Heart of the Lakes Center for Land Conservation Policy

LAND POLICY INSTITUTE

Partnership for Economic Impact Studies and Strategic Planning for Conservation Research

Establishing a National Benchmark for State Funding of Natural Resources Conservation and Management

Preliminary Summary of Findings

Figure 1. Amount of Inland Water

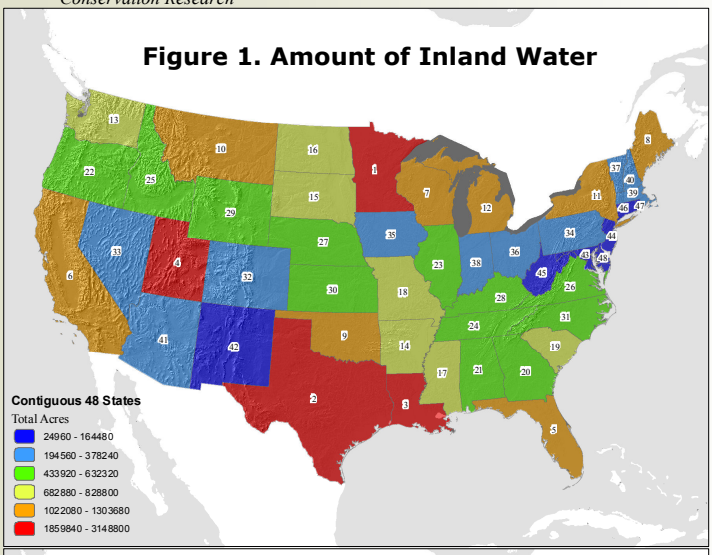


Figure 2. Amount of Wetlands

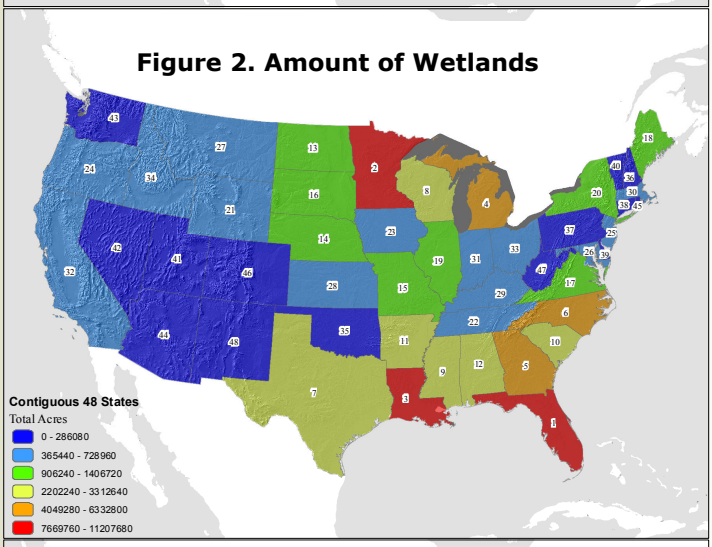
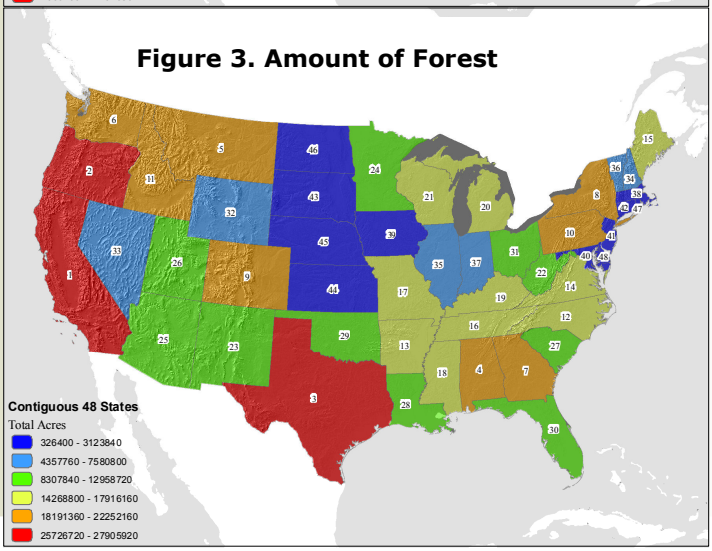


