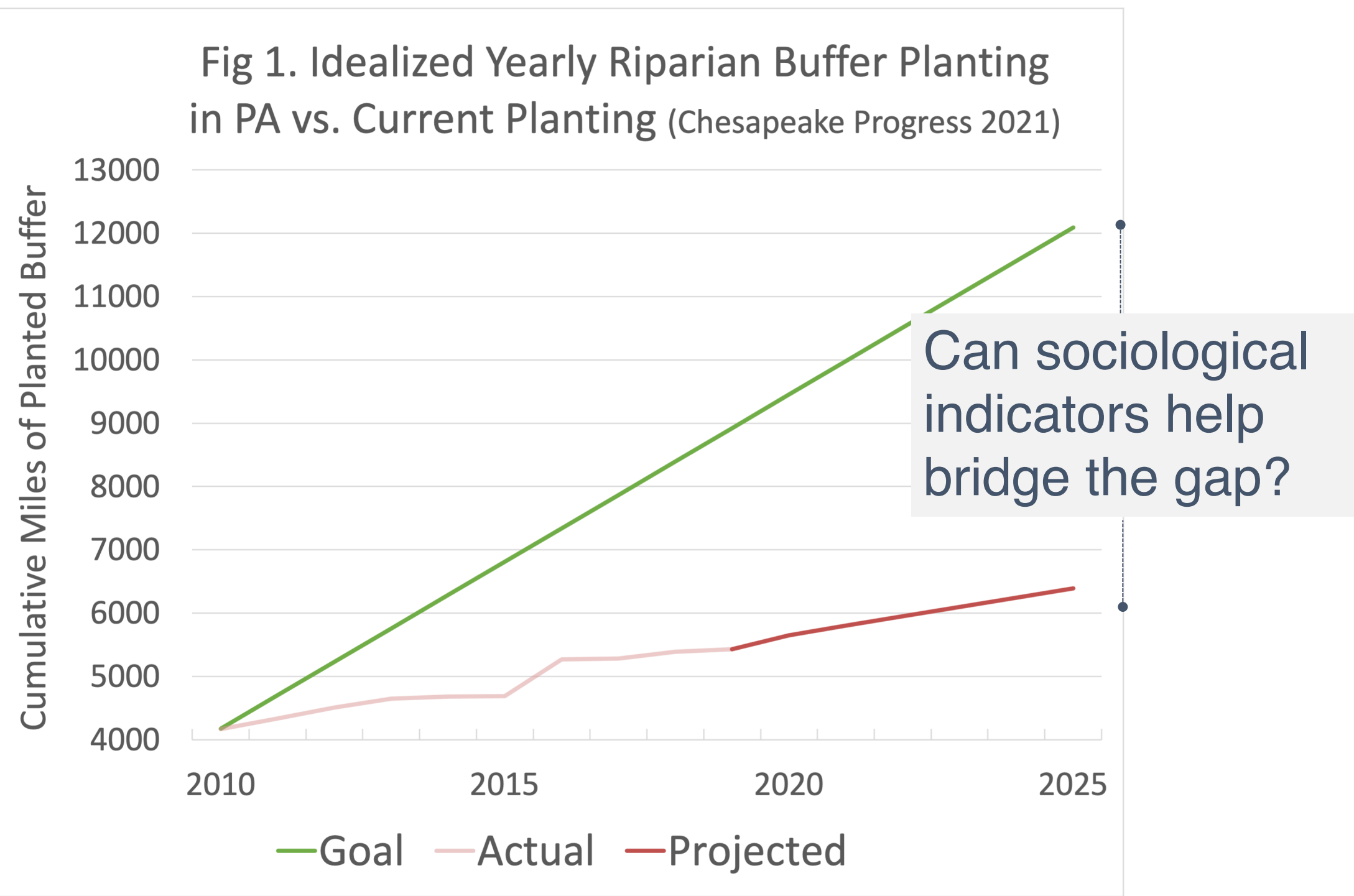


Spatially Targeting  
Riparian Buffer Outreach

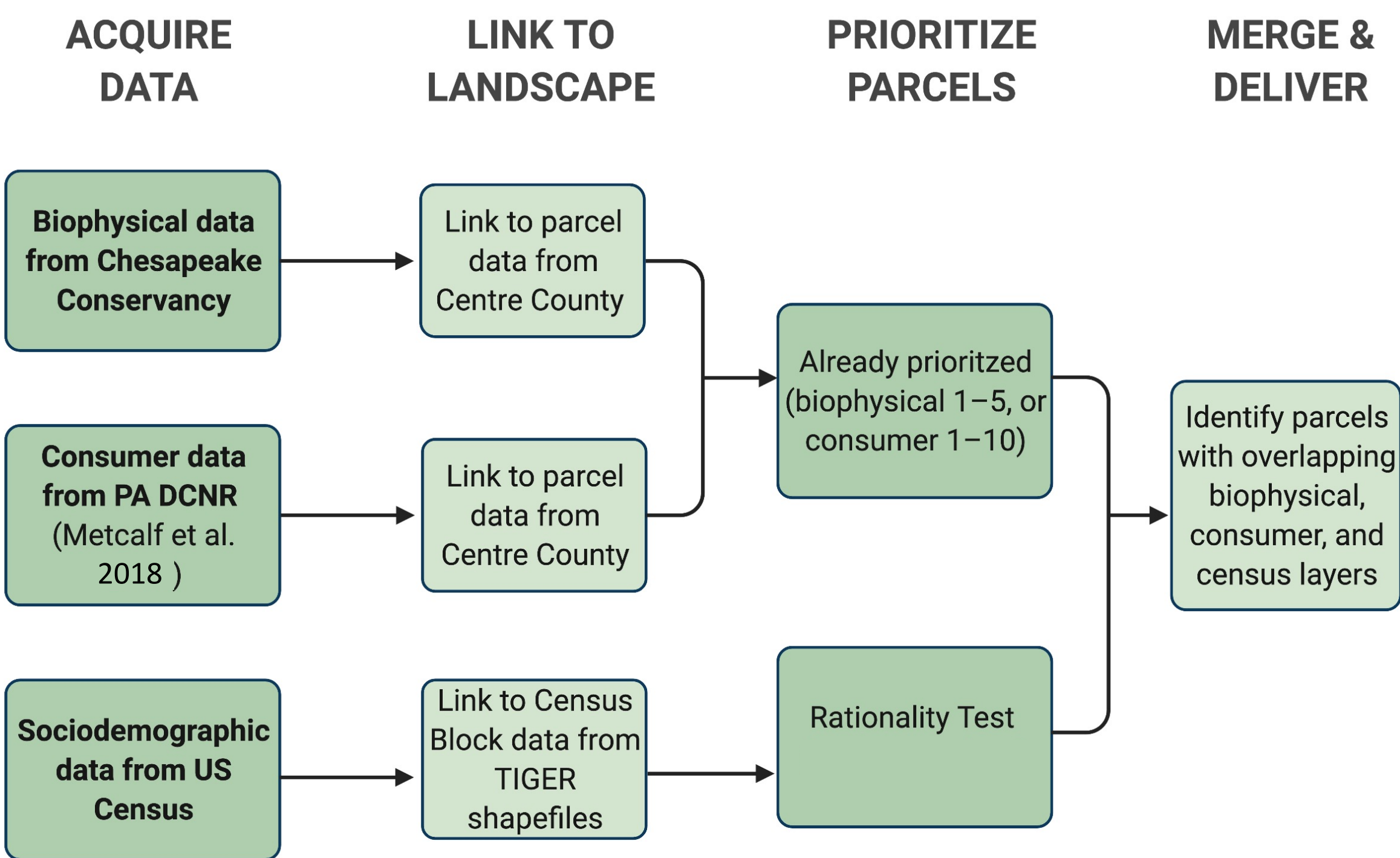
PRESENTER: **Marissa Kopp**  
mkk5565@psu.edu

**PROBLEM:** Pennsylvania is falling short of **riparian buffer** planting goals. Could Census data help us target landowners most willing to engage in riparian buffer outreach?

