

Racial and Ethnic Diversity: 2020 Census Results for Maryland

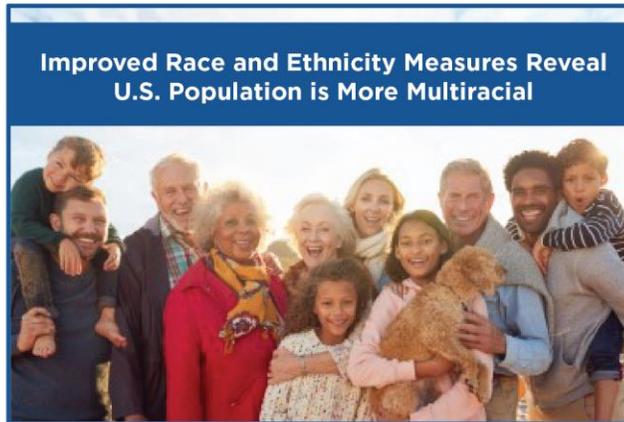
Maryland State Data Center Annual Meeting and Workshop

Nicholas A. Jones, Director, Race Ethnicity Research and Outreach
Eric Jensen, Senior Technical Expert, Demographic Analysis

Population Division, U.S. Census Bureau
October 19, 2021



2020 Census Provides a New Snapshot of Racial and Ethnic Composition and Diversity



2020 Census Asked Two Separate Questions on Hispanic Origin and Race

→ NOTE: Please answer BOTH Question 6 about Hispanic origin and Question 7 about race. For this census, Hispanic origins are not races.

6. Is this person of Hispanic, Latino, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican Am., Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino, or Spanish origin – *Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.* ↴

Significant changes from 2010 Census for race and ethnicity question designs, data processing, and coding.

7. What is this person's race?

Mark one or more boxes AND print origins.

- White – *Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc.* ↴

- Black or African Am. – *Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.* ↴

- American Indian or Alaska Native – *Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.* ↴

- | | | |
|---|--|--|
| <input type="checkbox"/> Chinese | <input type="checkbox"/> Vietnamese | <input type="checkbox"/> Native Hawaiian |
| <input type="checkbox"/> Filipino | <input type="checkbox"/> Korean | <input type="checkbox"/> Samoan |
| <input type="checkbox"/> Asian Indian | <input type="checkbox"/> Japanese | <input type="checkbox"/> Chamorro |
| <input type="checkbox"/> Other Asian – <i>Print, for example, Pakistani, Cambodian, Hmong, etc.</i> ↴ | <input type="checkbox"/> Other Pacific Islander – <i>Print, for example, Tongan, Fijian, Marshallese, etc.</i> ↴ | |

- Some other race – *Print race or origin.* ↴

Improvements to 2020 Census Question Designs, Data Processing, and Coding Procedures

- Yield a more accurate portrait of how people self-identify.
- Reveal U.S. population is much more multiracial and more diverse.

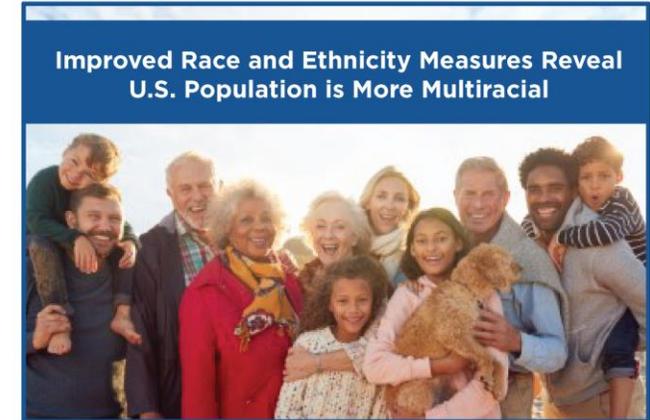
   Improvements to the 2020 Census Race and Hispanic Origin Question Designs, Data Processing, and Coding Procedures

August 03, 2021

BY RACHEL MARKS, CHIEF, RACIAL STATISTICS BRANCH, POPULATION DIVISION AND MERARYS RIOS-VARGAS, CHIEF, ETHNICITY AND ANCESTRY BRANCH, POPULATION DIVISION

2020 Census Shows Different But Reasonable and Expected Distributions

- 2020 Census and 2010 Census race data comparisons should be made with caution, taking into account improvements.
- Results are not surprising.
- Results align with expert research and findings.
- Improvements more accurately illustrate richness and complexity of how people identify within Office of Management and Budget (OMB) standards.



Cross Tabulation of Hispanic Origin by Race (Table P2)

P.L. 94-171 Redistricting Data

Table P2

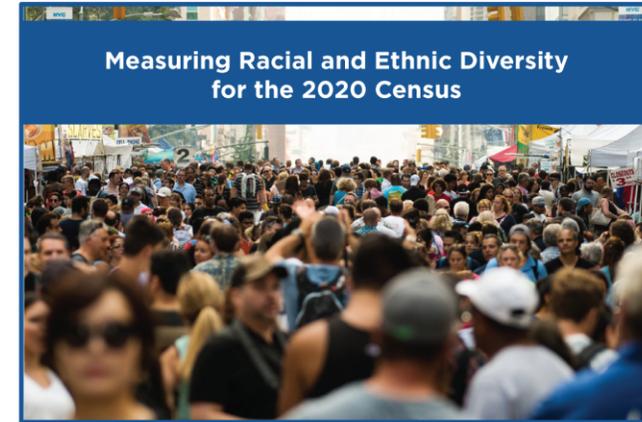
Hispanic or Latino, and Not Hispanic or Latino by Race

Universe: Total population

HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE [73]
Universe: Total population
Total:
Hispanic or Latino
Not Hispanic or Latino:
Population of one race:
White alone
Black or African American alone
American Indian and Alaska Native alone
Asian alone
Native Hawaiian and Other Pacific Islander alone
Some Other Race alone
Two or More Races:
Population of two races:
White; Black or African American
White; American Indian and Alaska Native
White; Asian
White; Native Hawaiian and Other Pacific Islander
White; Some Other Race
Black or African American; American Indian and Alaska Native
Black or African American; Asian
Black or African American; Native Hawaiian and Other Pacific Islander
Black or African American; Some Other Race
American Indian and Alaska Native; Asian
American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander
American Indian and Alaska Native; Some Other Race
Asian; Native Hawaiian and Other Pacific Islander
Asian; Some Other Race
Native Hawaiian and Other Pacific Islander; Some Other Race
Population of six races:
White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race

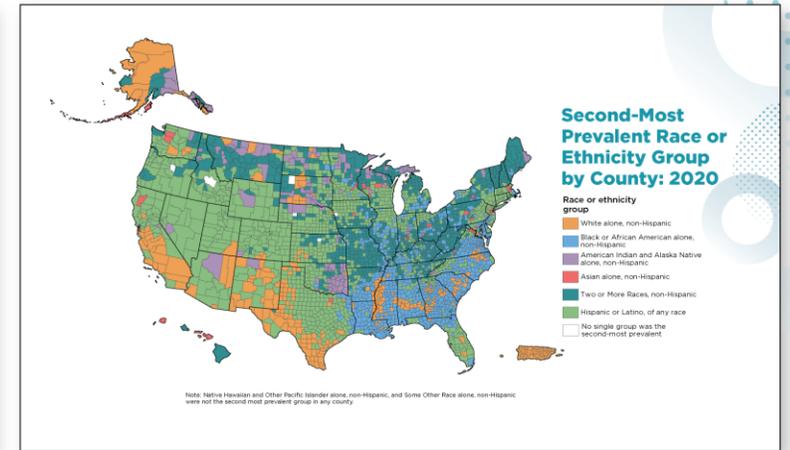
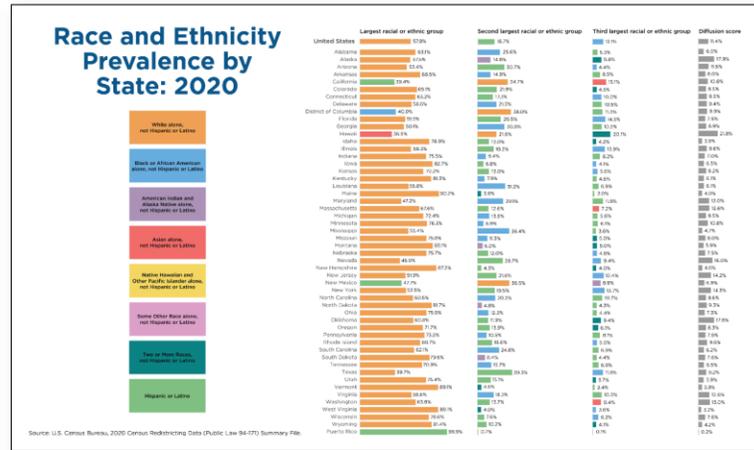
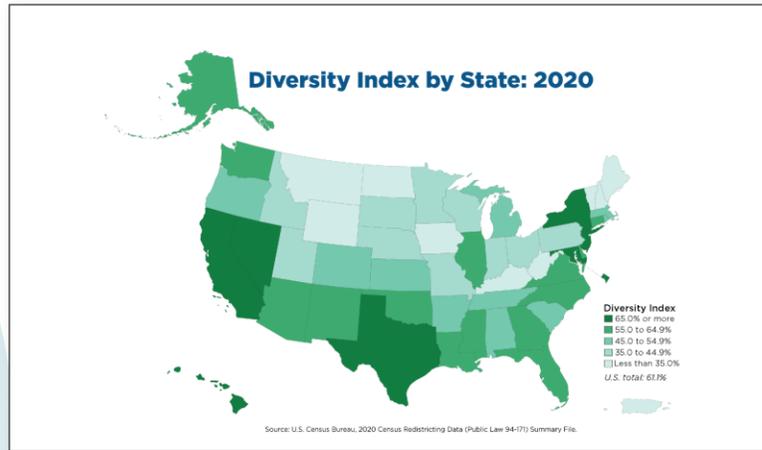
Comparing Cross-Tabulated Race and Ethnicity Data

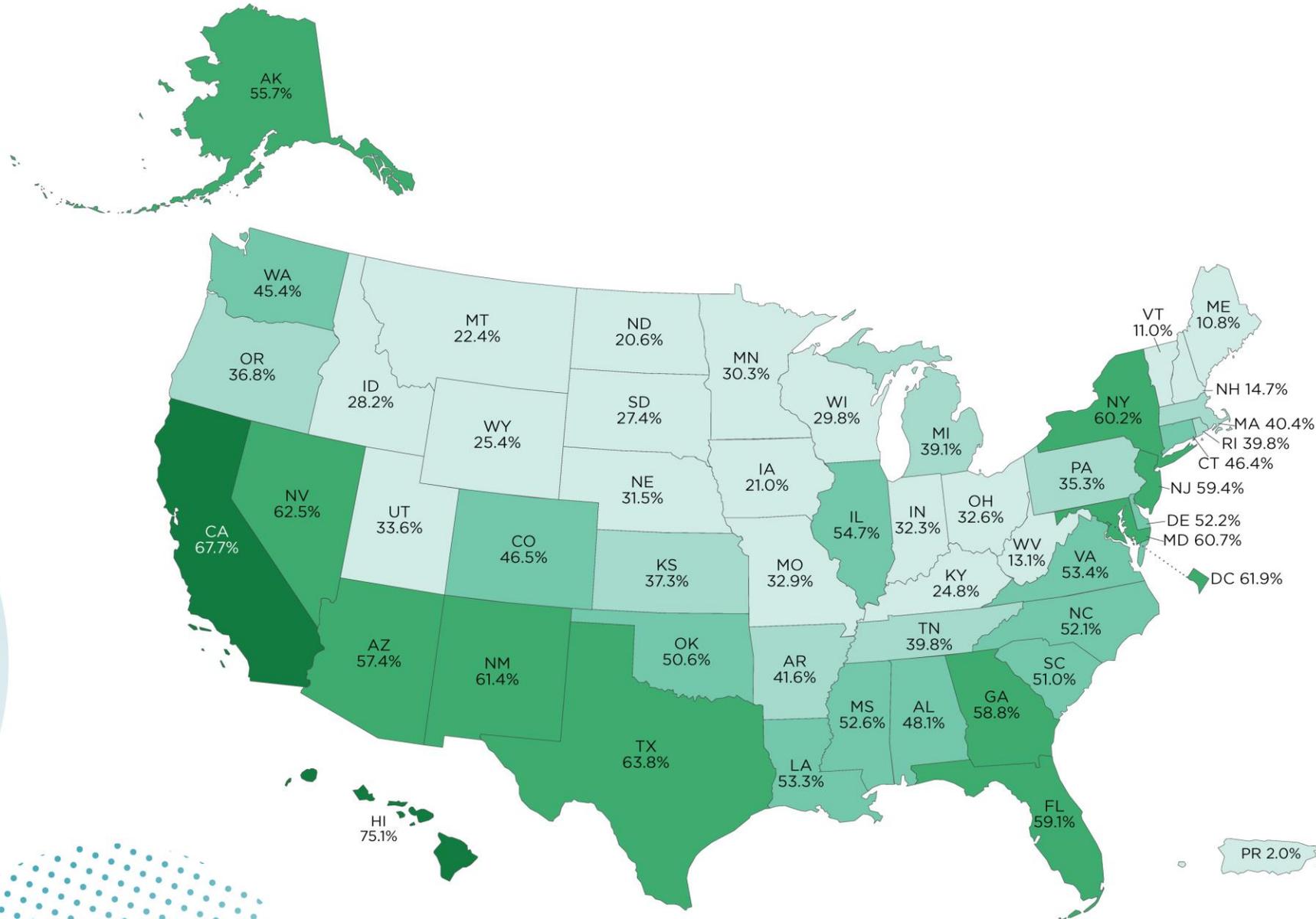
- Cross-tabulated race and ethnicity statistics are not as impacted by race reporting patterns of Hispanic respondents.
- We are confident changes in diversity measures reflect actual demographic changes, as well as improvements to 2020 Census question designs, data processing, and coding.



