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Marriage Deserts

Mapping America's Family Divide

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Executive Summary

This report maps the geography of family structure in the United States, identifying areas where married and married-parent households are either highly prevalent or notably scarce. Using newly-constructed maps and rankings based on 2020 Census data, we introduce two related concepts—*marriage deserts* and *married-family deserts*—to describe places where stable, married-family life is uncommon, alongside their counterparts, *marriage gardens* and *married-family gardens*, where it is most prevalent.

The analysis is motivated by a large body of research showing that family structure is closely associated with economic mobility and broader measures of social capital. As other research has found, the share of children growing up in two-parent households is one of the strongest predictors of upward mobility within a community. Yet this aspect of social life is not evenly distributed across the United States. This report and its corresponding maps seek to visualize these differences, mapping America's family divide.

To do so, we examine two measures at the level of Public Use Microdata Areas (PUMAs), geographic units that generally contain 100,000 to 200,000 individuals each. First, we measure the share of householders ages 15–64 who are married. Second, we measure the share of households with children that are headed by married couples.

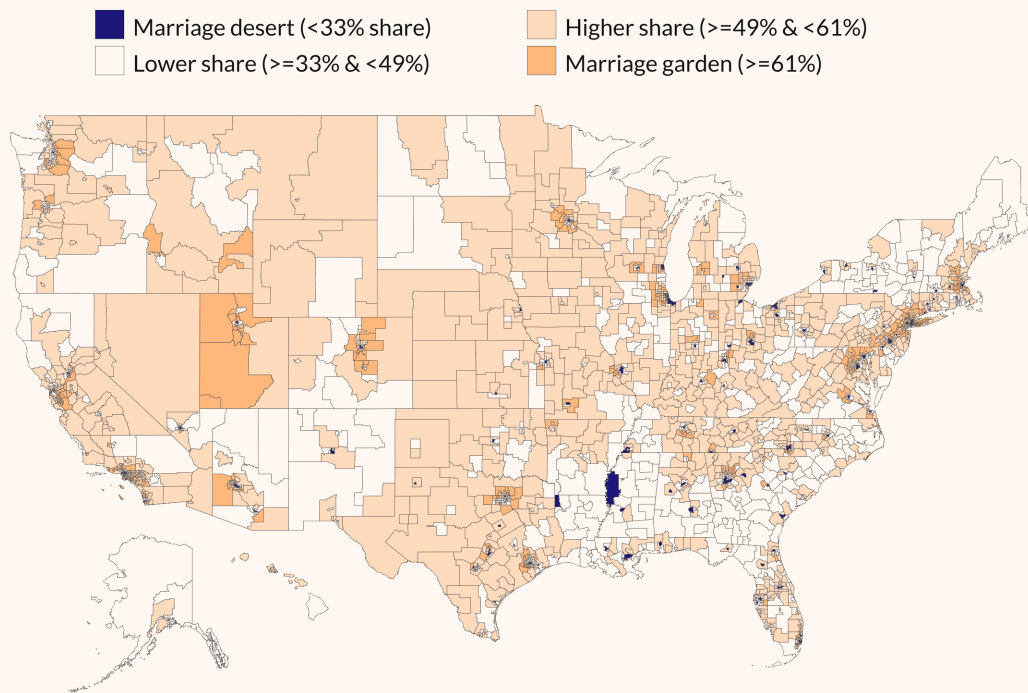
This report also serves as a complement to our [Get Married Maps](#), which illustrate parts of the country with particularly high or low marriage rates. While the Get Married Maps will be of most use to those looking to find a spouse, the maps in this report can help newlyweds determine which areas have particularly large shares of other married couples—and, thus, potentially stronger communities and support networks. (*Note: Interactive versions of all of the figures and tables in this document are available in the [online version of this report](#).*)

Key Findings

1. Marriage is far more common in certain parts of the United States than in others. Higher marriage rates tend to be found in suburban regions, whereas lower marriage rates are often found in the center of major cities.

Marriage prevalence by PUMA

Percentages of householders ages 15-64, by PUMA, who are married



Source: 2020 Decennial-Census estimates from the US Census Bureau.

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Here is a look at the top- and bottom-10 PUMAs by marriage share. In the nation's top marriage deserts, the share of householders ages 15–64 who are married is between approximately 13% and 17%.

Top marriage deserts

PUMAs with the lowest % of householders ages 15-64 who are married

Rank	Marriage desert	% married
1	Detroit City (South Central & Southeast) (MI)	13
2	Milwaukee County--City of Milwaukee Central (WI)	14
3	Cleveland City (East) & Bratenahl Village (OH)	14
4	District of Columbia (East) (DC)	14
5	St. Louis City (North) (MO)	15
6	Columbus (Central) & Grandview Heights Cities (OH)	15
7	Atlanta Regional Commission--Fulton County (Central)--Atlanta City (Southwest) (GA)	16
8	Cincinnati City (Central) (OH)	16
9	Boston City--Allston, Brighton & Fenway (MA)	17
10	Chicago City (South)--Hyde Park, Grand Boulevard, Woodlawn, Douglas & Kenwood (IL)	17

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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In the largest marriage gardens, by contrast, roughly three-quarters of householders—between 74% and 79%—are married.

Top marriage gardens

PUMAs with the highest % of householders ages 15-64 who are married

Rank	Marriage garden	% married
1	Fort Bend County (Northwest) (TX)	79
2	Utah County (East)--Spanish Fork, Springville, Lehi (Northeast) & Highland Cities (UT)	78
3	Utah County (West)--Saratoga Springs, Payson & Lehi (Southwest) Cities (UT)	77
4	Collin County (Northwest)--Celina City & Prosper Town (TX)	76
5	Western Central (CT)	76
6	St. Johns County (Northwest) (FL)	75
7	Ocean County (Lakewood) (NJ)	75
8	Bergen County (Central)--Ridgewood Village, Glen Rock & Westwood (NJ)	75
9	Denton County (South Central)--Flower Mound Town & Highland Village City (TX)	75
10	Williamson County--Thompson Station town & Fairview city (TN)	74

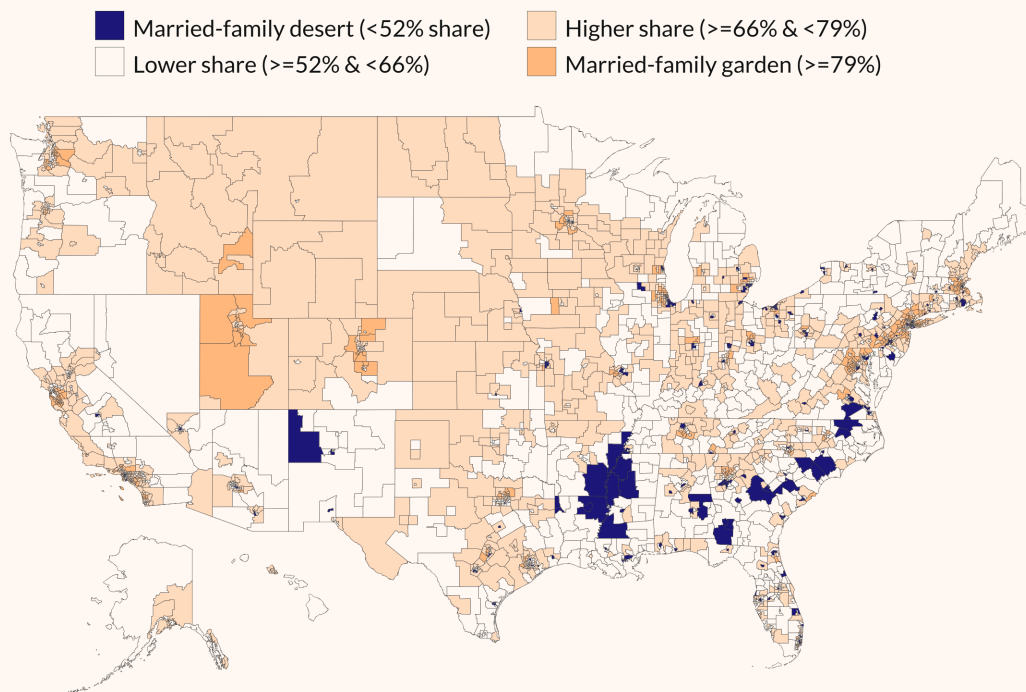
Source: 2020 Decennial-Census estimates from the US Census Bureau.

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2. The percentage of households with children that are led by a married couple tends to be higher in more affluent, suburban regions, but lower in urban centers and parts of the Southeastern US.

Married-family prevalence by PUMA

Percentages of households with children, by PUMA, that are led by a married couple



Source: 2020 Decennial-Census estimates from the US Census Bureau.

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As the following tables show, in the top married-family deserts, only around 18% to 26% of households with children are headed by married couples. Meanwhile, in the top married-family gardens, the corresponding figure rises to approximately 86% to 89%.

Top married-family deserts

PUMAS with the lowest % of households with children that are led by a married couple

Rank	Married-family desert	Married-family %
1	Cleveland City (East) & Bratenahl Village (OH)	18
2	District of Columbia (East) (DC)	20
3	Milwaukee County--City of Milwaukee Central (WI)	22
4	Detroit City (South Central & Southeast) (MI)	23
5	Chicago City (South)--Roseland, Chatham, West Pullman, Calumet Heights & Avalon Park (IL)	24
6	Atlanta Regional Commission--Fulton County (Central)--Atlanta City (Southwest) (GA)	24
7	Chicago City (West)--Austin, North Lawndale & East/West Garfield Park (IL)	25
8	St. Louis City (North) (MO)	25
9	Detroit City (North Central) (MI)	25
10	KIPDA Area Development District (Central)--Louisville/Jefferson Co (Northwest) (KY)	26

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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Top married-family gardens

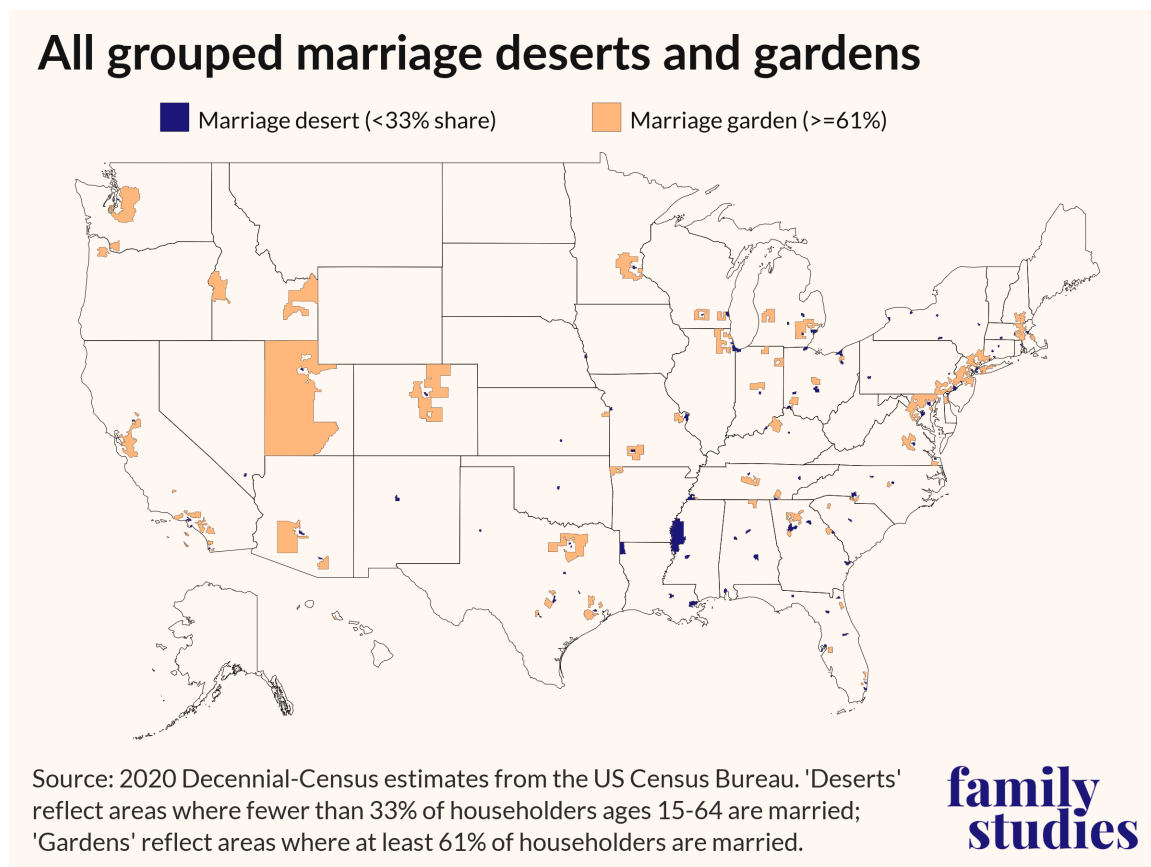
PUMAS with the highest % of households with children that are led by a married couple

Rank	Married-family garden	Married-family %
1	Alameda County (South)--Fremont City (Southeast) (CA)	89
2	Santa Clara County (Southwest)--Cupertino, Saratoga Cities & Los Gatos Town (CA)	88
3	Ocean County (Lakewood) (NJ)	88
4	Utah County (East)--Spanish Fork, Springville, Lehi (Northeast) & Highland Cities (UT)	88
5	Utah County (West)--Saratoga Springs, Payson & Lehi (Southwest) Cities (UT)	88
6	Norfolk County (Northwest)--Needham, Wellesley & Westwood (MA)	88
7	Western Central (CT)	88
8	Bergen County (Central)--Ridgewood Village, Glen Rock & Westwood (NJ)	88
9	Fort Bend County (Northwest) (TX)	88
10	Cook County (Northeast)--Northfield & New Trier Townships (IL)	87

Source: 2020 Decennial-Census estimates from the US Census Bureau.

