

FIT3179 Class Participation Choropleth Maps

Week 1



Data attributes can allow sorting/grouping in different ways

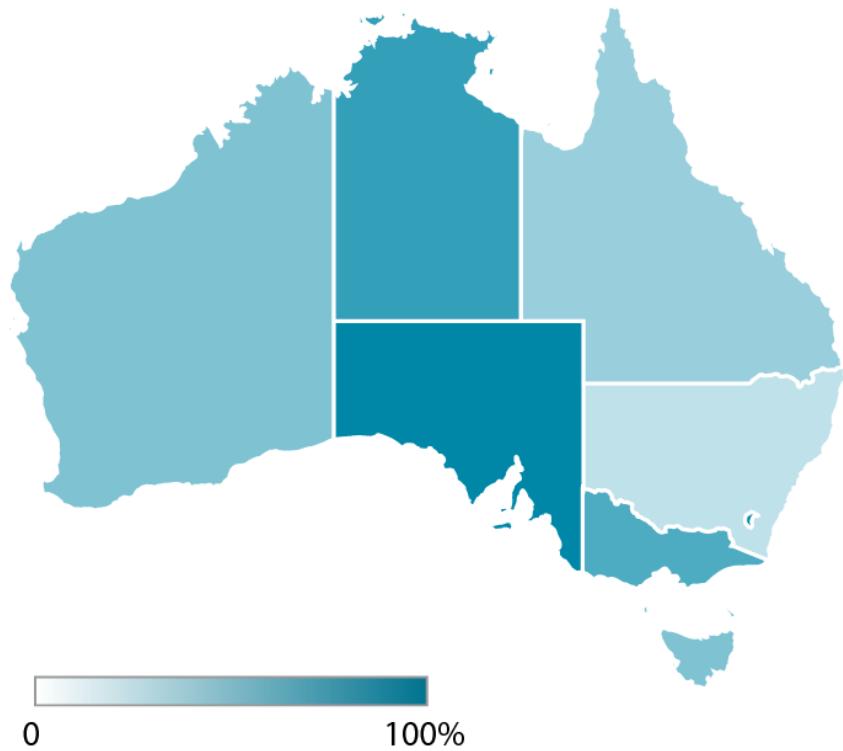
- Categorical (nominal data): *departments, gender, state...*
- Ordered (ordinal data): *age bracket, day of the week...*
- Quantitative: *\$, voltage, degrees Celsius, latitude/longitude...*



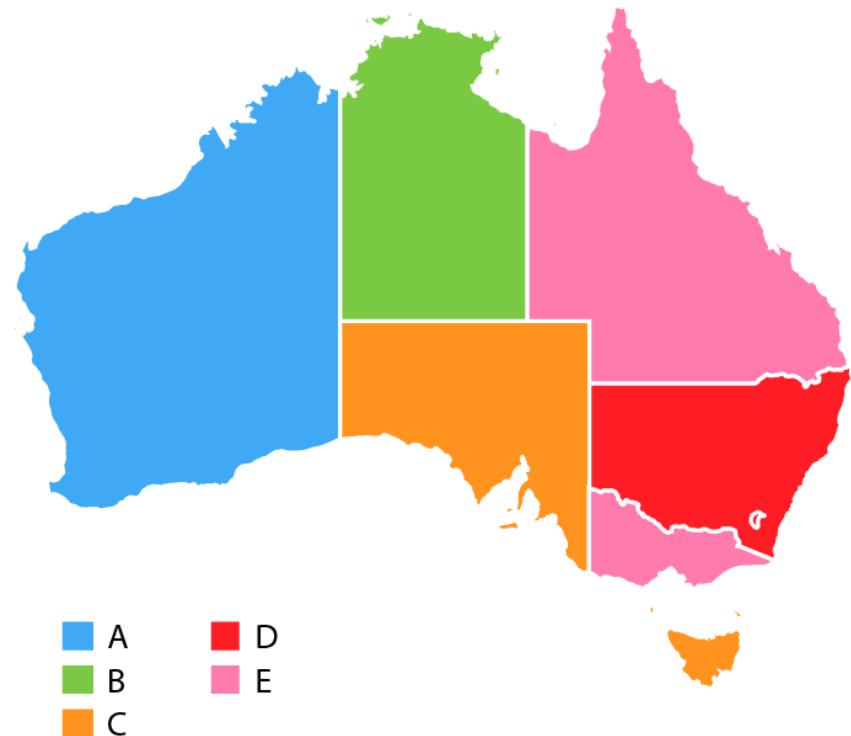
<http://intellspot.com/nominal-vs-ordinal-data/>
<http://intellspot.com/categorical-data-examples/>