Measuring Racial and Ethnic Diversity in the 2020 Census

Concept of “diversity” refers to representation and relative size of different racial and ethnic groups within a population.

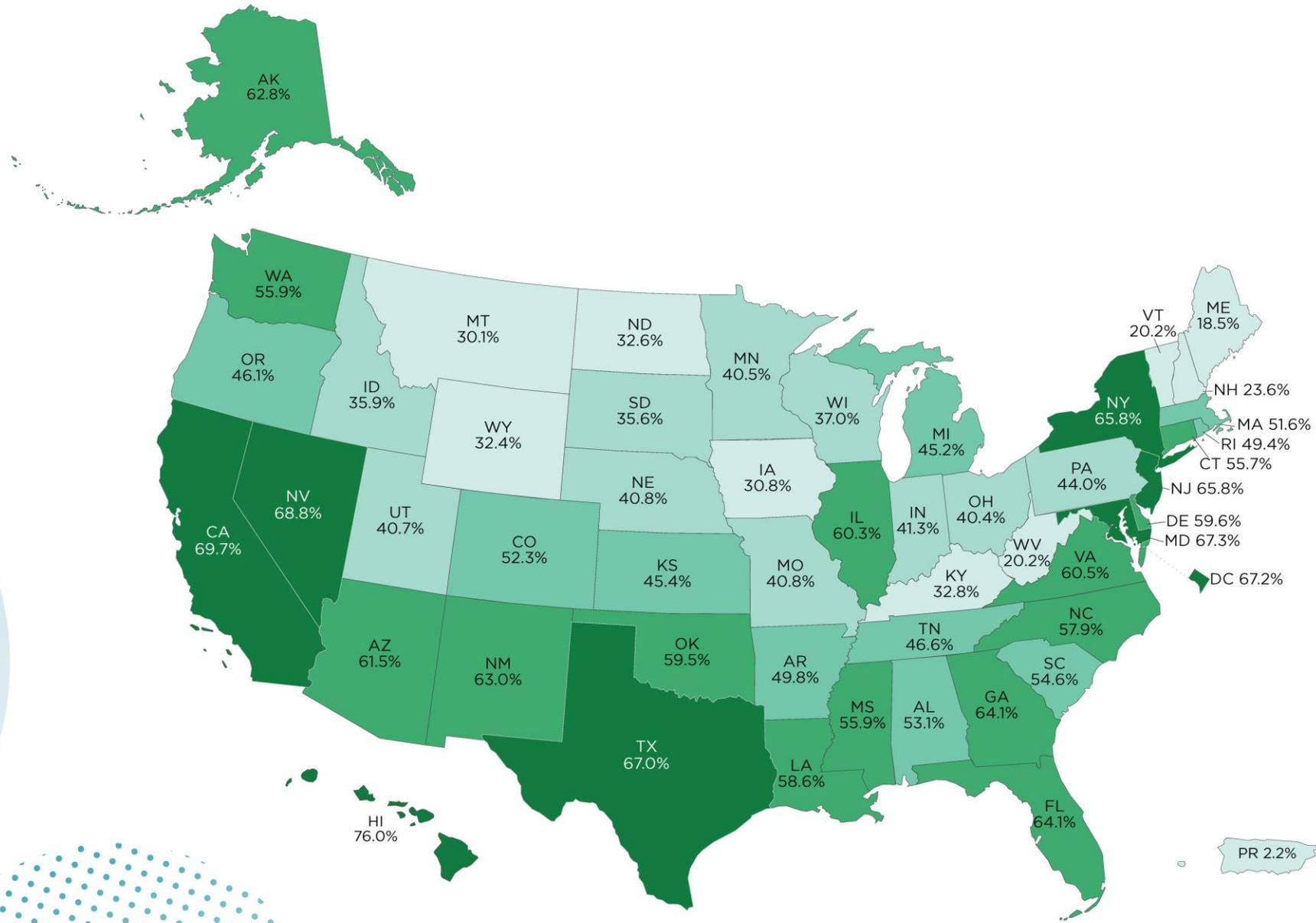




Race and Ethnicity Diversity Index by State: 2010

- Diversity Index**
- 65.0% or more
 - 55.0 to 64.9%
 - 45.0 to 54.9%
 - 35.0 to 44.9%
 - Less than 35.0%

U.S. total: 54.9%

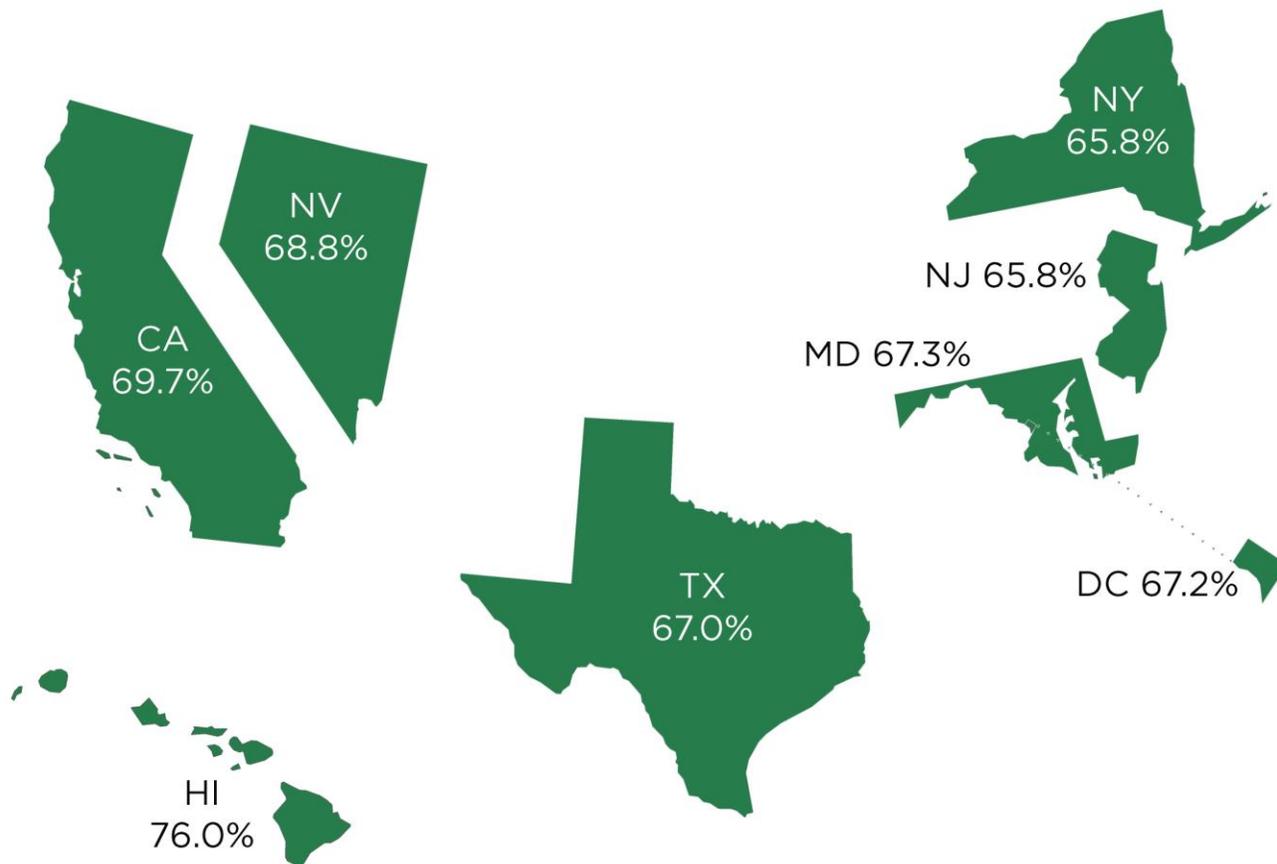


Race and Ethnicity Diversity Index by State: 2020

Diversity Index

- 65.0% or more
- 55.0 to 64.9%
- 45.0 to 54.9%
- 35.0 to 44.9%
- Less than 35.0%

U.S. total: 61.1%



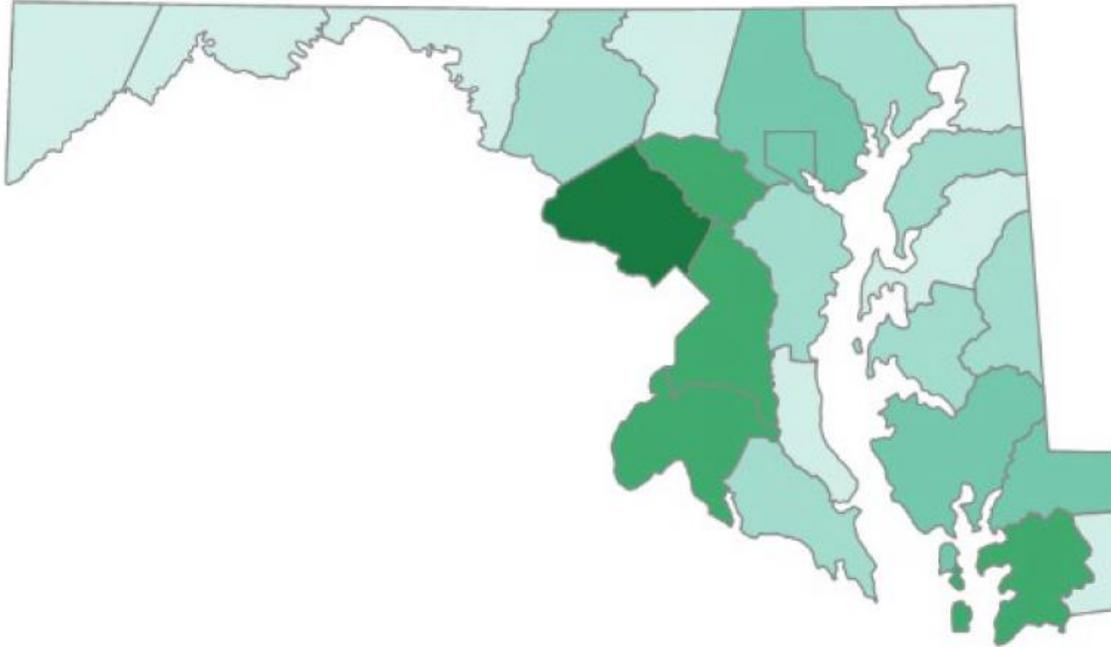
Race and Ethnicity Diversity Index by State: 2020