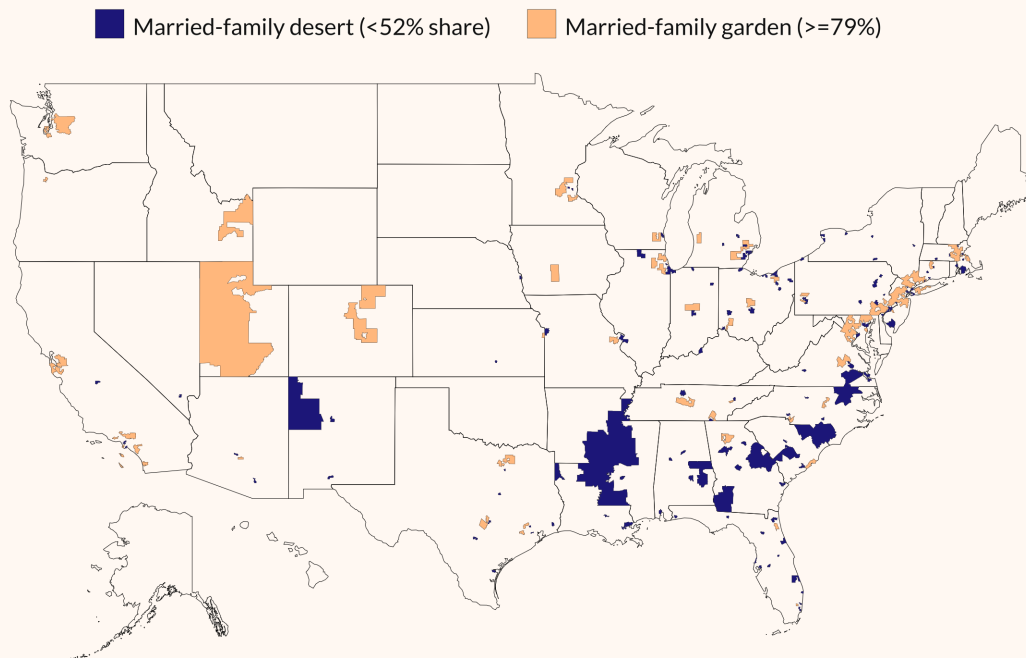
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3. The largest *grouped* marriage desert in the US, with over 686,000 householders between 15 and 64, is found in Lower Manhattan and Brooklyn. Meanwhile, the largest grouped marriage garden, with over 630,000 householders in this same age range, is located in the Dallas-Fort Worth suburbs, identified by grouping together contiguous PUMA-level marriage deserts and marriage gardens. (The following map shows all grouped marriage deserts and gardens, regardless of population.)



4. The largest grouped married-family desert, with around 178,000 households with children, is located in Manhattan and the Bronx. It is located relatively close to the largest grouped married-family garden, which spans from the suburbs of DC to those of Philadelphia and includes around 386,000 households with children.

All grouped married-family deserts and gardens



Source: 2020 Decennial-Census estimates from the US Census Bureau. 'Deserts' reflect areas where fewer than 52% of households with children are headed by a married couple; 'Gardens' reflect areas where at least 79% of such households are headed by a married couple.

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Introduction

Neighborhood family structures—whether experienced in apartments, public schools, or the local store—inform each other with a complex set of norms. As shown in research by Harvard economist Raj Chetty, “the most predictive factor of upward mobility in a community was the share of homes with two parents present in the household.”¹

And yet, there is a sharp divide in the experience of family across the United States dependent upon income. As IFS Senior Fellow Brad Wilcox and report author Chris Bullivant wrote in a previous paper,² higher levels of marriage and stability are prevalent among high-income families. Conversely, lower levels of marriage and stability are prevalent among low-income families.

This “social capital divide” is of concern because, across multiple metrics, children growing up in stable-married families have better life outcomes than their counterparts who grow up in less-stable cohabiting or single-parent households.

So the predictive—though certainly not deterministic—quality of the share of homes with two parents present in the household begs the question: where are these neighborhoods located? And where [are they not located](#)? This question matters because if we can see where they are, it may be easier to bridge the social-capital divide to create equal access to stable, married-family life and the relational security it confers.

¹ Raj Chetty et al., “Where Is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States,” *Quarterly Journal of Economics* 129, no. 4 (2014): 1553–1623.

² Brad Wilcox, Chris Bullivant, Peyton Roth, “Family Stability, Bridging America’s Social Capital Divide,” *Social Capital Campaign*, May 2022.

Importantly, this report does not seek to establish causal relationships between marriage rates, family structure, and economic or social outcomes. Nor does it attempt to explain why these patterns have emerged. Instead, it provides a descriptive foundation: a way of identifying where different family-structure environments exist, and how they vary in scale and intensity across the country. The maps and tables are offered as tools for further research, analysis, and discussion.

The variety of family formation patterns visualized in this way across the United States is descriptive. It attempts to capture in a “freeze frame” picture an enormously complicated and dynamic pattern of interconnected institutions and relationships. As with all big data projects it comes with a health advisory, that large-form data is never particularly sensitive to an individual’s story. And yet, at the perspective these maps do provide, there are clearly some communities, where stable, married family structures remain the dominant social norm; in others, they are comparatively rare.

The stark differences between community experience suggest that the “social-capital divide” in the United States is not only economic but also relational, embedded in the everyday environments in which individuals form relationships and raise children.

Marriage Deserts

This work was inspired by the [Opportunity Atlas published by Opportunity Insights](#)—in particular, their upward mobility maps, which include the share of people who are married by age 30. Their maps reveal a patchwork quality to marriage rates at a census tract level. Bullivant described the low marriage rates neighborhoods in these maps as “[marriage deserts](#)” in an article with Brad Wilcox. Just as it is harder to buy healthier groceries in a “food desert,” it is likely more difficult to enter into stable married families in a “marriage desert.” This is simply where relationships styles are learned in the context of existing relationships.

Motivated by the Opportunity Insights maps, we wanted to create our own, humbler, family-focused versions that focused on two measures:

- The share of householders aged 15-64 who are married.
- A sense of the share of households with children that are stable, two-parent homes.
(In this case, we use married couples as a proxy.)

What This Report Does Not Do

Beyond listing and describing areas with a particularly low and high prevalence of married and married-family households, we offer minimal analysis as to causes.

It is also beyond the scope of our research to establish a causal relationship between low rates of marriage and low rates of married families, or their converse, high rates of marriage and high rates of married families. While the connection may seem obvious, there are areas where higher rates of marriage do not correlate with higher rates of married families, and there are areas where low marriage rates correlate with higher shares of married families.

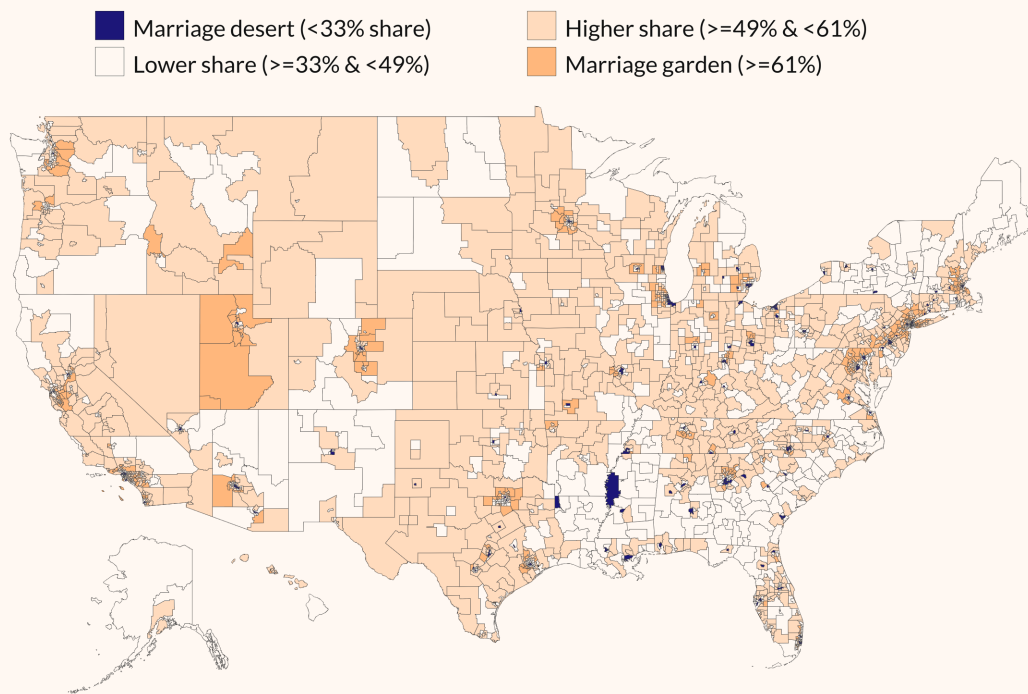
However, these maps are presented with the knowledge that areas of low marriage and weak family stability are more prone to less upward social mobility. And we hope that these are a useful tool for inspiring further research and analysis.

Marriage Deserts & Marriage Gardens

In this report, *marriage deserts* are defined as PUMAs in which the share of householders ages 15 to 64 who are married falls below 33% (the rounded 10th percentile for this metric), representing the lowest-observed marriage rates nationally. Meanwhile, *marriage gardens* are defined as PUMAs in which the share of householders ages 15 to 64 who are married is at least 61%, representing the highest-observed marriage shares nationally. The following map shows which PUMAs are either *deserts* or *gardens*, and which PUMAs fall in between.

Marriage prevalence by PUMA

Percentages of householders ages 15-64, by PUMA, who are married



Source: 2020 Decennial-Census estimates from the US Census Bureau.

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Figure 1. Percentages of householders ages 15-64, by PUMA, who are married

Marriage Deserts

The table below ranks the 10 PUMAs with the lowest shares of married householders ages 15–64. Across these areas, the married share of householders ranges from 13% to 17 percent. This implies that more than 80% of householders in these PUMAs are not married.