Figure 3. Amount of Forest



The Issue:

This report by the Land Policy Institute provides preliminary results on the drivers of conservation spending in the United States, and compares Michigan to other states. The results suggest that, in general, conservation spending is not driven by the extent of resource endowment, as one might expect, but rather by socio-economic and political factors.

Results also indicate that Michigan ranks near the top in terms of quantity and diversity of natural resources, as shown by land cover. Michigan is also at the top when considering the amount of wetlands and the area of coastal and Great Lake responsibility. However, Michigan ranks near the bottom in the U.S. in terms of per capita conservation spending, and has the largest gap between what it spends on conservation and what one would expect it to spend relative to its natural resource base and socio-economic realities.

Study Approach:

The presence of natural resources was quantified for each state, using publicly available data from federal agencies. Land cover data were derived from the National Land Cover Database (NLCD), USGS, 1992. Data on water features such as rivers, streams, and inland lakes came from the National Hydrography Dataset (NHD), USGS, 1999. State Parks data came from the US Census Bureau Statistical Abstract of the United States, 2003. Using these nationally standardized data allows us to make state-to-state comparisons. State funding data, defined as all state funds spent on environmental conservation, management, monitoring, enforcement, and remediation, was aggregated from state budget documents, agency financial statements, and capital spending summaries for each of the lower 48 states using the most recent data available from the states' websites. Note that this does not include federal spending in these areas, only state monies.

Socio-economic data were compiled from the US Census Bureau's 2005 adjustment. Political data came from the US Census Bureau's 2004 Census of Governments and Government Organizations.

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Public financial and debt data were compiled from the US Census Bureau's Census of State and Local Government Finances, 2003-2004. Per capita figures were derived by dividing funding totals for each state by their 2002 population totals, as adjusted by the US Census Bureau from the 2000 census. While Michigan annually spends more than several Western states like Montana, Wyoming, and Nevada, Michigan's larger population accounts for its lower per capita rank.

In terms of natural features, Michigan is geographically fortunate to have an abundance relative to other states. Table 1 shows the state's quantity of natural resources and Michigan's national rank in each category. Note the difference between coastline (a linear feature) and coastal management (an area that includes ocean or Great Lake bottom). Michigan's responsibility over portions of most of the Great Lakes means it has the largest area of coastal responsibility in the lower 48 states.

Once the data on natural resources, conservation spending, socio-economic, and political factors were collected, we developed a model to predict how much states would be expected to spend on conservation. Given a state's characteristics, the model outputs an expected level of spending. By comparing these figures of expected spending with what states actually spend, we determine the difference, or gap, between the two numbers. This gap shows by how much each state under-invests or invests on conservation, and is expressed in terms of dollars per person.

MI Natural Resources Features	MI Quantity	MI Rank
Water (Acres)	**1022080**	**12**
Rangeland (Acres)	**782720**	**21**
Wetlands (Acres)	**6332800**	**4**
Forest (Acres)	**15267840**	**20**
State Parks (Acres)	**285000**	**10**
Rivers (Miles)	**53881**	**33**
Ocean Coast (Miles)	**0**	**22**
Great Lakes Coast (Miles)	**3189**	**1**
Total Coast (Miles)	**3189**	**3**
Inland Lake Area (Sq Miles)	**1233**	**12**
Inland Lake Perimeter (Miles)	**13605**	**8**
Great Lakes Management (Sq Miles)	**24733827**	**1**
Total Water Management (Sq Miles)	**24733827**	**1**

Table 1. Quantity of Natural Resources in Michigan

Key Findings:

Despite expectations, conservation spending in the U.S. is not primarily driven by the size of the resource to preserve. Results indicate that the size of rangelands, wetlands, forested lands, parks, river miles, and ocean coasts do not have a systematic variation with per capita conservation spending. The only factor that varies systematically with spending was water acres, in which case states that are endowed with large water bodies actually under-spend on conservation. This leads to the general observation that conservation spending at the state level is driven by factors other than the resource base itself.

