i.e. without controls but were included

A total of 25% of 1,014 studies measured the economic impacts of protected areas

Only 2% of studies measured well-being such as health of local communities

More than 1,000 studies were included in the evidence map on the basis of systematically designed selection criteria.

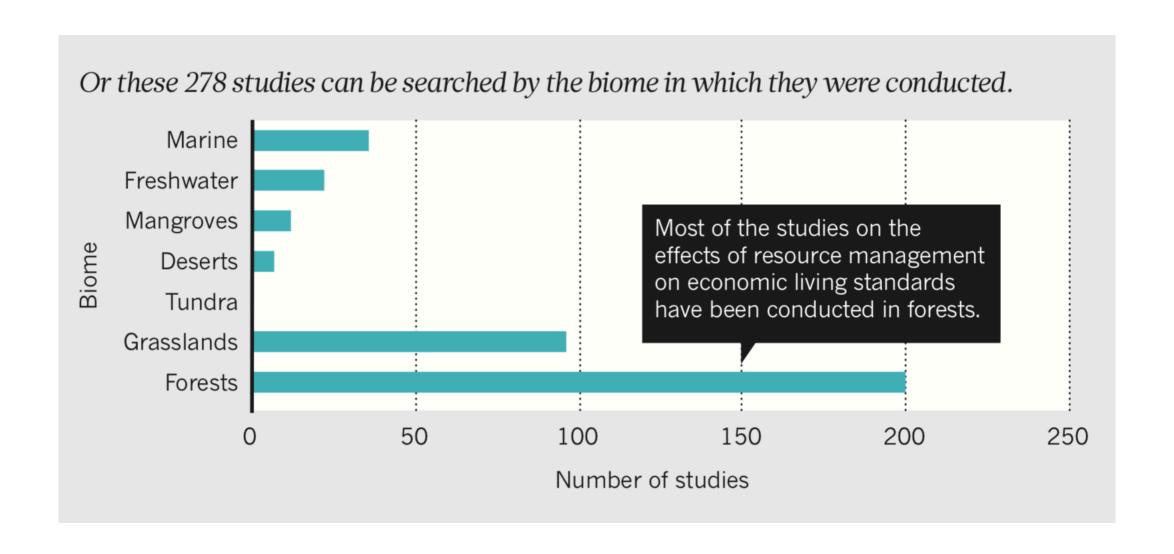
#### Conservation intervention

Users click on a cell to find out more about the studies that investigate links between a particular conservation policy and a measure of human well-being.

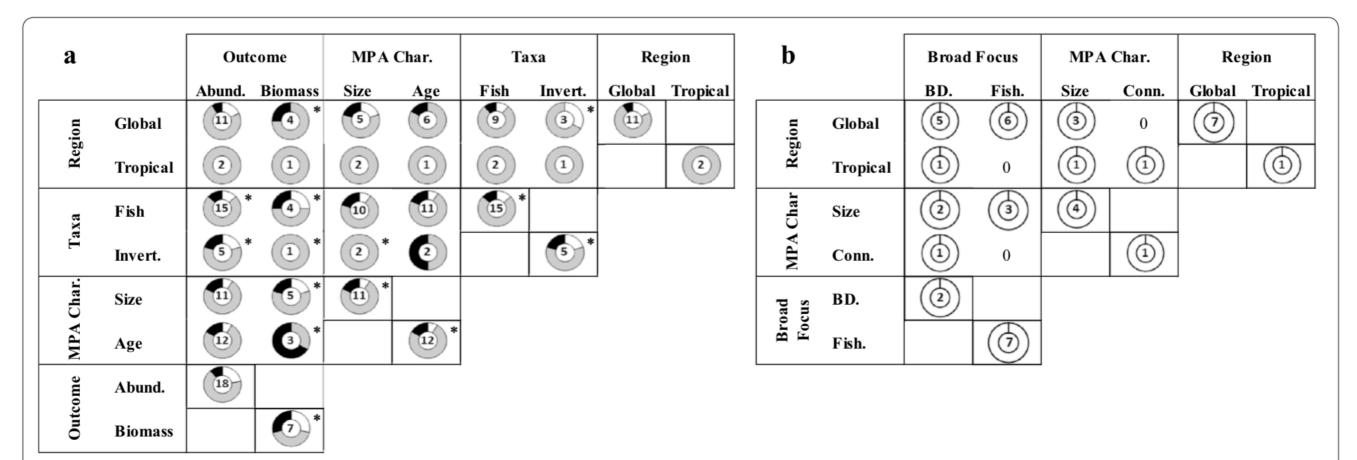
	Area protection	Land or water management	Resource management	Species management	Education and awareness	Law and policy	Economic incentives	Number of studies 0 50 100 150 200 2	50
	158	151	185	52	20	99	119	Material living standards	
	247	213	278	91	34	149	248	Economic living standards	
	21	17	10	11	5	6	21	Health	
	49	43	68	23	41	30	56	Education	
	133	162	202	58	31	134	109	Governance and empowerment	Il-bei
	102	105	140	45	18	75	89	Social relations	Human well-being
	45	29	33	21	5	19	16	Security and safety	luma
	36	37	23	19	15	24	47	Culture or spirituality	T
	22	16	24	6	6	12	17	Subjective well-being	
	1	3	3	1	1	2	2	Freedom of choice or action	

A search of these 278 studies by country indicates where in the world they have been carried out.

