Sustainability Insights | Research

Does Nature Matter To Economic Development? A Look At U.S. Local Governments

April 29, 2025

Incomes, urbanization, and land-use designations influence the degree to which nature is protected at a local level. U.S. local governments weigh its importance against competing economic needs.

S&P Global Ratings believes there is a high degree of unpredictability around federal policy implementation by the U.S. administration. Data and policies referenced herein may change and could lead to different circumstances than those considered in this research.

This research report explores an evolving topic relating to sustainability. It reflects research conducted by and contributions from S&P Global Ratings' sustainability research and sustainable finance teams as well as our credit rating analysts (where listed).

This report does not constitute a rating action

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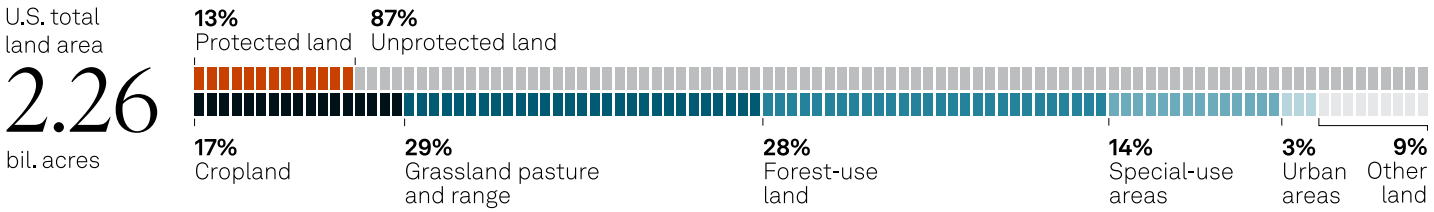
Protecting nature goes hand in hand with U.S. local governments' maintenance of parks and other green spaces for communities. But it has economic and financial implications. With increasing global focus on nature and biodiversity conservation as demonstrated through the establishment of landmark frameworks such as the 2022 Kunming-Montreal Global Biodiversity Framework, S&P Global Ratings sought to better understand how nature protection fits into the economic development of U.S. local governments (specifically, states and cities). In this report, we consider nature to be U.S. protected land classified as, national parks, forests, wildlife refuges or city parks.

Using statistical analysis, we examined data for the period 2013-2023 to explore the relationship between proportionate park acreage (the dependent variable, and a proxy for nature protection) at both state and city level, and 25 economic indicators (the independent variables). Indicators include incomes, unemployment, employment sectors, and housing construction activity. For details of our datasets and research approach, see the Appendix at the end of this report.

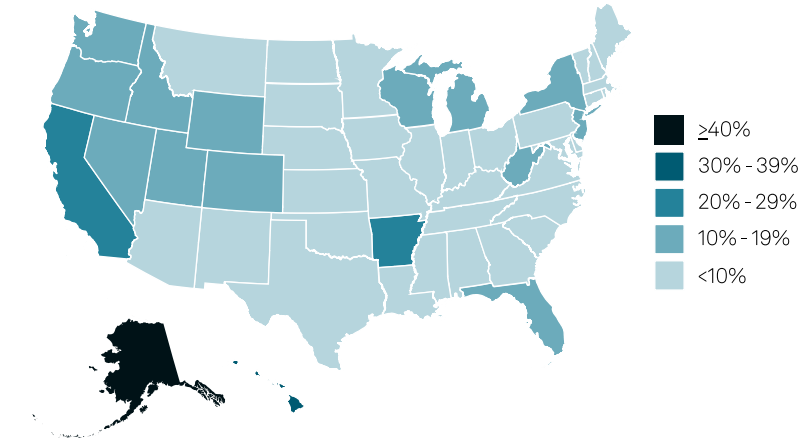
Key Findings

- U.S. local governments manage the relationship between land use and economic development while considering the quality of life of residents through actions such as investments in green spaces and park areas.
- Income, unemployment, urbanization, and land-use designations influence the proportion of protected land in states and cities.
- U.S. local governments typically evaluate the affordability of investing in nature, which has intangible economic value over the longer term, against more pressing needs such as housing and employment.

U.S. land by the numbers: Urban areas 3%, protected areas 13%



U.S. protected land (%)



-30% On average, low-income neighborhoods in the U.S. have **30% less park space** than high-income neighborhoods

Average spending for parks and recreation in the U.S. per city resident **$124**

9.5% Average parkland available for city residents in the U.S.

Conservation funds approved 2014-2024 **$33.78** bil.

Refer to Appendix for all data sources.

U.S. Local Governments Factor Nature Into Decisions

U.S. local governments have historically made land-use decisions that consider the preservation of nature as part of broader economic development initiatives. They have often considered nature to be instrumental to quality of life. For example, they have built parks and invested in green space, as one of many ways to attract residents and companies to create jobs.

U.S. local governments are also aware of the role that protecting nature can play in disaster resilience. It can create buffer zones for floodplains and watershed protection to safeguard physical assets. Either way, such measures aim to contribute to ensuring that, at different stages of urbanization, states and cities remain economically viable.

Nature, biodiversity, and broader sustainability issues are gaining global prominence. The 2022 Kunming-Montreal Global Biodiversity Framework set a global target to protect 30% of land and oceans by 2030 (30x30). It was adopted by 196 countries.

We believe considerations of the economic benefit of investing in nature will endure at the U.S. local government level, even though federal policies could be reprioritized. In our view, nature conservation is important to taxpayers. We see this in the historically consistent support of nature conservation efforts shown in data from the Land Vote Database (Trust for Public Land, LandVote®, 2025, www.landvote.org.).