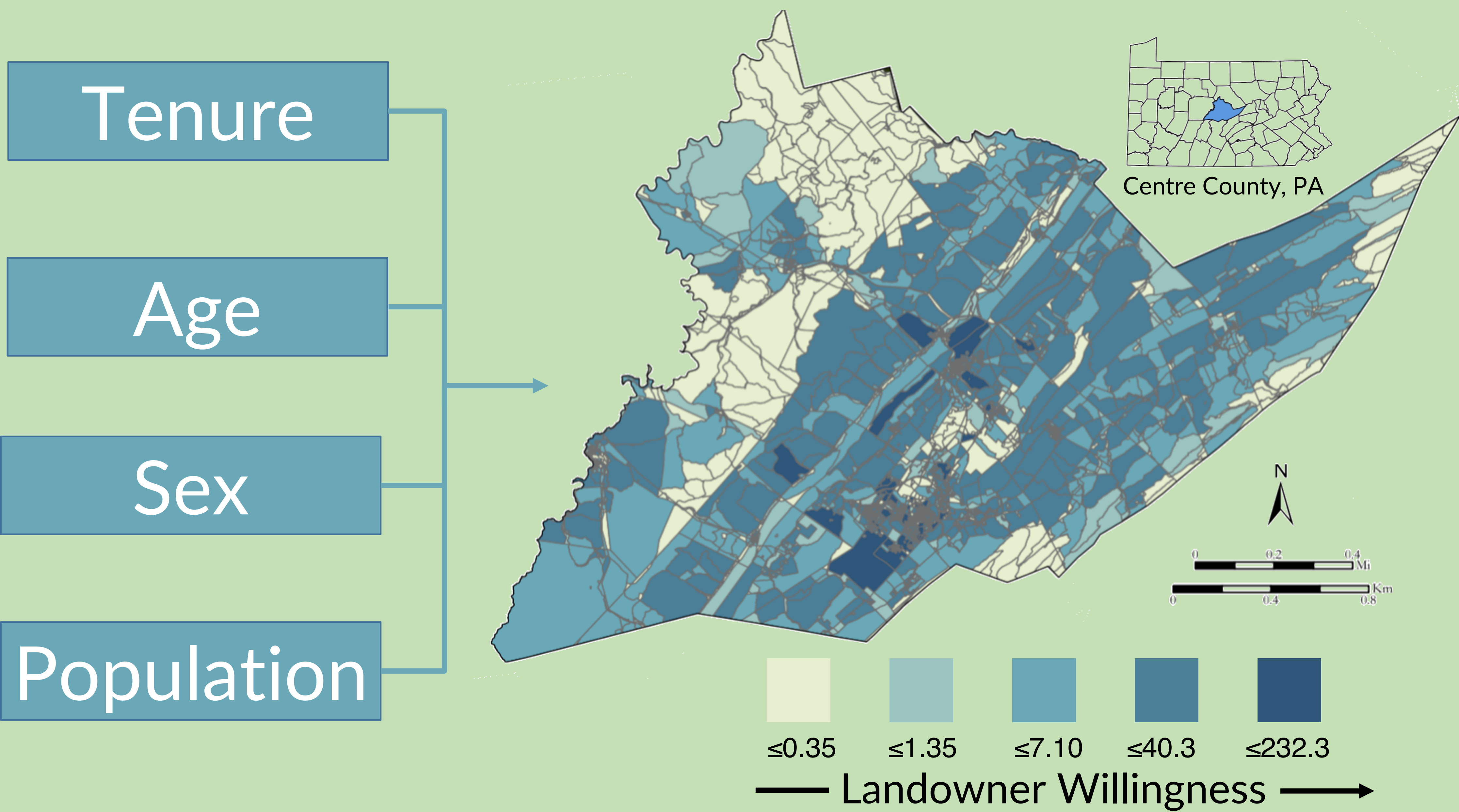


METHODS

1. Performed literature review and key informant interviews (n = 8) to identify **sociodemographic indicators** of landowner willingness to adopt riparian buffers
2. Translated 4 variables into an equation using a **rationality test** (Banai-Kashani 1989)
3. Mapped our output onto 2010 **Census blocks** in Centre County, PA
4. Overlaid our map onto Chesapeake Conservancy’s parcels prioritized by ecological need (Gemberling et al. 2020)
5. Tested equation performance against previous model outputs in a case study watershed (Metcalf et al. 2018)