Choropleth maps can show categorical, ordered, or quantitative data

Quantitative



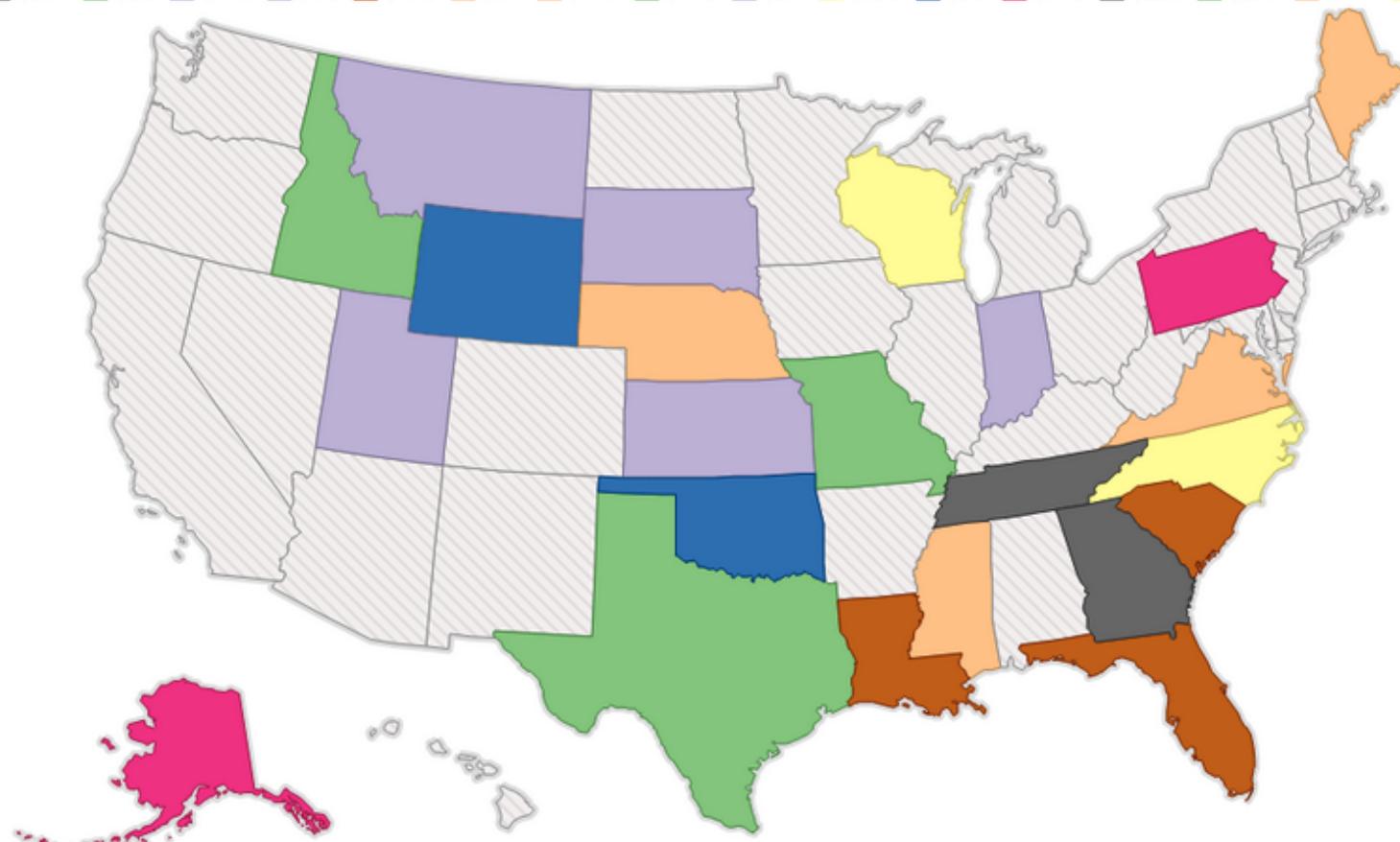
Categorical



Leaving Money on the Table

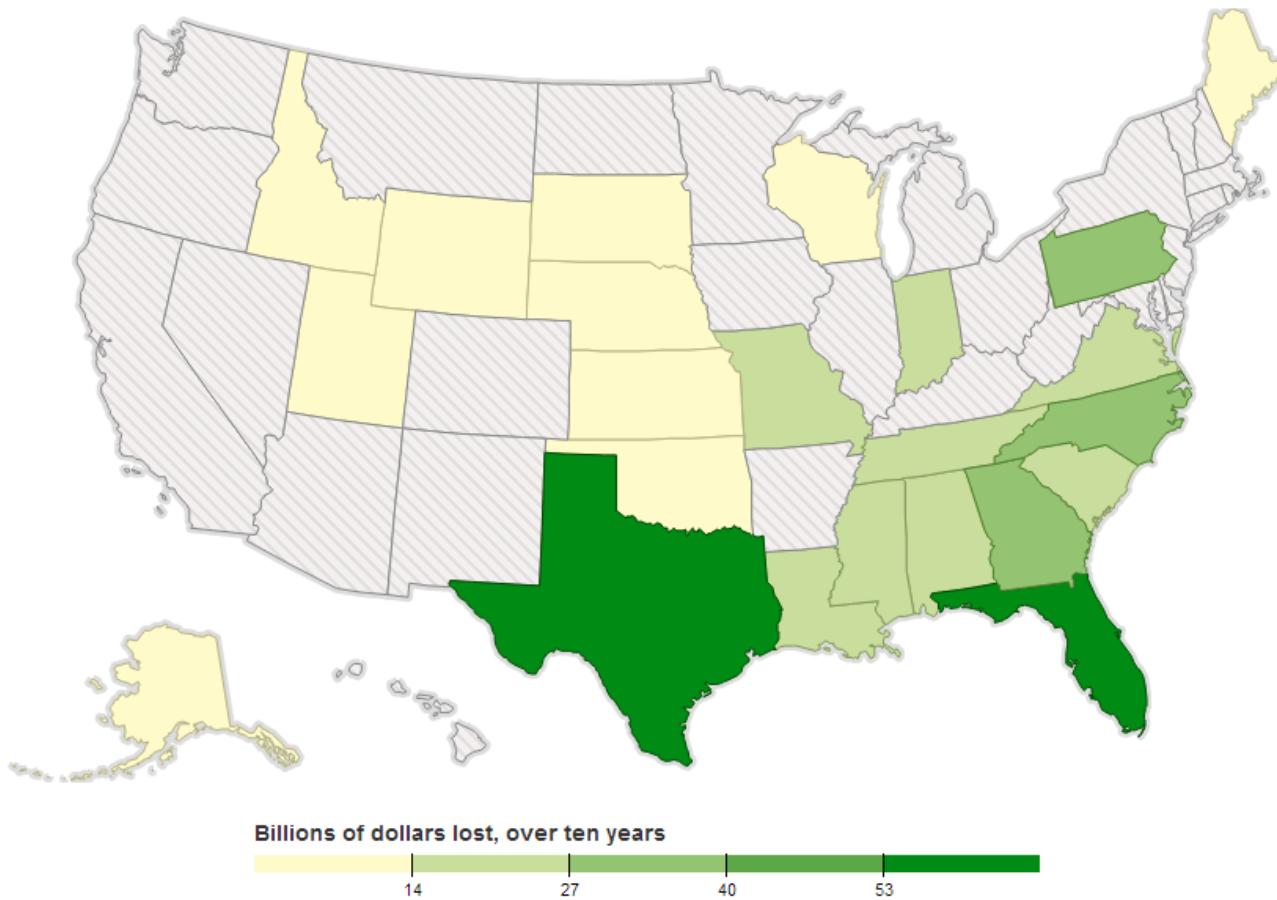
The amount of federal funds, in billions, that 24 states lost by refusing to expand Medicaid

