Other maps

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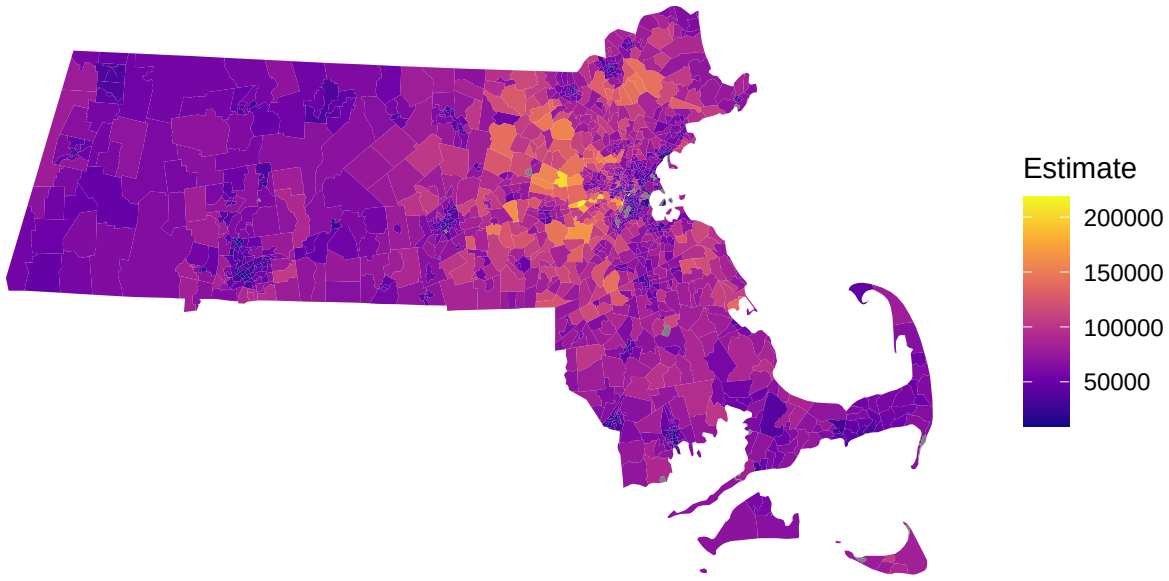
```
options(tigris_use_cache = TRUE)
#2006-2010
vars<-c(`High school graduate or higher` = "DP02_0066P",
                `Bachelors degree or higher` = "DP02_0067P",
                `Median Income` = "B19013_001",
                `Below Poverty Line` = "DP03_0119P")

options(tigris_use_cache = TRUE)
demographics_2010<-get_acs(state = "MA", geography = "tract",
                 variables = vars, year = 2010, geometry = TRUE)
```

```
## Getting data from the 2006-2010 5-year ACS
```

```
## Fetching data by table type ("B/C", "S", "DP") and combining the result.
```

```
#head(demographics_2010)

demographics_2010 %>% filter(variable== "Median Income") %>% ggplot(aes(fill = estimate)) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Median Income Distribution by Census Tracts in MA",
       caption = "Data source: 2006-2010 5-year ACS",
       fill = "Estimate") + theme_minimal()
```

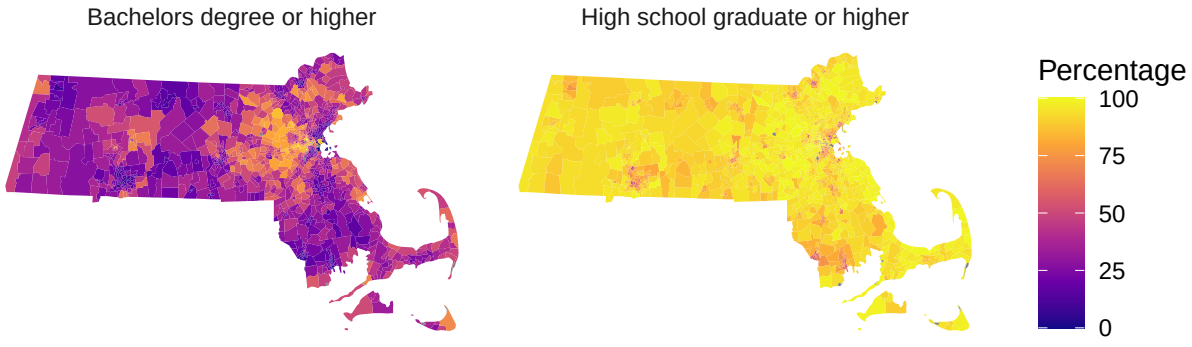
Median Income Distribution by Census Tracts in MA