Top marriage deserts

PUMAs with the lowest % of householders ages 15-64 who are married

Rank	Marriage desert	% married
1	Detroit City (South Central & Southeast) (MI)	13
2	Milwaukee County--City of Milwaukee Central (WI)	14
3	Cleveland City (East) & Bratenahl Village (OH)	14
4	District of Columbia (East) (DC)	14
5	St. Louis City (North) (MO)	15
6	Columbus (Central) & Grandview Heights Cities (OH)	15
7	Atlanta Regional Commission--Fulton County (Central)--Atlanta City (Southwest) (GA)	16
8	Cincinnati City (Central) (OH)	16
9	Boston City--Allston, Brighton & Fenway (MA)	17
10	Chicago City (South)--Hyde Park, Grand Boulevard, Woodlawn, Douglas & Kenwood (IL)	17

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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These marriage deserts are located in 10 major U.S. metropolitan areas across seven states—Georgia, Illinois, Massachusetts, Michigan, Missouri, Ohio, and Wisconsin—as well as the District of Columbia. Ohio appears three times in the top 10, making it the only state represented more than once. All 10 PUMAs are located east of the Rocky Mountains.

Marriage Gardens

The table below ranks the 10 PUMAs with the highest shares of married householders ages 15–64. Across these areas, the married share of householders ranges from 74 to 79 percent. This implies that around 3 in 4 householders ages 15–64 in these PUMAs are married, roughly the inverse of the pattern observed in the nation’s largest marriage deserts.

Top marriage gardens

PUMAs with the highest % of householders ages 15-64 who are married

Rank	Marriage garden	% married
1	Fort Bend County (Northwest) (TX)	79
2	Utah County (East)--Spanish Fork, Springville, Lehi (Northeast) & Highland Cities (UT)	78
3	Utah County (West)--Saratoga Springs, Payson & Lehi (Southwest) Cities (UT)	77
4	Collin County (Northwest)--Celina City & Prosper Town (TX)	76
5	Western Central (CT)	76
6	St. Johns County (Northwest) (FL)	75
7	Ocean County (Lakewood) (NJ)	75
8	Bergen County (Central)--Ridgewood Village, Glen Rock & Westwood (NJ)	75
9	Denton County (South Central)--Flower Mound Town & Highland Village City (TX)	75
10	Williamson County--Thompson Station town & Fairview city (TN)	74

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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These marriage gardens are located across six states—Connecticut, Florida, New Jersey, Tennessee, Texas, and Utah. Texas appears three times in the top 10, while Utah and New Jersey each appear twice. They tend to be located in suburban areas, unlike marriage deserts, which are more commonly found in the middle of cities.

Observable Differences

Family Structure Polarization. The differences between the Top 10 marriage deserts and the Top 10 marriage gardens are stark, with a 60+ percentage-point spread between these two extremes:

- **Marriage deserts:** 13%–17% married
- **Marriage gardens:** 74%–79% married

Even the marriage desert in tenth place, Chicago (17%) has less than one-quarter the marriage share of the 10th-ranked marriage garden in Thompson Station Town/Fairview, (74%). This does not appear to describe small variations around shared national norms, but rather two distinct family-formation regimes, so stark it could even be described as family structure polarization.

No state appears on both top 10 lists. This suggests an element of geographic polarization in family structure at the extremes. At the same time, this comparison should not be overinterpreted: a broader review of national maps shows that it is common for states to contain both marriage deserts and marriage gardens, often in close geographic proximity. The polarization observed here reflects the most extreme cases, not complete state-level segregation.

Ohio stands out as a negative outlier. Three Ohio PUMAs—Cleveland, Columbus, and Cincinnati—appear among the top 10 marriage deserts, while none appear among the top 10 marriage gardens. In the full national distribution, Ohio contains seven marriage gardens, with the largest—Delaware County (South), Ohio—ranking 41st nationally. Further research examining changes in marriage shares over time may help clarify whether Ohio's pattern reflects long-term post-industrial family decline distinct from the experiences of coastal, urbanized areas. Ohio stands in contrast to Texas, which features three marriage gardens in the top 10, while not appearing in our list of the top 10 marriage deserts.

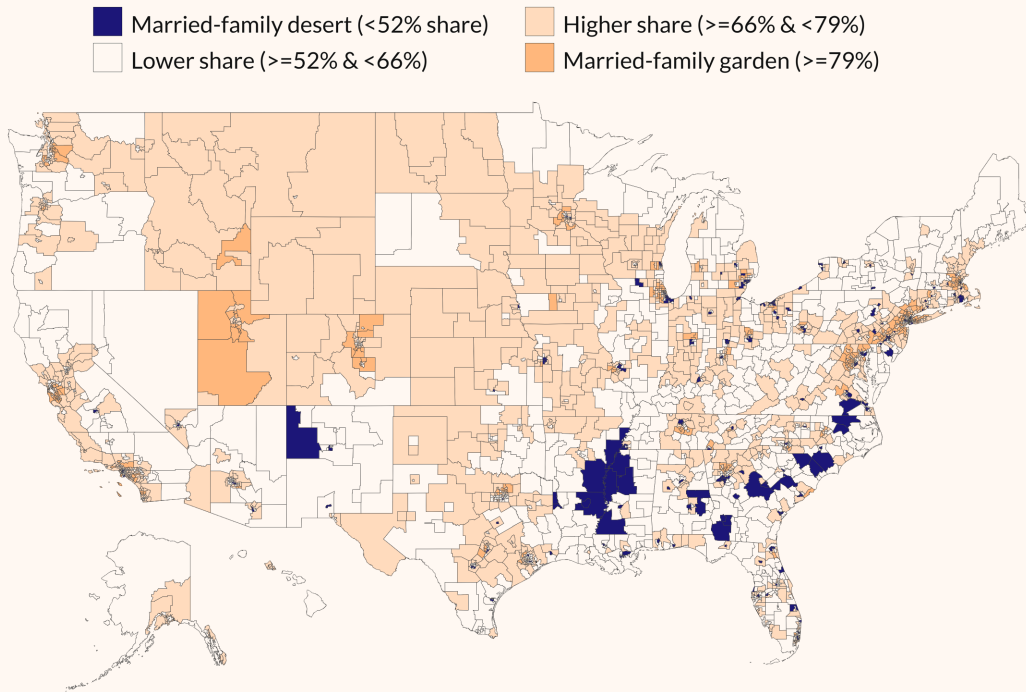
Implications for Children. What do these patterns imply for children? While the analysis above focuses on the share of householders who are married, the underlying motivation is to understand how local family structure shapes the social capital environments in which children are raised. A substantial body of research indicates that children's life outcomes are strongly influenced by relational stability within the family of origin, as well as by the prevalence of married-couple households in their surrounding community.

The top 10 *married-family deserts* and top 10 *married-family gardens* are therefore identified using the share of households with children of their own that are headed by married couples. This is with a view to considering a child's relational security—the degree of stability, continuity, and reliability in the family and community relationships that surround them.

The following map visualizes which parts of the country fall into each married-family category.

Married-family prevalence by PUMA

Percentages of households with children, by PUMA, that are led by a married couple



Source: 2020 Decennial-Census estimates from the US Census Bureau.

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Figure 2. Percentages of households with children, by PUMA, that are led by a married couple

Married-Family Deserts & Married-Family Gardens

In this analysis, *married-family deserts* are defined as PUMAs in which the share of households with children that are headed by a married couple falls below 52 percent. In these areas, children are less likely to be raised in a household headed by married parents and less likely to be surrounded by peers growing up in married-couple families—conditions associated with lower levels of relational security at both the household and neighborhood level.

Married-Family Deserts

The table below ranks the 10 PUMAs with the lowest shares of households with children headed by a married couple. Across these areas, the share of households with children headed by a married couple ranges from 18% to 26 percent. In all 10 of these married-family deserts, fewer than 1 in 3 households with children are headed by a married couple.

Top married-family deserts

PUMAS with the lowest % of households with children that are led by a married couple

Rank	Married-family desert	Married-family %
1	Cleveland City (East) & Bratenahl Village (OH)	18
2	District of Columbia (East) (DC)	20
3	Milwaukee County--City of Milwaukee Central (WI)	22
4	Detroit City (South Central & Southeast) (MI)	23
5	Chicago City (South)--Roseland, Chatham, West Pullman, Calumet Heights & Avalon Park (IL)	24
6	Atlanta Regional Commission--Fulton County (Central)--Atlanta City (Southwest) (GA)	24
7	Chicago City (West)--Austin, North Lawndale & East/West Garfield Park (IL)	25
8	St. Louis City (North) (MO)	25
9	Detroit City (North Central) (MI)	25
10	KIPDA Area Development District (Central)--Louisville/Jefferson Co (Northwest) (KY)	26

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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Married-Family Gardens

In this analysis, *married-family gardens* are defined as PUMAs in which the share of households with children that are headed by a married couple is at least 79 percent. In these areas, children are most likely to be raised in households headed by married parents and to be surrounded by peers growing up in married-couple families—conditions associated with higher levels of relational security at both the household and neighborhood level.

The next table ranks the 10 PUMAs with the highest shares of households with children headed by a married couple, among PUMAs with substantial numbers of households with children. Across these areas, the share of households with children headed by a married couple ranges from 87% to 89%. In all 10 married-family gardens, fewer than 1 in 7 households with children are not headed by a married couple.

Put differently, in these PUMAs, households with kids are roughly 6 to 8 times more likely to be headed by married parents than to be headed by single or unmarried parents.

These 10 married-family gardens are located primarily in the suburban and exurban communities of major U.S. metropolitan areas across seven states—California, Connecticut, Illinois, Massachusetts, New Jersey, Texas, and Utah. California, New Jersey, and Utah each contain two married-family gardens in the top 10.

Top married-family gardens

PUMAS with the highest % of households with children that are led by a married couple

Rank	Married-family garden	Married-family %
1	Alameda County (South)--Fremont City (Southeast) (CA)	89
2	Santa Clara County (Southwest)--Cupertino, Saratoga Cities & Los Gatos Town (CA)	88
3	Ocean County (Lakewood) (NJ)	88
4	Utah County (East)--Spanish Fork, Springville, Lehi (Northeast) & Highland Cities (UT)	88
5	Utah County (West)--Saratoga Springs, Payson & Lehi (Southwest) Cities (UT)	88
6	Norfolk County (Northwest)--Needham, Wellesley & Westwood (MA)	88
7	Western Central (CT)	88
8	Bergen County (Central)--Ridgewood Village, Glen Rock & Westwood (NJ)	88
9	Fort Bend County (Northwest) (TX)	88
10	Cook County (Northeast)--Northfield & New Trier Townships (IL)	87

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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A Stark Social Capital Divide

The differences between the Top 10 married-family deserts and the Top 10 married-family gardens are stark, with a difference of roughly 70 percentage points between the extremes.

- **Lowest married-family desert:** 18% of households with kids headed by a married couple
- **Highest married-family garden:** 89% of households with kids headed by a married couple

Married-couple households constitute a supermajority of families with children in the top 10 married-family gardens (>86%), but only a small minority in the top 10 married-family deserts (<26%). As with the marriage deserts/gardens, this comparison between married-family deserts and gardens demonstrates not just a variance around shared national norms, but a structural divergence in family structures. Over the course of childhood, these differences imply substantially different levels of exposure to married-couple households in children's everyday social environments.

This represents a significant discrepancy in lived experience for children growing up in these distinct environments. Those in married-family gardens grow up with married parents, in neighborhoods, schools, and after-school activities where most peers experience the same. These children will be observing marriage as a stable, ordinary feature of adult life. This will create stronger social capital networks, with a greater alignment between school, families, and community, overlapping stable inter-family interactions over a childhood and adolescence, creating denser networks of adult supervision, stable peer networks, and deep relational literacy.

By contrast, for children in married-family deserts, there is likely to be much greater churn in adult relationship stability, and greater inconsistency in supervision, where marriage and stable relationship bonds are atypical or distant from everyday norms—both for these children and their peers. Greater intergenerational kinship, such as grandparent care, and

demand on public resources, such as schools, may seek to compensate for this gap; however, it is likely that children in married-family deserts will still experience less social capital and relational literacy, than those in married-family gardens.

Households With Children

The previous analysis focuses on the share of households with children that are headed by married couples. An additional question is whether places with different family structures also differ in the overall prevalence of households with children. In other words, do married-family deserts and married-family gardens differ not only in how children are raised, but in how common it is for households to include children at all?

A clear pattern emerges when comparing the top 10 married-family deserts with the top 10 married-family gardens. PUMAs with markedly different family structures also differ substantially in the share of households that include children.