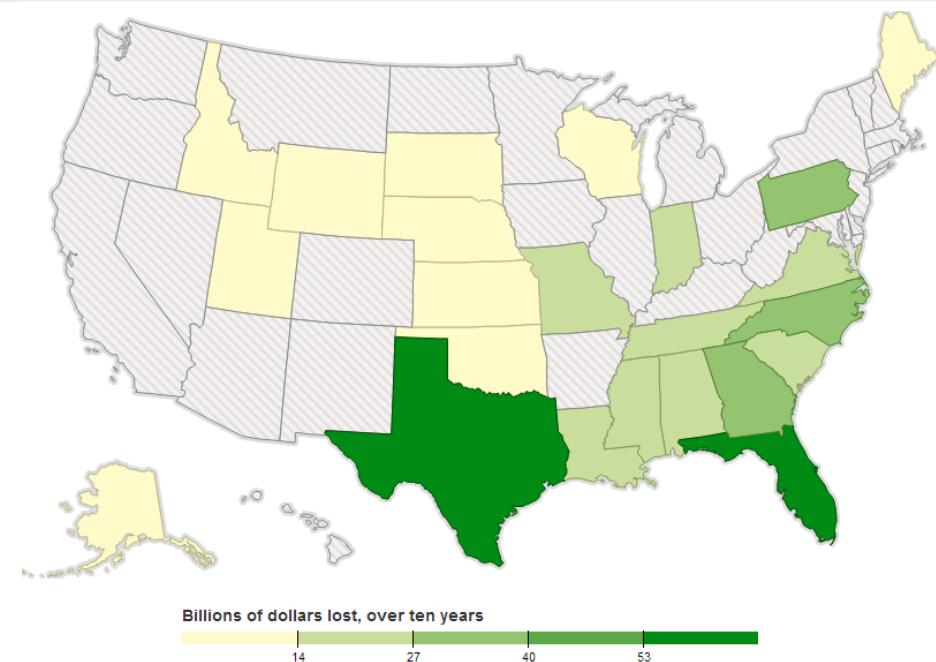
\$1.5 \$66.1 \$33.7 \$3.3 \$17.3 \$5.3 \$15.8 \$3.1 \$14.5 \$17.8 \$2.1 \$39.6 \$8.6 \$37.8 \$22.5 \$65.6 \$14.7 \$12.3 \$1.4



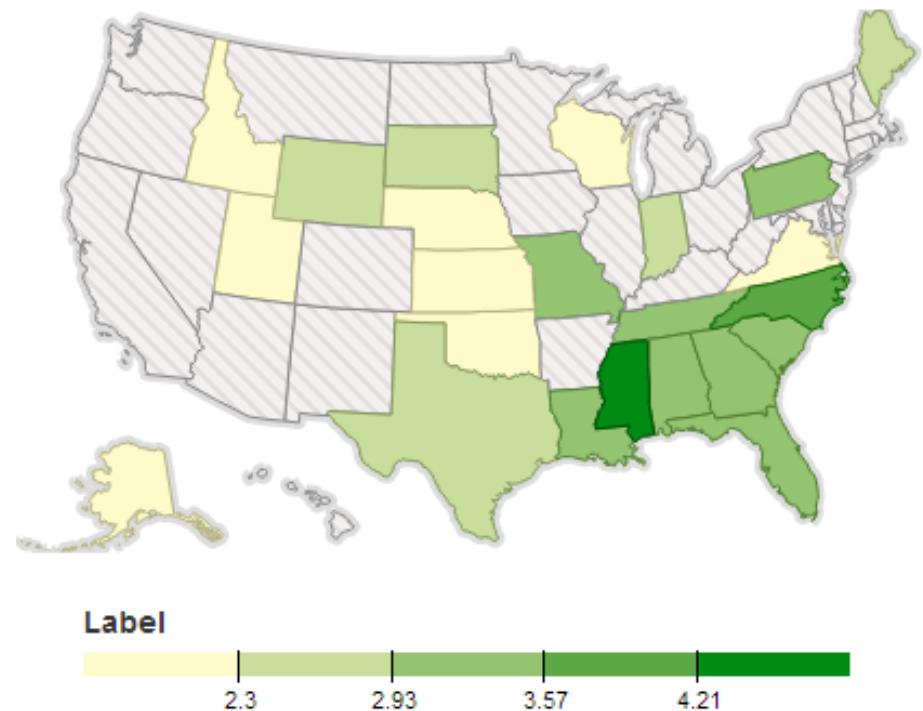
Leaving Money on the Table

The amount of federal funds, in billions, that 24 states lost by refusing to expand Medicaid