Data source: 2006−2010 5−year ACS

```
demographics_2010 %>% filter(variable %in% c("High school graduate or higher","Bachelors degree or high
  facet_wrap(~ variable) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Educational Attainment by Census Tracts in MA",
       caption = "Data source: 2006-2010 5-year ACS",
       fill = "Percentage") + theme_minimal()
```

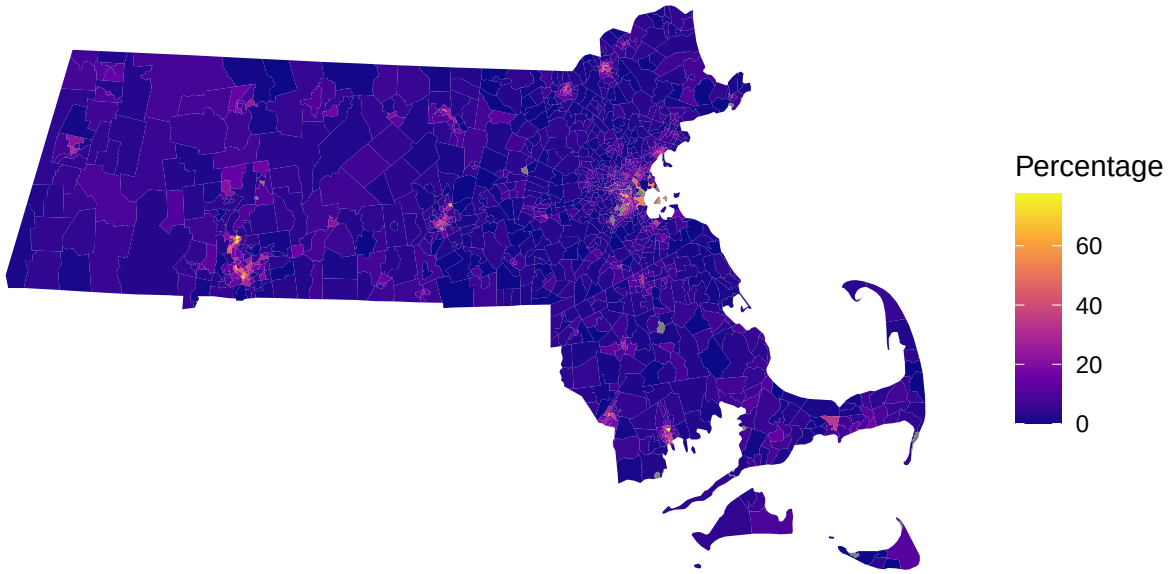
Educational Attainment by Census Tracts in MA



Data source: 2006−2010 5−year ACS

```
demographics_2010 %>% filter(variable==c("Below Poverty Line")) %>% ggplot(aes(fill = estimate)) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Families and people whose income in the past 12 months is below poverty level by Census
       caption = "Data source: 2006-2010 5-year ACS",
       fill = "Percentage") + theme_minimal()
```