Three Key Factors Drive Nature Protection

For the period 2013-2023, we ran two analyses: one for states and one for cities. We considered the share of city land representing park acreage as a proportion of total city acreage, against 25 socioeconomic indicators. We also looked at the share of state land representing park acreage as a proportion of total state acreage, against those same 25 socioeconomic indicators. We found:

- **Incomes matter.** Higher incomes on a per-capita basis are the most significant driver of protected land available. In wealthier areas, a higher proportion of protected land is available in both cities and states.
- **Urbanization also influences the amount of park acreage.** Population growth, employment opportunities, and housing construction activity play a role in how land use is determined. Greater urbanization needs tend to reduce the proportion of green space. As a result, land use for housing needs and other developments compete with nature protection.
- **Park acreage can vary based on land-use and zoning requirements.** Specific areas can be designated for different purposes, such as retail activity, residential or development, and parks. Often these purposes are tied to employment, with different sectors requiring different land use designations. As a result, our analysis examines employment in different sectors as a proxy for land-use designation. To this end, we see a significant relationship between government-related employment activity in cities and the amount of park acreage.

The results are presented in tables 1 and 2. For a detailed description of the data, methodology, statistical results (3a, 3b, 4a and 4b) and its limitations, please see the Appendix.

Table 1

State findings

Socioeconomic Variable	Coefficients	Significance
Housing starts (construction activity)	343.763	Very high
Employment (information)	0. 923	Very high
Employment (educational and health services)	0. 092	High
Employment (leisure and hospitality)	0. 122	High
Employment (government)	0. 404	Very high
Employment (military)	0.914	Very high
Unemployment rate (%)	0.782	Very high
Personal income per capita ($)	7.364	Very high

Table 2

City findings

Socioeconomic Variable	Coefficients	Significance
Population	-141.34	Very high
Housing starts (construction activity) *	-2.59	Very high
Employment (manufacturing)	-2.00	Very high
Employment (transportation, trade and utilities)	-1.32	Very high
Employment (wholesale trade)	3.83	Very high
Employment (retail and trade)	2.47	Very high
Employment (financial activities)	-1.15	High
Employment (leisure and hospitality)	-2.66	Very high
Employment (other services)	-6.97	Very high
Employment (state and local government)	-1.62	Very high
Employment (Military)	0.86	Very high
Unemployment rate (%)	-0.92	High
Real median household incomes ($)	1.13	Very high
Real retail sales (mil.)	-7.48	Very high

Rising incomes are a key driver of higher nature protection

Our findings show a strong positive relationship between incomes per capita and park acreage compared to total acreage, for both states and cities. Higher incomes are associated with higher park acreage; lower incomes are associated with lower park acreage. This suggests that household needs evolve, and preferences may change as incomes rise. In such circumstances, the marginal utility of consumption tends to decline, making the prospect of protecting nature relatively more desirable. In other words, nonessential goods, such as parks and green space, get more attention when essential needs are met.

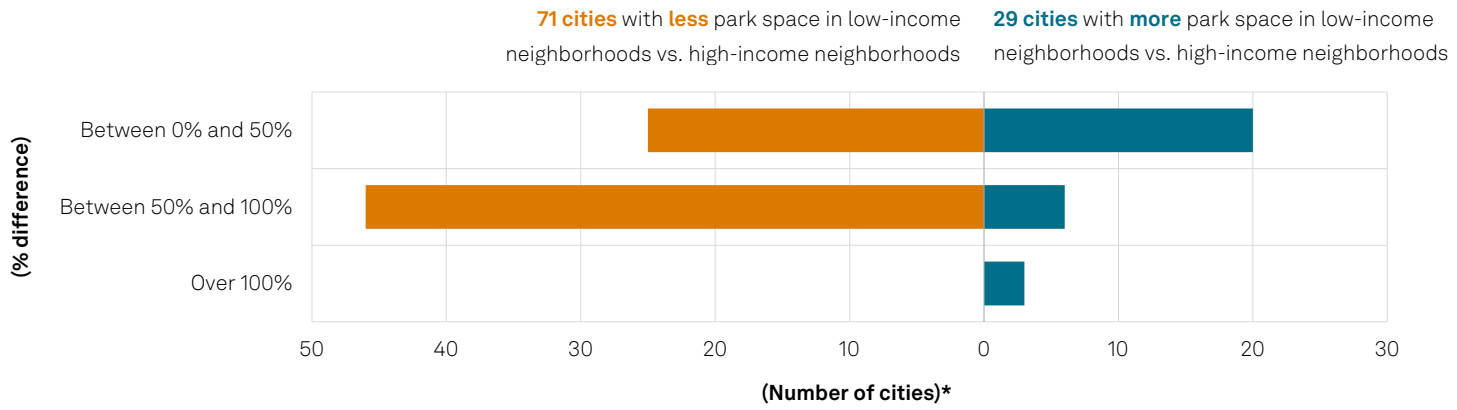
Higher incomes in diverse urban areas are generally associated with more economic activity. Heightened activity benefits the economy, but can also lead to increased pollution, changes in land use, and other consequences that can degrade nature. This, in turn, can prompt some taxpayers, subject to their preferences and interests, to want to protect the natural environment.

How economic activity by sector can increase environmental costs is outlined in "Unpriced Environmental Costs: The Top Externalities Of The Global Market," published by S&P Global Sustainable1 and the Capitals Coalition on July 2, 2024. For example, the report states that companies manufacturing primary materials and products generate notable environmental damage. This aligns with our finding that areas with high employment in manufacturing have significant negative correlations with park acreage available.

Park acreage availability in cities differs between high and low-income neighbourhoods. Using data from the Trust for Public Land, we observe that the relationship between income and green space is apparent within cities as well (see chart 1). High-income neighbourhoods in some cities are more likely to have access to parks than low-income neighbourhoods. This further supports our finding that affluent urban areas are associated with greater green space, either because high-income earners seek it out or because they have more financial resources to devote to proactively cultivating it in their neighbourhoods. We note, however, that the reverse is true in less urban areas.

