Mapping Political Change in Idaho

With flipbookr and xaringan

Rachel Goodman, September 2020

Prepping the Data

```
members02_11
```

```
# A tibble: 1,131 x 14
   name  chamber party district committees positions partialsession
   <chr> <chr>   <chr>    <dbl> <chr>      <chr>     <chr>
 1 John… House   R            1 Environme… <NA>      <NA>
 2 Geor… House   R            1 Local Gov… <NA>      <NA>
 3 Hild… House   R            2 Business;… <NA>      Temporary Abs…
 4 Free… House   R            2 <NA>       <NA>      Acting Repres…
 5 Wayn… House   R            2 Appropria… <NA>      <NA>
 6 Jim … House   R            3 Appropria… <NA>      <NA>
 7 Kris… House   R            3 Business;… <NA>      <NA>
 8 Mary… House   D            4 State Aff… <NA>      <NA>
 9 Don … House   R            4 Appropria… <NA>      <NA>
10 Tom … House   R            5 Agricultu… <NA>      <NA>
# … with 1,121 more rows, and 7 more variables: startdate <dttm>,
#   enddate <dttm>, startdate2 <dttm>, enddate2 <dttm>, startdate3 <l
#   enddate3 <lgl>, year <chr>
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district)
```

```
# A tibble: 1,131 x 14
   name  chamber party district committees positions partialsession
   <chr> <chr>   <chr>    <dbl> <chr>      <chr>     <chr>
 1 John… House   R            1 Environme… <NA>      <NA>
 2 Geor… House   R            1 Local Gov… <NA>      <NA>
 3 Shaw… Senate  R            1 Transport… <NA>      <NA>
 4 Hild… House   R            2 Business;… <NA>      Temporary Abs…
 5 Free… House   R            2 <NA>       <NA>      Acting Repres…
 6 Wayn… House   R            2 Appropria… <NA>      <NA>
 7 Clyd… Senate  R            2 Finance; … <NA>      <NA>
 8 Jim … House   R            3 Appropria… <NA>      <NA>
 9 Kris… House   R            3 Business;… <NA>      <NA>
10 John… Senate  R            3 Commerce … <NA>      <NA>
# … with 1,121 more rows, and 7 more variables: startdate <dttm>,
#   enddate <dttm>, startdate2 <dttm>, enddate2 <dttm>, startdate3 <l
#   enddate3 <lgl>, year <chr>
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year)
```

```
# A tibble: 1,131 x 5
   name               chamber party district year
   <chr>              <chr>   <chr>    <dbl> <chr>
 1 John L. Campbell   House   R            1 2002
 2 George E. Eskridge House   R            1 2002
 3 Shawn Keough       Senate  R            1 2002
 4 Hilde Kellogg      House   R            2 2002
 5 Freeman B. Duncan  House   R            2 2002
 6 Wayne R. Meyer     House   R            2 2002
 7 Clyde Boatright    Senate  R            2 2002
 8 Jim Clark          House   R            3 2002
 9 Kris Ellis         House   R            3 2002
10 John W. Goedde     Senate  R            3 2002
# … with 1,121 more rows
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year) %>%
  group_by(year, district)
```

```
# A tibble: 1,131 x 5
# Groups:   year, district [350]
   name               chamber party district year
   <chr>              <chr>   <chr>    <dbl> <chr>
 1 John L. Campbell   House   R            1 2002
 2 George E. Eskridge House   R            1 2002
 3 Shawn Keough       Senate  R            1 2002
 4 Hilde Kellogg      House   R            2 2002
 5 Freeman B. Duncan  House   R            2 2002
 6 Wayne R. Meyer     House   R            2 2002
 7 Clyde Boatright    Senate  R            2 2002
 8 Jim Clark          House   R            3 2002
 9 Kris Ellis         House   R            3 2002
10 John W. Goedde     Senate  R            3 2002
# … with 1,121 more rows
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year) %>%
  group_by(year, district) %>%
  mutate(party_total = case_when(
    !str_detect(paste0(party, collapse = ""), "D") ~"R",
    !str_detect(paste0(party, collapse = ""), "R") ~"D",
    TRUE ~"M"))
```

```
# A tibble: 1,131 x 6
# Groups:   year, district [350]
   name               chamber party district year  party_total
   <chr>              <chr>   <chr>    <dbl> <chr> <chr>
 1 John L. Campbell   House   R            1 2002  R
 2 George E. Eskridge House   R            1 2002  R
 3 Shawn Keough       Senate  R            1 2002  R
 4 Hilde Kellogg      House   R            2 2002  R
 5 Freeman B. Duncan  House   R            2 2002  R
 6 Wayne R. Meyer     House   R            2 2002  R
 7 Clyde Boatright    Senate  R            2 2002  R
 8 Jim Clark          House   R            3 2002  R
 9 Kris Ellis         House   R            3 2002  R
10 John W. Goedde     Senate  R            3 2002  R
# … with 1,121 more rows
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year) %>%
  group_by(year, district) %>%
  mutate(party_total = case_when(
    !str_detect(paste0(party, collapse = ""), "D") ~"R",
    !str_detect(paste0(party, collapse = ""), "R") ~"D",
    TRUE ~"M")) %>%
  ungroup()
```

```
# A tibble: 1,131 x 6
   name               chamber party district year  party_total
   <chr>              <chr>   <chr>    <dbl> <chr> <chr>
 1 John L. Campbell   House   R            1 2002  R
 2 George E. Eskridge House   R            1 2002  R
 3 Shawn Keough       Senate  R            1 2002  R
 4 Hilde Kellogg      House   R            2 2002  R
 5 Freeman B. Duncan  House   R            2 2002  R
 6 Wayne R. Meyer     House   R            2 2002  R
 7 Clyde Boatright    Senate  R            2 2002  R
 8 Jim Clark          House   R            3 2002  R
 9 Kris Ellis         House   R            3 2002  R
10 John W. Goedde     Senate  R            3 2002  R
# … with 1,121 more rows
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year) %>%
  group_by(year, district) %>%
  mutate(party_total = case_when(
    !str_detect(paste0(party, collapse = ""), "D") ~"R",
    !str_detect(paste0(party, collapse = ""), "R") ~"D",
    TRUE ~"M")) %>%
  ungroup() %>%
  select(year, district, party_total)
```

```
# A tibble: 1,131 x 3
   year  district party_total
   <chr>    <dbl> <chr>
 1 2002         1 R
 2 2002         1 R
 3 2002         1 R
 4 2002         2 R
 5 2002         2 R
 6 2002         2 R
 7 2002         2 R
 8 2002         3 R
 9 2002         3 R
10 2002         3 R
# … with 1,121 more rows
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year) %>%
  group_by(year, district) %>%
  mutate(party_total = case_when(
    !str_detect(paste0(party, collapse = ""), "D") ~"R",
    !str_detect(paste0(party, collapse = ""), "R") ~"D",
    TRUE ~"M")) %>%
  ungroup() %>%
  select(year, district, party_total) %>%
  unique()
```

```
# A tibble: 350 x 3
   year  district party_total
   <chr>    <dbl> <chr>
 1 2002         1 R
 2 2002         2 R
 3 2002         3 R
 4 2002         4 M
 5 2002         5 R
 6 2002         6 R
 7 2002         7 M
 8 2002         8 R
 9 2002         9 R
10 2002        10 R
# … with 340 more rows
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year) %>%
  group_by(year, district) %>%
  mutate(party_total = case_when(
    !str_detect(paste0(party, collapse = ""), "D") ~"R",
    !str_detect(paste0(party, collapse = ""), "R") ~"D",
    TRUE ~"M")) %>%
  ungroup() %>%
  select(year, district, party_total) %>%
  unique() %>%
  mutate(NDISTRICT=district)
```

```
# A tibble: 350 x 4
   year  district party_total NDISTRICT
   <chr>    <dbl> <chr>           <dbl>
 1 2002         1 R                   1
 2 2002         2 R                   2
 3 2002         3 R                   3
 4 2002         4 M                   4
 5 2002         5 R                   5
 6 2002         6 R                   6
 7 2002         7 M                   7
 8 2002         8 R                   8
 9 2002         9 R                   9
10 2002        10 R                  10
# … with 340 more rows
```

