



UHERO

THE ECONOMIC RESEARCH ORGANIZATION
AT THE UNIVERSITY OF HAWAII

OVERVIEW OF FIRE-RELATED UHERO PROJECTS

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PEX STEERING COMMITTEE MEETING

JANUARY 16, 2024

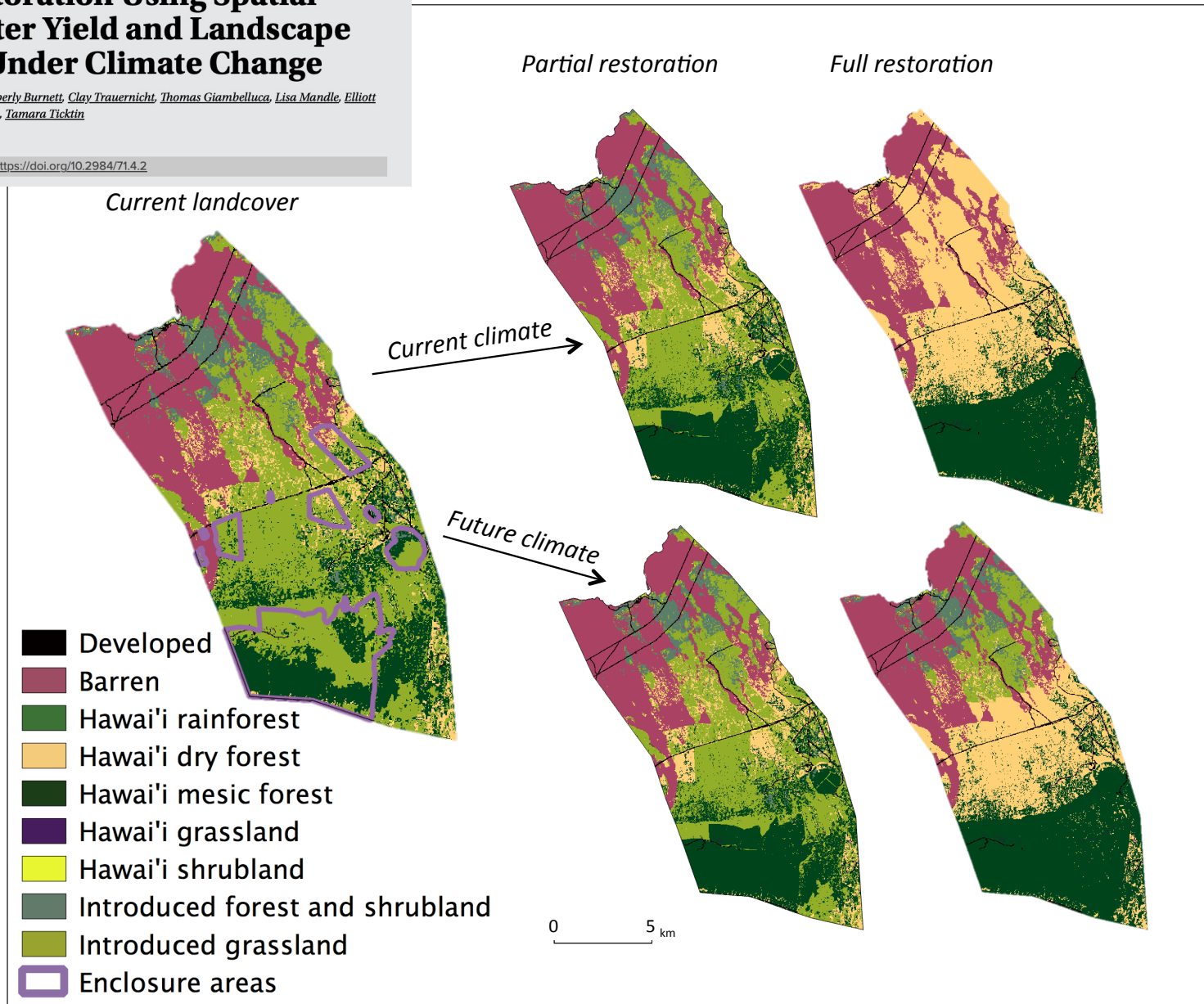
Land Cover in Pu'u Wa'awa'a Under Different Scenarios

Estimating Cost-Effectiveness of Hawaiian Dry Forest Restoration Using Spatial Changes in Water Yield and Landscape Flammability Under Climate Change