The state of the macro-economy can have a significant impact on the proportion of conservation spending. In general, a higher poverty rate and higher public debt levels discourage conservation spending. These factors are capturing the fact that social problems like poverty and accumulated debt can divert resources away from conservation spending.

Figure 4 shows levels of natural resources protection spending for each state, relative to what the model predicted states would spend given their realities. States to the right spend more than expected, while states to the left spend less. The central axis represents what states would be expected to spend, given their natural resources base, socio-economic and political conditions. In Michigan, the estimated under-spending on conservation is $3.18 per person, which given the 2005 population for Michi-

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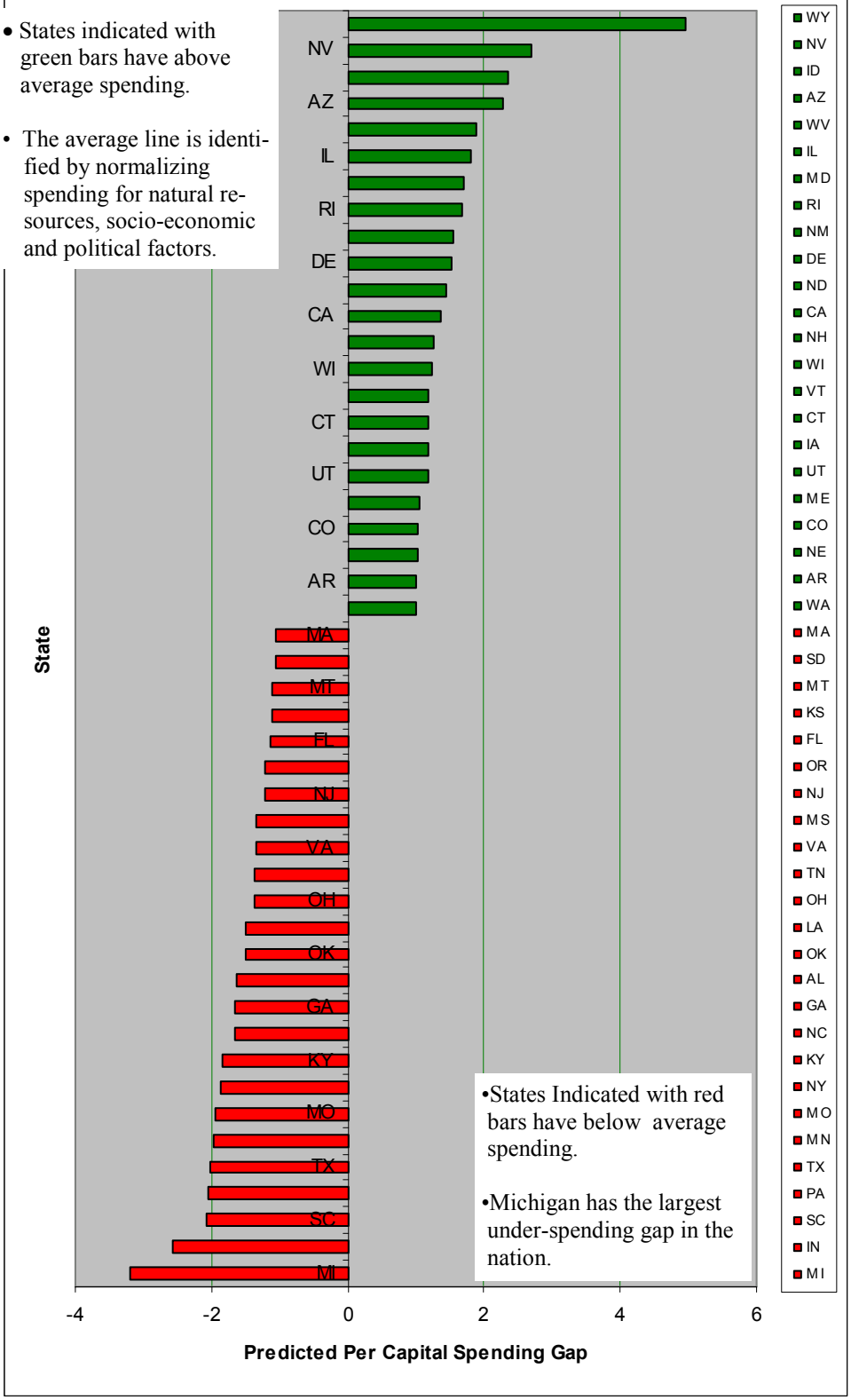
Figure 4. Per Capita Conservation Spending Gaps by State