Families and people whose income in the past 12 months is below poverty level b



Data source: 2006−2010 5−year ACS

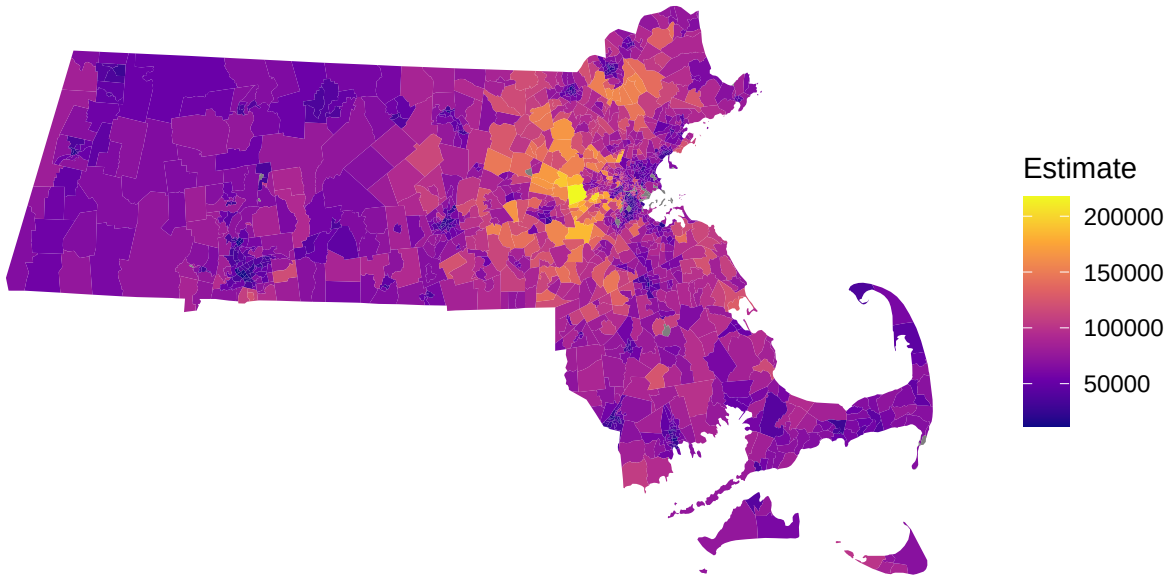
```
#2011-2015
options(tigris_use_cache = TRUE)
demographics_2015<-get_acs(state = "MA", geography = "tract",
                  variables = vars, year = 2015, geometry = TRUE)
```

```
## Getting data from the 2011-2015 5-year ACS
```

```
## Fetching data by table type ("B/C", "S", "DP") and combining the result.
```

```
demographics_2015 %>% filter(variable== "Median Income") %>% ggplot(aes(fill = estimate)) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Median Income Distribution by Census Tracts in MA",
       caption = "Data source: 2011-2015 5-year ACS",
       fill = "Estimate") + theme_minimal()
```

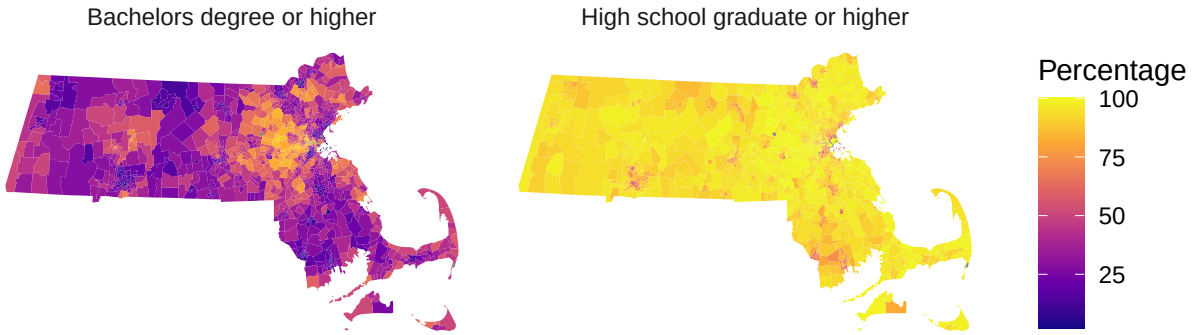
Median Income Distribution by Census Tracts in MA



Data source: 2011−2015 5−year ACS

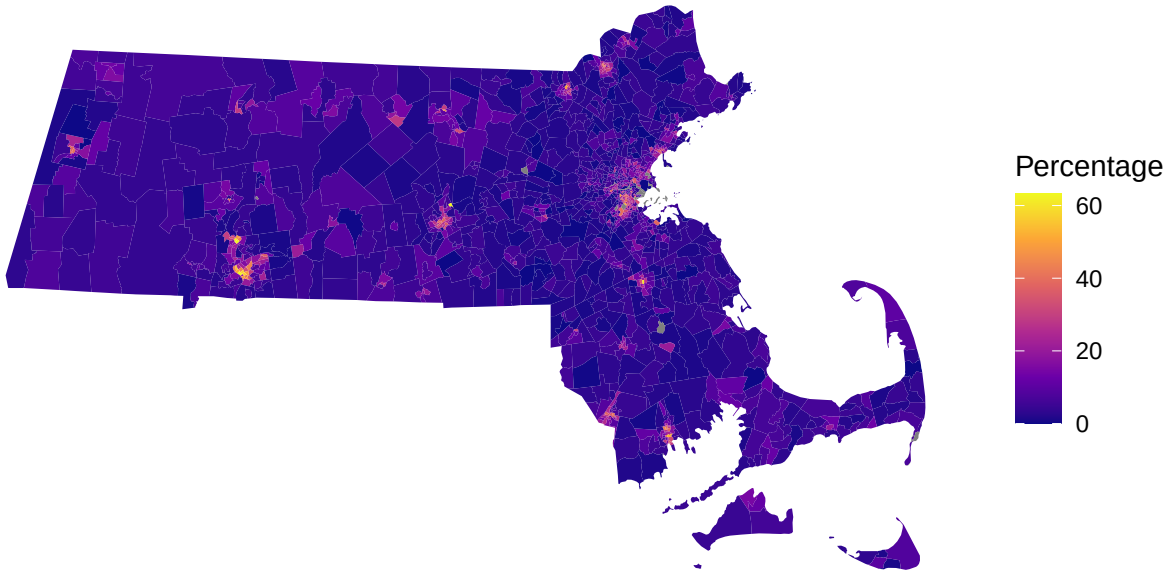
```
demographics_2015 %>% filter(variable %in% c("High school graduate or higher","Bachelors degree or high
  facet_wrap(~ variable) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Educational Attainment by Census Tracts in MA",
       caption = "Data source: 2011-2015 5-year ACS",
       fill = "Percentage") + theme_minimal()
```