Prepping the Data

```
members02_11 %>%
  arrange(year, district) %>%
  select(name, chamber, party, district, year) %>%
  group_by(year, district) %>%
  mutate(party_total = case_when(
    !str_detect(paste0(party, collapse = ""), "D") ~"R",
    !str_detect(paste0(party, collapse = ""), "R") ~"D",
    TRUE ~"M")) %>%
  ungroup() %>%
  select(year, district, party_total) %>%
  unique() %>%
  mutate(NDISTRICT=district) ->
  members02_11
```

Prepping the Mapping Data

```
map_02
```

```
Simple feature collection with 35 features and 2 fields
geometry type:  MULTIPOLYGON
dimension:      XY
bbox:           xmin: 241777.2 ymin: 98685.15 xmax: 744660 ymax: 882019.6
proj4string:    +proj=tmerc +lat_0=42 +lon_0=-114 +k=0.9996 +x_0=500000 +y_0=100000
First 10 features:
   DISTRICT NDISTRICT                       geometry
1        01         1 MULTIPOLYGON (((333701.4 78...
2        02         2 MULTIPOLYGON (((280658.3 71...
3        03         3 MULTIPOLYGON (((287396.8 76...
4        04         4 MULTIPOLYGON (((289829.2 73...
5        05         5 MULTIPOLYGON (((287081.9 74...
6        06         6 MULTIPOLYGON (((293149.7 61...
7        07         7 MULTIPOLYGON (((269846.9 58...
8        08         8 MULTIPOLYGON (((329227.9 44...
9        09         9 MULTIPOLYGON (((303757.8 33...
10       10        10 MULTIPOLYGON (((264272.6 28...
```

Prepping the Mapping Data

```
map_02 %>%
  merge(., members02_11, by="NDISTRICT")
```

```
Simple feature collection with 350 features and 5 fields
geometry type:  MULTIPOLYGON
dimension:      XY
bbox:           xmin: 241777.2 ymin: 98685.15 xmax: 744660 ymax: 882019.6
proj4string:    +proj=tmerc +lat_0=42 +lon_0=-114 +k=0.9996 +x_0=500000 +y_0=100000
First 10 features:
   NDISTRICT DISTRICT year district party_total                       geometry
1          1       01 2002        1           R MULTIPOLYGON (((333701.4 78...
2          1       01 2010        1           R MULTIPOLYGON (((333701.4 78...
3          1       01 2007        1           R MULTIPOLYGON (((333701.4 78...
4          1       01 2006        1           R MULTIPOLYGON (((333701.4 78...
5          1       01 2004        1           R MULTIPOLYGON (((333701.4 78...
6          1       01 2009        1           R MULTIPOLYGON (((333701.4 78...
7          1       01 2008        1           R MULTIPOLYGON (((333701.4 78...
8          1       01 2011        1           R MULTIPOLYGON (((333701.4 78...
9          1       01 2005        1           R MULTIPOLYGON (((333701.4 78...
10         1       01 2003        1           R MULTIPOLYGON (((333701.4 78...
```

Prepping the Mapping Data

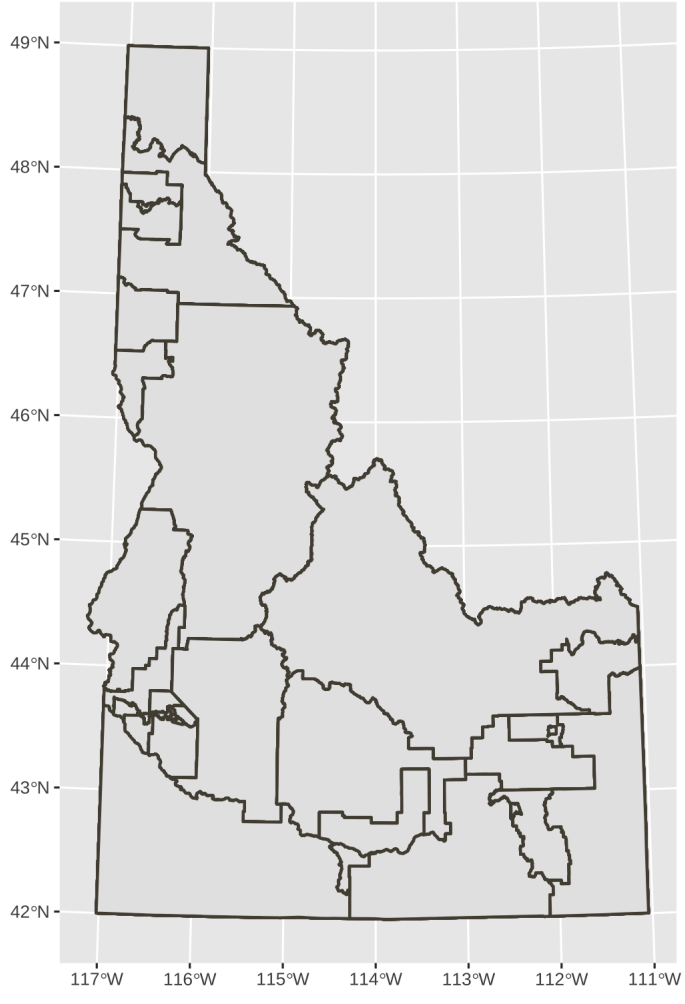
```
map_02 %>%
  merge(., members02_11, by="NDISTRICT") ->
  merged_data
```