Among the top 10 married-family deserts, the share of households with children ranges from a low of 15% in a Detroit PUMA to a high of 26% in a western-Chicago PUMA. In contrast, among the top 10 married-family gardens, the share of households with children ranges from 34% in Illinois's Northfield & New Trier Townships, to 57% in a western Utah-County PUMA.

On average, households with children account for 21% of all households in the top 10 married-family deserts, compared with 44% in the top 10 married-family gardens. In practical terms, the share of households with children is approximately twice as high in the top married-family gardens as in the top married-family deserts.

This pattern is consistent with prior research showing that fertility in the United States is increasingly concentrated among married households and those with greater economic stability. [Research by IFS Senior Fellow Lyman Stone](#), for example, finds that recent declines in fertility have been driven [disproportionately by lower birth rates among the unmarried](#)

and among lower-income populations. While the present analysis does not establish causality, the association between married-family structure and higher concentrations of households with children suggests that family norms and household formation are closely intertwined with contemporary fertility patterns.

Married-family deserts appear, on this evidence, to function increasingly as **adult-oriented or post-family spaces**, while married-family gardens appear to be environments that are more conducive to having and raising children. For children growing up in married-family deserts, this means not only being raised within a context of greater relational instability but also living in environments where **having children in the household is itself less common**.

Parenting, as well as marriage, is therefore less frequently observed as a dominant adult role within the community.

These differences have implications for schools, housing markets, tax bases, welfare systems, local politics, and the balance between services oriented toward children and those oriented toward older populations. Over time, environments with fewer children may also face challenges in sustaining the institutions and informal networks that support family life. At the same time, these results should be interpreted with caution. When we examine *all* PUMAs in our dataset, we find a weaker relationship between married-family shares and the percentage of all households with children. In fact, our marriage metric (i.e. the percentage of householders ages 15-64 who are married) is a *better*, though still imperfect, predictor of the percentage of households with children. In short, while we do see an association between higher married-family rates and higher child prevalence, additional factors—particularly housing availability, affordability, and local institutional capacity—are likely to shape how strongly marriage translates into higher fertility in different places.

Grouped PUMAS

The preceding analysis listed the top marriage deserts and marriage gardens at the level of individual PUMAs. This is useful for identifying the most extreme examples, but it only provides a partial picture.

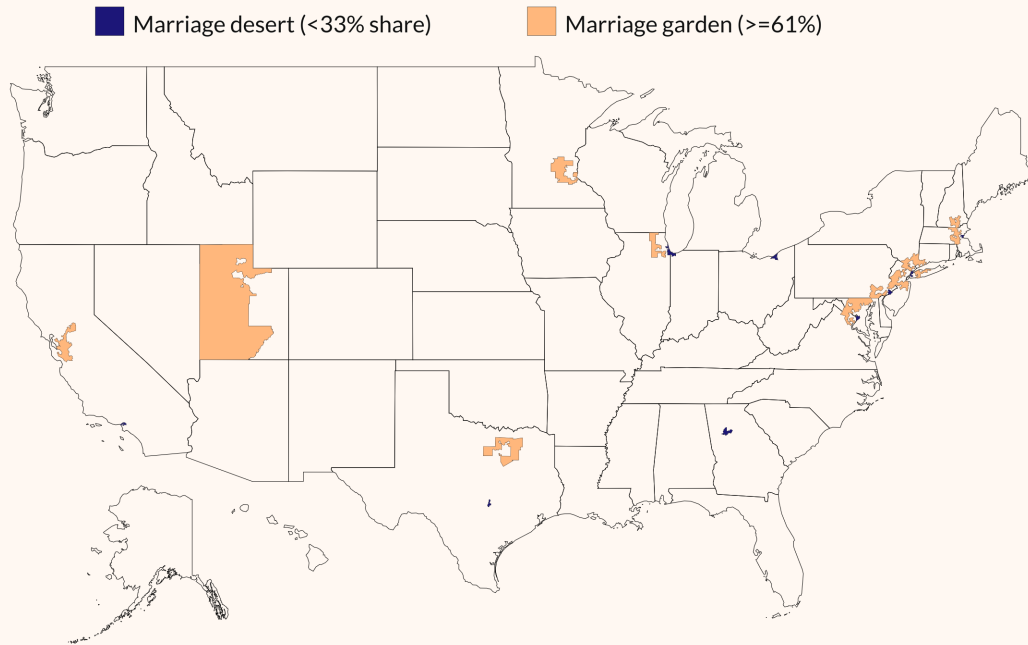
A cursory review of the maps shows that many marriage deserts and marriage gardens are located next to one another and thus form larger clusters of areas with similar family-structure characteristics.

In the next set of analyses, we consider the same four features (marriage deserts, marriage gardens, married-family deserts, and married-family gardens) but examine them using grouped PUMAs rather than individual units. These groupings are formed by adjacent PUMAs that meet the same criteria.

Grouped marriage gardens and deserts are ranked by the total number of householders ages 15-64 that they contain, and grouped married-family gardens and deserts are ranked by the total number of households with children that they contain. (This approach diverges from our individual-PUMA rankings, which were based on percentages rather than populations.)

The map below visualizes the top 10 grouped marriage deserts and gardens; following it is a map of the top 10 grouped married-family deserts and gardens. (Because grouped deserts are often located in densely populated urban areas, they are often harder to make out than grouped gardens.)

Ten largest grouped marriage deserts and gardens

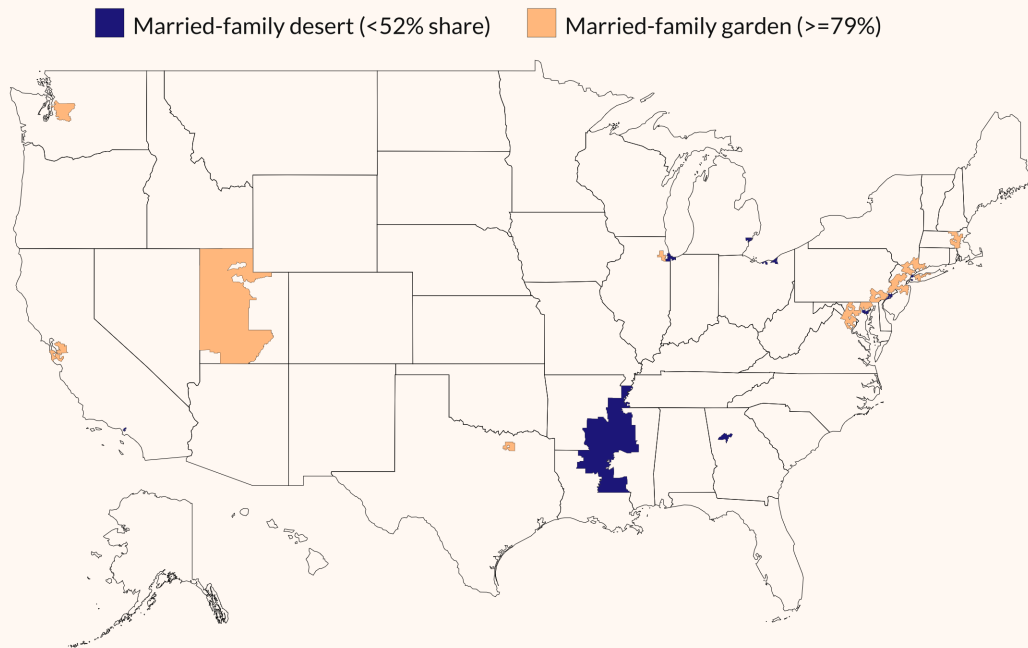


Source: 2020 Decennial-Census estimates from the US Census Bureau. 'Deserts' reflect areas where fewer than 33% of householders ages 15-64 are married; 'Gardens' reflect areas where at least 61% of householders are married.

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Figure 3. All grouped marriage deserts and gardens in the United States

Ten largest grouped married-family deserts and gardens



Source: 2020 Decennial-Census estimates from the US Census Bureau. 'Deserts' reflect areas where fewer than 52% of households with children are headed by a married couple; 'Gardens' reflect areas where at least 79% of such households are headed by a married couple.

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Figure 4. All grouped married-family deserts and gardens in the United States

Top 10 Grouped Marriage Deserts

The table below ranks the largest grouped marriage deserts by the total number of householders ages 15–64 (regardless of marital status) who live within contiguous PUMAs that meet the marriage-desert criteria. In these groupings, the minimum and maximum marriage shares reflect variation across adjoining neighborhoods within the same grouped region rather than isolated extremes.

Largest grouped marriage deserts

Rank	Grouped marriage desert	Total householders aged 15-64
1	Lower Manhattan-Brooklyn Marriage Desert (NY)	686520
2	Chicago-Gary Marriage Desert (IL-IN)	668379
3	Manhattan-Bronx-Queens Marriage Desert (NY)	544982
4	Los Angeles Marriage Desert (CA)	422668
5	Philadelphia Marriage Desert (PA-NJ)	417107
6	Atlanta Marriage Desert (GA)	327329
7	DC Marriage Desert (DC-MD)	256638
8	Boston Marriage Desert (MA)	226183
9	Austin Marriage Desert (TX)	211374
10	Cleveland Marriage Desert (OH)	206932

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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Across these areas, the married share of householders ranges from 14% to 33 percent. This means that over two-thirds of householders ages 15–64 in each of these grouped PUMAs are not married.

This list pulls in new cities and new states, primarily because it draws in America's largest cities, and with a higher maximum share than in the individual list. By contrast to the individual list, we now see we are researching a large phenomenon, with—in the case of the largest grouped marriage desert in New York—a total of 686,520 households.

These marriage deserts are located in major U.S. metropolitan areas across 11 states (California, Georgia, Illinois, Indiana, Massachusetts, Maryland, New Jersey, New York, Ohio, Pennsylvania, and Texas) and the District of Columbia.

New York has two of the largest deserts, in Manhattan and Queens, sharing a total of over 1.2 million householders in PUMAs with low shares of married individuals. California and Texas also join the Top 10, which means that grouped marriage deserts are present on both sides of the Rockies. California's grouped desert, which stretches from central Los Angeles to Santa Monica, is the fourth largest in the country.

What these top 10 grouped marriage deserts show, and not least among the 1.2 million households in New York, is that low marriage rates are not necessarily restricted to extreme examples. For extensive geographies or commuter distances, low marriage rates are broadly normalized. Given New York's unique importance in American cultural, media, and corporate leadership, it is worth noting that the context in which significant numbers of participants in the region work does not appear to promote shared norms around stable, married family life. While it is likely that executives and leaders in these industries live in the adjacent marriage gardens and married-family gardens, there is a clear divide between the family-haves and the family-have-nots that likely mirrors other forms of inequality in the region.

Top 10 Grouped Marriage Gardens

In this report, marriage gardens are defined as PUMAs in which the share of householders ages 15 to 64 who are married is at or above 61%, representing the highest observed marriage rates nationally.

The table below shows the 10 largest grouped marriage gardens. Across these areas, the married share of householders at the PUMA level ranges from 61% to 78 percent. At a minimum, this implies that 3 out of 5 householders in these PUMAs are married, and in several parts of these grouped PUMAs, over three-quarters are married.

These marriage gardens are located in major metropolitan areas across 13 states—**California, Connecticut, Illinois, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Texas, Virginia, and Utah.**

Largest grouped marriage gardens

Rank	Grouped marriage garden	Total householders aged 15-64
1	Suburban Dallas-Fort Worth Marriage Garden (TX)	636086
2	Suburban DC-Baltimore-Philadelphia Marriage Garden (VA-MD-PA)	544835
3	San Francisco Bay Area Marriage Garden (CA)	493496
4	Core Jersey Marriage Garden (NJ)	484576
5	Utah Marriage Garden (UT)	483754
6	NYC Tri-State Area Marriage Garden (CT-NJ-NY)	360575
7	Long Island Marriage Garden (NY)	328257
8	Suburban Chicago Marriage Garden (IL)	326494
9	Suburban Boston and Manchester Marriage Garden (MA-NH)	310174
10	Suburban Twin Cities Marriage Garden (MN)	301877

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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The Suburban Dallas-Fort Worth marriage garden is the largest grouped marriage garden in the country. At 636,086 householders ages 15-64, it is around 7% smaller than the largest grouped marriage desert in the previous table.