Diversity Index
■ 65.0% or more

Racial and Ethnic Diversity Index for Maryland

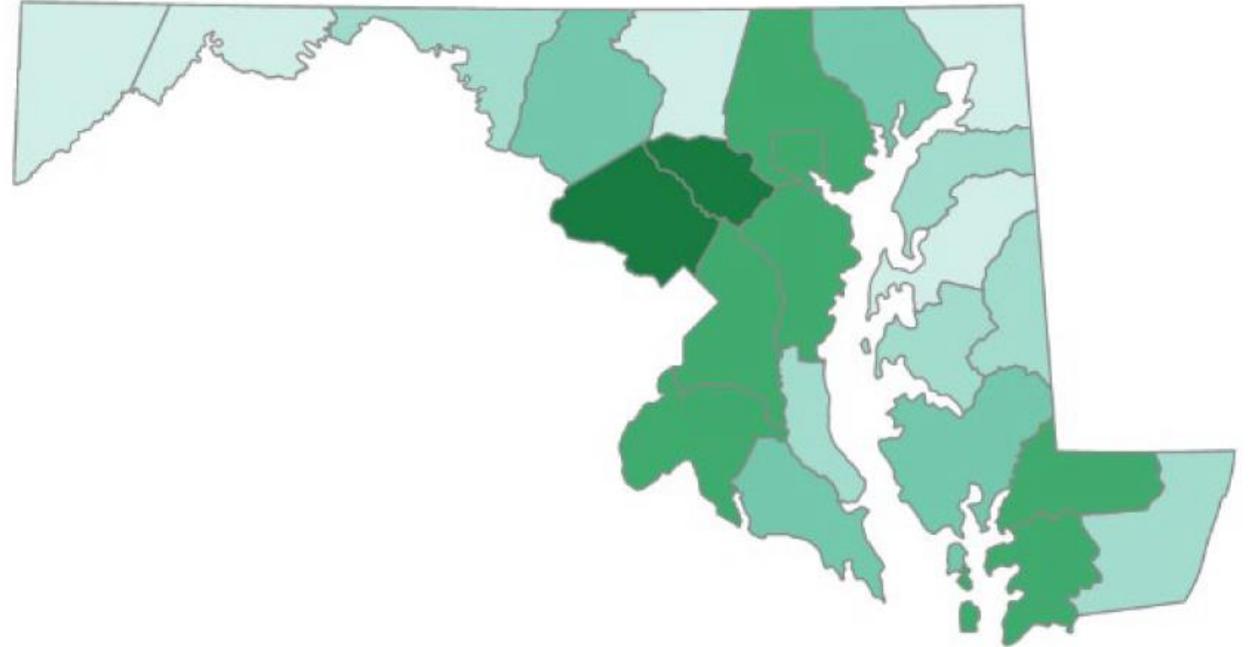
Diversity Index by County: 2010

Maryland: 60.7%



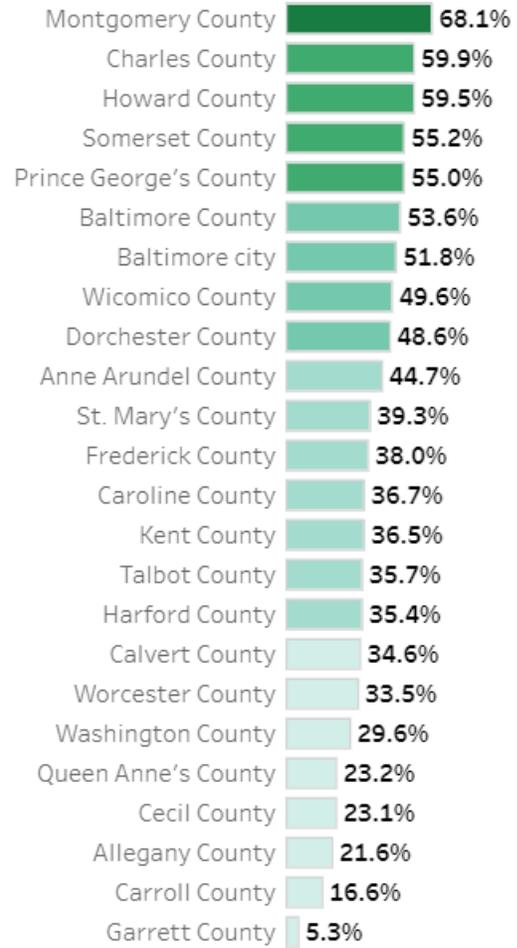
Diversity Index by County: 2020

Maryland: 67.3%

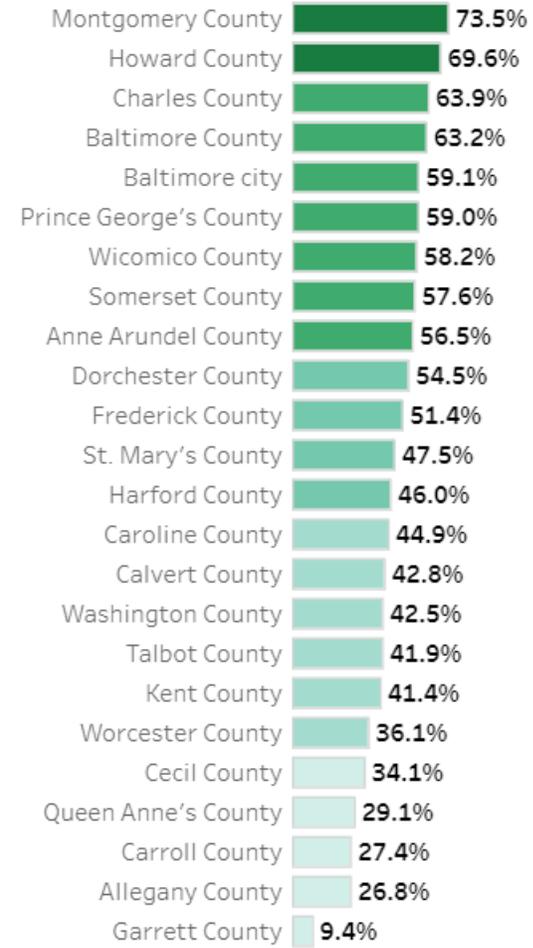


Diversity Index for Maryland Counties

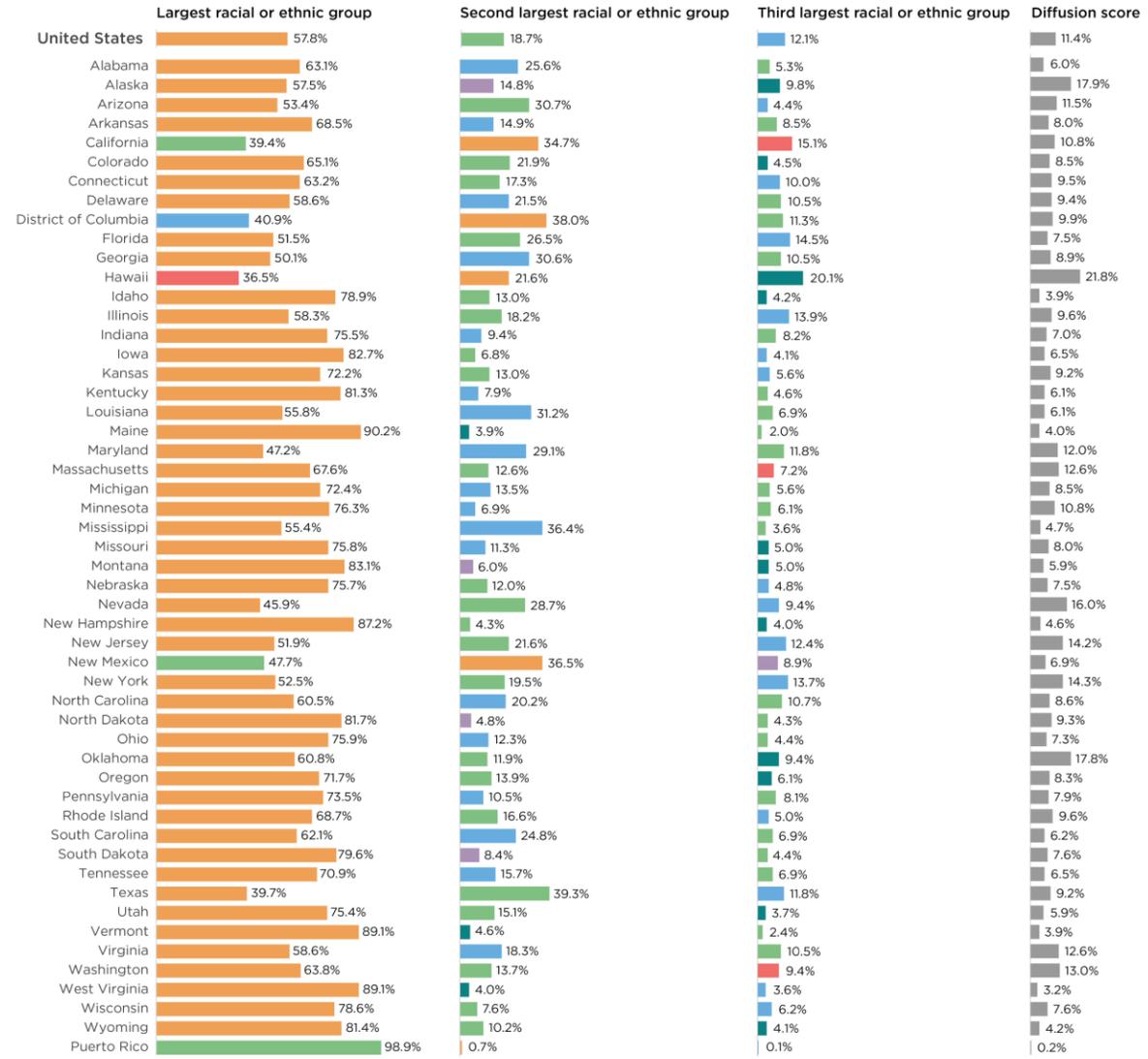
2010 Census



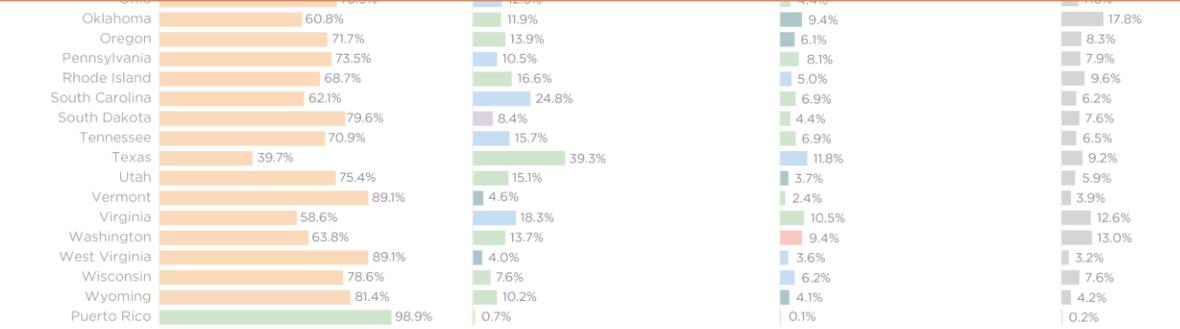
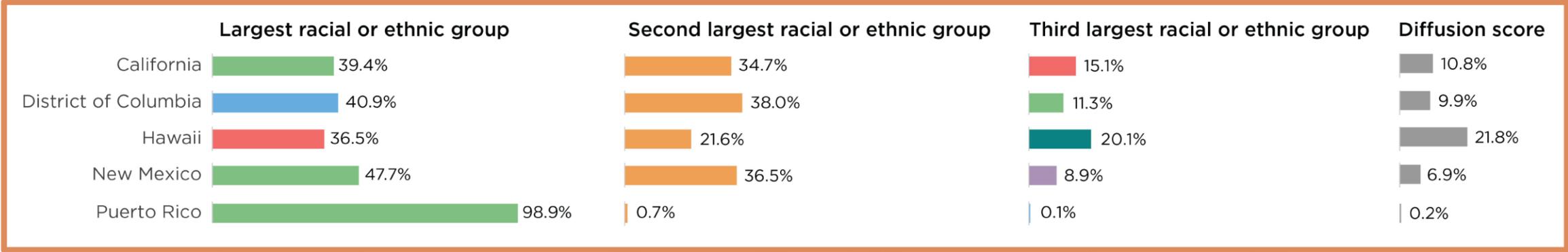
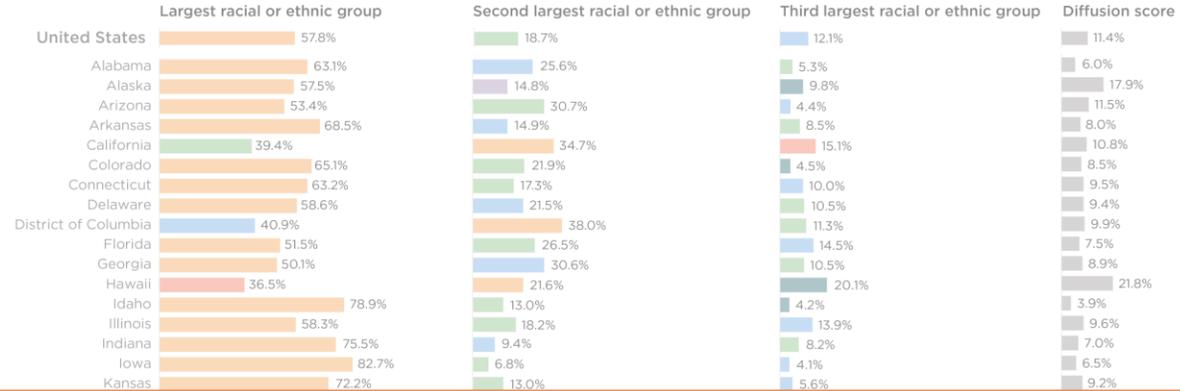
2020 Census