Constructing the Map

```
ggplot(data=merged_data)
```

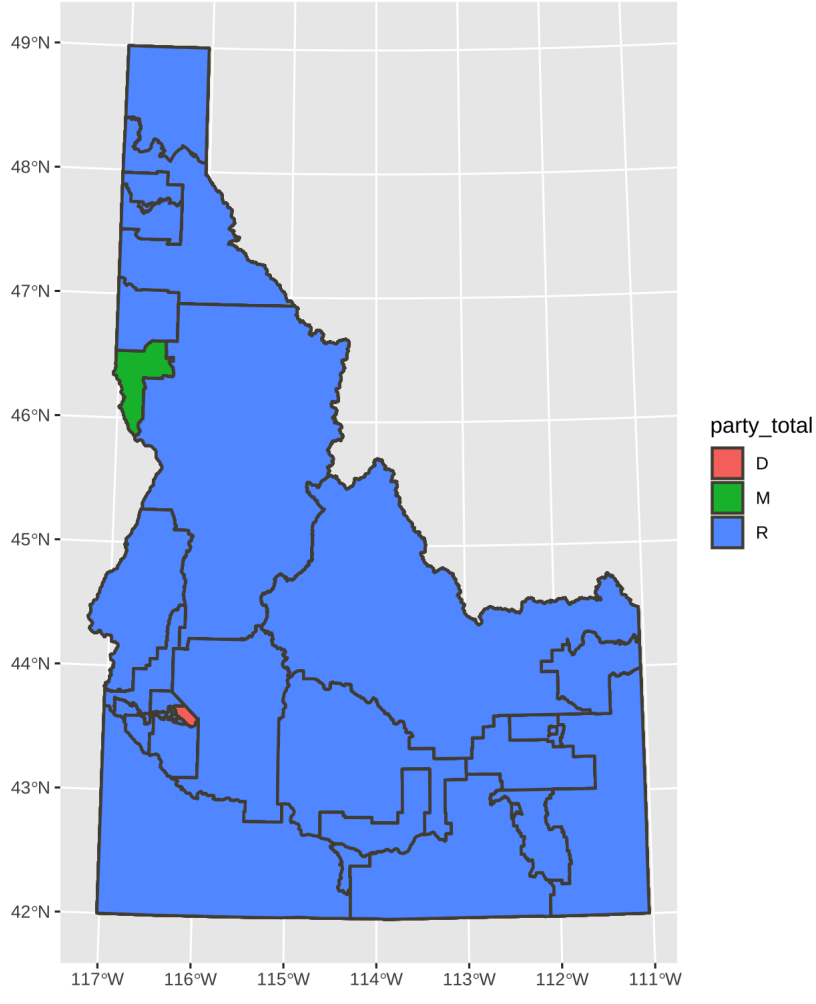
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7)
```



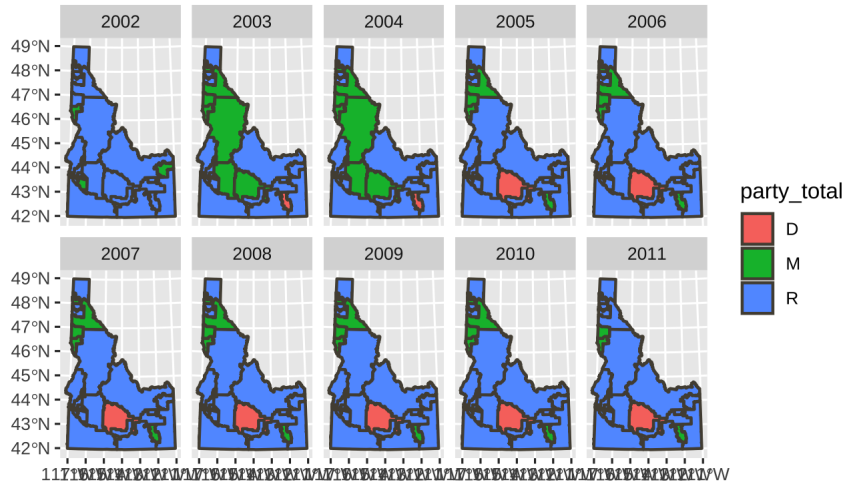
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total)
```



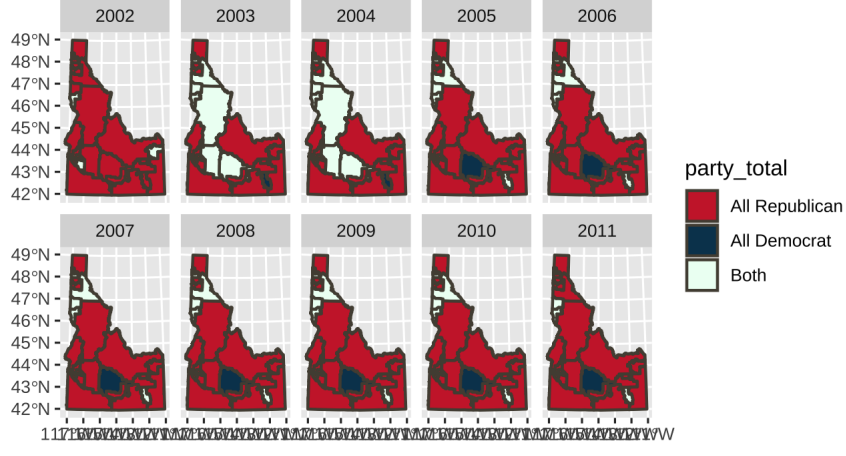
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2)
```



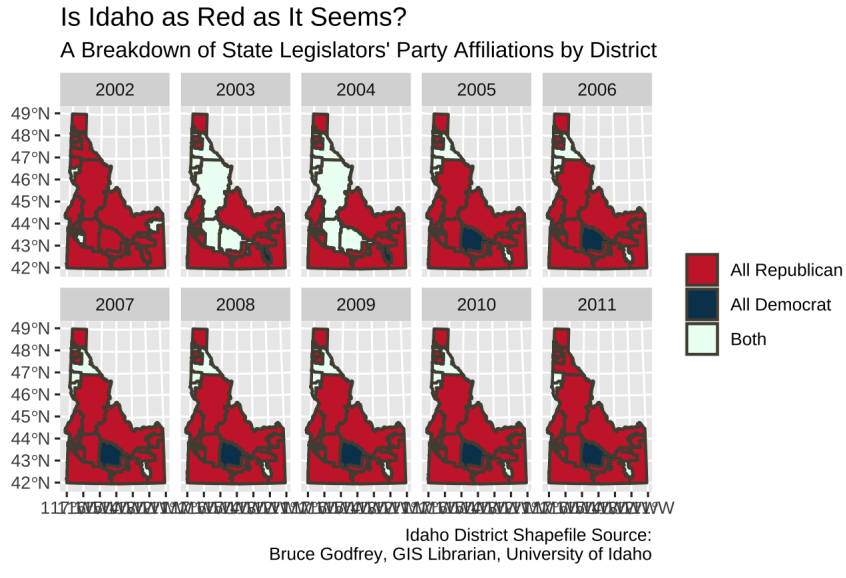
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
```