Chart 1

Lower income neighborhoods tend to have less park space



*Based on data from the 100 most populous cities as of 2024. Source: ParkScore © Trust for Public Land.

Unemployment and urbanization play roles in nature protection

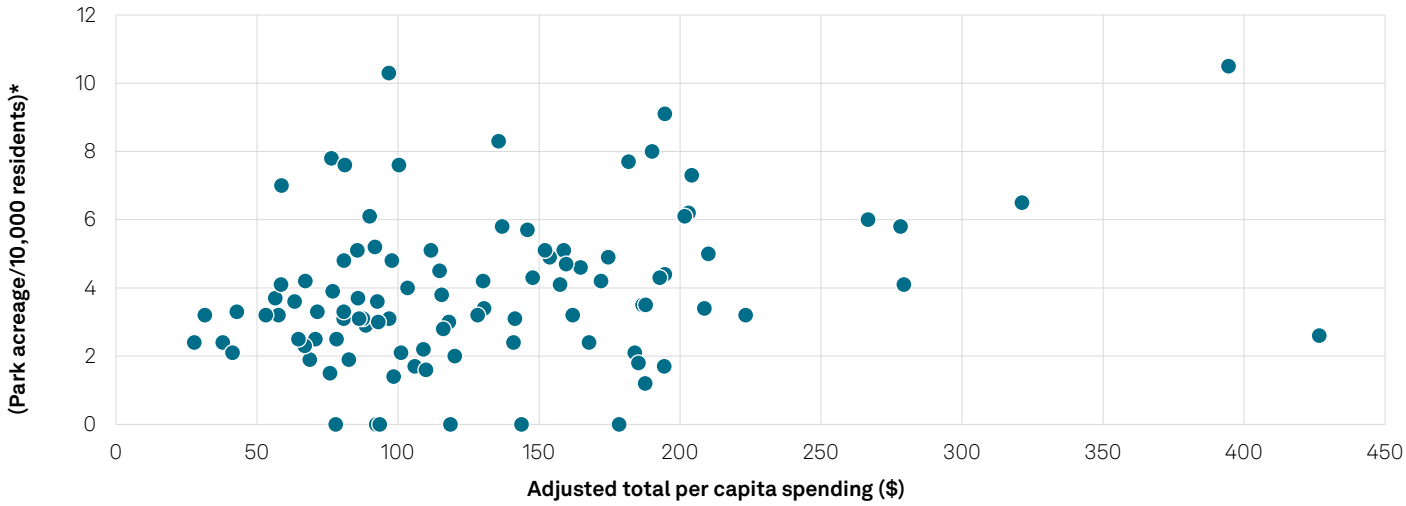
Employment opportunities and urbanization needs also matter. States with higher unemployment rates tend to have more protected land. This potentially indicates a lack of employment opportunities in remote areas that happen to be protected. However, this does not necessarily indicate causality. States such as Hawaii can have a high proportion of protected land (20%) with relatively low unemployment of 2.9%, based on the March 2025 U.S. Bureau of Labor Statistics. Conversely, states like Kentucky that have relatively high unemployment of 5.2% can also have a low proportion of protected land (1%). We also find that the relationship between unemployment and protected state land interacts with housing construction activity. When we exclude the unemployment rate from the model, the coefficient on housing construction activity drops by almost half. This suggests households in areas with higher unemployment could be less concerned about nature and more about job prospects.

Further research is required to assess the correlation between state-protected land, employment, and economic cycles. For example, there may be a time mismatch between the decision to protect land and its effective date, and the economic cycle indicator (in this case, the unemployment rate). By contrast, at the city level, higher employment correlates with a larger proportion of protected land. Since higher employment is also correlated to higher incomes, this reinforces our view that economic prosperity leads to greater access to green areas.

Population is a significant variable in cities but not states. Our research indicates that there is a negative relationship between the amount of park acreage available and population growth and density in cities. The more densely populated a city, the less protected available land it has. At the same time, we observe that the higher the population density in a city per park acre, the higher the associated spending on parks. This indicates that protecting nature in more crowded areas is more costly and could explain why the negative correlation occurs. Higher spending may also be behind lower voter approval for conservation in municipalities than other areas.

Chart 2

Park capital spending per capita increases in tandem with park acreage density



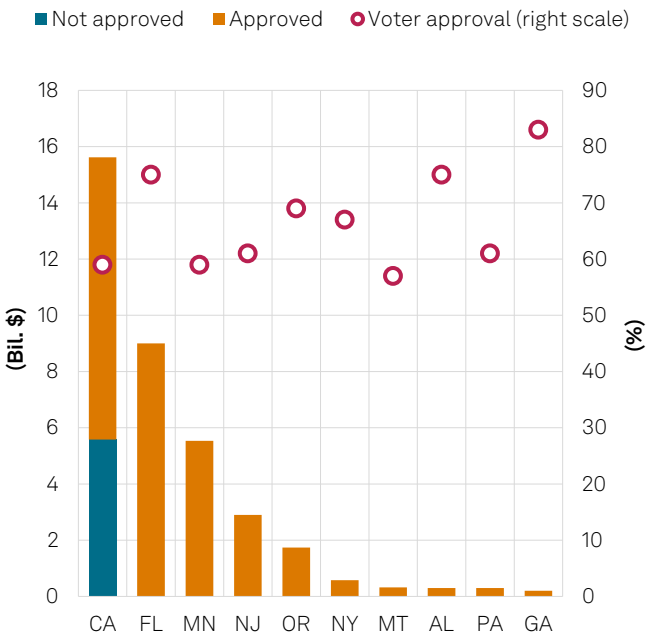
*Based on data from the 100 most populous cities as of 2024. Source: ParkScore © Trust for Public Land.