Total sum



Amount per capita



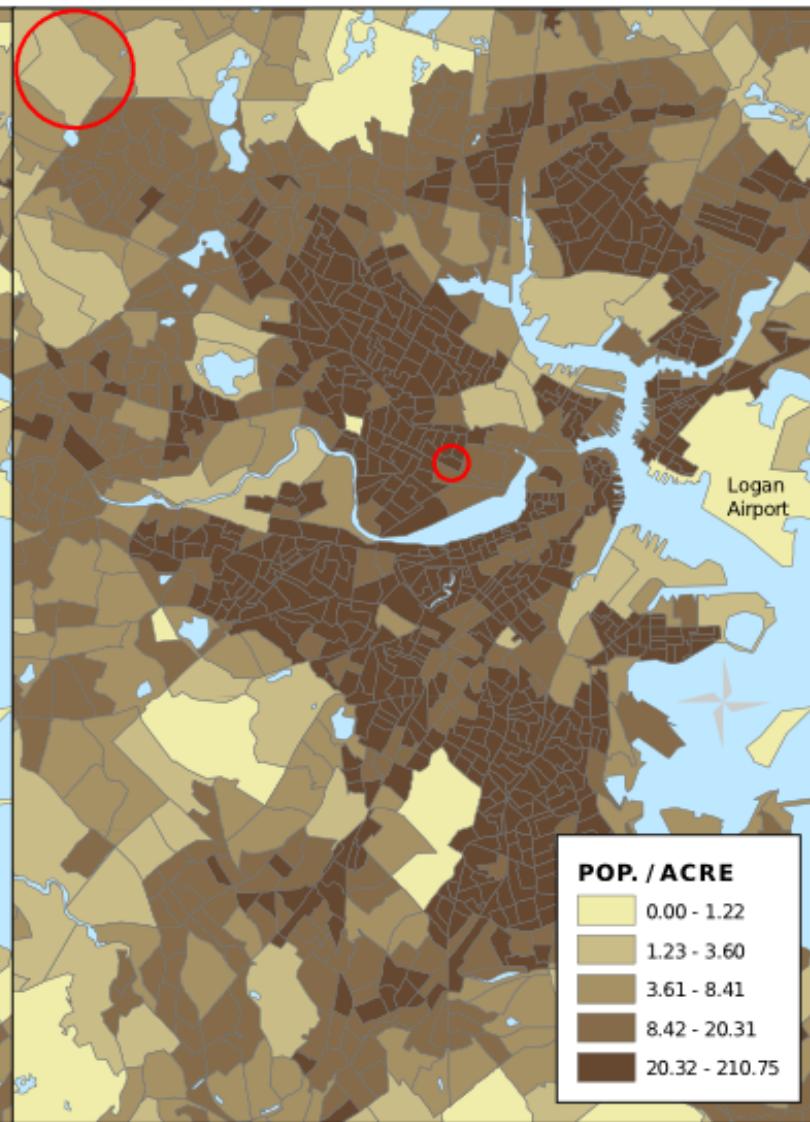
Choropleth rule

Generally do not map raw values, but normalise values by area if possible. Use percentages or rates otherwise.

Total Population of 2000 Census Block Groups



Population Density of 2000 Census Block Groups

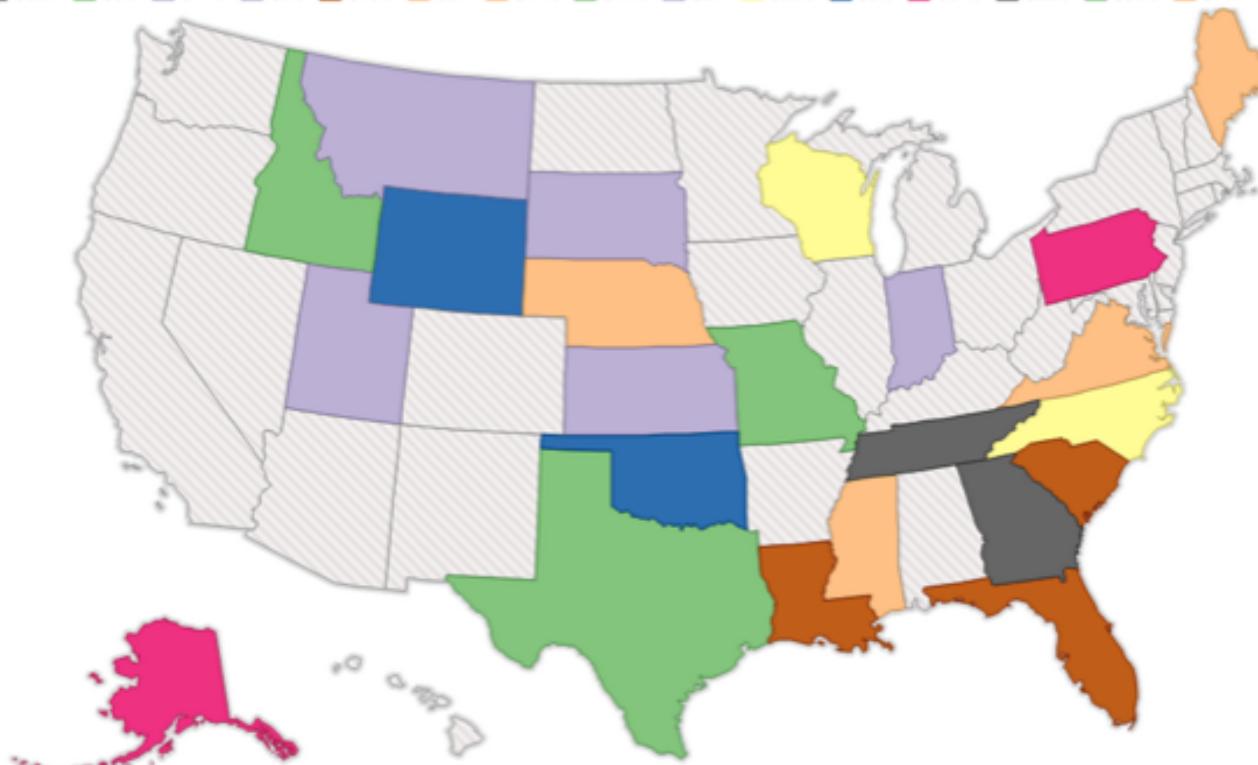


Colour for Choropleth Maps

Leaving Money on the Table

The amount of federal funds, in billions, that 24 states lost by refusing to expand Medicaid