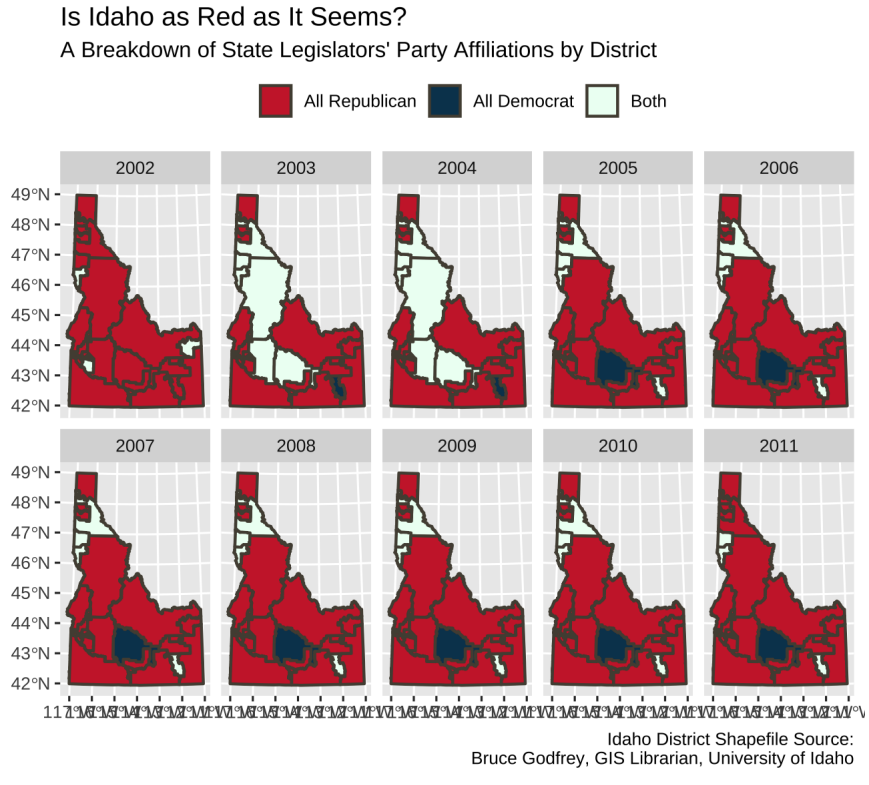
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL)
```



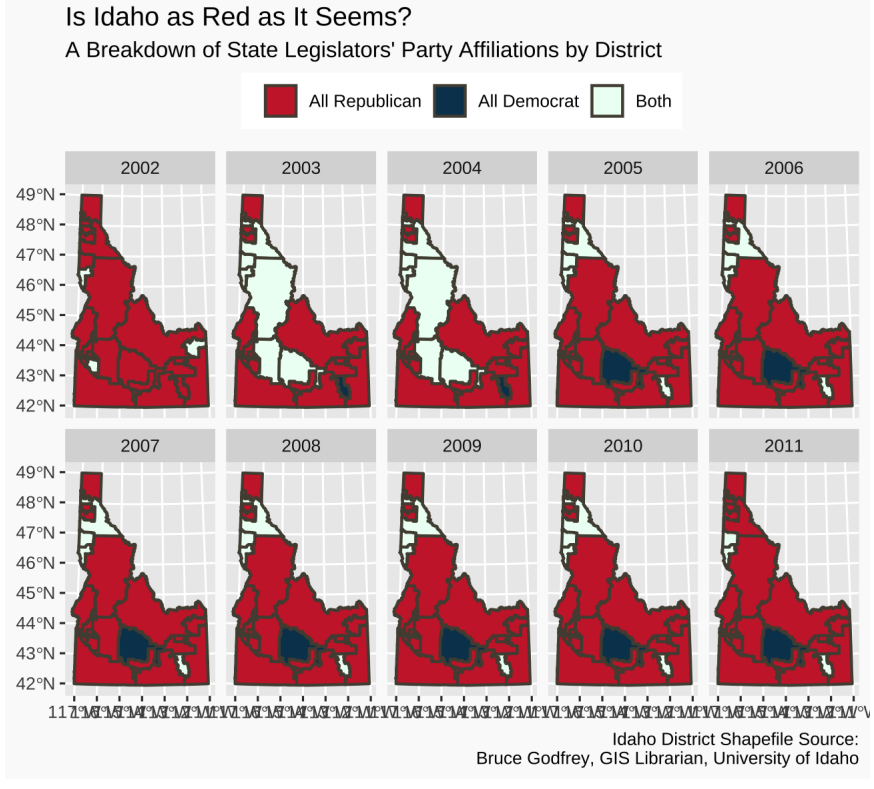
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top')
```



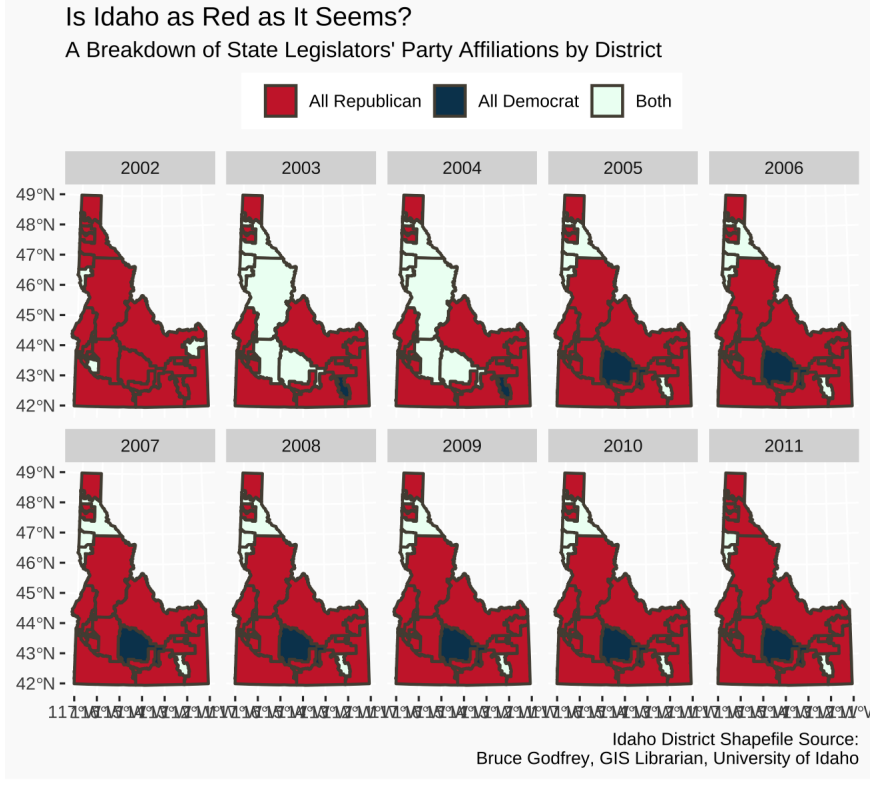
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top') +
  theme(plot.background = element_rect(fill="#fafafa",
                                       color="#fafafa"))
```



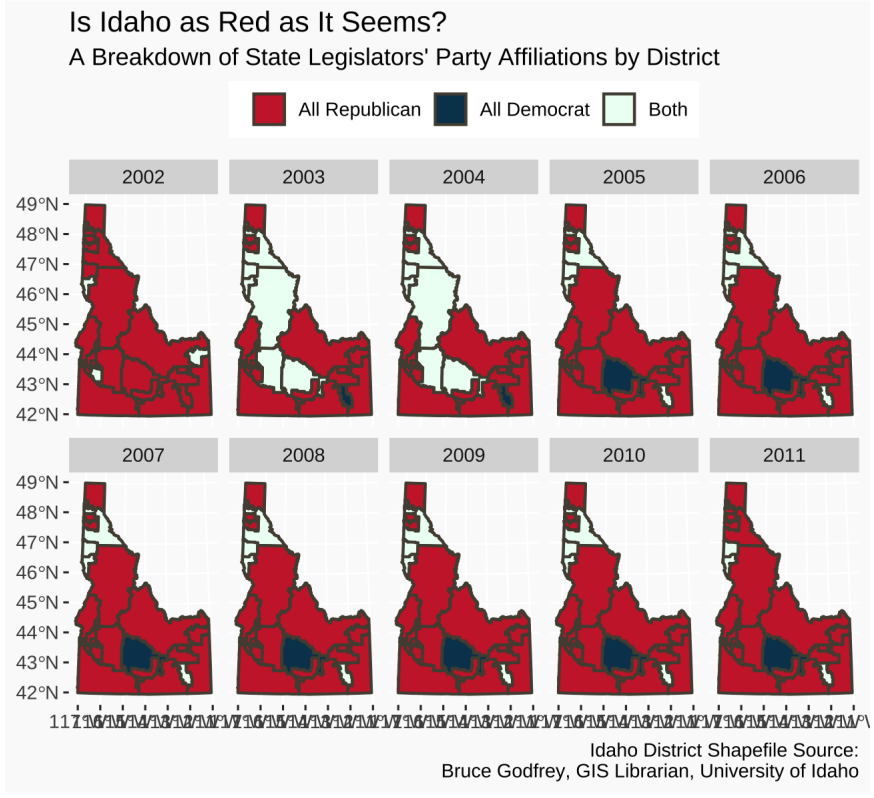
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top') +
  theme(plot.background = element_rect(fill="#fafafa",
                                       color="#fafafa")) +
  theme(panel.background = element_rect(fill="#fafafa"))
```



