Valuing Urban Greening using Hedonic Pricing: Middle Rio Grande Valley in the Greater Albuquerque Area

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Analysis

The Paretian Liberal Paradox and ecological economics

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Abstract

Two of the most basic considerations in collective choice are the Pareto principle and some minimal protection of individual rights. In his Impossibility Theorem, Sen (1970) shows that there is a potential inconsistency between preference sovereignty (as expressed by the Pareto condition) and the protection of minimal rights (a liberal or liberty condition). The Paretian Liberal Paradox (PLP), and the extensive debate surrounding it, prompts serious reconsideration of the traditional welfare economics approach. The critique of welfarism made by the PLP is of

RIGHTS

DEMOCRACY IN A HOTTER WORLD

THERE'S LESS WATER WHAT DO WE DO?

WELFARE

VALUATION IN A HOTTER WORLD

HOW DO PEOPLE USE AND VALUE WATER?

Responding to Climate Change
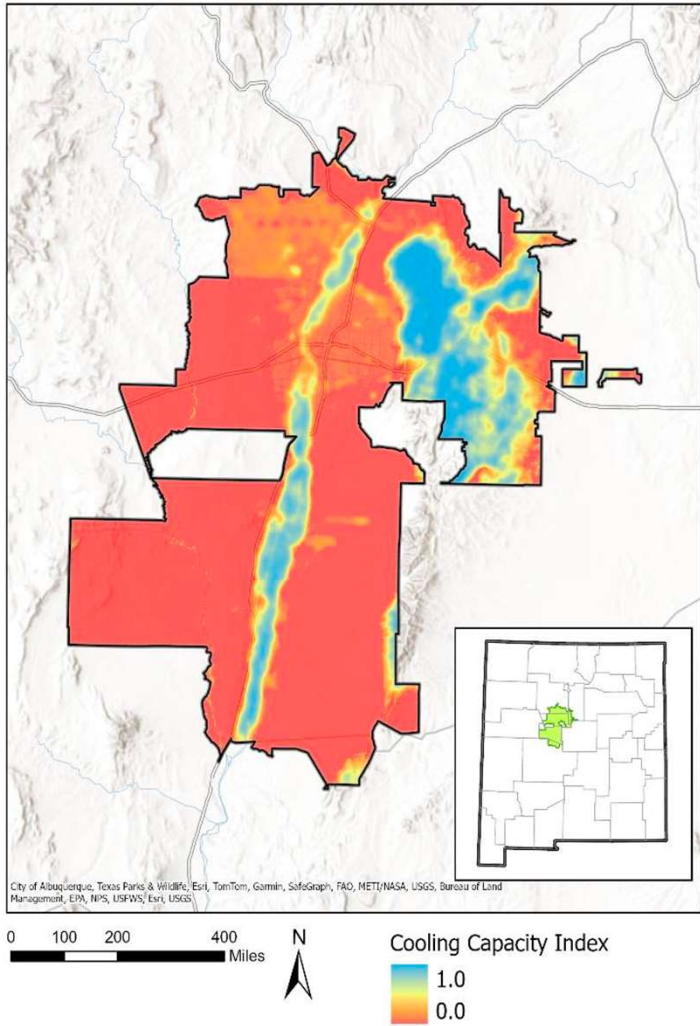
Research Question