Support for land conservation is high across all entities but declines as urbanization increases. We observe voters in municipalities (including cities) generally provide less support for land conservation proposals compared with state voters. According to the Trust for Public Land for 2003-2023, state-level voter approval for nature protection averaged around 75%. This compares with approximately 70% for counties and 60% for municipalities. The disparity could reflect competing referendum priorities related to economic development. It may highlight the trade-off between economic and nature-related aspirations. As our findings outlined above indicate, economic and other needs may be more acute at the city level.

Voter approval for land conservation measure is higher for states than for municipalities

Chart 3a

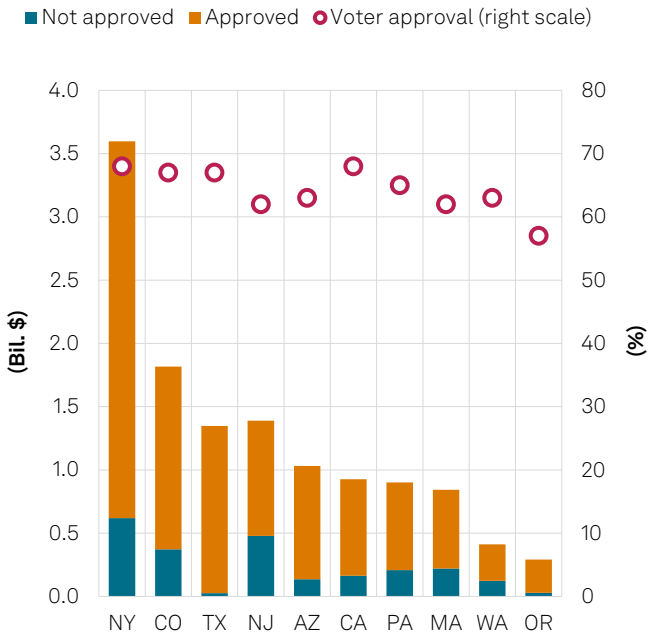
State conservation funds at stake



Source: Trust for Public Land, LandVote®, 2025, www.landvote.org.

Chart 3b

Municipal conservation funds at stake



Source: Trust for Public Land, LandVote®, 2025, www.landvote.org.

Employment sectors and land-use codes can drive nature protection

Employment categories play a more significant role at the city level than at state level. Employment in the wholesale, retail, and military sectors has a positive relationship with protected land in cities. Meanwhile, employment in manufacturing, transportation, financial activities, leisure, and other services has a negative relationship with protected land in cities.

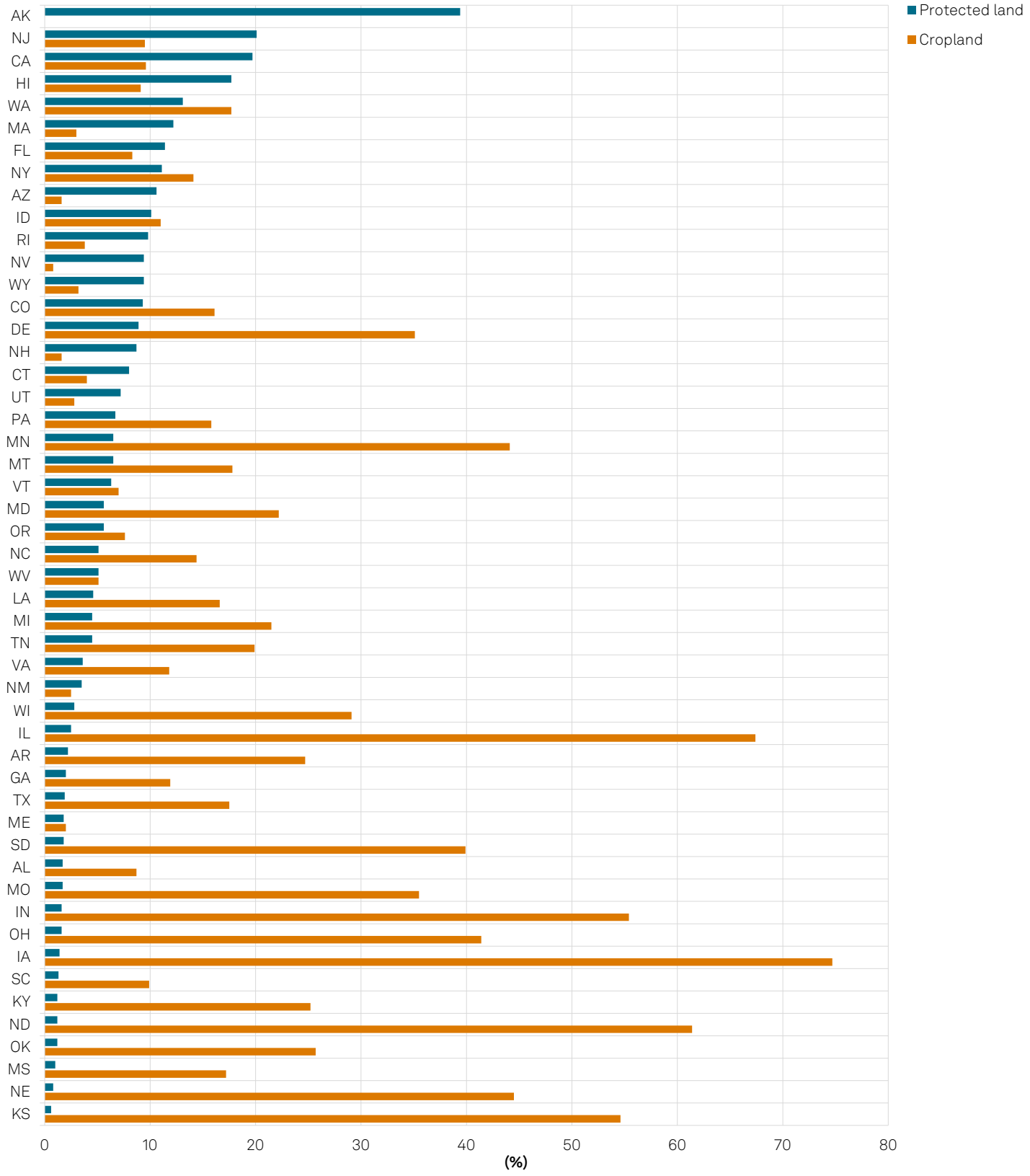
A reason for this, at least in part, could be land-use rights as defined for each employment sector. However, further research is needed to understand how a city's employment composition affects the amount of land protected.