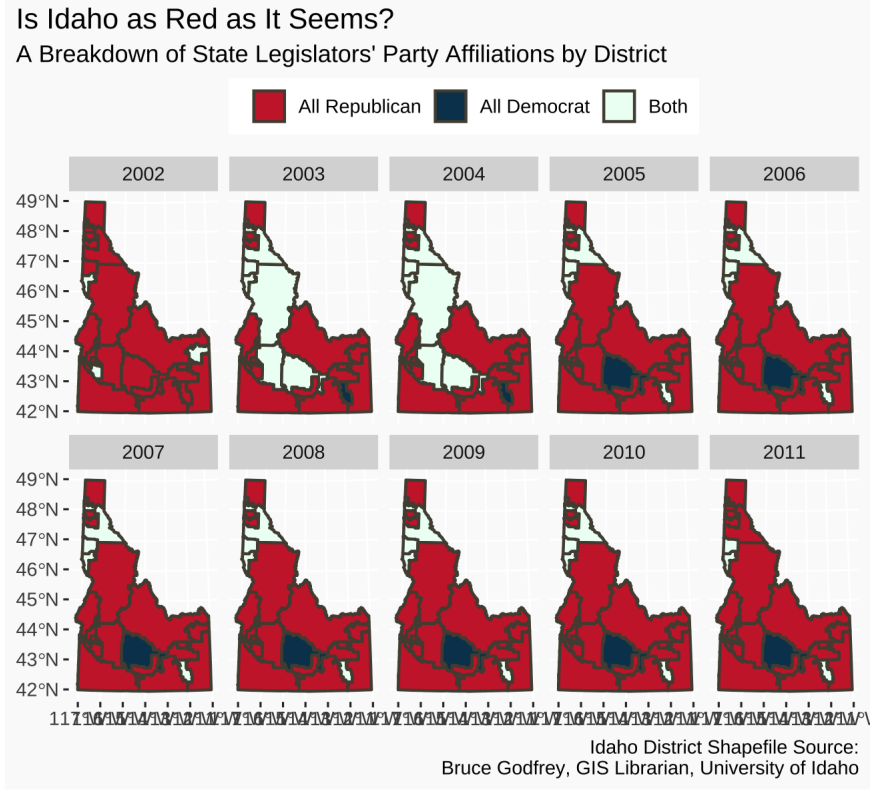
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top') +
  theme(plot.background = element_rect(fill="#fafafa",
                                       color="#fafafa")) +
  theme(panel.background = element_rect(fill="#fafafa")) +
  theme(text=element_text(family="Bahnschrift", size=12))
```



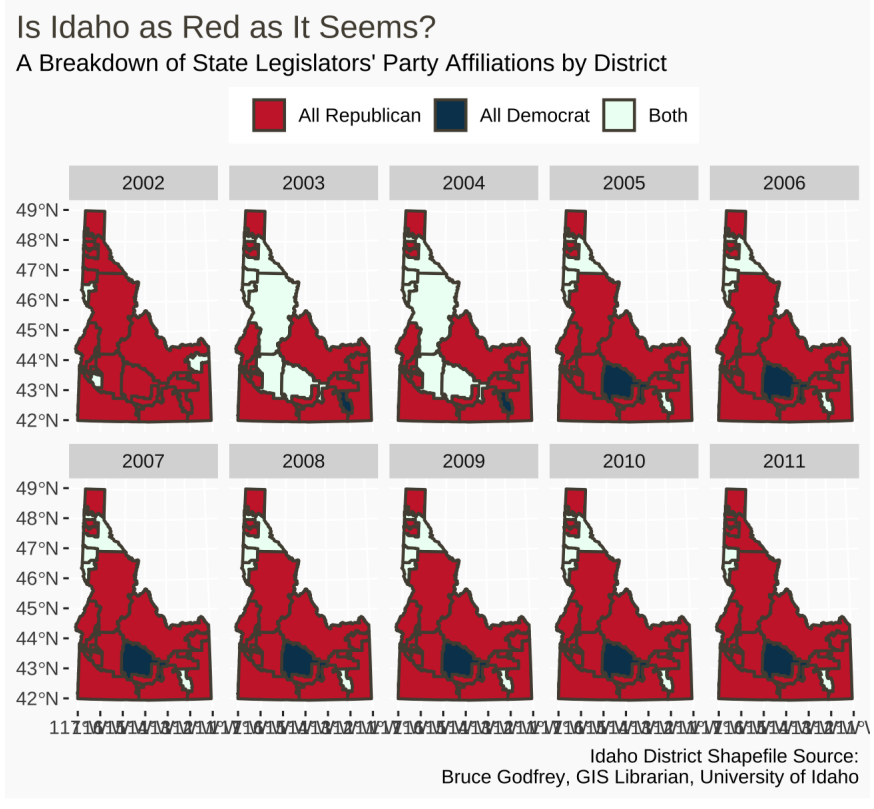
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top') +
  theme(plot.background = element_rect(fill="#fafafa",
                                       color="#fafafa")) +
  theme(panel.background = element_rect(fill="#fafafa")) +
  theme(text=element_text(family="Bahnschrift", size=12)) +
  theme(plot.title.position = "plot")
```