Connecticut, Texas, Utah, and New Jersey are represented in both the top 10 grouped marriage gardens and the top 10 individual-PUMA marriage gardens. This suggests that marriage gardens in these states combine high marriage rates with breadth across multiple neighborhoods, indicating depth as well as scale in their marriage ecosystems. New states appearing in the grouped marriage gardens include **California, Illinois, Maryland, Minnesota, New York, New Hampshire, and Pennsylvania.**

Notably, there are seven states that not only appear in the top 10 grouped marriage gardens but also feature in the top 10 grouped marriage deserts: **California, Illinois, New York, New Jersey, Maryland, Massachusetts, and Pennsylvania.** In many cases, the grouped deserts are located within the urban core of a given metropolitan region, whereas the grouped gardens are in suburban parts of that same region. Indeed, the geography of marriage gardens is overwhelmingly suburban and exurban in character, standing in clear contrast to the urban-core concentration observed among marriage deserts.

Top 10 Grouped Married-Family Deserts

In this analysis, married-family deserts are defined as PUMAs in which the share of households with children that are headed by a married couple falls below 52 percent. In these areas, children are less likely to be raised in households headed by married parents and less likely to be surrounded by peers growing up in married-couple families—conditions associated with lower levels of relational security at both the household and neighborhood level.

The table below ranks the 10 grouped PUMAs with the lowest shares of households with children headed by a married couple, where groupings consist of contiguous PUMAs that meet the married-family desert criteria. Across these grouped married-family deserts, the PUMA-level share of households with children headed by a married couple ranges from 18% to 52%.

Largest grouped married-family deserts

Rank	Grouped married-family desert	Households with children
1	Manhattan-Bronx Married-Family Desert (NY)	178144
2	Mississippi Married-Family Desert (LA-MS-AR-TN)	155492
3	Philadelphia Married-Family Desert (PA-NJ)	138295
4	Chicago-Gary Married-Family Desert (IL-IN)	117540
5	Atlanta Married-Family Desert (GA)	99093
6	Los Angeles Married-Family Desert (CA)	76999
7	Brooklyn Married-Family Desert (NY)	76805
8	Cleveland Married-Family Desert (OH)	71423
9	Baltimore Married-Family Desert (MD)	64020
10	Detroit Married-Family Desert (MI)	59715

Source: 2020 Decennial-Census estimates from the US Census Bureau.



These 10 grouped married-family deserts are located in eight major U.S. metropolitan areas across 10 states—**California, Georgia, Illinois, Indiana, Maryland, Michigan, New York, New Jersey, Ohio, and Pennsylvania**—and a significant married-family desert that includes parts of the Mississippi Delta in **Louisiana, Mississippi, Arkansas, and Tennessee**.

America's largest grouped married-family desert is located in the Bronx and Manhattan, with 178,144 households with children. New York is also home to the seventh-largest grouped married-family desert, which is located in Brooklyn. Combined, New York's two married-family deserts hold over 250,000 households with children who are living in married-family deserts.

A significant member of this top 10 list is the Mississippi Delta, which ranks second. In fact, 155,492 households with children across a large, contiguous, mostly-rural geography fall within this married-family desert, where the share of households with children headed by a married couple ranges from 27% to 52 percent. Notably, this married-family desert does *not* coincide with one of the largest grouped marriage deserts. However, a review of the maps shows that it overlaps with contiguous PUMAs in which overall marriage rates are below the national average. This alignment suggests that married-family deserts may emerge in regions where marriage prevalence is already depressed, even if those areas have not yet reached the lowest national marriage shares.

Finally, four metropolitan areas—**Atlanta, Cleveland, Chicago** and **Detroit**—appear in both the individual and grouped Top 10 married-family desert tables. This suggests a prevalence and persistence in both depth and scale of lower shares of households with children headed by married couples in these cities.

Top 10 Grouped Married-Family Gardens

In this analysis, married-family gardens are defined as PUMAs in which the share of households with children that are headed by a married couple is at or above 79%. In these areas, children are more likely to be raised in households headed by married parents and to be surrounded by peers growing up in married-couple families—conditions associated with higher levels of relational security at both the household and neighborhood level.

The 10 grouped married-family gardens that contain the largest number of households with children are shown in the following table. Across these grouped married-family gardens, the share of households with children headed by a married couple ranges from 79% to 89 percent.

Largest grouped married-family gardens

Rank	Grouped married-family garden	Households with children
1	Suburban DC-Baltimore-Philadelphia Married-Family Garden (VA-DC-MD-PA)	385561
2	San Francisco Bay Area Married-Family Garden (CA)	294628
3	Core Jersey Marriage Garden (NJ)	244656
4	Utah Married-Family Garden (UT)	221389
5	NYC Tri-State Area Married-Family Garden (CT-NJ-NY)	184595
6	Suburban Boston Married-Family Garden (MA)	153676
7	Suburban Seattle Married-Family Garden (WA)	131032
8	Long Island Married-Family Garden (NY)	126083
9	Suburban Dallas-Fort Worth Married-Family Garden (TX)	123864
10	Suburban Chicago Married-Family Garden (IL)	108357

Source: 2020 Decennial-Census estimates from the US Census Bureau.

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These grouped married-family gardens are located in 10 mostly suburban and exurban regions across the District of Columbia and 12 states—**California, Connecticut, Illinois, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Utah, Texas, Virginia, and Washington**. This is the first part of our findings in which the state of Washington appears within a top 10 ranking.

Key Differences in the Grouped Married-Family Deserts and Gardens

Geographically, the grouped married-family gardens—like the individual Top 10 married-family gardens—are generally concentrated in suburban and exurban areas rather than central metropolitan cores. Many are located in high-income regions with limited housing availability, such as the San Francisco Bay Area and Northern Virginia. These characteristics are consistent with patterns of residential sorting and may help explain the relatively narrow range between minimum and maximum married-family shares observed within grouped gardens.

It is also notable that several of the largest grouped married-family gardens are located in regions that are economically affluent and institutionally influential, including Northern Virginia, the Bay Area, and parts of Connecticut. In the New York area, two large married-family deserts (encompassing parts of the Bronx, Manhattan, and Brooklyn) are near married-family gardens in New Jersey and Long Island. This juxtaposition highlights the degree to which sharply different family-structure environments can exist in close geographic proximity within the same broader labor and housing markets.

Six states (**California, Illinois, Maryland, New York, New Jersey and Pennsylvania**) are each home to top 10 grouped married-family gardens *and* grouped married-family deserts. This in part reflects that these are populous states, but it also means that, even within state lines, there is a huge discrepancy in childhood experience. These states are also located within our lists of the top 10 grouped marriage deserts and gardens, making them arguably the most divided states in America for family experience.

Four Features Beyond the Top 10s

So far, we have reviewed the top 10 individual and grouped deserts and gardens for our percent married and married-family metrics. In this section, we want to briefly outline some observable features of the entire map, which point to interesting opportunities for future research.

1. Double Deserts

Marriage deserts and married-family deserts in the same geography

Chicago. Certain areas constitute both marriage deserts *and* married-family deserts. Within these areas, there is both a low share of householders who are married *and* a low share of households with children headed by married families. We see this, for example, in parts of Atlanta, Baltimore, Chicago, Cleveland, Detroit, Los Angeles, Newark, New York, Philadelphia, and Washington D.C., among other cities.

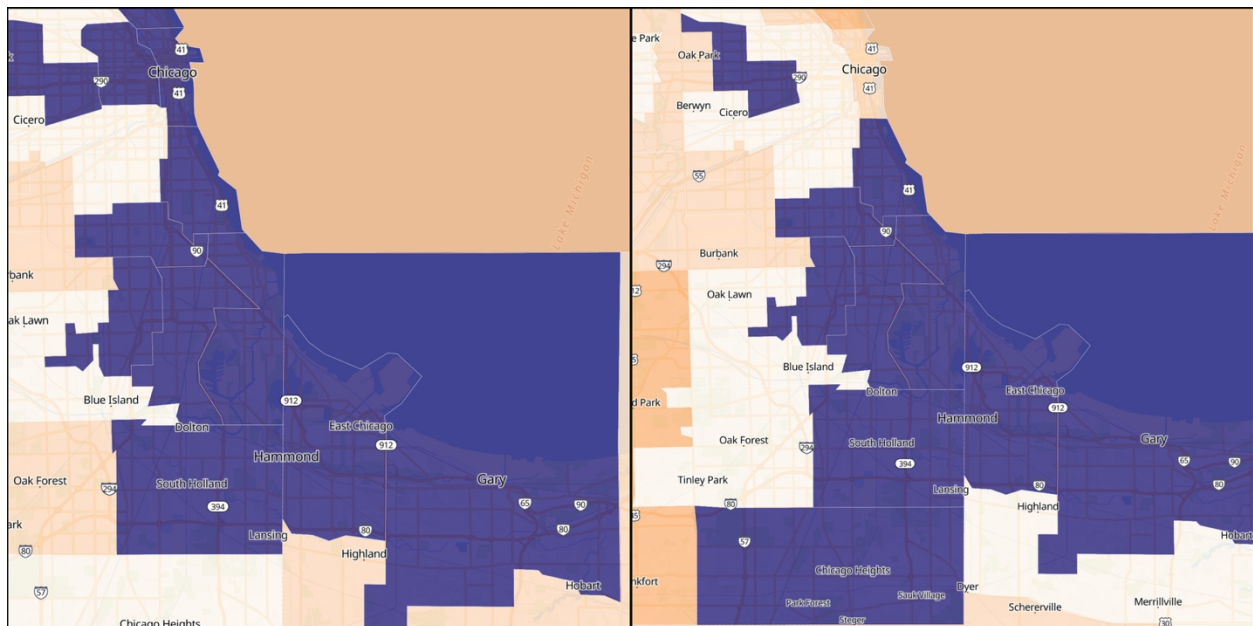


Figure 5. Comparing Chicago marriage-desert PUMAs and married-family-desert PUMAs

In the above figure, we can see there are some PUMAs that are both marriage deserts and married-family deserts. We have termed these areas *double deserts*.

Further research is needed to see if householders in these areas experience a persistent difficulty in entering into marriage and stable family life, and whether a lack of role models of stable, family life reproduces itself, limiting people's lifestyle choices.

2. Delayed-Marriage Deserts

Marriage deserts give way to married-family gardens once children are in the picture

Manhattan and Brooklyn. There are some marriage deserts with significant, low rates of marriage. However, in the same geography, the share of householders with children who are married is relatively high. In other words, marriage deserts do not equal married-family deserts. Such areas include college towns, for example.