In densely populated areas, U.S. local governments must address the needs of all groups given limited space. This is the case in places such as New York City, where there is less available land. U.S. local governments are tasked with deciding whether to allocate land for quality-of-life, for example by investing in green space, or as a possible solution for other socioeconomic needs such as the development of affordable housing.

Changes to land-use designation can have direct economic impacts. As of 2023, according to the U.S. Geological Survey Protected Area Database, 13% of the U.S.'s approximate 2.4 billion acres of land is protected. Designating uses for land is one way decision-makers can influence how U.S. local governments grow and develop. However, it often presents challenges, even in largely rural, undeveloped areas where there might be plenty of land available. Decisions depend on existing land-use designations, land rights, availability, urban maturity, and zoning requirements.

Chart 4

States with more protected land tend to have less cropland



Source: U.S. Department of Agriculture, USGS Protected Areas Database of the United States (PAD-US).

Agricultural land is regionally and nationally important given its role in food supply. We observe that as the proportion of protected land declines within each state, the proportion of cropland increases (see chart 3). This indicates that there may be competition over land use in certain states. Any requests to modify land use from productive to protected can meet opposition. Such modifications can have a direct negative economic impact on farmers through a loss of productive land and also by affecting land value. For example, when Iowa lawmakers debated a plan to restore existing farmland from overuse by protecting it through livestock grazing, local initiatives in the state offered conservation cost-sharing to help farmers establish wildlife habitats and build soil health.

We also observe a trend related to the legal independence of indigenous nations to preserve land. The Biden-Harris "America The Beautiful" plan, announced in 2021, included a "Tribally Led Conservation and Restoration" section. It aimed to advance land conservation led by indigenous local communities.

There are opportunities under the Environmental Protection Agency (EPA) to allocate grants for the protection and restoration of waters from nonpoint source pollution. However, this may change if federal sources are depleted. In addition, agreements with the U.S. National Parks Service Agency could allow indigenous nations to legally manage preservation efforts, with significant efforts already observed in states like Arkansas and Colorado.

Overall, our findings show a positive relationship between the share of government and military employment in states with protected state land. This may reflect the federal government's role as the largest owner of public land. It owns 27% of protected land in the U.S., the majority of which is in the Northwest. Therefore, land-use decisions also play a role at the federal level.

We saw this in March 2025, when the U.S. Department of Housing and Urban Development and the Department of Interior announced a Joint Task Force on Federal Land for Housing to identify underutilized federal lands suitable for residential development, streamline land transfer processes, and promote policies that increase the availability of affordable housing.

Can U.S. Local Governments Afford To Protect Nature?

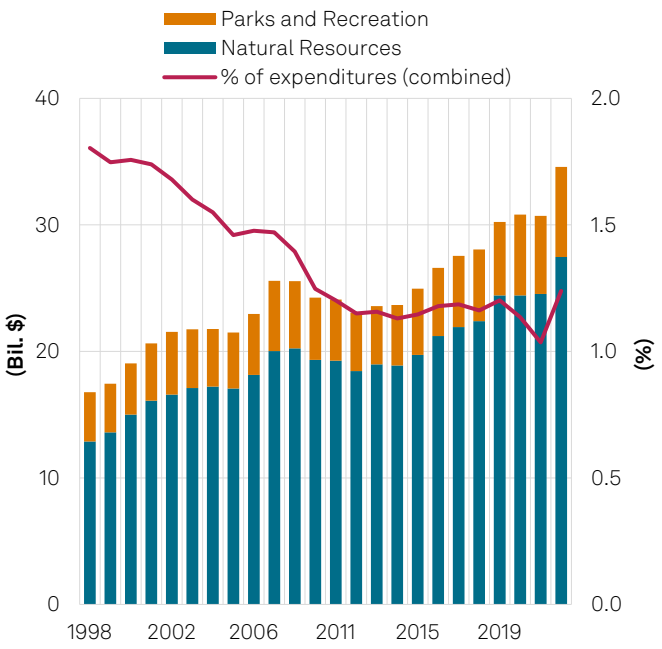
According to the U.S. Census Bureau's Annual Survey of State and Government Finances, nominal public spending related to natural resources and parks and recreation across states and cities more than doubled since 1998. These budget line items represent proxies for spending on nature protection. This is for two reasons. First, natural resources can also include economically productive resources such as forests for timber production. Second, parks and recreation also includes revenue-generating items such as stadiums and fields.

Spending on natural resources, parks, and recreation as a percentage of the budget has declined. At state level, the spending represents between 1.0% to 1.8% of state budgets. A higher proportion of the spending is allocated toward natural resources such as agriculture and mining. For municipalities (including cities) and counties, spending as a proportion of the budget fluctuates between 2.3% and 2.9%. We note there is increased incentive for municipalities to reduce costs and maximize benefits through shared service agreements relating to land use and parks.