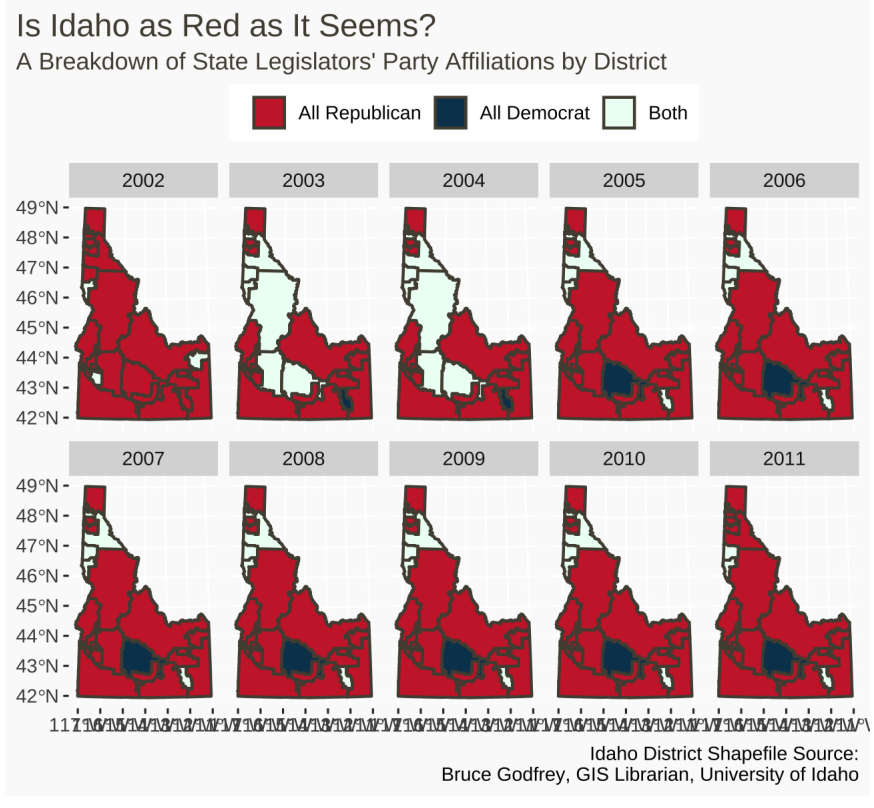
Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top') +
  theme(plot.background = element_rect(fill="#fafafa",
                                       color="#fafafa")) +
  theme(panel.background = element_rect(fill="#fafafa")) +
  theme(text=element_text(family="Bahnschrift", size=12)) +
  theme(plot.title.position = "plot") +
  theme(plot.title=element_text(color="#534D41",
                                size=16,
                                margin=margin(t=3,b=5,
                                              unit="pt")))
```



Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top') +
  theme(plot.background = element_rect(fill="#fafafa",
                                       color="#fafafa")) +
  theme(panel.background = element_rect(fill="#fafafa")) +
  theme(text=element_text(family="Bahnschrift", size=12)) +
  theme(plot.title.position = "plot") +
  theme(plot.title=element_text(color="#534D41",
                                size=16,
                                margin=margin(t=3,b=5,
                                              unit="pt"))) +
  theme(plot.subtitle=element_text(color="#534D41",
                                   size=12,
                                   margin=margin(b=5,
                                                 unit="pt"))
```

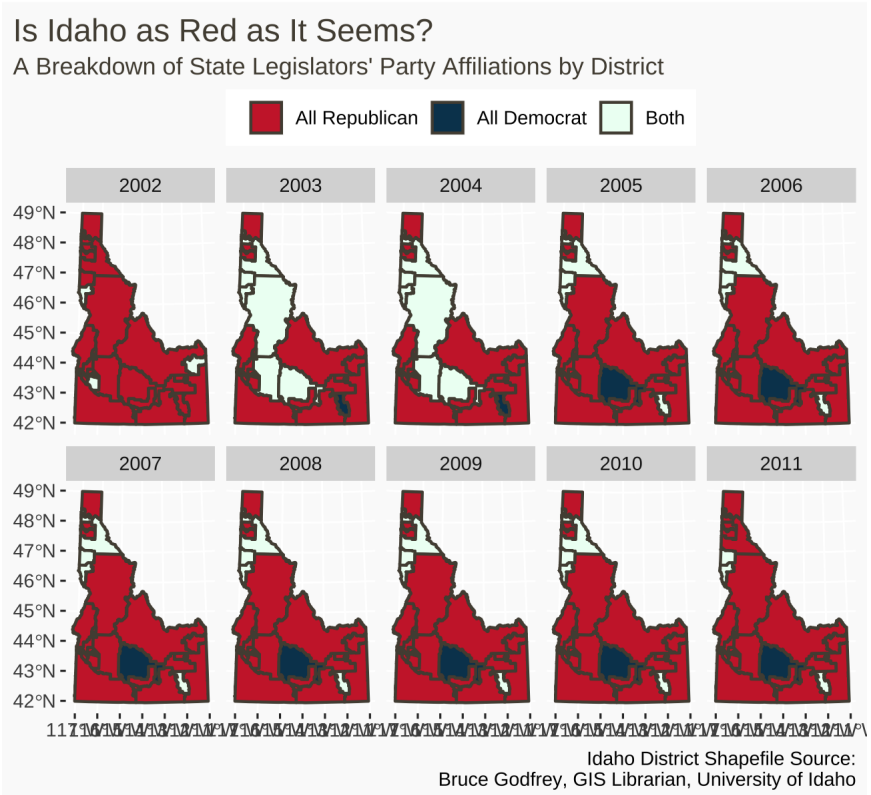


Constructing the Map

```
ggplot(data=merged_data) +
  geom_sf(color="#534D41", size=.7) +
  aes(fill=party_total) +
  facet_wrap(~year,nrow=2) +
  scale_fill_manual(values=c("#CC2936", "#08415C", "#edfff4"
                    breaks=c("R", "D", "M"),
                    labels=c("All Republican", "All Democrat
  labs(title="Is Idaho as Red as It Seems?",
       subtitle="A Breakdown of State Legislators' Party Aff
       caption="Idaho District Shapefile Source:\nBruce Godf
       fill=NULL) +
  theme(legend.position = 'top') +
  theme(plot.background = element_rect(fill="#fafafa",
                                       color="#fafafa")) +
  theme(panel.background = element_rect(fill="#fafafa")) +
  theme(text=element_text(family="Bahnschrift", size=12)) +
  theme(plot.title.position = "plot") +
  theme(plot.title=element_text(color="#534D41",
                                size=16,
                                margin=margin(t=3,b=5,
                                              unit="pt"))) +
  theme(plot.subtitle=element_text(color="#534D41",
                                   size=12,
                                   margin=margin(b=5,
                                                 unit="pt"))
  idaho_map
```