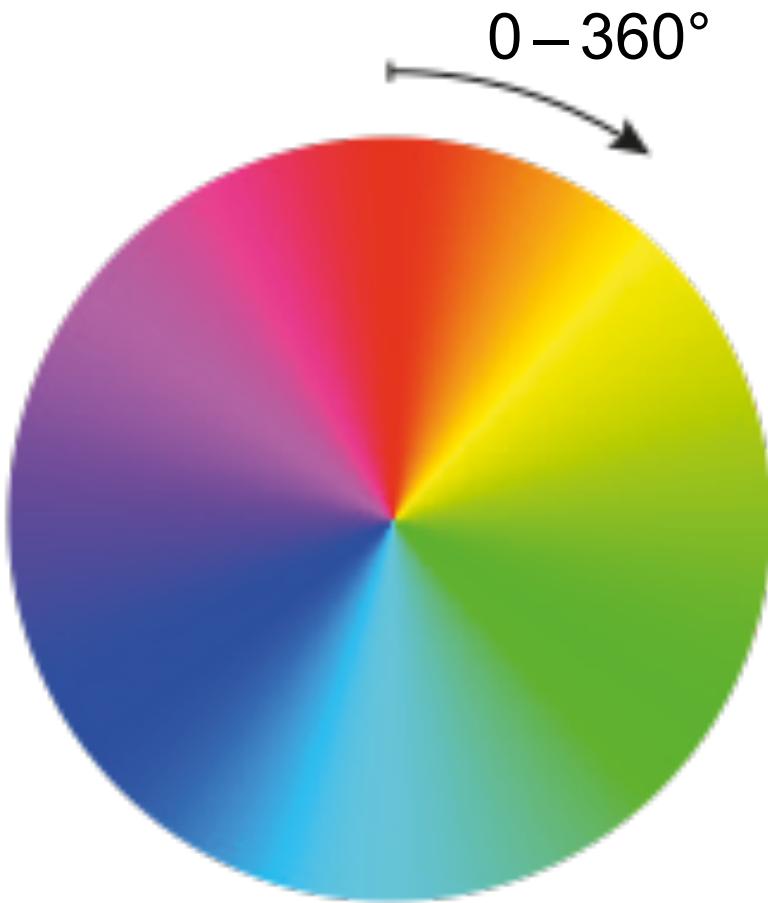
\$1.5 \$66.1 \$33.7 \$3.3 \$17.3 \$5.3 \$15.8 \$3.1 \$14.5 \$17.8 \$2.1 \$39.6 \$8.6 \$37.8 \$22.5 \$65.6 \$14.7 \$12.3 \$1.4



Created with [Datawrapper](#)

Source: [Urban Institute](#). Get the data

Hue



Expressed as angular direction on colour wheel

0 % ← → 100 %



Luminance

Level of illumination

Also called value or brightness

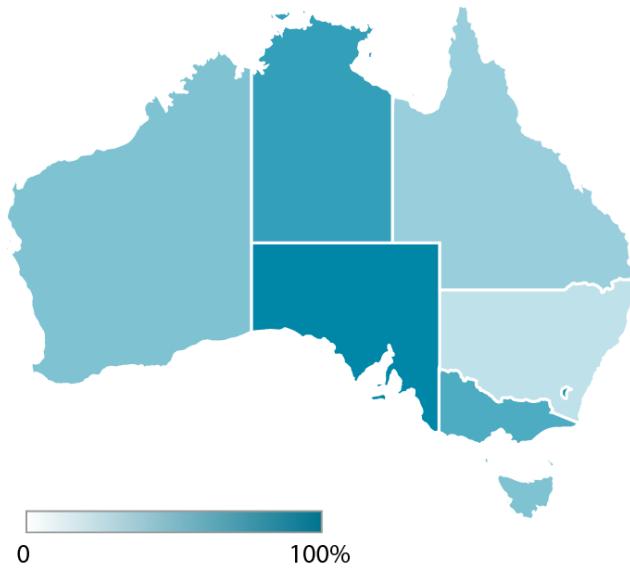
0 % ← → 100 %



Saturation

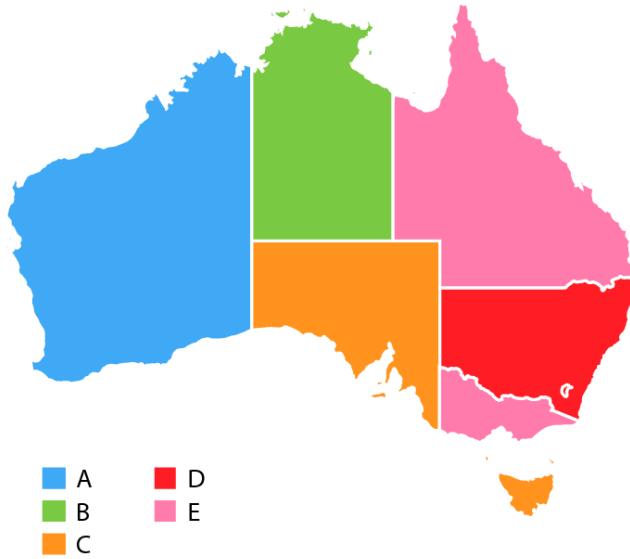
Difference from neutral gray

Colour for Quantitative Choropleth Maps



- Primarily luminance changes: the higher the value, the darker.
- Slight change in hue is possible, but has mainly aesthetic function. Change hue for diverging distributions.
- Change in saturation is possible, but should not be main variable.