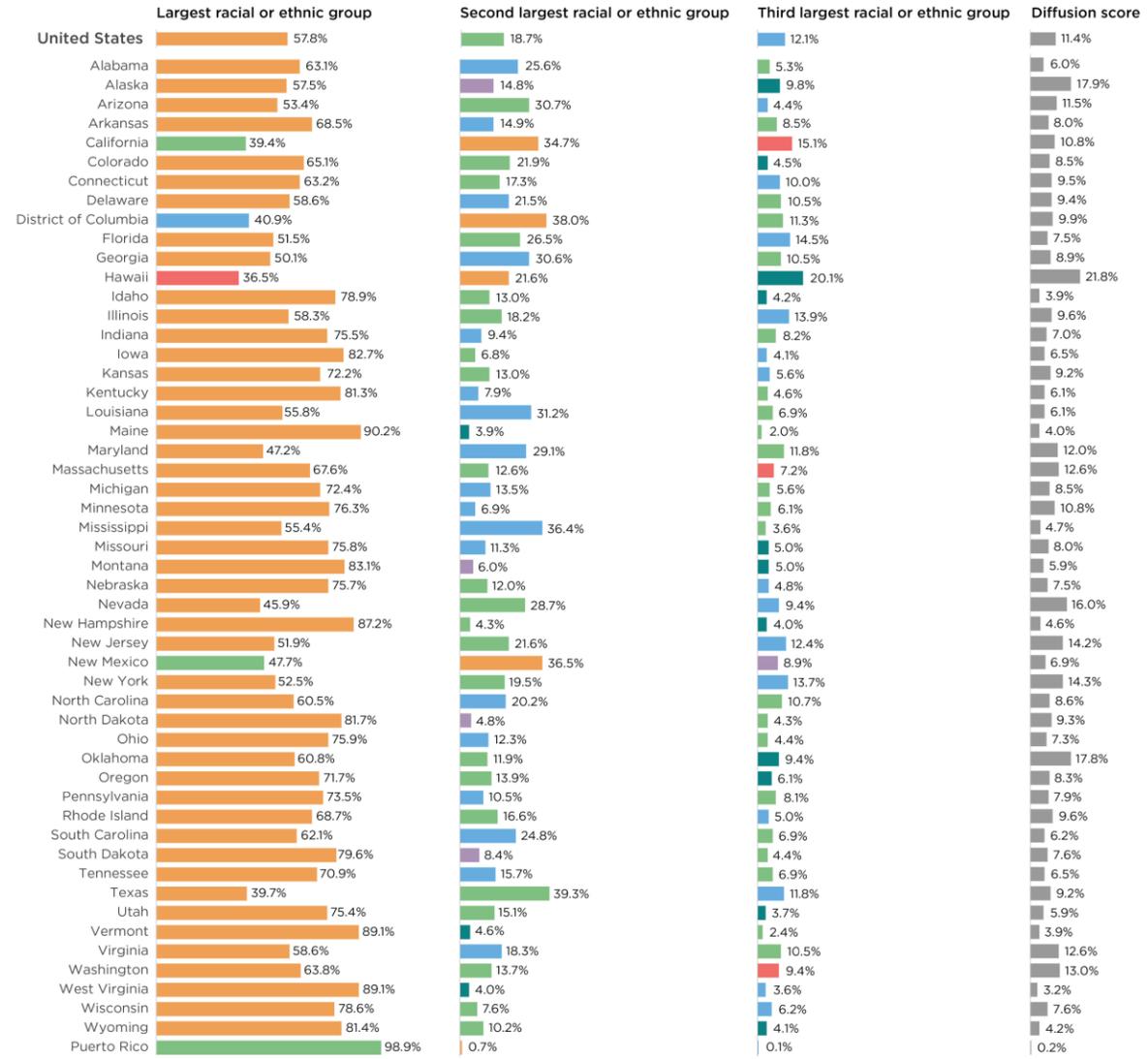
Race and Ethnicity Prevalence by State: 2020



Race and Ethnicity Prevalence by State: 2020



Race and Ethnicity Prevalence by State: 2020



Race and Ethnicity Prevalence for Maryland

2020 Census



2010 Census



White alone,
not Hispanic or Latino

Black or
African American
alone,
not Hispanic or Latino

American Indian and
Alaska Native alone,
not Hispanic or Latino

Asian alone,
not Hispanic or Latino

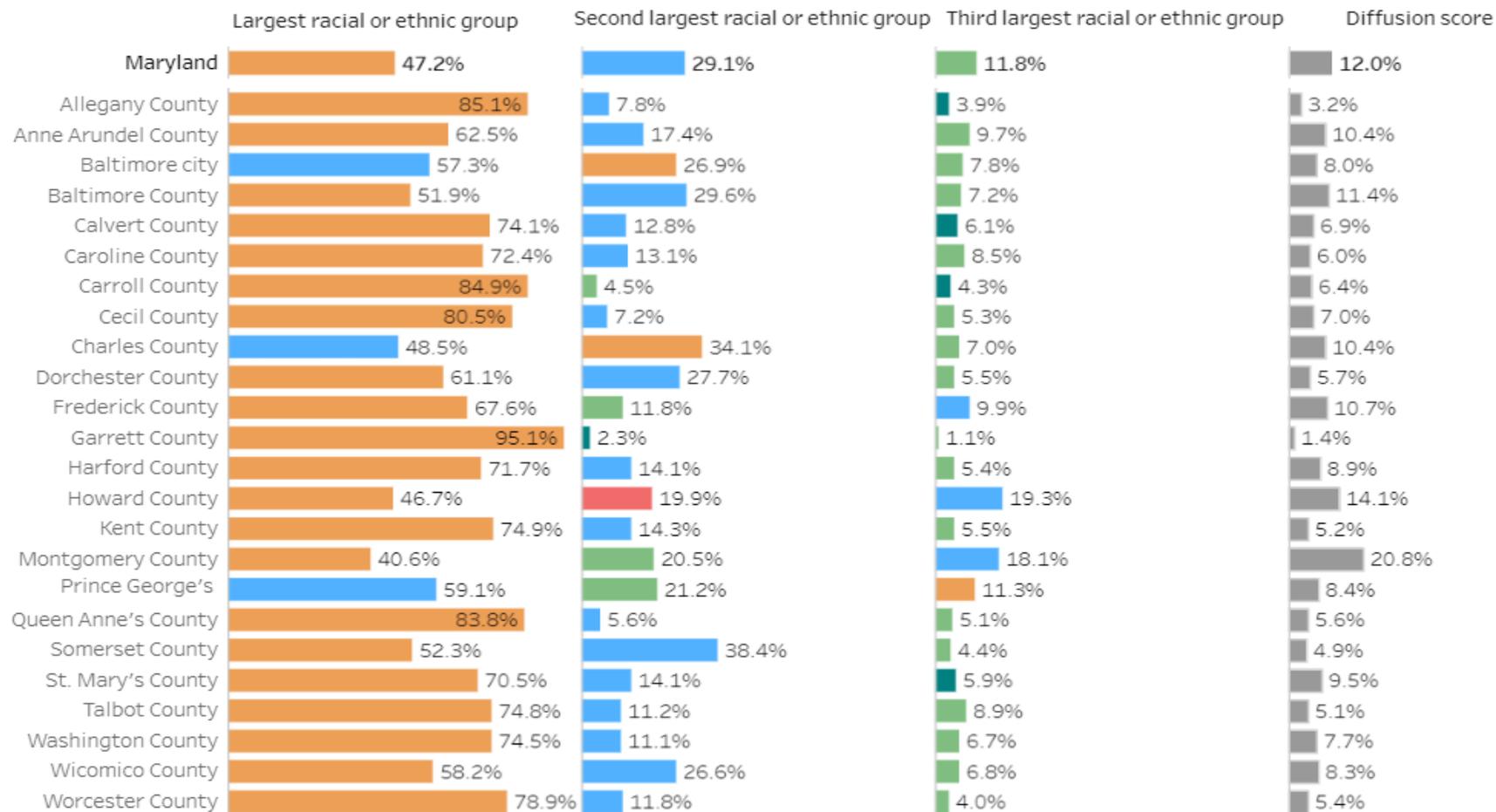
Native Hawaiian and
Other Pacific Islander
alone,
not Hispanic or Latino

Some Other Race
alone,
not Hispanic or Latino

Two or More Races,
not Hispanic or Latino

Hispanic or Latino

Race and Ethnicity Prevalence by County: 2020



Interested in a particular county?
Enter a county in the search bar to highlight it.

Highlight Coun...

Use the filter to change the state.