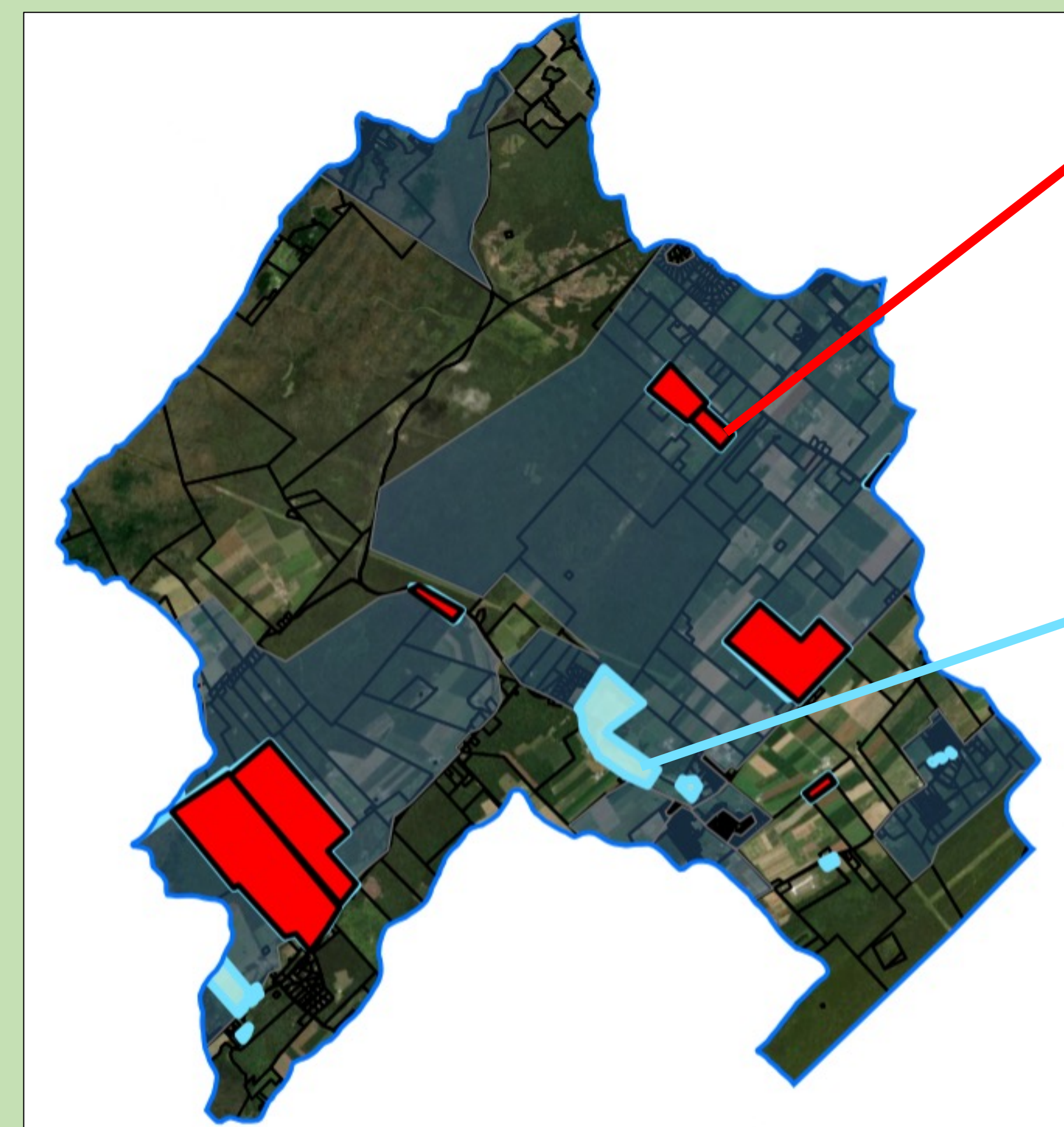


Tenure, age, sex, and population density  
can target landowners more willing to  
engage in riparian buffer outreach



How can we use these maps?

A case study from Beaver Branch (HUC12) exemplifies how to target outreach at intersections of high landowner willingness and ecological need.



- Best Opportunities:** Both high landowner willingness and high ecological need for buffers. These opportunities should maximize ecological impact per outreach effort.
- Good Opportunities:** Lower ecological need, but high landowner willingness. These opportunities can still (1) get buffers in the ground and (2) create successful demonstration plots for more hesitant landowners.

AUTHORS: Kopp M, Aviste R, Naylor RS, Tallon A, Traub J, & Whitley H

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KEY TERMS

**Riparian Buffer:** a best management practice where vegetation is planted along streams to catch nutrients

**Sociodemographic Indicator:** variables that gauge likelihood of an outcome

**Tenure:** when a property owner lives on the land (as opposed to a renter)

**Rationality Test:** a method of weighing variables against each other based on relative importance informed by experts

**Census Blocks:** the finest resolution (smallest) unit of Census data

OUTCOMES

- We capture 80% of parcels more complex models find to be ~66% more likely to engage in riparian outreach
- In contrast to previous models, we use only four freely available variables, which reduces processing time and increases accessibility
- Our collaborative products are helping stakeholders implement Centre County’s County Action Plan

FUTURE DIRECTIONS

- Cross model comparisons offer a solid proof of concept, but must be validated in the field through direct outreach efforts

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