Colour for Categorical Choropleth Maps



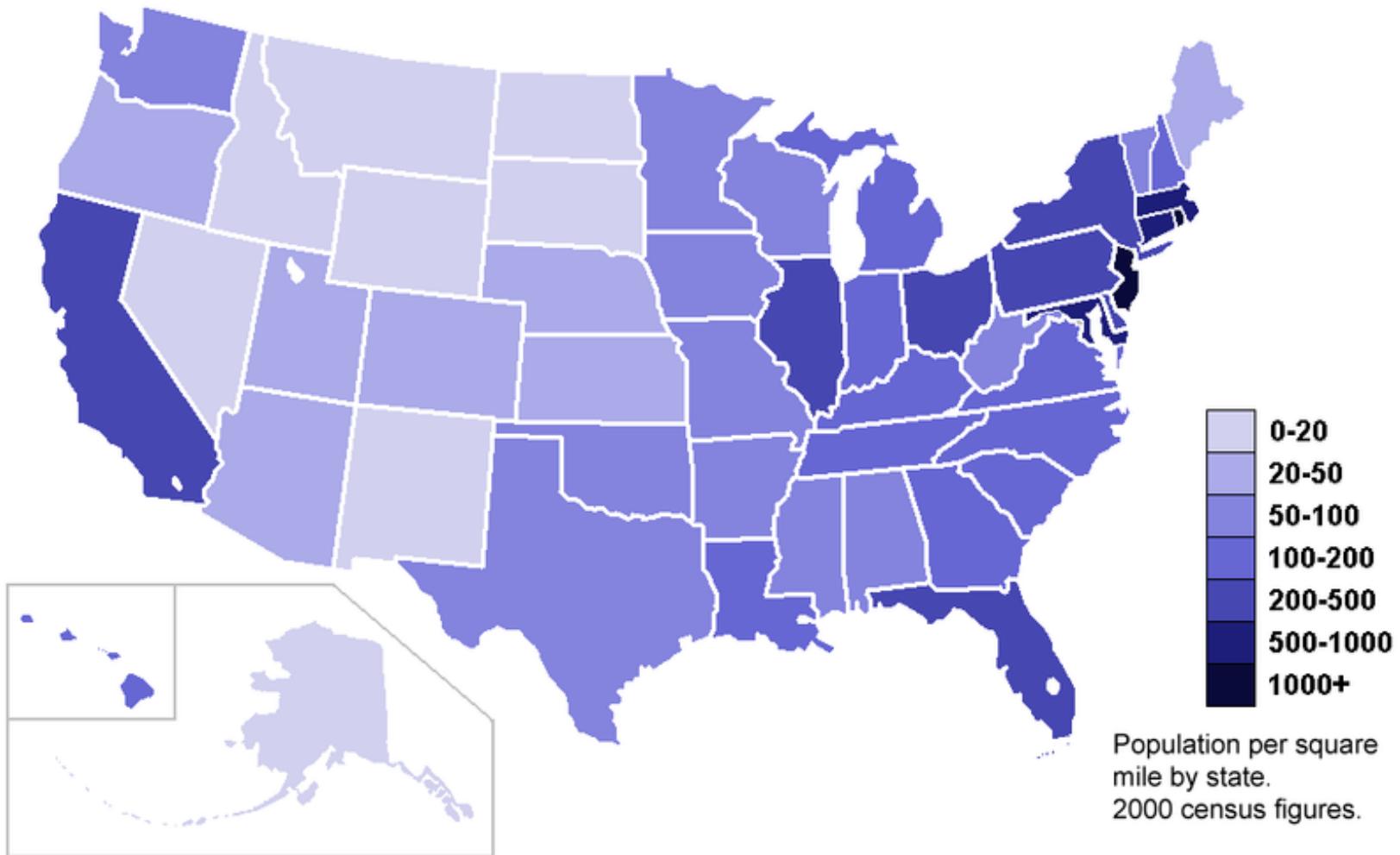
- Primarily hue changes

- What data type is mapped (quantitative, ordered, categorical)?
- If the data is quantitative, does it need to be normalised, and is it normalised?
- Which colour components (hue, saturation, luminance) vary?
- Is the colour choice appropriate for the type of data?
- Are the class breaks and the legend logical?