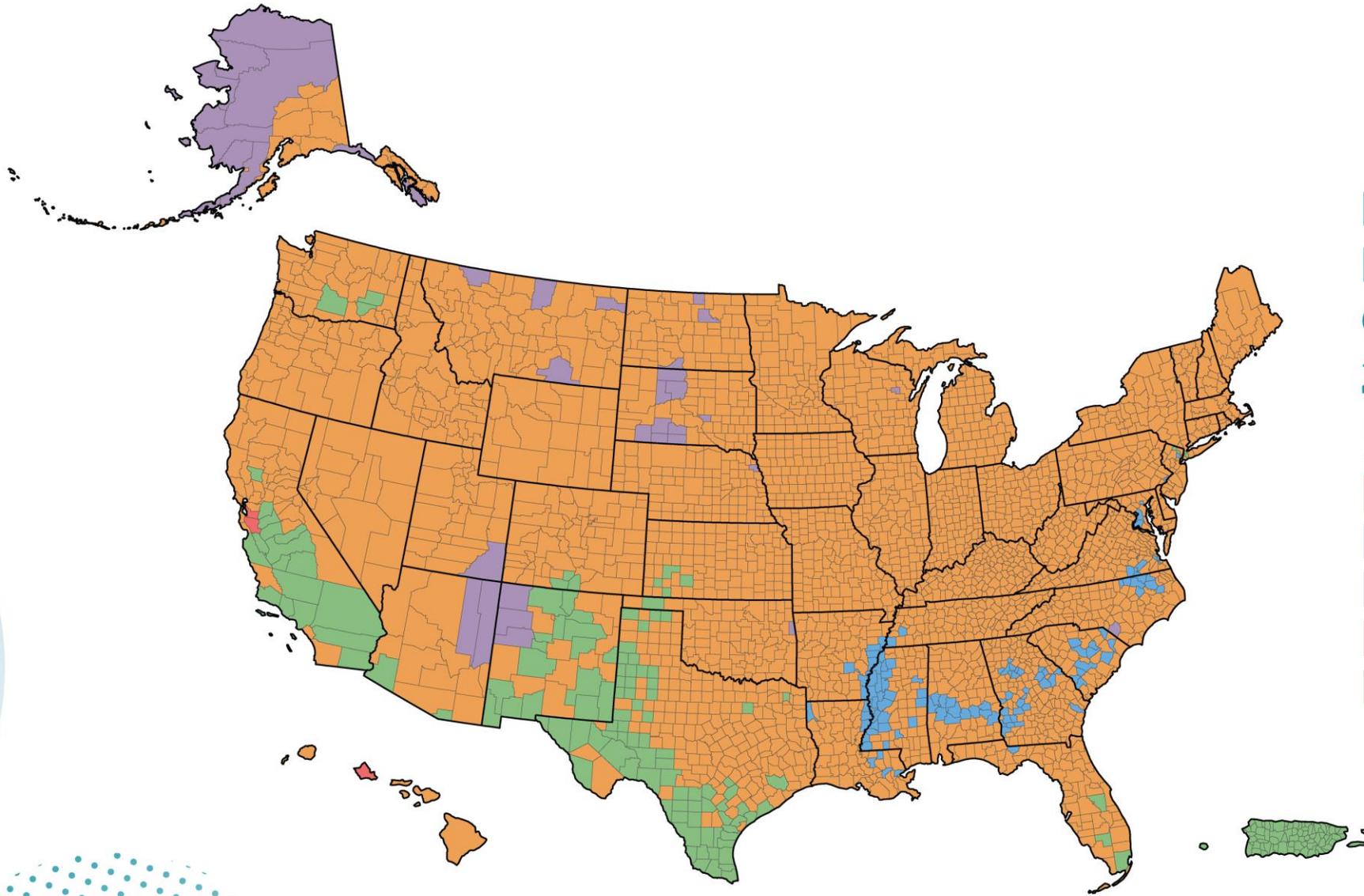
Maryland

[Return to Nation](#)

Change the year

2020

2010

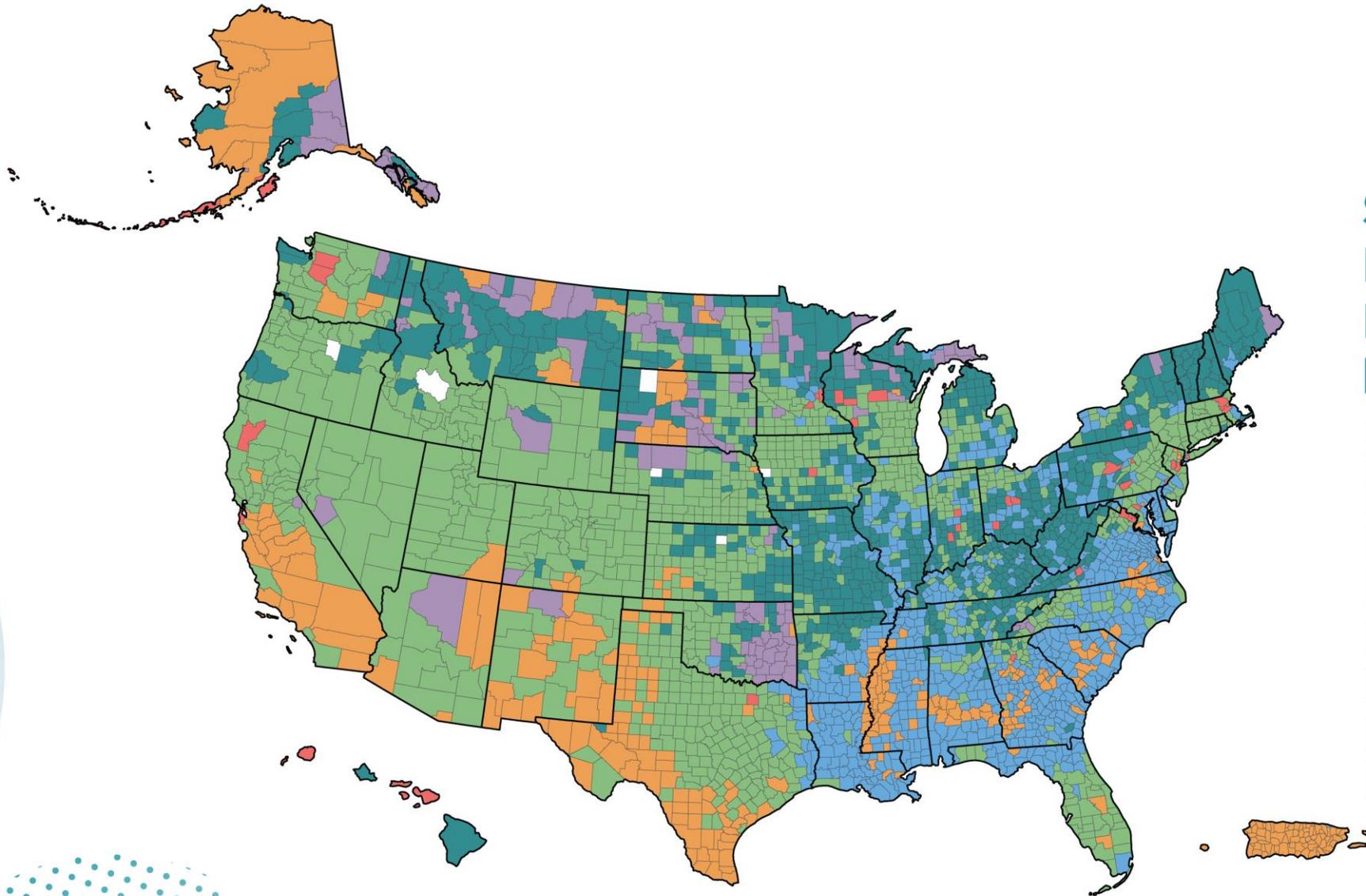


Most Prevalent Race or Ethnicity Group by County: 2020

Race or ethnicity group

- White alone, non-Hispanic
- Black or African American alone, non-Hispanic
- American Indian and Alaska Native alone, non-Hispanic
- Asian alone, non-Hispanic
- Hispanic or Latino, of any race

Note: Native Hawaiian and Other Pacific Islander alone, non-Hispanic, Some Other Race alone, non-Hispanic, and Two or More Races, non-Hispanic were not the most prevalent group in any county.



Second-Most Prevalent Race or Ethnicity Group by County: 2020

Race or ethnicity group

- White alone, non-Hispanic
- Black or African American alone, non-Hispanic
- American Indian and Alaska Native alone, non-Hispanic
- Asian alone, non-Hispanic
- Two or More Races, non-Hispanic
- Hispanic or Latino, of any race
- No single group was the second-most prevalent

Note: Native Hawaiian and Other Pacific Islander alone, non-Hispanic, and Some Other Race alone, non-Hispanic were not the second most prevalent group in any county.

Racial and Ethnic Diversity in the United States: 2010 Census and 2020 Census

Pick a topic.



Diversity Index Maps

Race and Ethnicity Prevalence Rankings

Race and Ethnicity Prevalence Maps

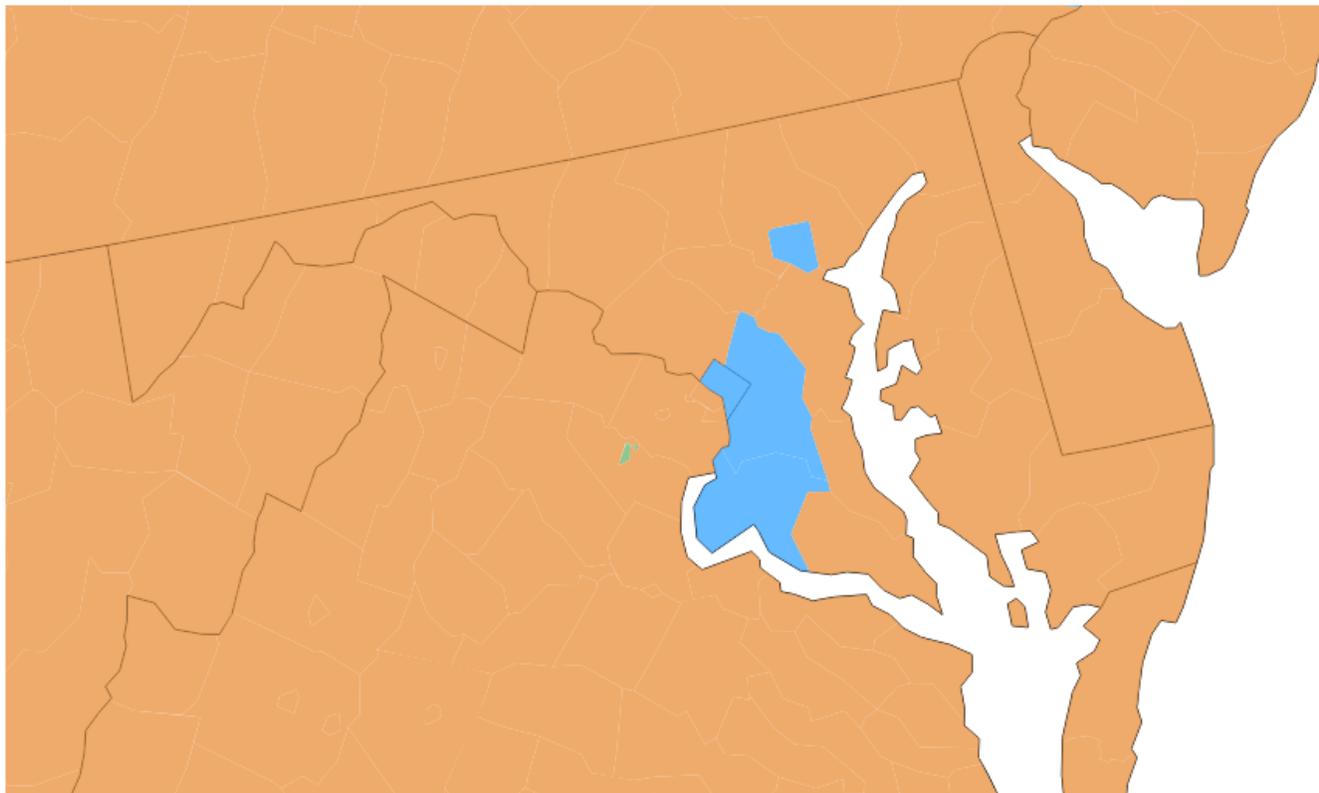
Data Tables

Prevalence maps show the geographic distribution of the largest, second largest, or third largest racial or ethnic group at a specific geographic level. These maps often reveal regional patterns in how the U.S. population is spatially distributed by race and ethnicity.

Hover over the map to view the largest, second largest, or third largest racial or ethnic group for each county. Use the filters to the right of the chart to change the year or highlight a county or group.



Largest Racial or Ethnic Group by County: 2020



Interested in a particular county?

Enter a county in the search bar to highlight it.

Highlight County

Or enter a racial or ethnic group below to highlight counties for that group.

Highlight Group

Change the year

2020

2010

Change the prevalence map

Largest racial or ethnic group

Second largest racial or ethnic group

Third largest racial or ethnic group

Racial and Ethnic Diversity in the United States: 2010 Census and 2020 Census

Pick a topic.