Local spending on nature protection is historically more predictable than state spending

Chart 5a

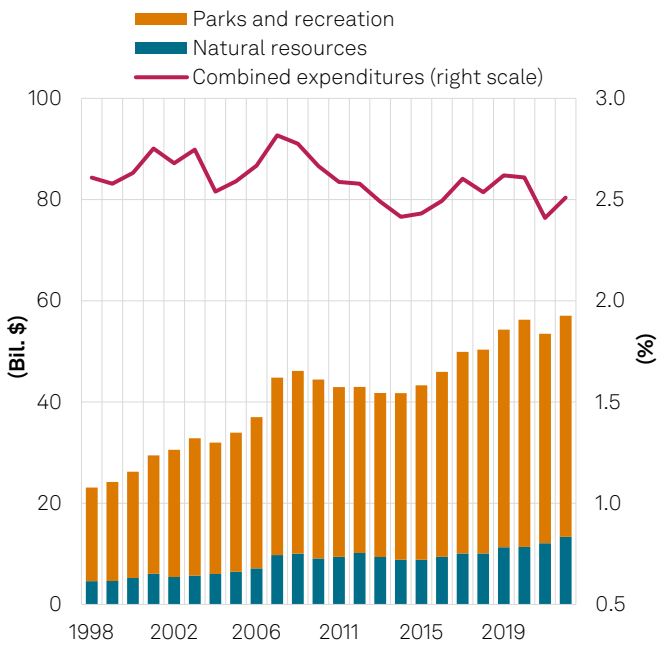
State expenditures on nature protection



Source: U.S. Census Bureau.

Chart 5b

Local expenditures on nature protection

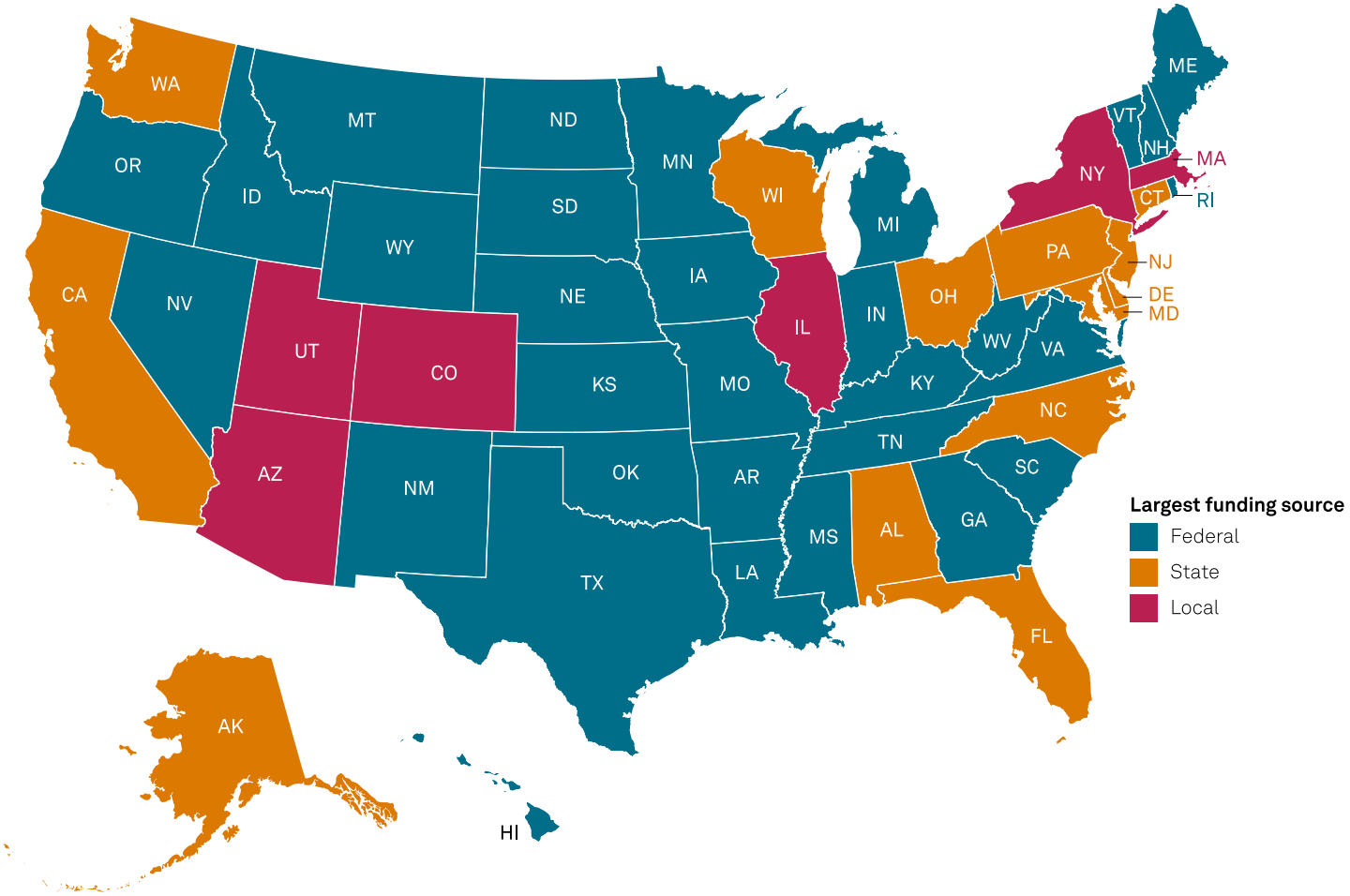


Source: U.S. Census Bureau.

On the revenue side, cities tend to rely on taxpayers' money while states rely on federal money for land conservation initiatives. At state level, Colorado, Utah, Massachusetts, Illinois, Arizona, and New York stand out as relying mostly on locally derived funding sources. Despite the uncertainty associated with federal money, we expect states will likely continue spending on nature-related needs to remain attractive with regards to quality of life, but also as part of resilience strategies to protect against worsening physical climate risks in many areas. However, the amount of spending could decrease. As shown in Chart 5a for 2022, states are willing to make cuts during unpredictable events, such as the pandemic. This is also true today--we believe that generalized budget pressure could lead to expenditure cuts because of ongoing economic uncertainty (see "U.S. States 2025 Outlook: Eyes on Washington, Focus on Budgets," Jan. 7, 2025).