gan, amounts to a state-wide under-spending on conservation of $32.13 million. This amount would be needed to close the conservation spending gap. The states were grouped into 3 tiers based on their spending patterns (Figure 5), 1st Tier being the best conservation investment in the country. The average spending gap for Michigan to move to the 3rd Tier is $44.76 million, to move to the 2nd Tier is $49.81 million, and to move to 1st Tier is $67.29 million per year. These estimates are based on current socio-economic conditions in Michigan, and are expected to increase as the economic condition of the State improves.

Discussion:

Michigan is among the national leaders in terms of the amount and diversity of natural resources land cover, as shown in Table 1. This resource legacy has significant ecological and economic value. The economic value of our natural resource base extends beyond traditional commodity production systems, such as timber and commercial fisheries. The green infrastructure in the state can be used as an economic development tool to bolster residents' quality of life.

However, Michigan is at the bottom in terms of how much it spends to protect those resources. This disconnect could be addressed by changes in policy to strengthen the state's commitment to managing its natural infrastructure.

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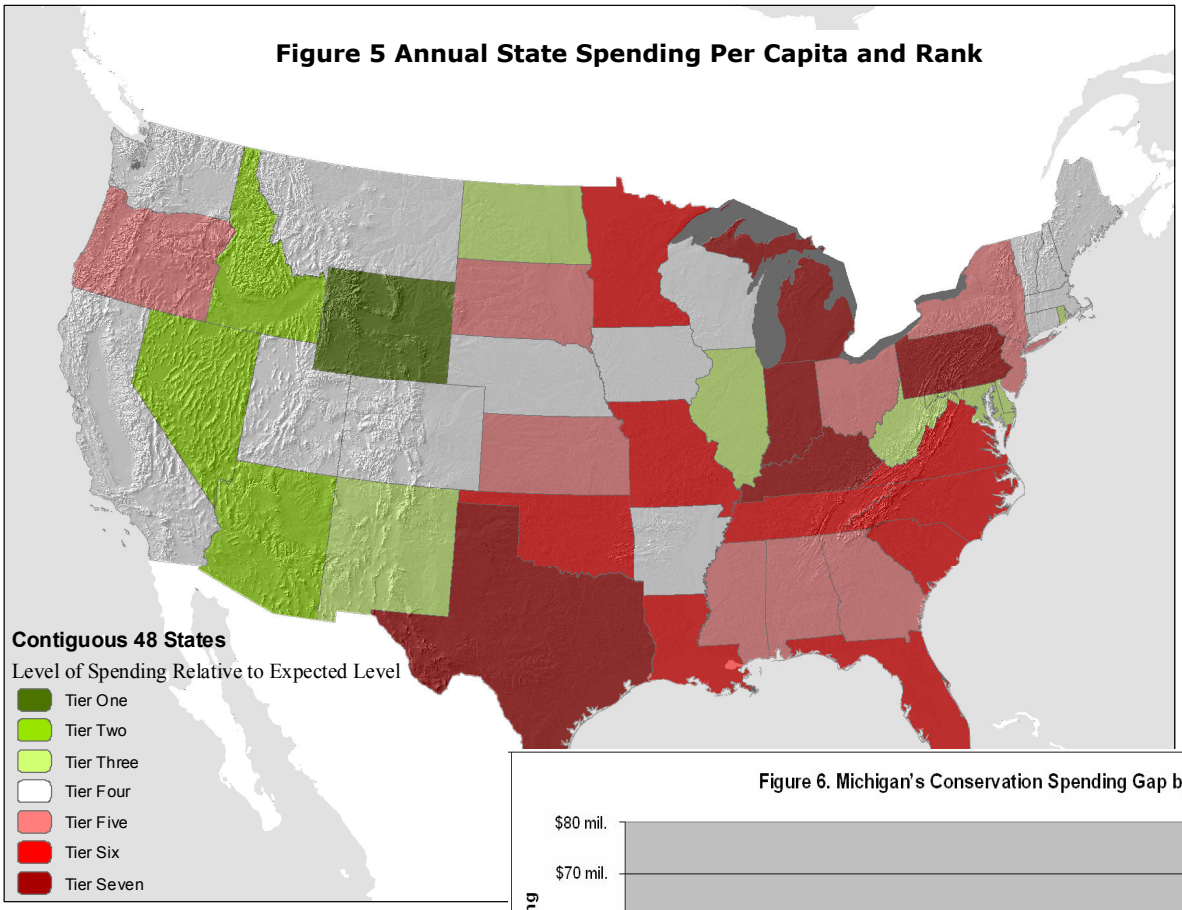
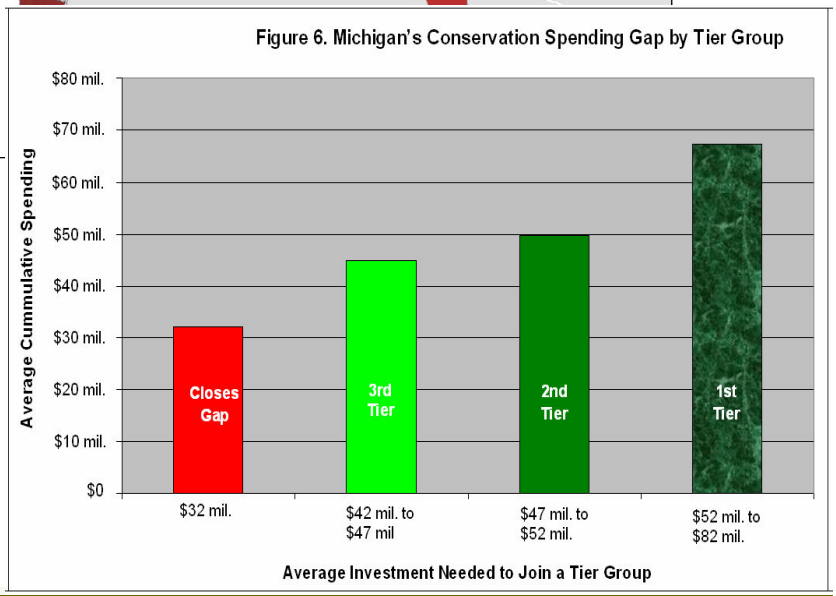


Furthermore, a dialogue between citizens and legislators is necessary to determine the priority of protecting our natural features.

Michigan's funding and land use policies could move to reflect the outcome of that dialogue and guide Michigan's goals for the future. Only by striving for national leadership in protection spending can Michigan preserve its legacy as a national leader in natural resources and its role as an effective land and water steward.



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