Diversity Index Maps

Race and Ethnicity Prevalence Rankings

Race and Ethnicity Prevalence Maps

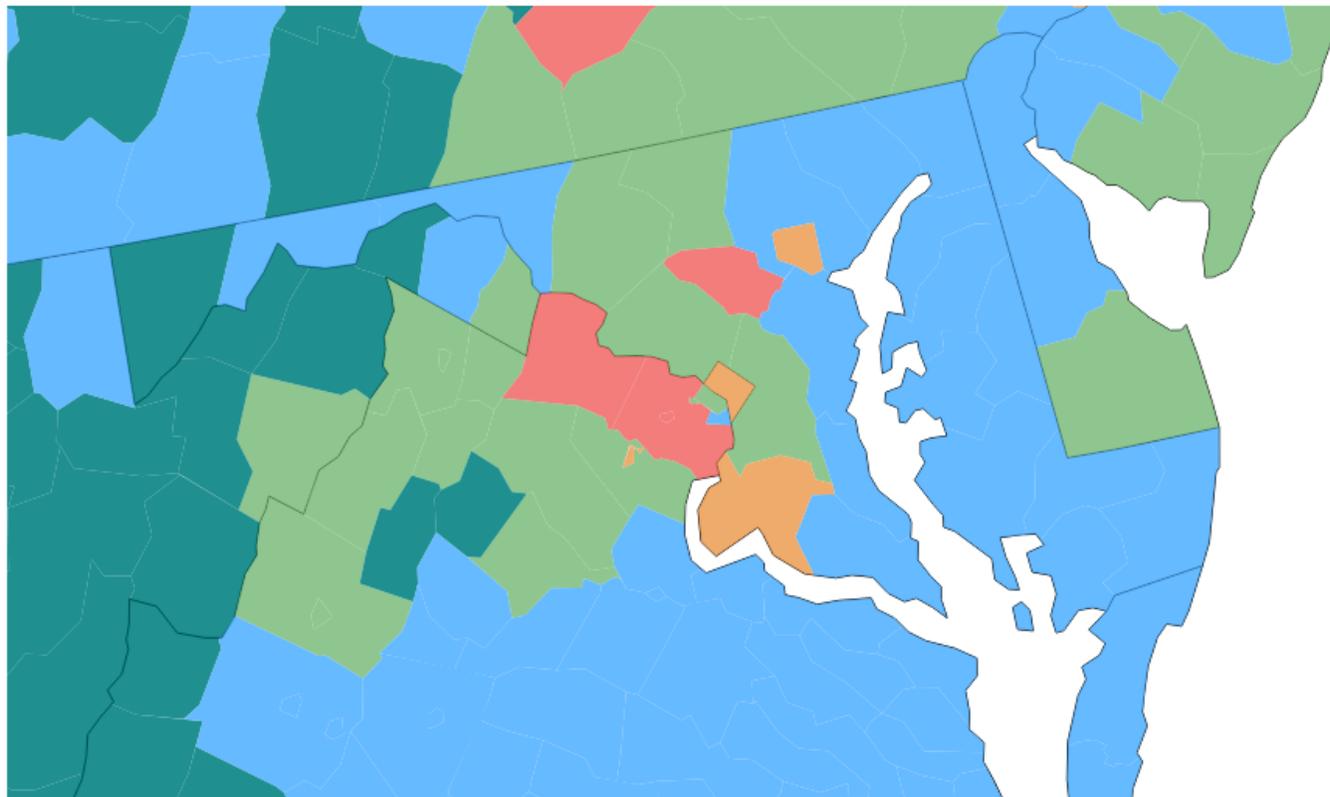
Data Tables

Prevalence maps show the geographic distribution of the largest, second largest, or third largest racial or ethnic group at a specific geographic level. These maps often reveal regional patterns in how the U.S. population is spatially distributed by race and ethnicity.

Hover over the map to view the largest, second largest, or third largest racial or ethnic group for each county. Use the filters to the right of the chart to change the year or highlight a county or group.



Second Largest Racial or Ethnic Group by County: 2020



Interested in a particular county?

Enter a county in the search bar to highlight it.

Highlight County

Or enter a racial or ethnic group below to highlight counties for that group.

Highlight Group

Map Legend

No single group was the second largest

Change the year

2020

2010

Change the prevalence map

Largest racial or ethnic group

Second largest racial or ethnic group

Third largest racial or ethnic group

Racial and Ethnic Diversity in the United States: 2010 Census and 2020 Census

Pick a topic.



Diversity Index Maps

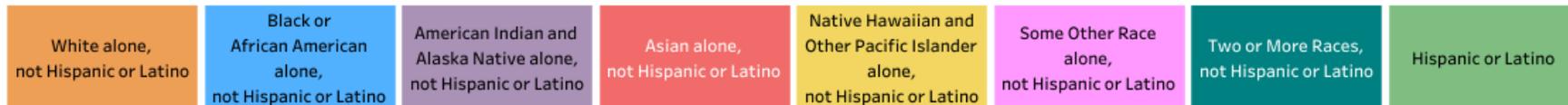
Race and Ethnicity Prevalence Rankings

Race and Ethnicity Prevalence Maps

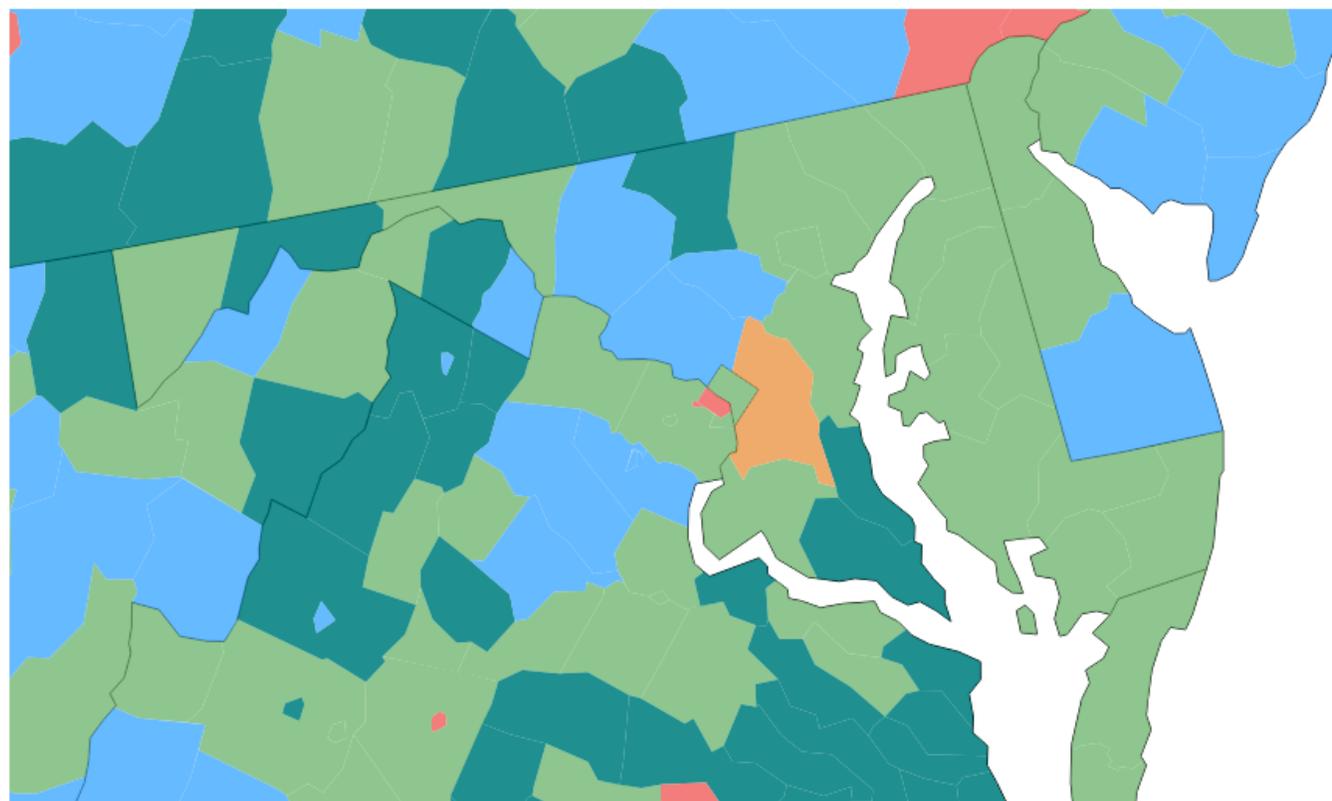
Data Tables

Prevalence maps show the geographic distribution of the largest, second largest, or third largest racial or ethnic group at a specific geographic level. These maps often reveal regional patterns in how the U.S. population is spatially distributed by race and ethnicity.

Hover over the map to view the largest, second largest, or third largest racial or ethnic group for each county. Use the filters to the right of the chart to change the year or highlight a county or group.



Third Largest Racial or Ethnic Group by County: 2020



Interested in a particular county?

Enter a county in the search bar to highlight it.

Highlight County

Or enter a racial or ethnic group below to highlight counties for that group.

Highlight Group

Map Legend

No single group was the third largest

Change the year

2020

2010

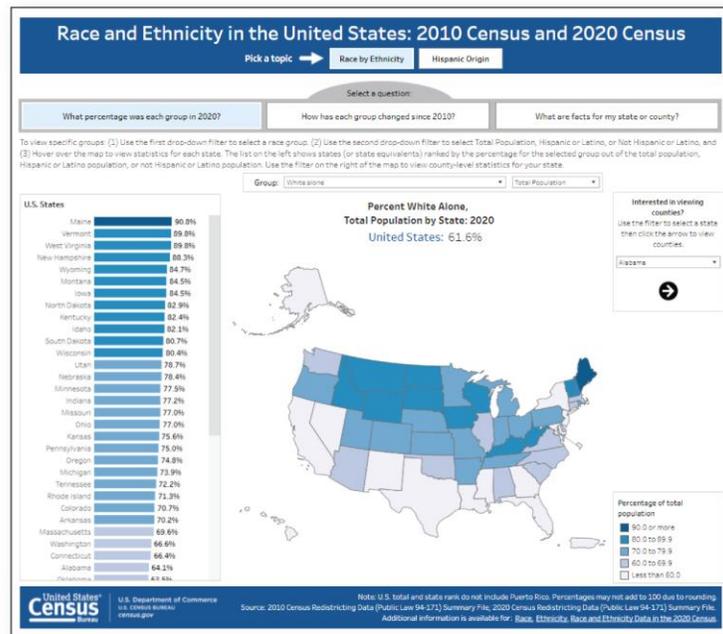
Change the prevalence map

Largest racial or ethnic group

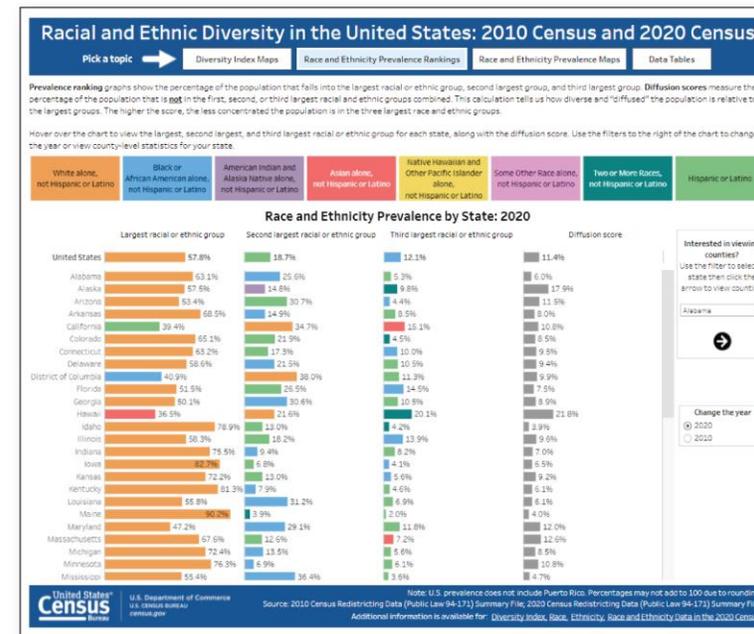
Second largest racial or ethnic group

Third largest racial or ethnic group

Our interactive data visualizations available on census.gov can help you explore statistics for your state, county, and areas across the United States.