How does heat (and its green/cooling correlates) get capitalized into the ABQ MSA housing market?
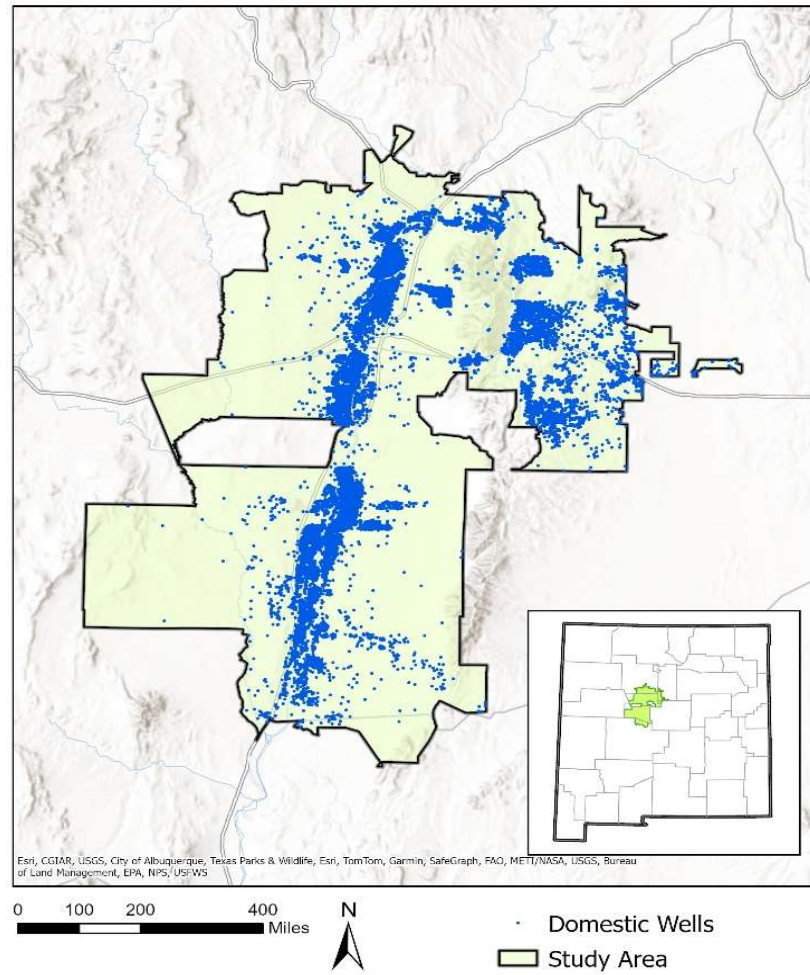
Methods & Data

- Hedonic Pricing Method (HPM): Econometrically decompose observed price variation - ABQ metro housing mkt - to isolate marg. implicit prices for variables of interest

- 5,000+ geo-located observations

- Web-scraped Price & Housing Data - Zillow

- Census Data for Neighborhood Characteristics, +

- Vector of environmental variables

-**Proximity to Amenities**: Rio Grande (RIVER-DIST), ditch & irrig. Convey. (DITCH-DIST) & greenspaces: parks, open spaces & golf courses (GREEN-DIST)

-**Land Surface Temperature (LST):** USGS data portal.

-**Enhanced Veget. Index (EVI):** Sentinel-2 imagery,

-**Ave. Cooling Capacity Index (CCI): InVEST** Cooling model.

-**Tree Canopy** Mid-Region Council of Governments.

-**Active well density:** NM OSE spatial data repository.

CCI

DW

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GRN-DENS-BG	+ *	+ *	+ **	+ *	+ *
RIVER-DIST	NS	- ***	NS	NS	NS
AVG-CCI	+ ***				
LST		- ***			
EVI			+ ***		
T-CANOPY-BG				+ ***	
WELL-DENS					+ ***
SPATIAL ERROR (λ)	***	***	***	***	***
R-squared	0.812	0.792	0.813	0.812	0.811

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Findings

Select Findings

- Heat & its correlates significantly capitalized into greater Abq H-market

- **One standard dev. LST = about $40k** in capitalized present value

- Annualized value per **AF of water in Greenspace = approx. $184 per AF**

THANK YOU
QUESTIONS

Future Research Agenda

- OpenET
- Lawns v. Trees
- HPM apartments/rentals
- Equitable green access
- Domestic wells - regulation
- Replicate the SM valuation surveys of 1994/1995
- Say and Pay - Green finance in MRGV

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