Choropleth Map Examples

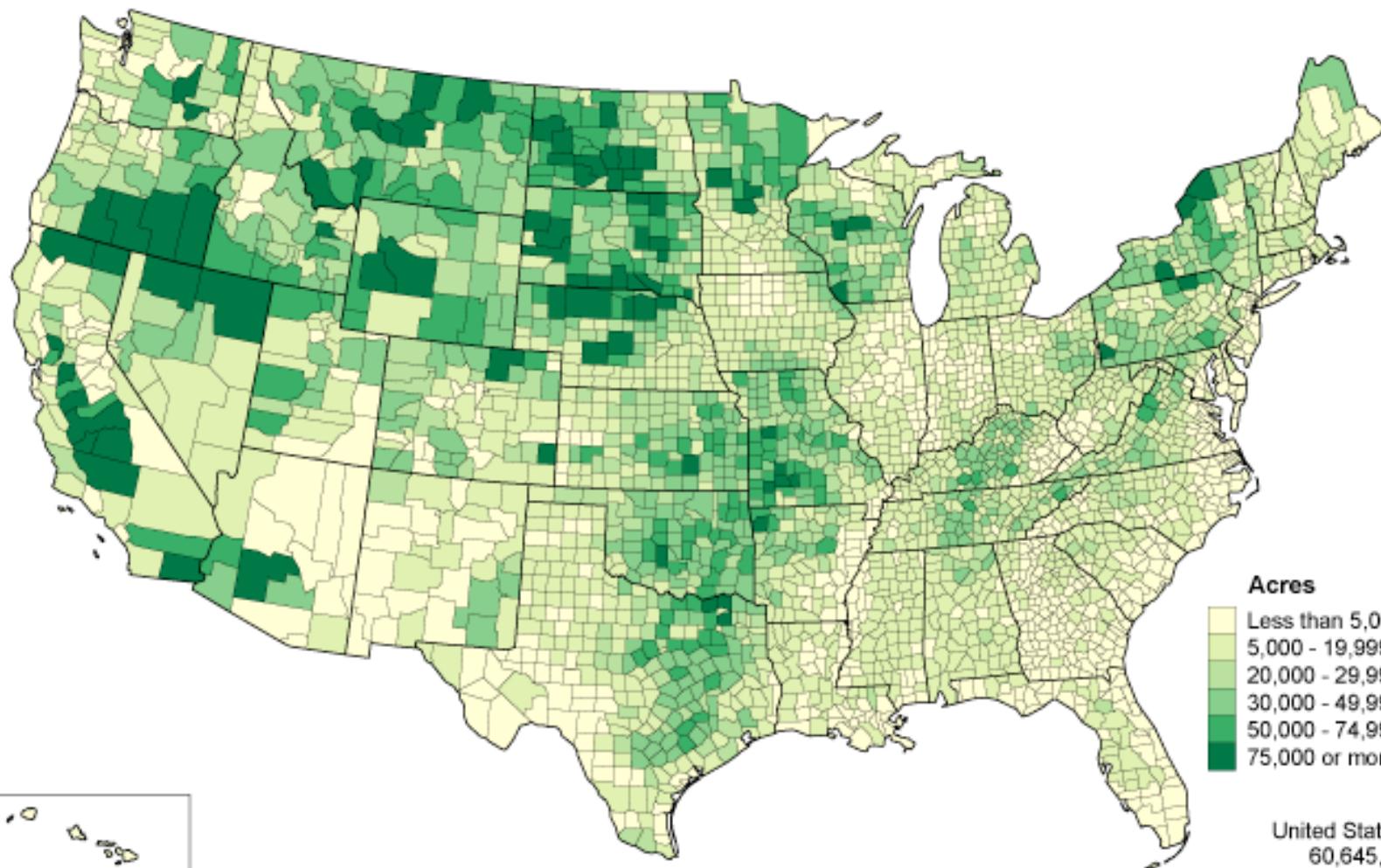
Good and Bad







Hay - All Hay Including Alfalfa, Other Tame, Small Grain, and Wild, Harvested Acres: 2002



Acres

- Less than 5,000
- 5,000 - 19,999
- 20,000 - 29,999
- 30,000 - 49,999
- 50,000 - 74,999
- 75,000 or more

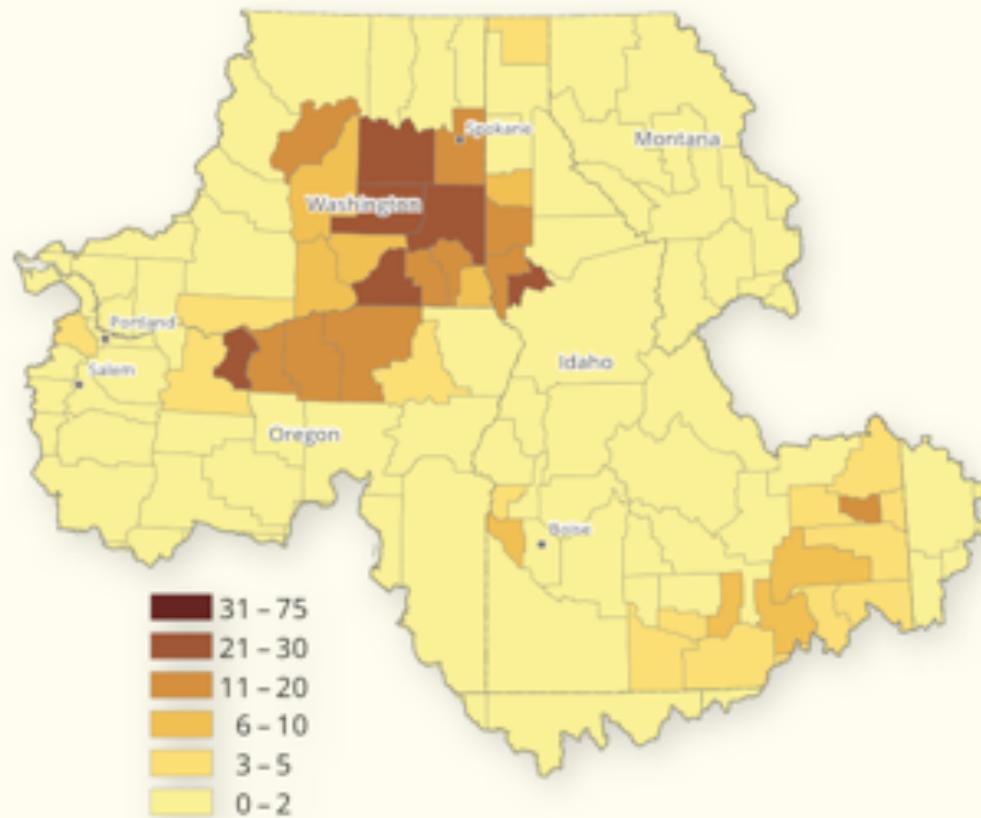
United States Total
60,645,417



02-M227

U.S. Department of Agriculture, National Agricultural Statistics Service

Percent of County Acreage Harvested for Wheat



Exotic-pet incidents 1990-2013

Born Free USA has tracked 2,000 incidents involving wild animals held in captivity. Due to incomplete reporting, the database is limited.