[Race and Ethnicity Data Viz](#)



[Racial Ethnic Diversity Data Viz](#)

[DATA GEMS: How Can I Visualize Race and Hispanic Origin Data from the 2020 and 2010 Census?](#)

[DATA GEMS: How Can I Access Data About Race and Ethnic Diversity from the 2020 and 2010 Census?](#)

2020 Census Provides a New Snapshot of Racial and Ethnic Composition and Diversity

Improved Race and Ethnicity Measures Reveal U.S. Population is More Multiracial



Improved Race and Ethnicity Measures Reveal U.S. Population Is Much More Multiracial

2020 U.S. Population More Racially and Ethnically Diverse Than Measured in 2010



2020 U.S. Population More Racially and Ethnically Diverse Than Measured in 2010

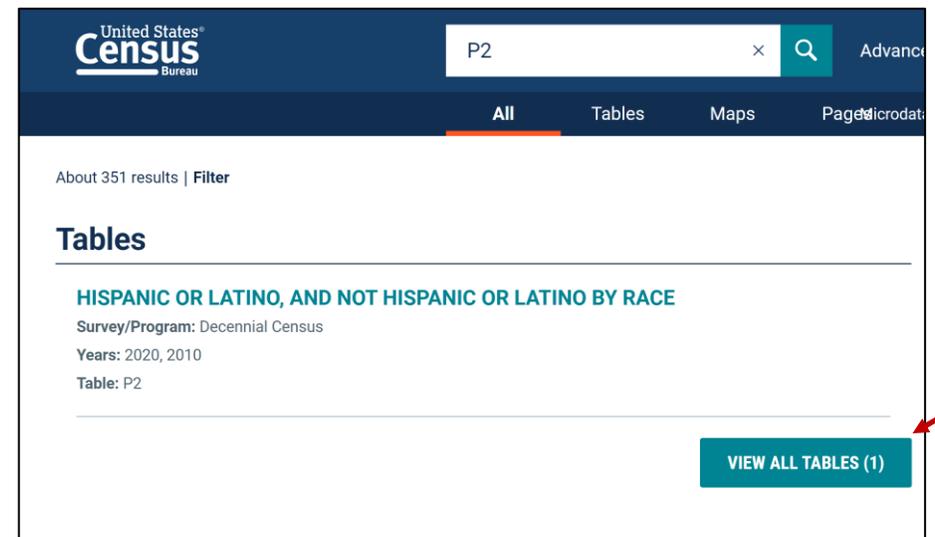
Producing Racial and Ethnic Diversity Measures for the 2020 Census Using data.census.gov and Microsoft Excel

data.census.gov



Step 1: Go to data.census.gov and put “P2” into the search box. This will select **Table P2, including HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE** from the 2020 Census Redistricting Data

Step 2: Select *View All Tables(1)*



data.census.gov

The screenshot shows the search results for 'P2' on data.census.gov. The main title is 'HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE'. Below the title, there are details: 'Survey/Program: Decennial Census', 'Product: 2020: DEC Redistricting Data...', 'TableID: P2', and 'Universe: Total population'. A green 'CUSTOMIZE TABLE' button is highlighted with a red arrow. The table below shows data for Alabama and Alaska.

Label	Alabama	Alaska
▼ Total:	5,024,279	733,300
Hispanic or Latino	264,047	49,800
▼ Not Hispanic or Latino:	4,760,232	683,500
▼ Population of one race:	4,575,614	611,800
White alone	3,171,351	421,700
Black or African American alone	1,288,159	20,700
American Indian and Alaska Native alone	23,119	108,800

Step 3: Select *Customize Table*

The screenshot shows the 'CUSTOMIZE TABLE' interface. The navigation bar includes 'Notes', 'Selections', 'Geos', 'Years', 'Topics', 'Surveys', 'Codes', 'Filter', 'Margin of Error', 'Transpose', and 'Restore'. The 'Geos' option is selected and highlighted with a red arrow. Below the navigation bar, the table shows data for Alabama and Alaska.

Label	Alabama	Alaska
▼ Total:	5,024,279	733,300
Hispanic or Latino	264,047	49,800
▼ Not Hispanic or Latino:	4,760,232	683,500
▼ Population of one race:	4,575,614	611,800
White alone	3,171,351	421,700
Black or African American alone	1,288,159	20,700
American Indian and Alaska Native alone	23,119	108,800
Asian alone	75,918	

Step 4: Now click *Geos*

data.census.gov

The screenshot shows the 'GEOGRAPHY' section of the data.census.gov interface. The 'GEOGRAPHY' list on the left has 'County' selected. The 'WITHIN (STATE)' list on the right has 'All Counties within United States and Puerto Rico' selected. A red arrow points to 'COUNTY' in the 'GEOGRAPHY' list. Another red arrow points to 'All Counties within United States and Puerto Rico' in the 'WITHIN (STATE)' list. A third red arrow points to the 'CLOSE' button at the bottom right.

Step 5: Select the geographic level. In this example, we are looking at All Counties. Then hit **CLOSE**

2020CENSUS.GOV

The screenshot shows an error message: "Sorry, that table is too large to display." Below the message, it says "The size of this table may exceed your browser's capabilities and may result in error or browser instability." There are two buttons: "DOWNLOAD TABLE" and "FILTER RESULTS". A red arrow points to the "DOWNLOAD TABLE" button. Below the buttons, it says "To proceed with the table display anyway, [open the table.](#)"

Step 6: The table will be too large to display. Not to worry, just select **DOWNLOAD TABLE**

data.census.gov

United States[®]
Census
Bureau

P2 x Advanced Search

Download

Select Table Vintages

P2	All	2020	2010
DEC Redistricting Data (PL 94-171)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DECIA Guam Summary File	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DECIA Commonwealth of the Northern Mariana Islands Summary File	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DECIA American Samoa Summary File	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DEC Summary File 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DECIA U.S. Virgin Islands Summary File	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

File Type

CSV
 PDF

What You're Getting

- 1 .csv files (metadata)
- 1 .csv files (data)
- 1 .txt files (table title)

Compressed Size Estimate: 266.6 kB

DOWNLOAD

Step 7: A window will appear with some pre-selected items, you won't need to change anything, just select *DOWNLOAD*, and then choose *Download Now* in the pop-up window."

2020CENSUS.GOV

DECENNIALPL2020.P2_data_with_overlays
Type: Microsoft Excel Comma Separated Values File

DECENNIALPL2020.P2_metadata_2021-10
Type: Microsoft Excel Comma Separated Values File

DECENNIALPL2020.P2_table_title_2021-10
Type: Text Document

Step 7: The files will be zipped, and you will need to use an application such as Win Zip to open them. You want to open the file that says `_data` in the filename

Microsoft Excel

Preparing the data

We only need to keep the following variables:

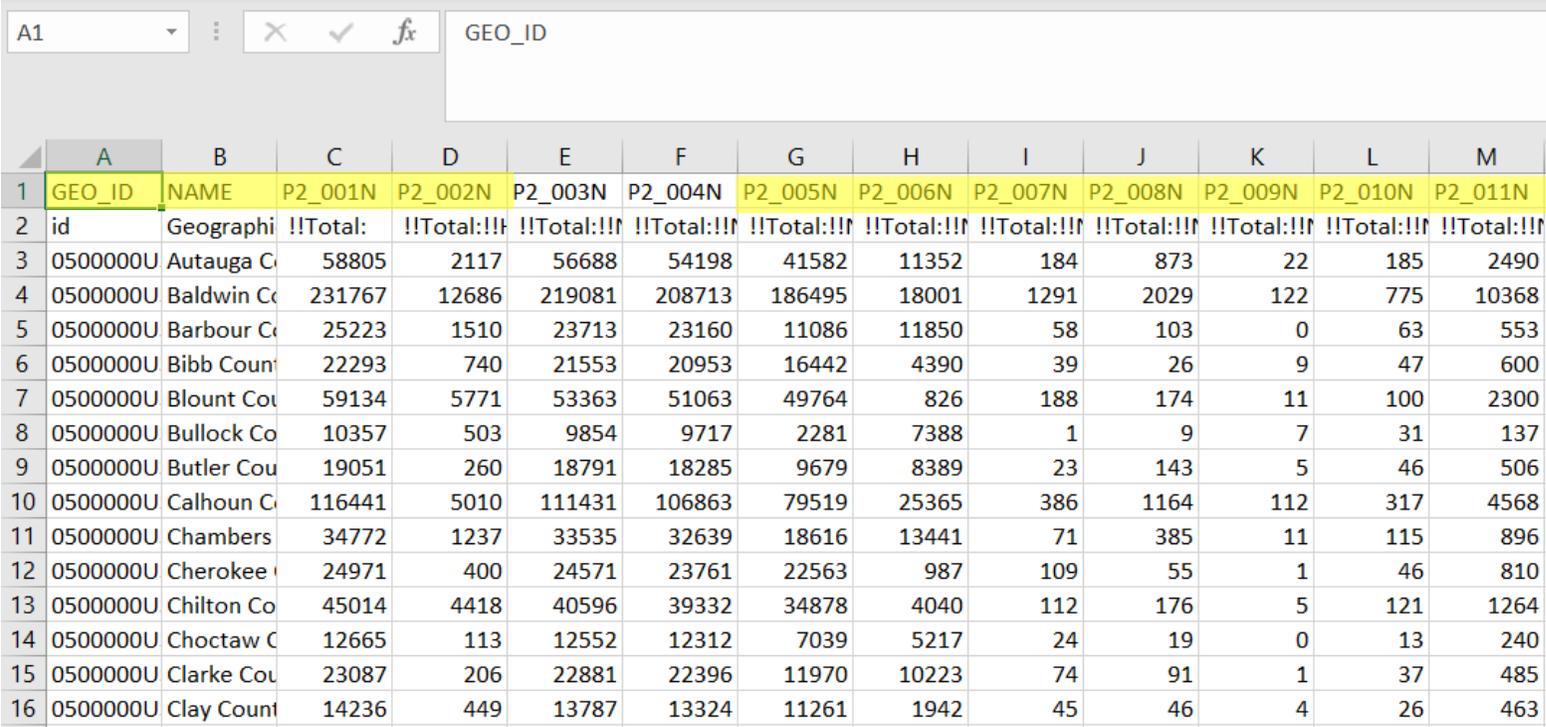
Geo-ID

Name

P2_001N

P2_002N

P2_005N - P2_011N



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	GEO_ID	NAME	P2_001N	P2_002N	P2_003N	P2_004N	P2_005N	P2_006N	P2_007N	P2_008N	P2_009N	P2_010N	P2_011N
2	id	Geographi	!!Total:	!!Total:!!									
3	0500000U	Autauga Co	58805	2117	56688	54198	41582	11352	184	873	22	185	2490
4	0500000U	Baldwin Co	231767	12686	219081	208713	186495	18001	1291	2029	122	775	10368
5	0500000U	Barbour Co	25223	1510	23713	23160	11086	11850	58	103	0	63	553
6	0500000U	Bibb Count	22293	740	21553	20953	16442	4390	39	26	9	47	600
7	0500000U	Blount Cou	59134	5771	53363	51063	49764	826	188	174	11	100	2300
8	0500000U	Bullock Co	10357	503	9854	9717	2281	7388	1	9	7	31	137
9	0500000U	Butler Cou	19051	260	18791	18285	9679	8389	23	143	5	46	506
10	0500000U	Calhoun C	116441	5010	111431	106863	79519	25365	386	1164	112	317	4568
11	0500000U	Chambers	34772	1237	33535	32639	18616	13441	71	385	11	115	896
12	0500000U	Cherokee	24971	400	24571	23761	22563	987	109	55	1	46	810
13	0500000U	Chilton Co	45014	4418	40596	39332	34878	4040	112	176	5	121	1264
14	0500000U	Choctaw C	12665	113	12552	12312	7039	5217	24	19	0	13	240
15	0500000U	Clarke Cou	23087	206	22881	22396	11970	10223	74	91	1	37	485
16	0500000U	Clay Count	14236	449	13787	13324	11261	1942	45	46	4	26	463

You can delete the other variables and the second row

Microsoft Excel

Calculate race and ethnicity proportions:

Hispanic or Latino = P2_002N / P2001N

$$L2 = D2 / \$C2$$

White Alone Non-Hispanic = P2_005N / P2001N

$$M2 = E2 / \$C2$$

Black Alone Non-Hispanic = P2_006N / P2001N

$$N2 = F2 / \$C2$$

American Indian and Alaska Native (AIAN) Alone Non-Hispanic

$$= P2_007N / P2001N$$

$$O2 = G2 / \$C2$$

	A	B	C	D	E	L	M	N	O
						Hispanic or Latino	White Alone Non-Hispanic	Black Alone Non-Hispanic	AIAN Alone Non-Hispanic
1	GEO_ID	NAME	P2_001N	P2_002N	P2_005N				
2	0500000U	Autauga Co	58805	2117	41582	0.036	0.707117	0.193045	0.003129
3	0500000U	Baldwin Co	231767	12686	186495				
4	0500000U	Barbour Co	25223	1510	11086				
5	0500000U	Bibb Count	22293	740	16442				
6	0500000U	Blount Cou	59134	5771	49764				
7	0500000U	Bullock Co	10357	503	2281				
8	0500000U	Butler Cou	19051	260	9679				
9	0500000U	Calhoun C	116441	5010	79519				
10	0500000U	Chambers	34772	1237	18616				
11	0500000U	Cherokee	24971	400	22563				
12	0500000U	Chilton Co	45014	4418	34878				
13	0500000U	Choctaw C	12665	113	7039				
14	0500000U	Clarke Cou	23087	206	11970				
15	0500000U	Clay Count	14236	449	11261				
16	0500000U	Cleburne C	15056	284	13740				

Microsoft Excel

Calculate race and ethnicity proportions:

Asian alone non-Hispanic = P2_008N / P2001N

$$P2 = H2 / \$C2$$

Native Hawaiian and Other Pacific Islander (NHPI) alone non-Hispanic = P2009N / P2001N

$$Q2 = I2 / \$C2$$

Some Other Race (SOR) alone non-Hispanic = P2010N / P2001N

$$R2 = J2 / \$C2$$

Two or More Races (Multiracial) non-Hispanic = P2011N / P2001N

$$S2 = K2 / \$C2$$

Click and Drag to copy the same equations for all counties

	A	B	C	D	E	L	M	N	O
						Hispanic or Latino	White Alone Non-Hispanic	Black Alone Non-Hispanic	AIAN Alone Non-Hispanic
1	GEO_ID	NAME	P2_001N	P2_002N	P2_005N				
2	0500000U	Autauga Co	58805	2117	41582	0.036	0.707117	0.193045	0.003129
3	0500000U	Baldwin Co	231767	12686	186495				
4	0500000U	Barbour Co	25223	1510	11086				
5	0500000U	Bibb Count	22293	740	16442				
6	0500000U	Blount Cou	59134	5771	49764				
7	0500000U	Bullock Co	10357	503	2281				
8	0500000U	Butler Cou	19051	260	9679				
9	0500000U	Calhoun Co	116441	5010	79519				
10	0500000U	Chambers	34772	1237	18616				
11	0500000U	Cherokee	24971	400	22563				
12	0500000U	Chilton Co	45014	4418	34878				
13	0500000U	Choctaw C	12665	113	7039				
14	0500000U	Clarke Cou	23087	206	11970				
15	0500000U	Clay Count	14236	449	11261				
16	0500000U	Cleburne C	15056	284	13740				

Diversity Index

T2 $=1-(L^2 + M^2 + N^2 + O^2 + P^2 + Q^2 + R^2 + S^2)$

	A	B	L	M	N	O	P	Q	R	S	T	U
			Hispanic or Latino	White Non- Hispanic	Black Non- Hispanic	AIAN Non- Hispanic	Asian Non- Hispanic	NHPI Non- Hispanic	SOR Non- Hispanic	Multiracial Non- Hispanic	Diversity Index	Chance
1	GEO_ID	NAME										
2	0500000U	Autauga Co	0.036	0.707117	0.193045	0.003129	0.014846	0.000374	0.003146	0.0423433	0.45939	45.93904
3	0500000U	Baldwin Co	0.054736	0.804666	0.077669	0.00557	0.008754	0.000526	0.003344	0.0447346		
4	0500000U	Barbour Co	0.059866	0.439519	0.469809	0.002299	0.004084	0	0.002498	0.0219244		
5	0500000U	Bibb Count	0.033194	0.737541	0.196923	0.001749	0.001166	0.000404	0.002108	0.0269143		
6	0500000U	Blount Cou	0.097592	0.841546	0.013968	0.003179	0.002942	0.000186	0.001691	0.0388947		
7	0500000U	Bullock Co	0.048566	0.220238	0.713334	9.66E-05	0.000869	0.000676	0.002993	0.0132278		
8	0500000U	Butler Cou	0.013648	0.508057	0.440344	0.001207	0.007506	0.000262	0.002415	0.0265603		
9	0500000U	Calhoun C	0.043026	0.682912	0.217836	0.003315	0.009996	0.000962	0.002722	0.0392302		

Diversity Index = 1 - (Hispanic² + White² + Black² + AIAN² + Asian² + NHPI² + SOR² + Multiracial²)

In our Excel example

T2 = 1 - (L² + M² + N² + O² + P² + Q² + R² + S²)

Diversity Index

T2 $=1-(L^2 + M^2 + N^2 + O^2 + P^2 + Q^2 + R^2 + S^2)$

	A	B	L	M	N	O	P	Q	R	S	T	U
	GEO_ID	NAME	Hispanic or Latino	White Non-Hispanic	Black Non-Hispanic	AIAN Non-Hispanic	Asian Non-Hispanic	NHPI Non-Hispanic	SOR Non-Hispanic	Multiracial Non-Hispanic	Diversity Index	Chance
2	0500000U	Autauga Co	0.036	0.707117	0.193045	0.003129	0.014846	0.000374	0.003146	0.0423433	0.45939	45.93904
3	0500000U	Baldwin Co	0.054736	0.804666	0.077669	0.00557	0.008754	0.000526	0.003344	0.0447346		
4	0500000U	Barbour Co	0.059866	0.439519	0.469809	0.002299	0.004084	0	0.002498	0.0219244		
5	0500000U	Bibb Count	0.033194	0.737541	0.196923	0.001749	0.001166	0.000404	0.002108	0.0269143		
6	0500000U	Blount Cou	0.097592	0.841546	0.013968	0.003179	0.002942	0.000186	0.001691	0.0388947		
7	0500000U	Bullock Co	0.048566	0.220238	0.713334	9.66E-05	0.000869	0.000676	0.002993	0.0132278		
8	0500000U	Butler Cou	0.013648	0.508057	0.440344	0.001207	0.007506	0.000262	0.002415	0.0265603		
9	0500000U	Calhoun C	0.043026	0.682912	0.217836	0.003315	0.009996	0.000962	0.002722	0.0392302		

Convert the probability into a chance by multiplying by 100

$$\text{Chance} = \text{DI} * 100$$

In our Excel example

$$U2 = T2 * 100$$

Prevalence Ranking

We can calculate the most prevalent race or ethnicity groups using the LARGE function in Excel. This function returns whichever ranked value you specify.

1st Prevalent = LARGE(L2:S2,1)

1st Prevalent Percent = V2 * 100

We need to check for ties between racial and ethnicity groups.

1st Ties = COUNTIF(L2:S2,V2)

1st Label =

IF(W2=1,INDEX(\$L\$1:\$S\$1,SUMPRODUCT(MAX((\$L2:\$S2 = V2)*(COLUMN(\$L2:\$S2)))))-COLUMN(\$L\$1)+1),"Tie")

	T	U	V	W	X	Y	Z	AA	AB	AC	AD
	Diversity Index	Chance	1st Prevalent	1st Prevalent Percent	1st Ties	1st Label	2nd Prevalent	2nd Prevalent Percent	2nd Ties	2nd Label	3rd Prevalent
1	0.45939	45.93939	0.7071	70.7117	1	White Alor	0.193045	19.30448	1	Black Alon	0.042343
2	0.341364	34.13641									
3	0.582009	58.2009									
4	0.41542	41.54195									
5	0.280546	28.0546									
6	0.440106	44.01062									
7	0.547019	54.70192									
8	0.482669	48.26688									
9	0.56189	56.18898									
10	0.180666	18.06662									
11	0.38114	38.11401									
12	0.520979	52.09787									
13	0.534561	53.4561									
14	0.353598	35.35977									
15	0.164809	16.48095									
16	0.515414	51.54139									
17											

Prevalence Ranking

We repeat the same process to calculate the 2nd and 3rd most prevalent race or ethnicity groups.
We still need to check for ties between racial and ethnic groups

2nd Most Prevalent Group

2nd Prevalent = LARGE(L2:S2,2)

2nd Prevalent Percent = Z2 * 100

2nd Ties = COUNTIF(L2:S2,Z2)

2nd Label =

IF(Z2=1,INDEX(\$L\$1:\$S\$1,SUMPRODUCT(MAX((\$L2:\$S2 = Z2)*(COLUMN(\$L2:\$S2)))))-
COLUMN(\$L\$1)+1),"Tie")

3rd Most Prevalent Group

3rd Prevalent = LARGE(L2:S2,3)

3rd Prevalent Percent = AD2 * 100

3rd Ties = COUNTIF(L2:S2,AD2)

3rd Label =

IF(AC2=1,INDEX(\$L\$1:\$S\$1,SUMPRODUCT(MAX((\$L2:\$S2 = AD2)*(COLUMN(\$L2:\$S2)))))-
COLUMN(\$L\$1)+1),"Tie")

Diffusion Score

The Diffusion Score tells us the percentage of the population that is not in the three most prevalent groups.

We can calculate it by subtracting the sum of the three most **Prevalent Percent** groups from 100:

$$AH = 100 - (W2 + AA2 + AE2)$$

= 100 - (W2+AA2+AE2)													
	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
	Most Prevalent	Most Prevalent Percent	Most Ties	Most Label	2nd Prevalent	2nd Prevalent Percent	2nd Ties	2nd Label	3rd Prevalent	3rd Prevalent Percent	3rd Ties	3rd Label	Diffusion Score
1													
2	0.7071	70.7117	1	White Alor	0.193045	19.30448	1	Black Alon	0.042343	4.234334	1	Multiracia	5.75
3	0.8047	80.4666	1	White Alor	0.077669	7.766852	1	Black Alon	0.054736	5.473601	1	Hispanic o	6.29
4	0.4698	46.9809	1	Black Alon	0.439519	43.95195	1	White Alor	0.059866	5.9866	1	Hispanic o	3.08
5	0.7375	73.7541	1	White Alor	0.196923	19.69228	1	Black Alon	0.033194	3.319428	1	Hispanic o	3.23
6	0.8415	84.1546	1	White Alor	0.097592	9.759191	1	Hispanic o	0.038895	3.889471	1	Multiracia	2.20
7	0.7133	71.3334	1	Black Alon	0.220238	22.02375	1	White Alor	0.048566	4.856619	1	Hispanic o	1.79
8	0.5081	50.8057	1	White Alor	0.440344	44.03443	1	Black Alon	0.02656	2.656029	1	Multiracia	2.50
9	0.6829	68.2912	1	White Alor	0.217836	21.78356	1	Black Alon	0.043026	4.302608	1	Hispanic o	5.62
10	0.5354	53.5373	1	White Alor	0.386547	38.65466	1	Black Alon	0.035575	3.55746	1	Hispanic o	4.25
11	0.9036	90.3568	1	White Alor	0.039526	3.952585	1	Black Alon	0.032438	3.243763	1	Multiracia	2.45
12	0.7748	77.4826	1	White Alor	0.098147	9.814724	1	Hispanic o	0.08975	8.974986	1	Black Alon	3.73
13	0.5558	55.5784	1	White Alor	0.411923	41.19226	1	Black Alon	0.01895	1.894986	1	Multiracia	1.33
14	0.5185	51.8474	1	White Alor	0.442803	44.28033	1	Black Alon	0.021007	2.100749	1	Multiracia	1.77
15	0.7910	79.1023	1	White Alor	0.136415	13.64147	1	Black Alon	0.032523	3.252318	1	Multiracia	4.00
16	0.9126	91.2593	1	White Alor	0.032811	3.281084	1	Multiracia	0.030353	3.035335	1	Black Alon	2.42
17	0.6688	66.8830	1	White Alor	0.161657	16.16572	1	Black Alon	0.091406	9.140559	1	Hispanic o	7.81



QUESTIONS & DISCUSSION

Racial and Ethnic Diversity: 2020 Census Results for Maryland

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