Chart 6

Most states rely primarily on federal resources to fund land conservation



Trust for Public Land, Conservation Almanac.

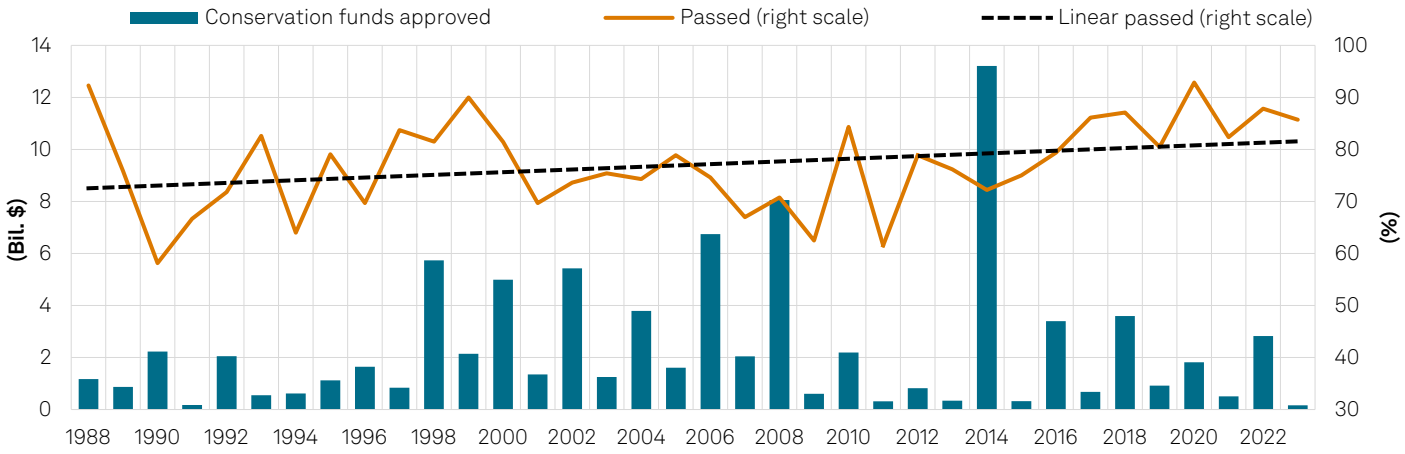
For federally owned land, conservation is typically funded in part or in full by the federal government. This could make conservation difficult to continue if cuts to programs are made. At a local level, parks and conservation easements, for example, are essentially paid for by taxpayers, who sometimes receive tax credits as a result. Therefore, if federal funding is reduced then identifying new funding sources supported by taxpayers at the local level will become more important for advancing conservation efforts.

Taxpayers' increasing interest in nature protection is reflected in voters' willingness to support associated funding through taxes. Data from the Land Vote Database shows that voter approval for conservation efforts through tax rate increases across U.S. local governments trended upward from the 1980s through 2023.

Despite mixed success for the various legislative proposals, we observe two reinforcing trends. First, the number and size of approved measures is increasing on average. This perhaps reflects higher costs associated with conservation efforts as well as their increased importance to residents and taxpayers. Second, voter support for land conservation financing since the 1980s has trended upward across all states, which may continue.

Chart 7

Voter approval for conservation measures continues to increase



Source: Trust for Public Land, LandVote®, 2025, www.landvote.org.

Historically, the median voter approval rate for land conservation referendums across all government types is between 50%-70%. Real estate transfer taxes have the highest approval rate, at more than 80%. One reason for the increasing popularity of real estate transfer taxes could be their one-time nature for the taxpayer. This compares with a higher property tax levy, which is annually recurring and tied to property values.

U.S. local governments have other channels to support implementation of land conservation programs. Funding may be through one-time allocations, such as grants, discretionary budget appropriations, and stimulus programs. It can also be recurring through fees and royalties. At the same time, allocation for one-time funding can be competitive, and recurring revenues are not guaranteed. As budgets grow due to rising costs and increased needs, U.S. local governments will therefore continue to evaluate whether to invest in nature when considering their long-term economic prospects.

Efforts related to nature conservation can help U.S. local governments protect assets from climate-related physical risks. At the same time, we recognize these efforts can pose risks if adaptation measures are not integrated into their protection. For example, this is the case in regions with urban-wildland prone to wildfires (see "Credit Risks Associated With Wildfires Are Increasing For California Public Finance Entities," Feb. 20, 2025).

Table 3

Examples of nature considerations by U.S. local governments

Place	Rating	Conservation efforts
Phoenix, Arizona	AA+/Stable	Conservation programs as part of urban development and efforts to reduce heat stress
Midpeninsula Regional Open Space District, California	AAA/Stable	Dedicated district covers expanse of over 10 preserved areas in California
Wake County, North Carolina	AAA/Stable	Land acquisition for parks and recreation through voter-approved bonds.

Source: S&P Global Ratings.

Looking Ahead

U.S. local governments play an essential role in nature conservation efforts and may have a vested interest in preserving nature to the extent that it aligns with their economic strategy. How U.S. local governments opt to support these initiatives can vary. Decisions to prioritize investments in nature versus other needs remain a key consideration. The benefits of nature have not been fully economically quantified: Some cannot necessarily be measured. However, some lawmakers continue to consider the value of nature to taxpayers in their economic decision-making.

While our analysis suggests rising incomes correlate with an increase in land use for green space in some areas, U.S. local governments could face increasingly difficult trade-offs in relation to nature protection. This could happen if more pressing economic needs such as housing or employment opportunities are not met. Costs increasing for preserving nature could also hinder momentum. Several U.S. local governments remain ahead of peers in proactive investing in conservation. States such as California, Hawaii, and Florida, have allocated funding exceeding $1 billion annually in recent years. Nevertheless, it remains uncertain whether other U.S. local governments will follow suit. More research is needed to understand the economic benefits of protecting nature against the cost of its erosion, and to what extent U.S. local governments can manage the associated outcomes.