OWNERSHIP OF ANIMAL INVOLVED

Private 66% Zoo 28 Circus 6

SPECIES INVOLVED

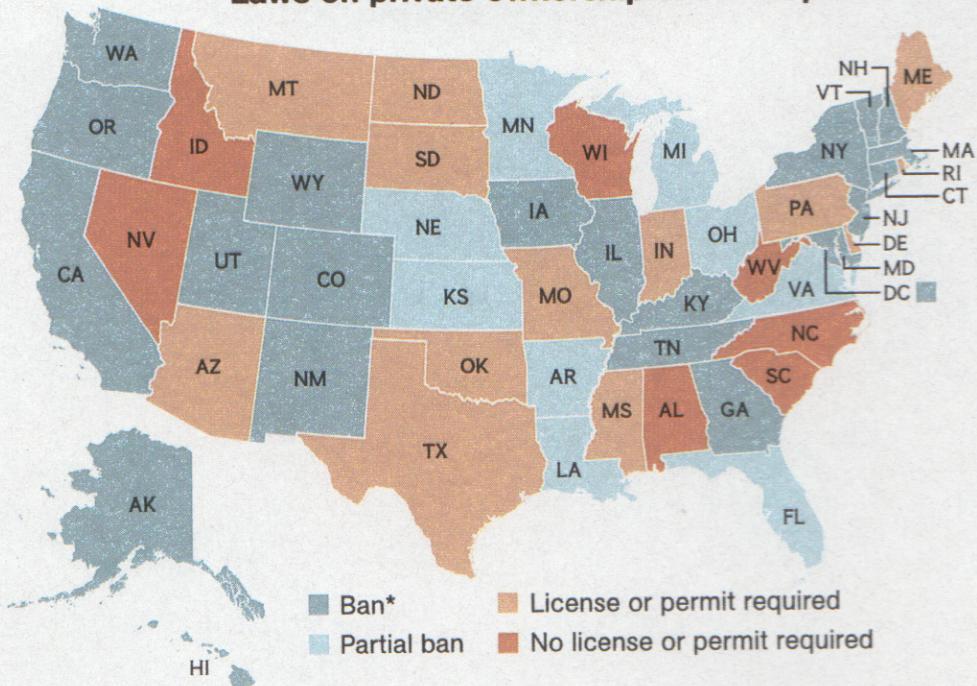
Reptiles 32% Big cats 19 Primates 16

TYPE OF INCIDENT

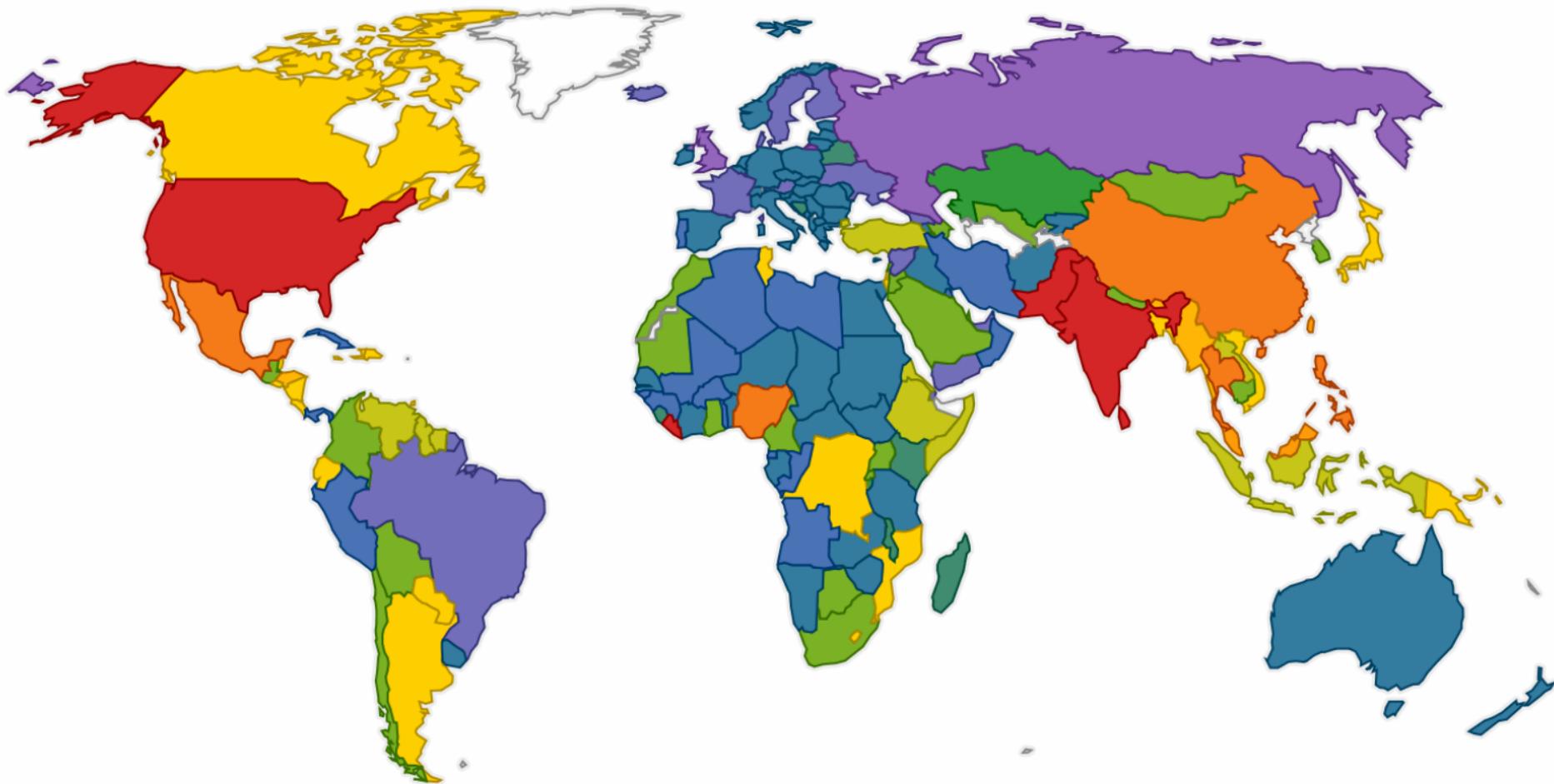
	Human	Animal	Other
Animal escape	42%	24	14
			Human (82 deaths)

GRAPHIC: LAWSON PARKER, NGM STAFF; MARGARET NG
SOURCE: BORN FREE USA

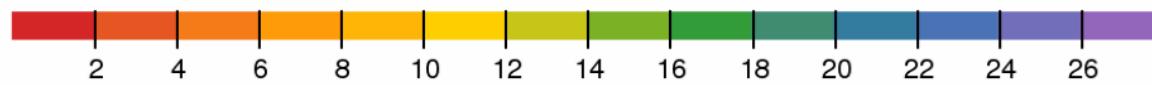
Laws on private ownership of exotic pets



*Animals covered by bans vary by state.



Number of statutory minimum days of annual leave



Where Poor and Uninsured Americans Live

The 26 Republican-dominated states not participating in an expansion of Medicaid are home to a disproportionate share of the nation's poorest uninsured residents. Eight million will be stranded without insurance. [Related Article »](#)