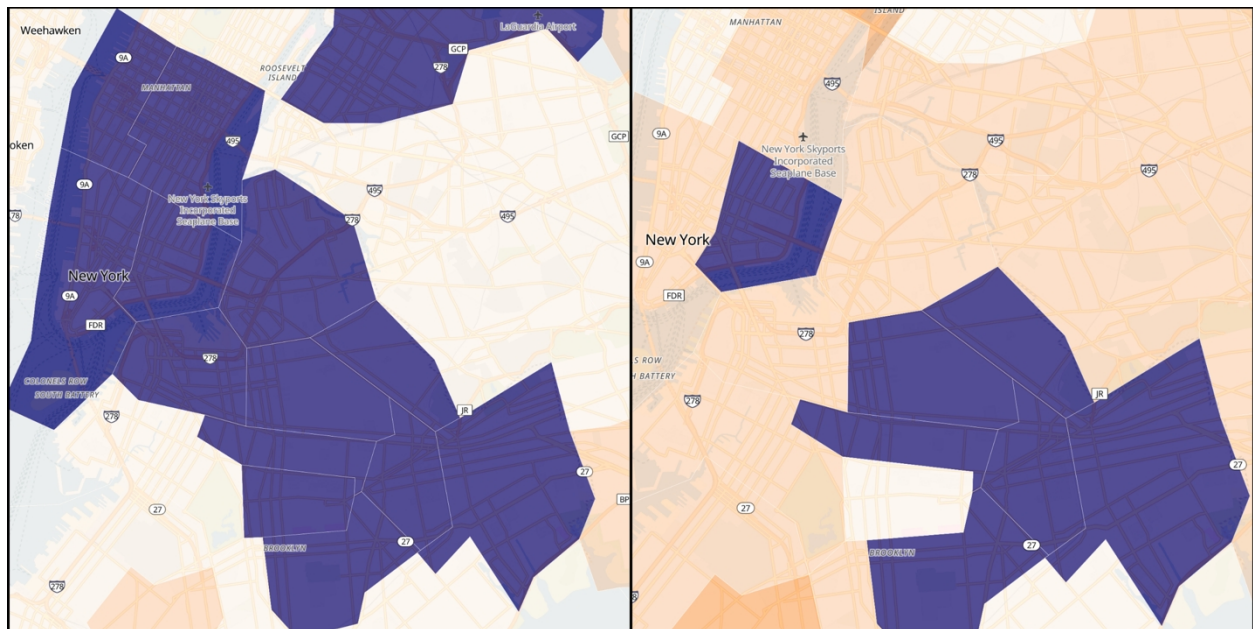


Figure 6. Comparing Manhattan and Brooklyn, NY, marriage-desert PUMAs and married-family-desert PUMAs

But these areas also appear in those economically active zones that attract young people from across the country, such as certain neighborhoods within Washington D.C., Los Angeles, and New York. Once we compare these marriage deserts with the share of households with children headed by a married couple, we see the deserts quickly give way to regions with higher shares of married families.

In the figures above, we can see that while certain PUMAs are both marriage deserts and married-family deserts, other PUMAs are both marriage deserts and areas with higher shares of married families. We have termed these areas delayed-marriage deserts, though this hypothesis requires additional research.

It is possible that, in these areas, young people remain single longer but ultimately get married prior to having children, provided that they remain in the area. This may be in defiance of surrounding communities that remain double deserts. If this is occurring, it could suggest that, when young people come to an area that has low marriage and low married-family rates as part of inward work migration, they bring high levels of social capital and relational literacy with them and replicate the norms they grew up with elsewhere. This interpretation is speculative and intended as a prompt for further research, rather than a conclusion.

3. Desert Corridors

Lower-share marriage regions combined with large married-family deserts

The Mississippi Delta. Several large, contiguous regions within the US have lower (but not desert-level) shares of adults ages 15-64 who are married, together with desert-level married-family rates. Low marriage rates appear to be associated with married-family deserts. This is in contrast to the delayed marriage deserts discussed earlier, where lower marriage rates coexist with higher married-family rates. We see these desert corridors in parts of the Mississippi Delta and New Mexico.

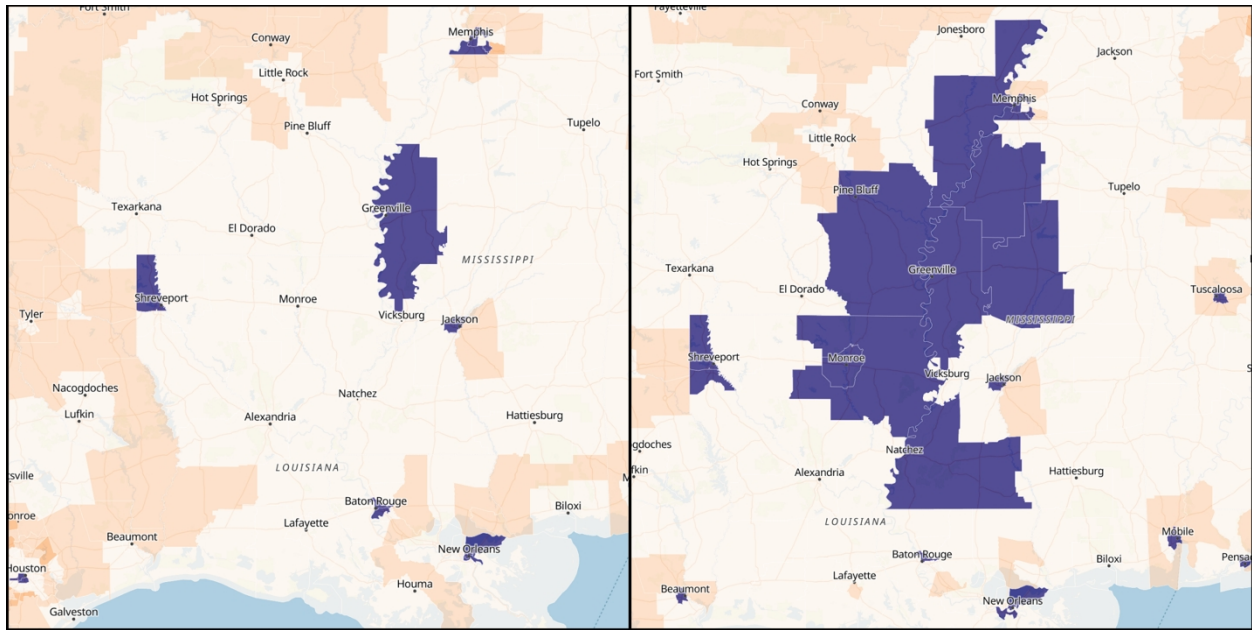


Figure 7. Comparing Mississippi Delta-area marriage-desert PUMAs and married-family-desert PUMAs

The Mississippi Delta is home to America's second-largest married-family desert. In this side-by-side comparison with its corresponding share of householders ages 15-64 who are married, we can see that these married-family deserts exist in the context of a large area where marriage rates are lower than normal.

Further research could investigate whether low marriage rates cause low married family rates and whether this share is growing across generations. If a given generation of children lacks exposure to married parents (except, perhaps, on TV), it is plausible that, upon entering adulthood, such children may reproduce the relationship patterns they experienced growing up. This would, in turn, reduce the share of householders ages 15-64 who are married. This may well put downward pressure on fertility rates and result in fewer children, but the share of children in married-family deserts would likely increase. These desert corridors, therefore, are vulnerable to becoming double deserts in the coming decades. In this desert growth, we perhaps witness in these corridors the growth of tomorrow's double deserts.

New Mexico. In the Southwest, we see that New Mexico has lower-share marriage rates and several married-family deserts. The married-family deserts encompass both Native American reservations and more urban areas.

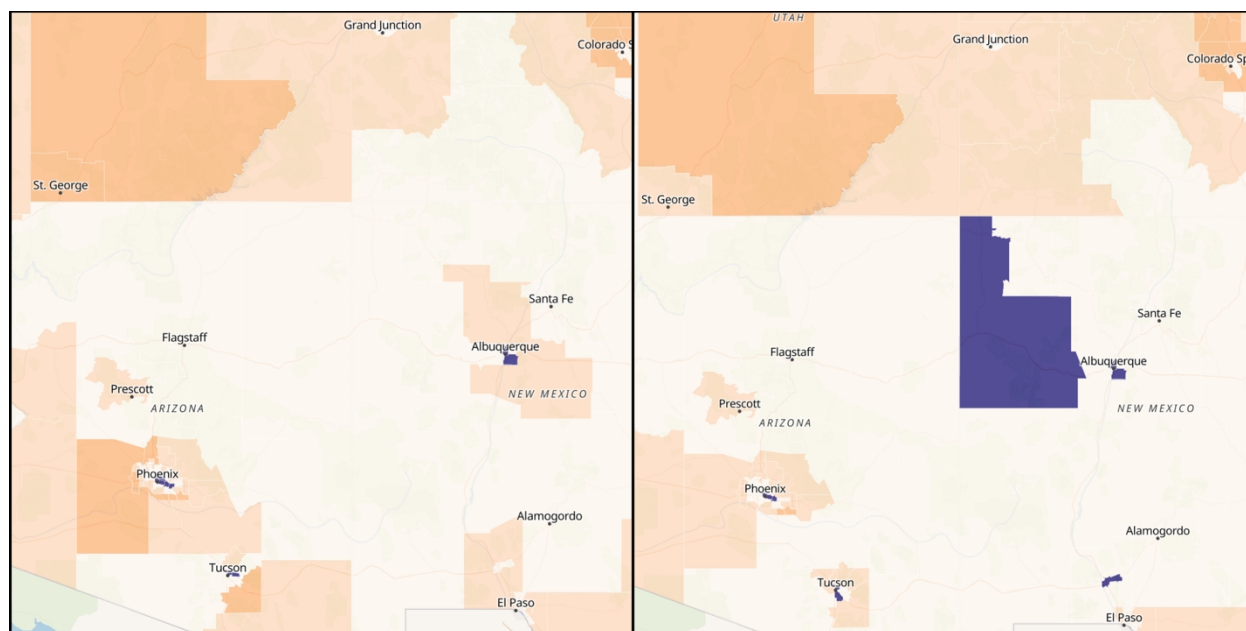


Figure 8. Comparing New Mexico marriage-desert PUMAs and married-family-desert PUMAs

4. Inverse Desert Corridors—Rural America

High marriage prevalence but low married-family shares

An inverse pattern appears to be the case in rural areas of the United States and in particular central Appalachia. In these PUMAs, we see above-average marriage rates among householders ages 15-64. However, when we look at the share of households with children that are headed by married couples, we see that these same areas have lower shares of married families.

This is the inverse of what we see in the Mississippi Delta, where low rates of marriage are coterminous with low rates of married families.

Further research is required to understand this pattern conclusively and in what direction it is traveling. One possibility is that older adults in these regions generally chose to get married, but their adult children are having children without first getting married.

Central Appalachia. The area between West Virginia and Kentucky contains large areas with higher-share marriage rates but lower-share married-family rates. This, for example, is a pattern visible in both central California and rural Nevada.

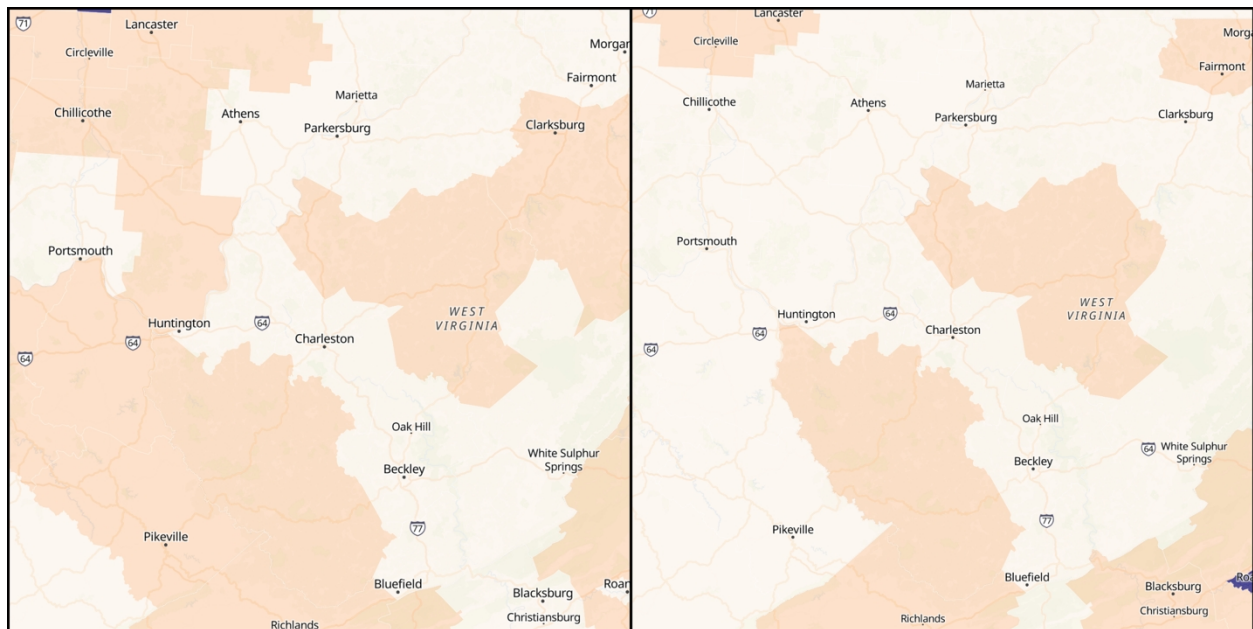


Figure 9. Comparing Central Appalachia marriage-desert PUMAs and married-family-desert PUMAs

What this area possibly shows is that even if individuals have access to marriage role models (i.e. parents or grandparents), they will not necessarily be married themselves when they have children. Again, further research is required to understand the nature of this pattern. If, however, role models are important to establishing pathways to stable, married family life and the relational security and social capital that creates, then a reversal of trends may be easier to accomplish in central Appalachia—and regions like it—than in those areas where marriage is less of a norm.