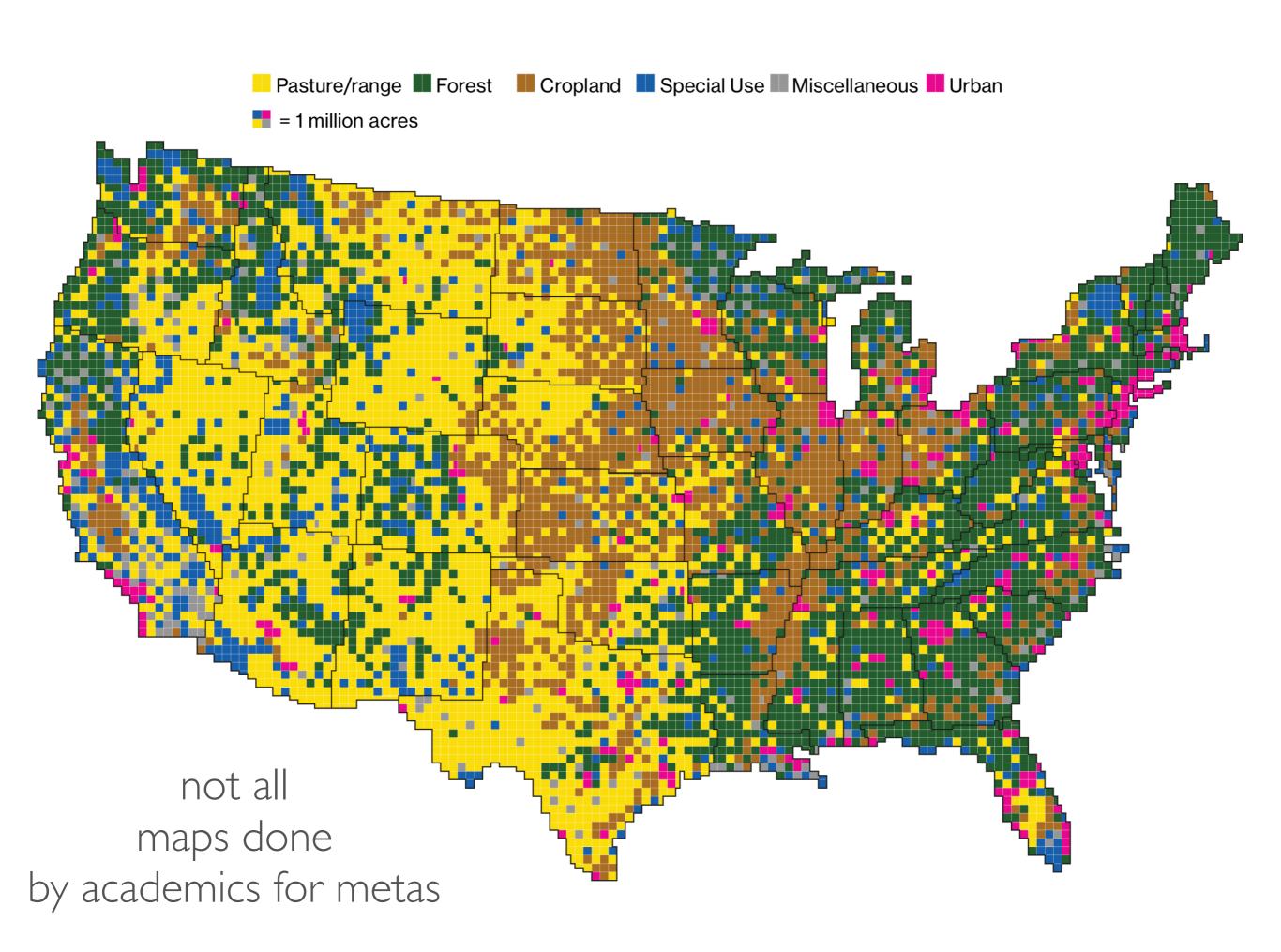




# many ways to map and visualize studies



**Fig. 3** Example **a** meta-analytical and **b** narrative evidence review map illustrating the marine protected area review landscape. The matrix should be read using combinations from the *top and left* headings to form the particular question of interest. *Each individual doughnut chart* describes the number of reviews addressing a question, and the proportion of reviews that are high (26.5+; *black*), moderate (13.5−26; *grey*) and low (≤13; *white*) scoring. *Star symbols* represent where one or more reviews have been identified that partially address the particular question. Full details identifying reviews that address a particular question are reported in the supporting tables. Abbreviations in headings refer to: Taxa—*Invert* invertebrates *MPA Char* MPA characteristics, outcome measures—*Abund* abundance, broad focus—*BD* biodiversity, *Fish* fisheries (Example adapted from Woodcock et al. [12])



#### bio4enviro connection

studies all over the world > many lost/inaccessible > scrapes > maps

#### tools

bibliometrics

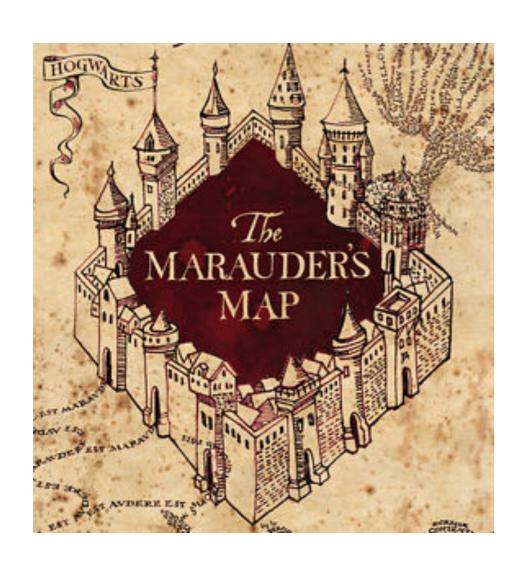
open science tools

team science

mapping

critical idea linkage of conservation to people

# implications



a magic interactive map that shows environmental change is not so farfetched