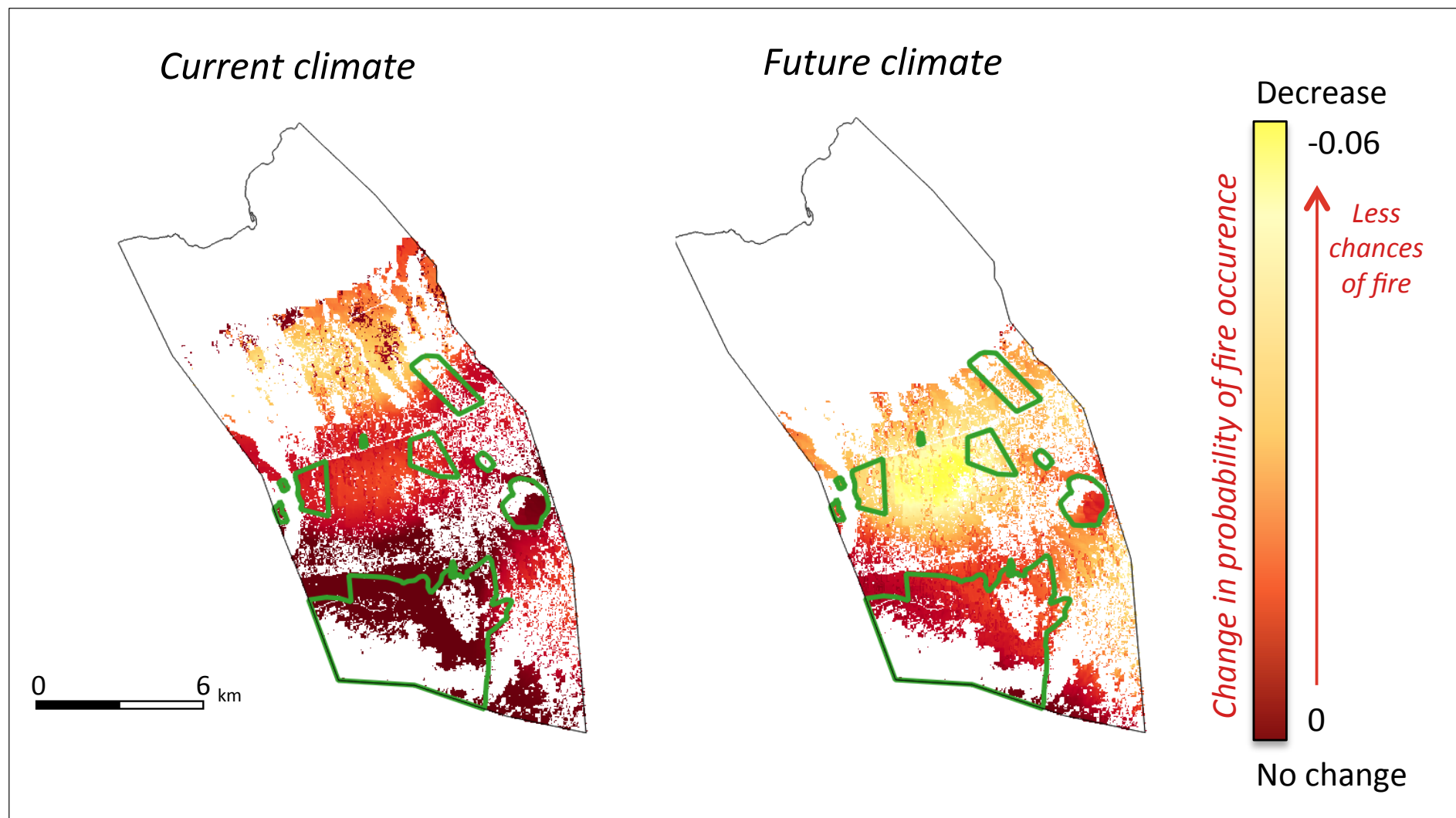
Christopher A. Wada, Leah L. Bremer, Kimberly Burnett, Clay Trauernicht, Thomas Giambelluca, Lisa Mandle, Elliott Parsons, Charlotte Weil, Natalie Kurashima, Tamara Tickin