Conclusion

This report has identified PUMAs where marriage rates and married-family rates are especially high or low. It has also shown which clusters of married-family and marriage deserts and gardens have a particularly large population.

As shown in our maps, marriage deserts are present across the United States. They cluster in specific neighborhoods and, in some cases, extend across large metropolitan regions. At the individual PUMA level, some of the lowest marriage shares appear in parts of cities such as Cleveland, Milwaukee, St. Louis, and Washington, D.C. When grouped, marriage deserts encompass far larger populations: the top three grouped deserts, which include parts of New York City and Chicago, each span over 500,000 households.

The analysis also shows that marriage deserts and married-family deserts frequently overlap, though not uniformly. In cities such as Chicago, Philadelphia, Baltimore, Los Angeles, and Newark, some neighborhoods experience both low marriage among adults and low shares of households with children headed by married couples. In other areas—such as parts of New York City and Washington, D.C.—lower marriage shares give way to stronger married-family patterns once children are present, suggesting delayed or selective marriage rather than a complete absence of married family life.

By contrast, married-family gardens—both individual and grouped—are most often found in suburban and exurban areas, including parts of Northern Virginia, the Bay Area, Connecticut, Utah, and New Jersey. In these gardens, roughly 80% to nearly 90% of households with children are headed by married parents. We also found that the largest married-family gardens have higher numbers of households with children, on average, than do the largest deserts. In addition, the individual PUMAs with the highest married-family percentages have higher shares of households with children than do those PUMAs with the lowest percentages.

Mapping these patterns provides a foundation for further research into how marriage deserts and married-family deserts evolve over time and what they mean for families, children, and communities across the country.

Appendix: Methodology

In order to create our analysis, we first needed to choose whether to base our calculations on 2020 Census data or the American Community Survey. We ultimately chose the former dataset, as it has a much larger sample size and should thus be less susceptible to sampling bias. (However, we did perform an alternative ACS-based analysis in order to corroborate our findings; see below for more details.)

Having selected the 2020 Census as our main data source, we needed to consider what level of geographic unit would be suitable for accurately representing the data.

Our Choice of PUMAs

Our analysis features data at the PUMA (Public Use Microdata Area) level. We also considered using tracts as our reference region, as tract-level metrics would reveal much more variation within specific cities than would metro-area-, county-, or state-level data.

However, the 2020 Census dataset was modified in accordance with new differential privacy guidelines that sought to protect confidentiality at the local level by importing national data into the local level. This has introduced reliability concerns for census-tract-level data. To address this challenge, we grouped tract-level data into PUMAs, as doing so may help offset or diminish the effects of differential-privacy-driven alterations to those tracts' original data. (It would have been more straightforward to use pre-tabulated PUMA-level statistics, but this data [was not available](#) for the 2020 Census.)

Data Retrieval

We used the [2020 Decennial Census](#) API (Application Programming Interface) to retrieve Census-tract-level data that could then be grouped into PUMA-level data. These metrics included relevant [Demographic and Housing Characteristics variables](#) from groups H14 (Tenure by Household Type by Age of Householder) and P20 (Households by Type and Presence of Own Children Under 18 Years). ([This page](#) provides the Census Bureau's definition of 'householder'.)

The Census also provides [a file](#) that lists the 2020 PUMA that corresponds to each 2020 Census tract. We used this file to add PUMA information to each Census tract in our table, then created a new PUMA-level table that contains the sums of all values for all tracts within each PUMA.

We then used these PUMA-level sums to calculate relative percentages for our analysis. For instance, to calculate the percentage of householders aged 15-64 who were married, we first calculated the number of householders aged 15-64 who were married (i.e. variables H14_005N + H14_039N + H14_006N + H14_040N), then divided this sum by the total number of householders aged 15-64 (i.e. variables H14_005N + H14_006N + H14_014N + H14_015N + H14_010N + H14_011N + H14_029N + H14_030N + H14_033N + H14_034N + H14_020N + H14_021N + H14_024N + H14_025N + H14_039N + H14_040N + H14_048N + H14_049N + H14_044N + H14_045N + H14_063N + H14_064N + H14_067N + H14_068N + H14_054N + H14_055N + H14_058N + H14_059N).

Meanwhile, to calculate the percentage of households with their [own children](#) that were headed by married couples, we divided the number of *married-couple* households with children of their own under 18 (variable P20_003N) by the *total* number of households with children of their own under 18 (variables P20_003N + P20_006N + P20_011N + P20_017N). (All references to children in our analysis and this brief refer to householders' *own* children rather than *related* children; see the previous hyperlink for more details on the definitions of these terms.)

Analyzing PUMA-level data

To group PUMAs into 'deserts' and 'gardens,' we first needed to determine the percentage cutoffs for those groupings.

Age groups

Typically, in our research, we focus on prime-working-age adults (i.e. those aged 18-54 or 21-54) when analyzing marriage and family trends. However, the 2020 Census only made marital status data available for three householder age ranges within [the H14 group](#): 15-34; 35-64; and 65+. Therefore, we chose an age range of 15-64 for our analyses of marriage prevalence. (In order to limit the effects of widowhood on our marriage prevalence calculations, we did not include the 65+ age group.)

Given that the average age at first marriage has been trending higher, we could also have set a higher minimum age for our marital-share analyses, such as 35. However, selecting a 35-64 age range rather than our 15-64 range would have obscured this delayed-marriage trend, which we believe is worth representing as well. (Our approach, however, likely resulted in lower marriage-prevalence calculations in areas with large shares of young adults, such as college towns.)

Classifying PUMAS into marriage 'deserts' and 'gardens'

For our % married maps, we found the PUMA-level percent-married values that corresponded to the 10th, 50th, and 90th percentiles, then rounded them to the nearest integer. (The resulting values were 33%, 49%, and 61%, respectively.)

PUMAs in which fewer than 33% of householders aged 15-64 were married were considered 'deserts'; those with shares greater than or equal to 33%, but less than 49%, were classified as 'lower share' regions; those with shares greater than or equal to 49%, but less than 61%, were classified as 'higher share' regions; and those in which 61% or more of householders aged 15-64 were married were classified as 'gardens.'

This approach means that, regardless of the actual prevalence of married households in the US, around one in every ten PUMAs will be classified as a desert, and another one in every ten PUMAs will be classified as a garden. An alternative methodology would have been to set a specific numerical value for 'deserts' and 'gardens', but our percentile-based approach may be more intuitive.

Classifying regions into married-family deserts and gardens

We used a similar approach for our married-family maps. The rounded 10th, 50th, and 90th PUMA-level percentiles for our married-family metric (i.e. the % of households with children that are headed by a married couple) were 52%, 66%, and 79%, respectively.

As a result, PUMAs in which fewer than 52% of households with children were headed by a married couple were classified as deserts; those with a percentage greater or equal to 52%, but less than 66%, were classified as lower-share regions; those with a percentage greater to or equal to 66%, but less than 79%, were classified as higher-share regions; and those in which married-couple households represented at least 79% of households with children of their own were classified as gardens. The following table that summarizes these cutoffs.

PUMA classification thresholds

Metric	Desert cutoff (rounded 10th percentile)	Median (rounded 50th percentile)	Garden cutoff (rounded 90th percentile)
% of householders aged 15-64 who are married	33	49	61
% of households with kids headed by married couple	52	66	79

Regions whose percentage is less than the desert cutoff are classified as deserts; those with a percentage greater than or equal to the desert cutoff, but less than the median, are classified as lower-share regions; those with a percentage greater than the median, but less than the garden cutoff, are classified as higher-share areas; and those with a percentage greater than or equal to the garden cutoff are classified as gardens.

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Mapping

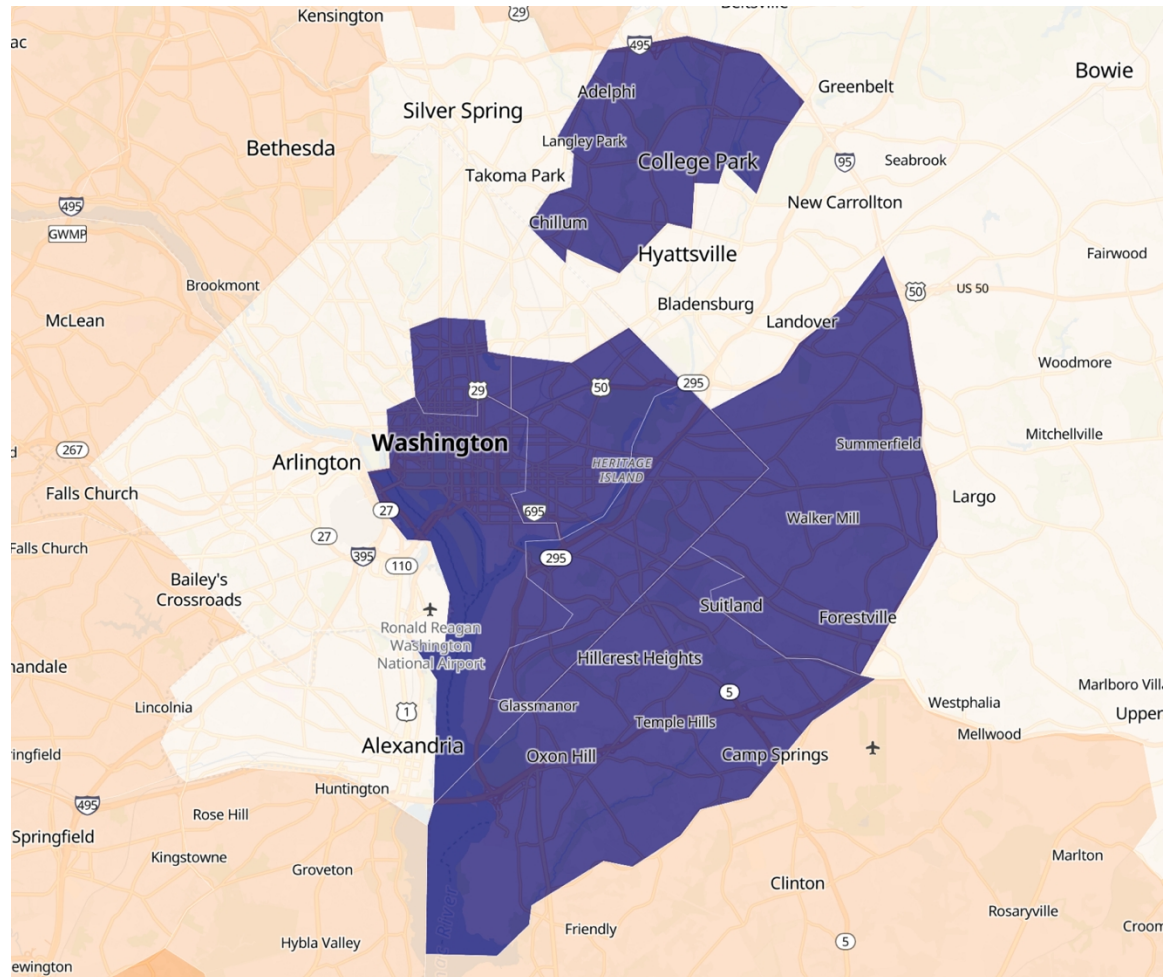
These maps were rendered in Python using the Plotly library's [choropleth_map\(\)](#) function and PUMA shapefiles from the Census Bureau. (In order to reduce map size and load time, these shapefiles were simplified using the [simplify_coverage\(\)](#) function of Geopandas, another Python library.) Deserts are colored purple; lower-share regions have a very light orange color; higher-share regions are colored light orange; and gardens are colored orange.

