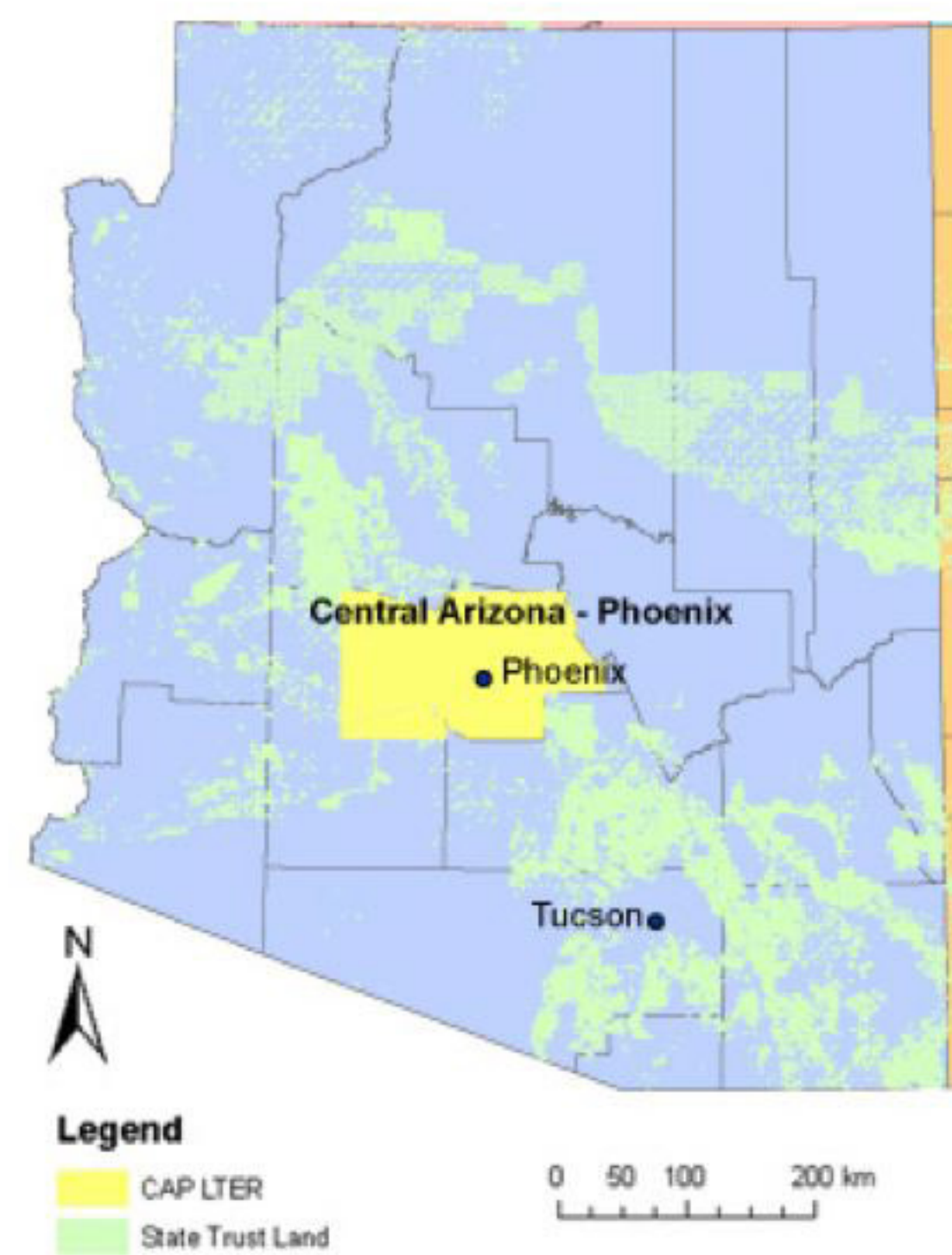


Introduction

Why State Trust Land?

In Arizona, state trust land (STL) comprises over 9 million acres of land. Designed as a source of income for public schools, STL is a unique institution which restricts the use of large areas of undeveloped land (Currie, Quillen). While in trust, these lands are protected from private ownership, but their status is perpetually subject to changes in state legislation. Land that surrounds urban areas, such as Phoenix and Flagstaff, is prime space for development and also serves as home to pristine desert ecosystems. With a booming population and a rapid increase in urban development, STL is a lucrative revenue resource. The primary source of revenue from Arizona's STL comes from land for development purposes, both commercial and residential. The principal from development land sales totals seventy-two percent, or \$277,670,557, of the total revenues from STL (Lincoln Institute). STL in Arizona is a unique and somewhat obscure policy instrument that dates back nearly a century to Arizona statehood. It provides fertile research ground for scholars interested in urban development, public policy, and the history of the American West.