Appendix

This section describes our data and methodology. Limitations are described thereafter. Full results are presented in table 1A and 1B above.

Results

Table 3a

State findings
Model coefficients

'000s	Estimate	Std. error	t value	Pr(>|t|)	Sig
Housing starts (construction activity) *	343.763	62.444	5.505	0.000	***
Employment (information)	0.923	0.214	4.316	0.000	***
Employment (educational and health services)	0.092	0.053	1.755	0.080	
Employment (leisure and hospitality)	0.122	0.050	2.432	0.015	*
Employment (government)	0.404	0.038	10.599	0.000	***
Employment (military)	0.914	0.091	10.049	0.000	***
Unemployment rate (%)	0.782	0.095	8.201	0.000	***
Personal income per capita ($)	7.364	0.875	8.418	0.000	***

*Seasonally adjusted annual rate. Source: S&P Global Ratings.

Table 3b

State findings
Goodness-of-fit statistics

Metric	Value
R-squared	0.635
Adjusted R-squared	0.629
F-statistic	98.229
p-value (F-statistic)	0.000

Source: S&P Global Ratings.

Table 4a

City findings
Model coefficients

'000s	Estimate	Std. error	t value	Pr(>|t|)	Sig
Year	0.001	0.000	3.972	0.000	***
Population	-141.336	16.669	-8.479	0.000	***
Housing starts (construction activity) *	-2.588	0.227	-11.409	0.000	***
Employment (manufacturing)	-2.005	0.184	-10.886	0.000	***
Employment (transportation, trade and utilities)	-1.321	0.217	-6.099	0.000	***
Employment (wholesale trade)	3.825	0.802	4.769	0.000	***
Employment (retail and trade)	2.473	0.564	4.385	0.000	***
Employment (financial activities)	-1.153	0.471	-2.448	0.015	*

Employment (leisure and hospitality)	-2.657	0.410	-6.475	0.000	***
Employment (other services)	-6.974	0.867	-8.045	0.000	***
Employment (state and local government)	-1.623	0.196	-8.264	0.000	***
Employment (Military)	0.864	0.240	3.592	0.000	***
Unemployment rate (%)	-0.923	0.406	-2.272	0.024	*
Real median household incomes ($)	1.127	0.073	15.44	0.000	***
Real retail sales (mil.)	-7.483	1.089	-6.87	0.000	***

*Seasonally adjusted annual rate. Source: S&P Global Ratings.

Table 4b

City findings
Goodness-of-fit statistics

Metric	Value
R-squared	0.693
Adj R-squared	0.677
F-statistic	46.0952
p-value (F-statistic)	0.000

Source: S&P Global Ratings.

Data And Methodology

S&P Global Ratings gathered data on land use and economic indicators for U.S. local governments. Our dependent variable to measure nature protection for the period 2013-2023 follow. For states, we used the National Park Services Acreage Reports for all states. For cities, we used the ParkServe© dataset from the Trust for Public Land for the top 100 most populous cities. We concatenated the cities by state to account for nested random effects. Cities in the same state are more alike than those in other states. We then calculated deviations from the U.S. sample average each year for the datasets.

Finally, we related these datasets to the following 25 socioeconomic indicators (our independent variables, sourced from S&P Global/IHS Markit), adjusting for inflation where applicable:

- Population (thousands)
- Housing Starts, total private (SAAR)
- Employment (NAICs) (thousands)
  - Service providing private
  - Construction, natural resources, and mining
  - Manufacturing
  - Transportation, trade and utilities
  - Wholesale trade
  - Retail trade
  - Transportation, warehousing, and utilities
  - Information
  - Financial activities
  - Professional and business services
  - Educational and health services
  - Leisure and hospitality

  - Other services
  - Government
  - Federal government
  - State and local government
  - Military
- Unemployment (%)
- Real median household income (thousands, 2017)
- Per capita personal income (thousands)
- Real gross metropolitan product (millions 2017)
- Real retail sales (millions 2012)
- New car registrations (thousands)

We used a panel fixed effects model to control for those location-specific characteristics that may play a significant role in how much land is protected but are not included in our list of independent variables.

$$X'_{i,j,t} = \left(\frac{1}{N}\sum_{j=1}^{N} X_{i,j,t}\right)$$ *N--Total number of states.* $X_{i,j,t}$ *--The* i^{th} *variable for state* j *for year* t.

Limitations

- The U.S. does not have a standard approach to measure the state of nature and its economic value. Several sources and methodologies exist across the U.S. Department of Agriculture (USDA), U.S. Census, U.S. Geological Survey (USGS), and National Park Service (NPS) Land Resources National Program Center databases. Given the absence of standardized data, local governments often act in silos toward land conservation at a local level. This makes broader comparisons more difficult to measure consistently. After examining the differences in total acreage data for each state reported across multiple resources, we identified the NPS as having the most up-to-date data available at a state level.
- For cities, the socioeconomic variables are based on metropolitan statistical areas which may extend beyond the geographical boundaries of the city acreage as defined by the ParkServe© dataset, which encompasses a somewhat smaller area.
- The distribution of park acreage for both U.S. cities and states is skewed and leptokurtic, which means that outliers in the state and city data affect the mean of the sample distribution disproportionately. In part, we aim to explain some of these differences by assessing socioeconomic data. However, aspects of the land, policy, taxpayer preferences, and regulation that are not measured directly in our model may also play a role. Those may be accounted for in the fixed effects.

Related Research

- US States 2025 Outlook: Eyes on Washington, Focus on Budgets, Jan. 7, 2025
- Credit Risks Associated With Wildfires Are Increasing For California Public Finance Entities, Feb. 20, 2025

External Research

- Unpriced Environmental Costs: The Top Externalities of the Global Market, S&P Global Sustainable1 and the Capitals Coalition, July 2, 2024.

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