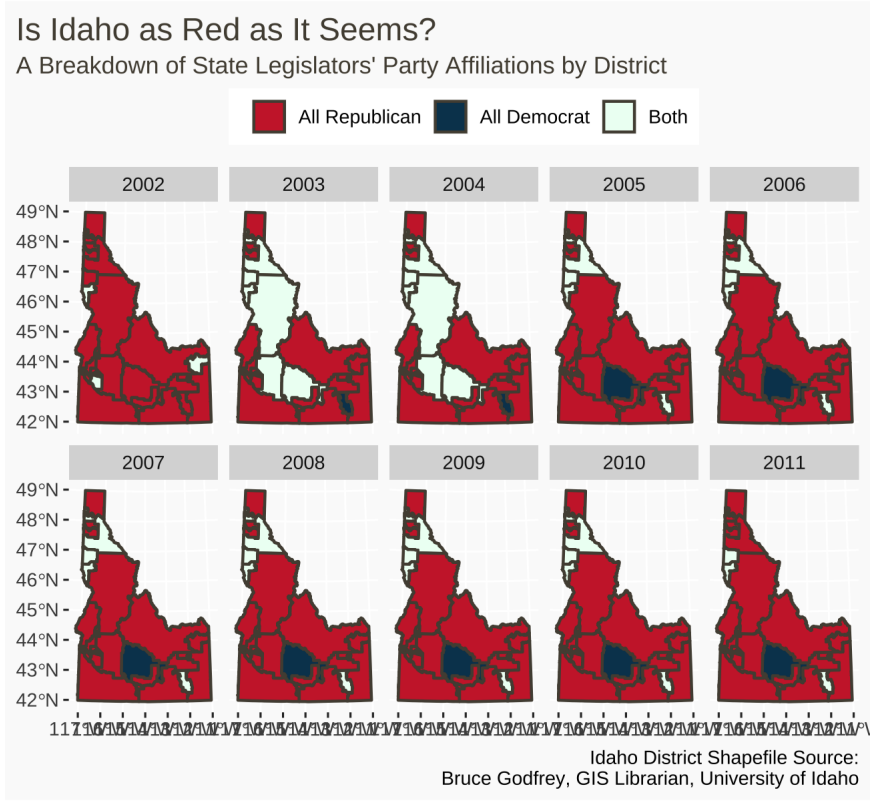
Designing the Map

```
idaho_map
```



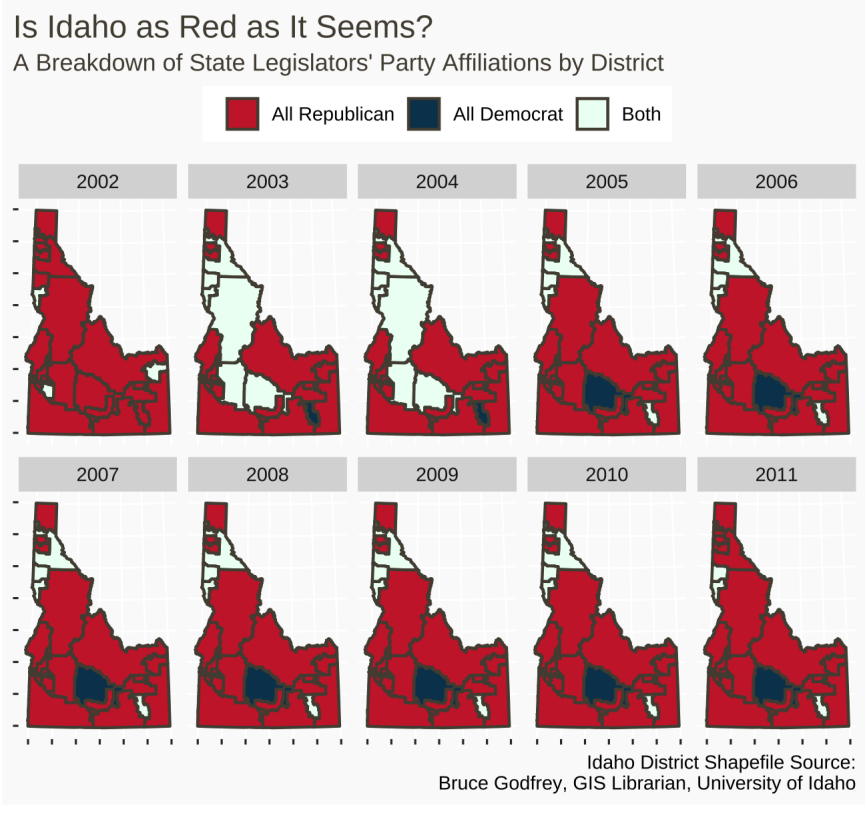
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank())
```



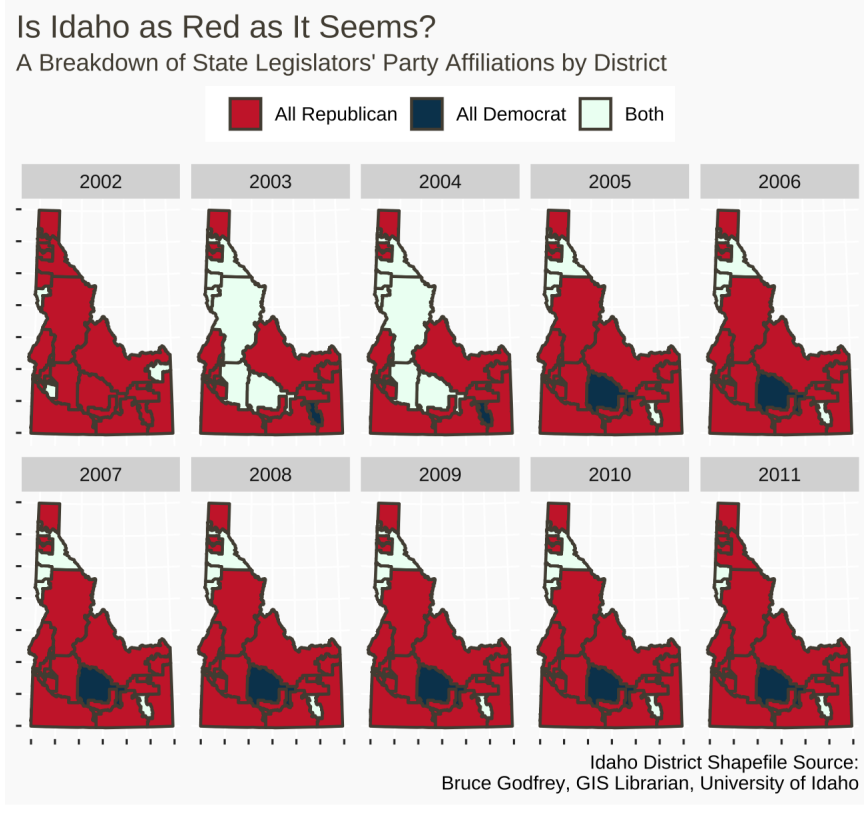
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank())
```