Educational Attainment by Census Tracts in MA



Data source: 2011−2015 5−year ACS

```
demographics_2015 %>% filter(variable==c("Below Poverty Line")) %>% ggplot(aes(fill = estimate)) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Families and people whose income in the past 12 months is below poverty level by Census
       caption = "Data source: 2011-2015 5-year ACS",
       fill = "Percentage") + theme_minimal()
```



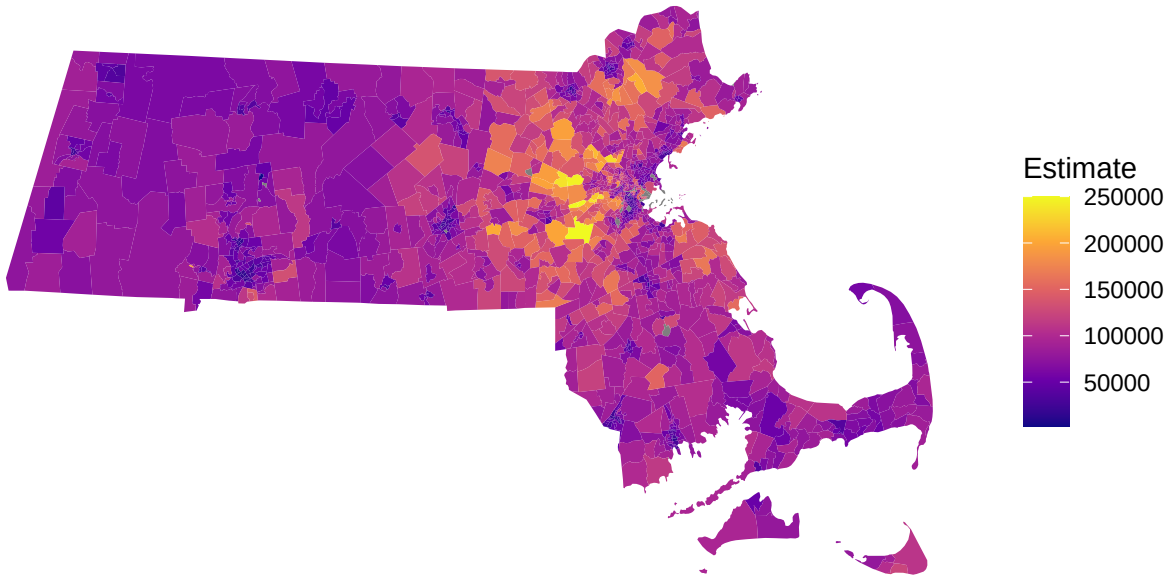

```
#2015-2019
vars1<-c(`High school graduate or higher` = "DP02_0067P",
                 `Bachelors degree or higher` = "DP02_0068P",
                 `Median Income` = "B19013_001",
                 `Below Poverty Line` = "DP03_0119P")

options(tigris_use_cache = TRUE)
demographics_2019<-get_acs(state = "MA", geography = "tract",
                  variables = vars1, year = 2019, geometry = TRUE)
```

```
## Getting data from the 2015-2019 5-year ACS
```

```
## Fetching data by table type ("B/C", "S", "DP") and combining the result.
```

```
demographics_2019 %>% filter(variable== "Median Income") %>% ggplot(aes(fill = estimate)) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Median Income Distribution by Census Tracts in MA",
       caption = "Data source: 2015-2019 5-year ACS",
       fill = "Estimate") + theme_minimal()
```