One dimension of STL that has not yet been explored is the role of citizens in shaping STL policy. STL is a compelling and relatively unexamined area of research for the study of direct democracy and the environment (Souder). As Arizona continues to urbanize, citizens have voiced concerns that the state is selling land that should be used for environmental conservation purposes. These concerns are manifested in a number of citizen's ballot measures that seek to preserve and protect ecosystems on STL. An examination of these recent ballot measures led to a fascinating discovery - Arizona has a rich tradition of direct democracy that intersects with STL, with such ballot measures dating as far back as 1918.



A Map of State Trust Land in Arizona and the CAP LTER Site.

Direct Democracy and STL Analysis

We examine linkages between STL and direct democracy via a text analysis of ballot measures pertaining to STL governance. We analyze ballot measures from seven states that pertain to state trust land use. These date from 1918 to 2006, with the vast majority (17/23 measures) coming from Arizona. We utilize text analysis to identify and locate major topic codes and used factor analysis to identify crosscutting themes in the ballot measures. The analysis identifies four main dimensions which inform an understanding of STL in light of direct democracy.

Below are data for the ballot measures we collected, topic codes and corresponding frequencies used for text analysis, and the principal component analysis we conducted to determine the main components, or topic groupings, in the STL measures.

Figure 1: Ballot Measures and Corresponding Years

Arizona	1918, * 1918, 1918, 1927, 1940, 1950, 1990, 1992, 1994, 1998, 2000, 2000, 2002, 2004, 2006, 2006
Colorado	1996, 1998
Idaho	1998
Montana	2004
Oklahoma	1908
South Dakota	1996
Utah	1998

* repeated years indicate multiple STL measures for that year.

Figure 2: Topic Codes, Keywords, and Frequencies

Major Topic Codes	Keywords	Frequency*
Growth and Development	Growth/Growing/Development	4
Economic Issues	Revenue/Economic/Value	11
Trustee Issues	Board of Trustees/State Board of Land Commissioners/Trustee	2
Beneficiary Issues	Board of Education/School/Fund/Beneficiaries	12
Natural Resources	Mine/Mineral/Oil/Gas/Timber	6
Agriculture and Grazing	Agricultural/Grazing	4
Application and Lease Issues	Application/Lease/Lessee	9
Sale and Auction Issues	Advertising/Rights-of-way/Sale/Auction/Notice	14
Conservation and Open Space	Conservation/Conserve/Environment/Steward/Open Space	9
Land Exchange	Exchange	7

*Number of measures the code was identified in. N=23

Figure 3: Component Matrix*

	Component			
	1	2	3	4
Economic Issues	.813			
Trustee Issues	.584	-.584	.583	.307
Beneficiary Issues		-.785		
Natural Resources	.472	.650		
Agriculture and Grazing			.791	
Application and Lease Issues	.315	.517	.328	
Sale and Auction Issues			.762	
Conservation and Open Space	.784			.368
Growth and Development				.978
Land Exchange	.659			

A four-factor analysis with a Varimax rotation method and Kaiser normalization enabled maximum variance accounted for each item produced. It provided four distinct groupings, or components.

*excludes item loadings <.30

GENERAL UTILITY COMPONENT
The first component had a very strong loading for a number of the items. This component appears to be a general utility component. It expresses an underlying tension in the STL ballot measures (and STL management in general) regarding a desire to extract the maximum economic value from STL yet at the same time conserve and protect STL space. The items that comprise this component are the economic issues, trustee issues, natural resources, application and lease issues, conservation and open space, and exchange topic codes. The economic issues topic code had the highest loading at .813 and conservation and open space had the second highest loading at .784.

AGRICULTURAL PROCEDURE COMPONENT
The third component is a combination of trustee issues, agricultural and grazing, application and lease issues, and sale and auction issues. These relations make this component the agricultural procedure dimension.

PROCEDURAL ASPECTS OF NATURAL RESOURCE USE COMPONENT
The second component is specifically related to natural resource use and the application and lease issues topic code. Both the natural resources and application and lease issues are included in this component, indicating that this is a dimension that is related to the procedural aspects of natural resource use on STL. Interestingly, the trustee issues and beneficiary issues topic code loadings are both negative, at -.584 and -.785 respectively. The negative loadings make this component the only bipolar factor. The negative loadings indicate that trustee and beneficiary issues are not strongly manifested in this dimension. After land for agriculture and development, the main resources found on STL include oil, gas, timber and minerals. In general, the Arizona measures associated with this dimension are purely procedural, focusing on the leasing, auction, and advertising requirements of STL that contains natural resources, and also stipulates the length of years that a lease can be held before it has to be renewed. The Montana measure asks voters whether cyanide leach processing should be used on mineral land with open-pit gold and silver mines. The measure notes that the use of cyanide leach processing has the potential of increasing royalties from STL (Montana 2004).

RESULTS: ISSUE AREAS FOUND IN STL BALLOT MEASURES

Acknowledgments

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Image References

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All other photographs by Abigail M. York.
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