Author Affiliations +

Pacific Science, 71(4):401-424 (2017). <https://doi.org/10.2984/71.4.2>

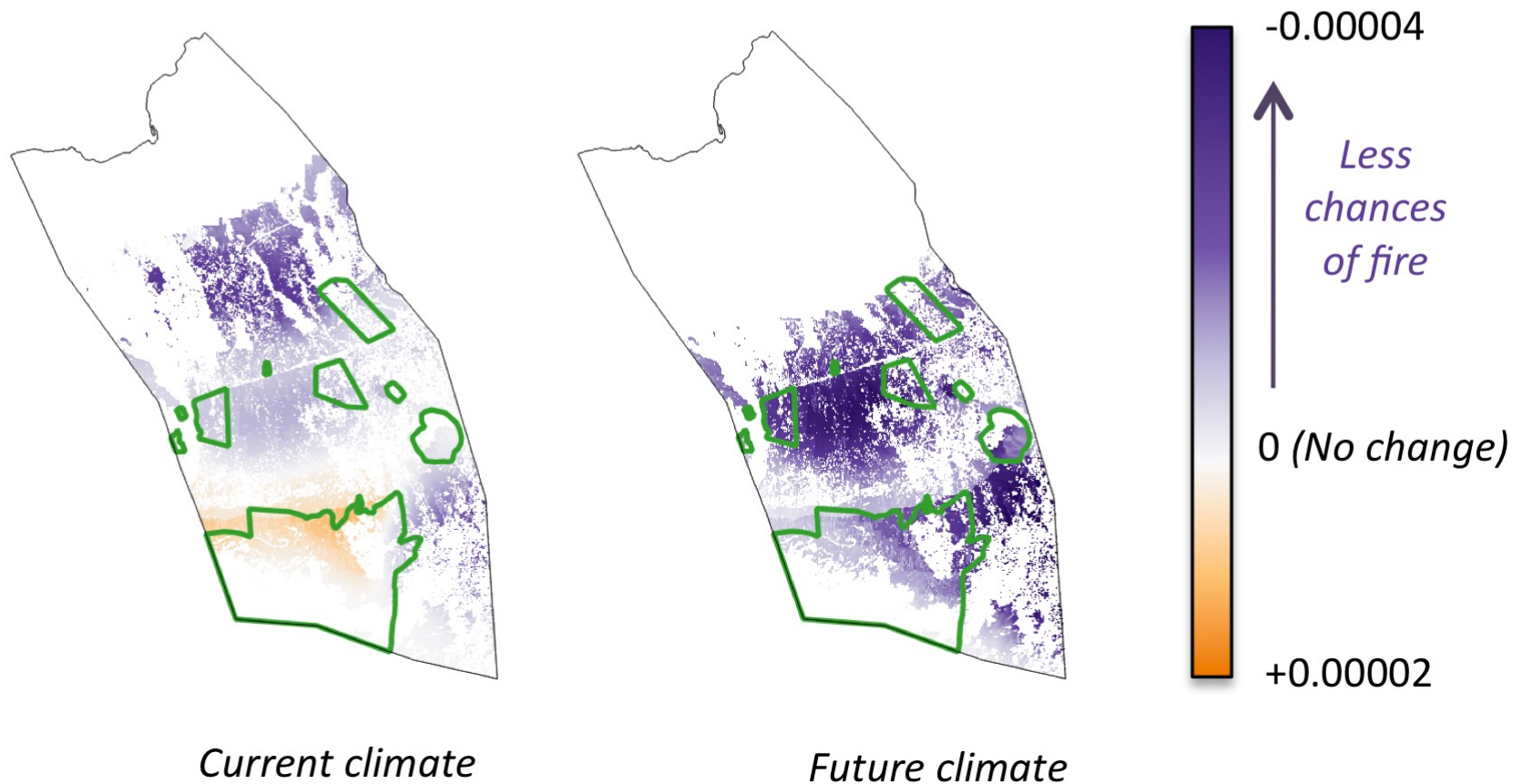


Impact of Restoration on Landscape Flammability



Cost-effectiveness of Restoration

Change in probability of fire occurrence per dollar



Benefits and Costs of Agricultural Land Conversion to Reduce Wildfire Risk

(with Clay Trauernicht, Leah Bremer, Christopher Wada, and Makena Coffman)

- **Background:** Maui wildfires demonstrated the human and economic costs that vast areas of unmanaged agricultural lands pose to communities across Hawaii
- **Challenge:** Reducing landscape flammability is a public good while wildfire risk is a public bad so how can we efficiently and inclusively reduce wildfire risk?
- **Cost-effectiveness:** Consider set of proven fire risk reduction strategies (e.g., road, standard firebreak, greenbreak, agroforest, etc.)
- **Additional benefits:** Ecosystem and others (e.g., biodiversity, freshwater, local food production, community building, cultural practices, landscape aesthetics, etc.)
- **Inform policy:** Combination of non-compliance penalties and ecosystem service incentives for land owners/managers

Envisioned Research Output

Probability of Wildfire Occurrence	Type of Firebreak	Cost (\$/area/yr)	Additional Benefits			
			Biodiversity Habitat (area)	Freshwater (volume)	Local Food Production (weight)	...
5%	Road					
	Standard					
	Green					
	Agroforest					
	...					
10%	Road					
	Standard					
	Green					
	Agroforest					
	...					
...	...					

Other Proposed UHERO Fire-Related Projects

- **In progress:** UHERO is partnering with JABSOM on the Maui Wildfire Exposure Study, <https://www.mauiwes.info>
- **Health Effects and Healthcare Utilization in Aftermath of Maui Fires (proposed, Daniela Bond-Smith and Ruben Juarez) :** Use health records from Med-Quest and private insurers to calculate incidence of pulmonary, cardiovascular and psychological conditions and compare to expected rates in normal times, as well as assess healthcare utilization patterns across different providers
- **Impact of Wildfires on Education of Maui School Children (proposed, Daniela Bond-Smith and Rachel Inafuku) :** Use DOE student records to ascertain characteristics, location, and school attendance delay for each student as well as compare academic achievement to pre-fire baseline
- **Public Trust in Government on Maui (proposed, Colin Moore) :** Survey of Maui residents to gauge impact of wildfires on the community's trust in public officials and government agencies