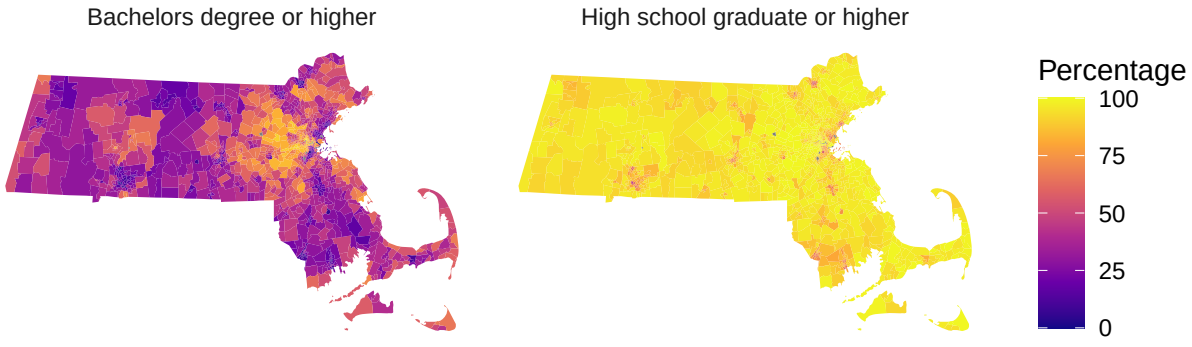
Median Income Distribution by Census Tracts in MA



Data source: 2015−2019 5−year ACS

```
demographics_2019 %>% filter(variable %in% c("High school graduate or higher","Bachelors degree or high
  facet_wrap(~ variable) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Educational Attainment by Census Tracts in MA",
       caption = "Data source: 2015-2019 5-year ACS",
       fill = "Percentage") + theme_minimal()
```

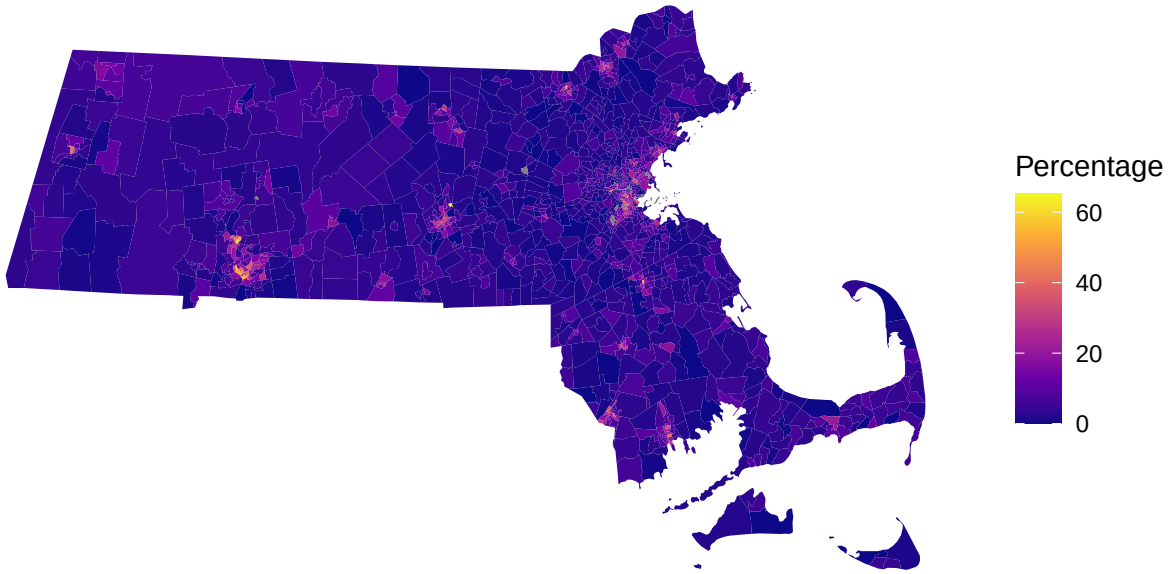
Educational Attainment by Census Tracts in MA



Data source: 2015−2019 5−year ACS

```
demographics_2019 %>% filter(variable==c("Below Poverty Line")) %>% ggplot(aes(fill = estimate)) +
  geom_sf(color = NA) +
  coord_sf(crs = 6491, datum = NA) +
  scale_fill_viridis_c(option = "C",direction = 1) +
  labs(title = "Families and people whose income in the past 12 months is below poverty level by Census
       caption = "Data source: 2015-2019 5-year ACS",
       fill = "Percentage") + theme_minimal()
```

Families and people whose income in the past 12 months is below poverty level b



Data source: 2015−2019 5−year ACS