Categorical versus gradient

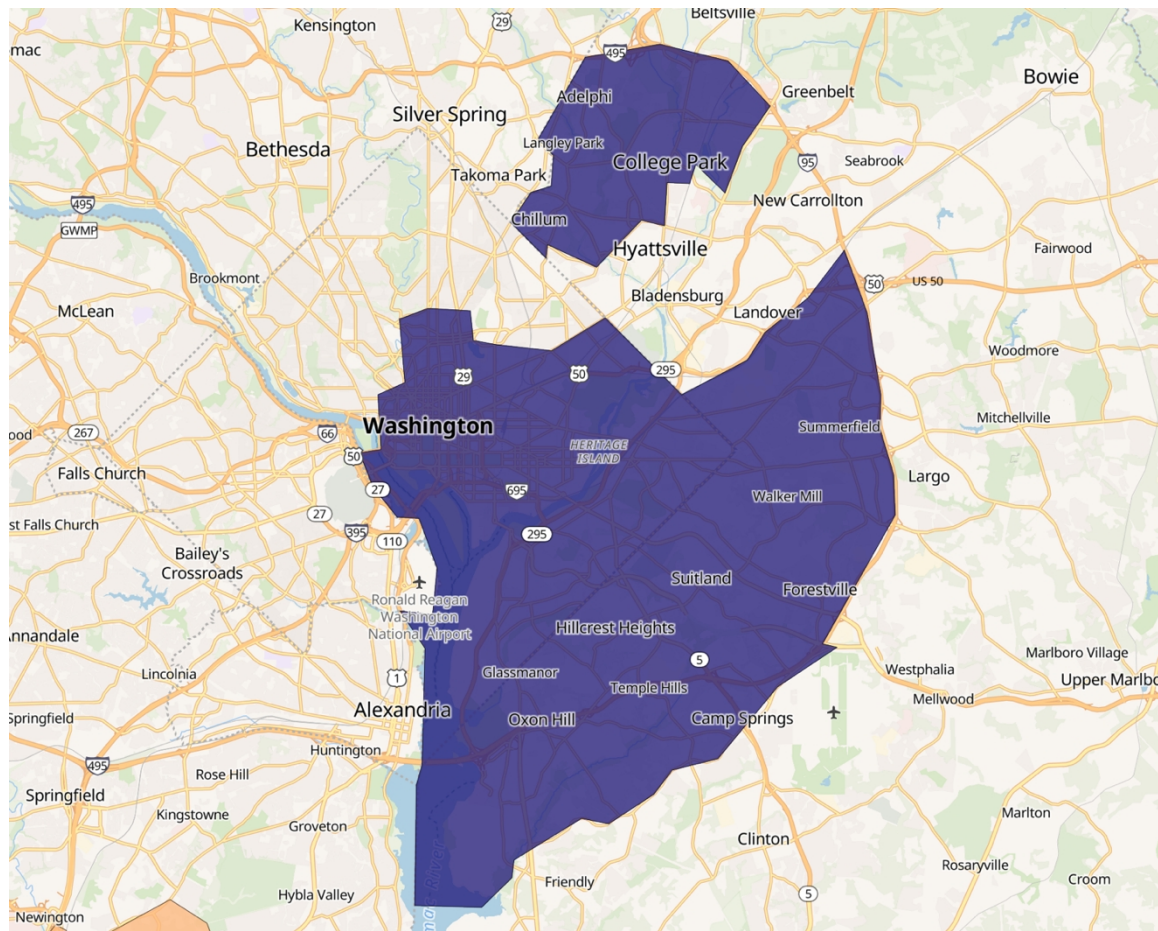
We could also have used a gradient scale rather than a categorical one. However, the current approach and choice of colors helps highlight deserts while also making gardens easier to identify.

Grouping 'deserts' and 'gardens' together

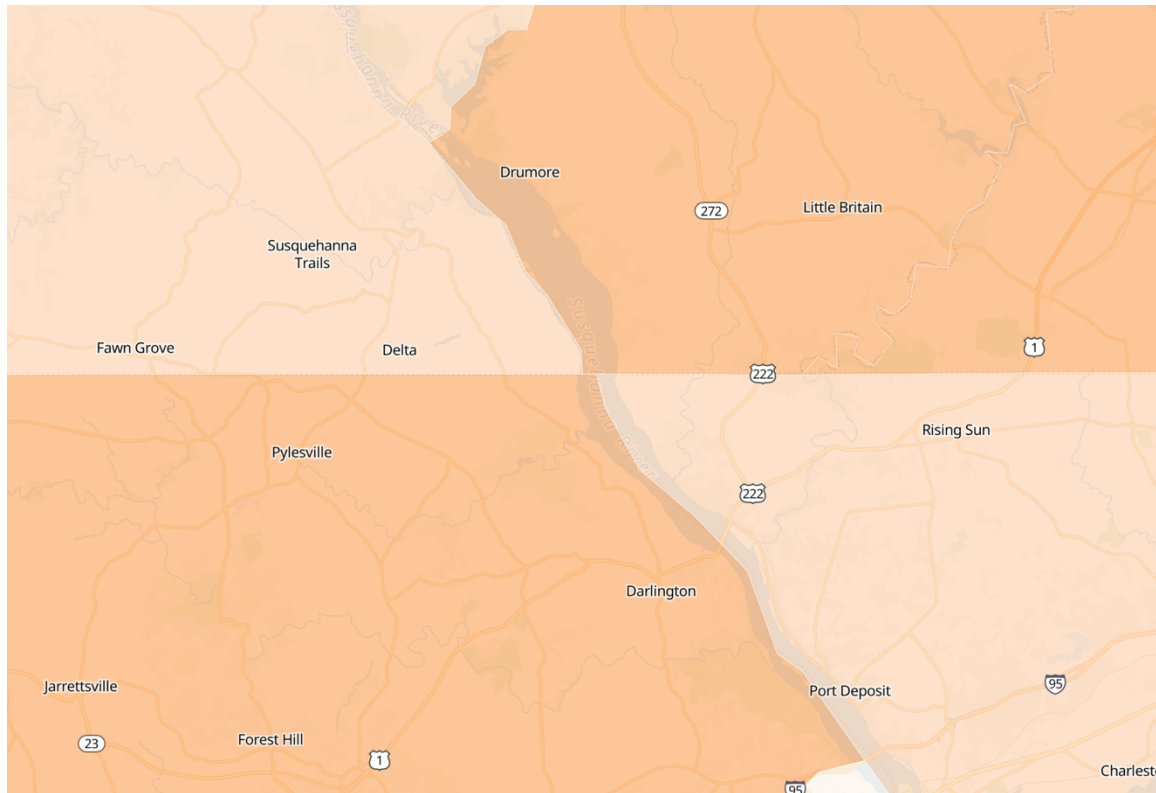
To create our grouped-PUMA maps and tables, we used Geopandas to group contiguous desert and garden PUMAs together. (PUMAs that met only at one point were not considered contiguous.) The following two screenshots of DC-area PUMAs illustrate this process. The first image shows ungrouped PUMAs:



Meanwhile, the following image shows the same marriage-desert PUMAs within the grouped-PUMA map. Note that the borders around the DC-area marriage deserts have been removed, thus creating one single grouped PUMA. Note that the map also includes the marriage-desert PUMA near College Park, MD, even though it does not have any contiguous deserts.



Determinations about which PUMAs to group together were based solely on the original boundaries of our simplified PUMA shapefiles. For instance, because the simplified boundaries of certain Cleveland-area PUMAs included large portions of Lake Erie, these PUMAs got grouped together to form the Cleveland Married-Family Desert (which ranked 8th within our list of grouped married-family deserts by population), even though the western PUMAs within this group do not share any *land* area with the eastern PUMAs.



We could have addressed this issue by trimming out areas of PUMAs that extended into the Great Lakes and the Atlantic and Pacific Oceans. However, we would then have had to decide whether to prevent PUMAs from getting grouped across *other* bodies of water as well, such as rivers and inland lakes. Ultimately, we decided to take a simpler approach and use the original shapefiles, including their land *and* water areas, as a basis for our grouped PUMAs.

However, for aesthetic reasons, we did trim ex-coastal areas out of individual and grouped PUMAs within the static images used in the PDF copy of our report. These updates did not affect our calculations, which were performed prior to this grouping process.

Once our PUMAs were grouped together, we then ranked them by relevant household and householder counts. Grouped marriage-desert and marriage-garden PUMAs were ranked by the total number of householders aged 15-64 (regardless of marital status). Meanwhile, grouped married-family-desert and married-family garden PUMAs were ranked by the total number of households with children of their own (whether or not those households were headed by a married couple).

Checking our findings with American Community Survey microdata³

The 2020 Decennial Census's massive sample size made it an ideal choice for our analysis. However, one major limitation of this data is that it only provided *household*-level data for our metrics of interest. Multiple factors (roommates, multigenerational households, etc.) can cause the percentage of married *householders* to differ from the percentage of married *adults*. Similarly, differences in family sizes can cause the percentage of *households* with children that are led by a married couple to differ from the percentage of *children* in married-couple households.

Therefore, both to check the validity of our decennial-Census analyses and to provide results at the individual level, we performed PUMA-level analyses of IPUMS-provided microdata from the 2023 American Community Survey 5-year dataset. (This dataset encompassed the years 2019 through 2023.) Because PUMA names were provided for each respondent, there was no need to map tracts to their corresponding PUMAs, as we did for our analysis of 2020 Census data.

³ Citation for IPUMS American Community Survey microdata: Steven Ruggles, Sarah Flood, Matthew Sobek, Daniel Backman, Grace Cooper, Julia A. Rivera Drew, Stephanie Richards, Renae Rodgers, Jonathan Schroeder, and Kari C.W. Williams. IPUMS USA: [Version 16.0 2023 ACS 5-year estimates](#). Minneapolis, MN: IPUMS, 2025.

An alternative approach would have been to use pre-tabulated PUMA-level estimates; however, the microdata file allows for more flexible filters and simpler confidence interval calculations (which we computed within R).

To calculate the percentage of adults aged 15-64 who were married, we determined which adults had a MARST value of 1 (Married, spouse present) or 2 (Married, spouse absent), then divided the weighted sum of adults with one of these values by the sum of all adults within this age range. (Note that the 'Married, spouse absent' condition is distinct from the 'Separated' condition; we did not count separated adults as married for the purpose of this analysis. Visit [this Census page](#) for more details on these terms' definitions.)

For our married-family calculations, we first determined whether each individual under age 18 had married parents. To do so, we linked unmarried children's records to their parents via IPUMS, then classified these children as being in a married-couple family if either their mother or their father had either a 'married, spouse present' status or a 'married, spouse absent' status.

Our methodology for this analysis was similar to that of our Decennial-Census analyses: we calculated rounded 10th, 50th, and 90th percentiles, then used these percentiles to classify regions as deserts, lower-share areas, higher-share areas, or gardens. The following table shows the values of these percentiles for both metrics.

PUMA classification thresholds for ACS-based analysis

Metric	Desert cutoff (rounded 10th percentile)	Median (rounded 50th percentile)	Garden cutoff (rounded 90th percentile)
% of adults ages 15-64 who are married	35	47	56
% of children in married-parent families	49	65	80

Regions whose percentage is less than the desert cutoff are classified as deserts; those with a percentage greater than or equal to the desert cutoff, but less than the median, are classified as lower-share regions; those with a percentage greater than the median, but less than the garden cutoff, are classified as higher-share areas; and those with a percentage greater than or equal to the garden cutoff are classified as gardens.



Overall, our individual-level results from this analysis of American Community Survey microdata lined up quite well with the household-level results that we calculated using data from the 2020 Census. The Pearson correlation between our household and individual-level percent-married values was 0.93, and the correlation between our household and individual-level married-family percentages was 0.949. In addition, 78.5% of PUMAs were classified in the same category (garden, desert, etc.) for our marriage metrics, and 80.1% ended up in the same category for our married-family metrics.

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The map screenshots in the 'Four Features beyond the Top 10s' section and the appendix show Open Street Map data, which is available under the [Open Database License](https://www.openstreetmap.org/copyright). For more information, visit <https://www.openstreetmap.org/copyright>.

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