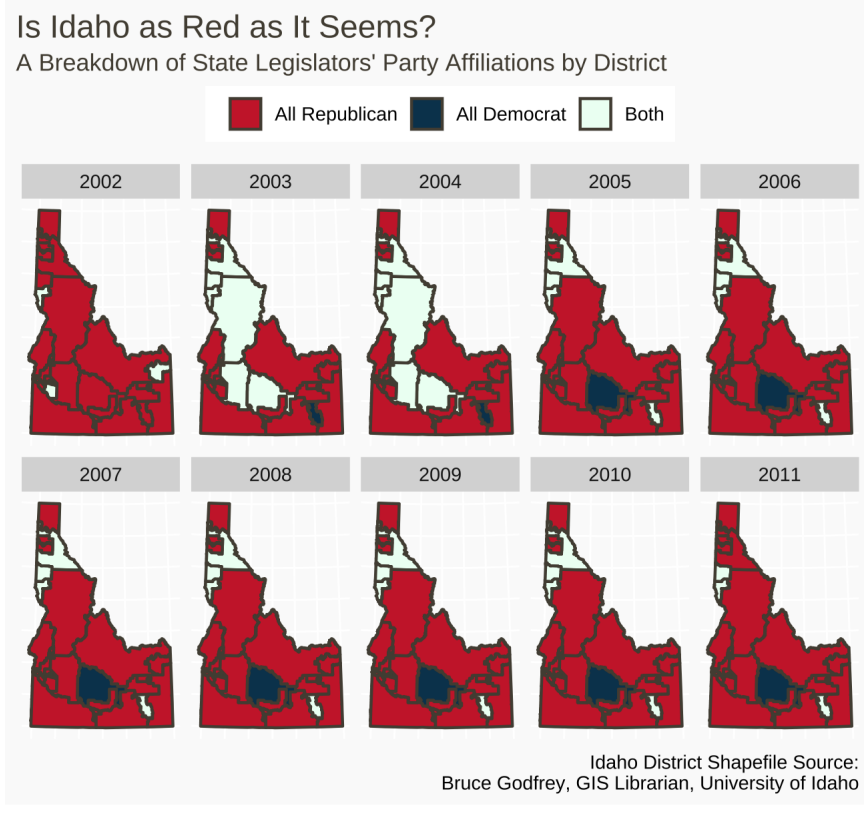
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank())
```



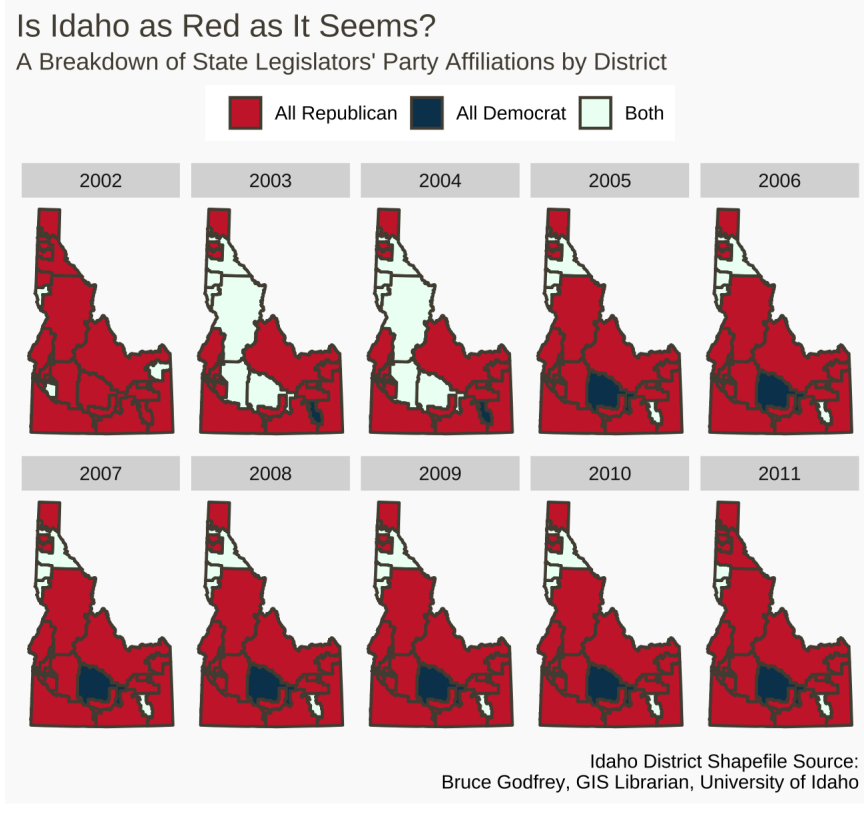
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank())
```



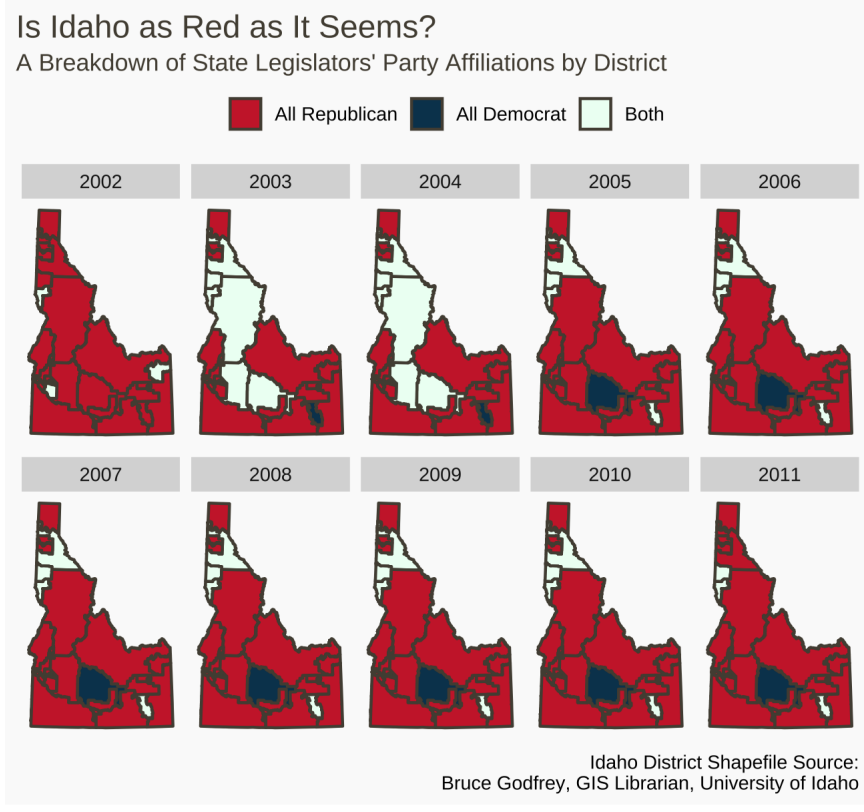
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank())
```



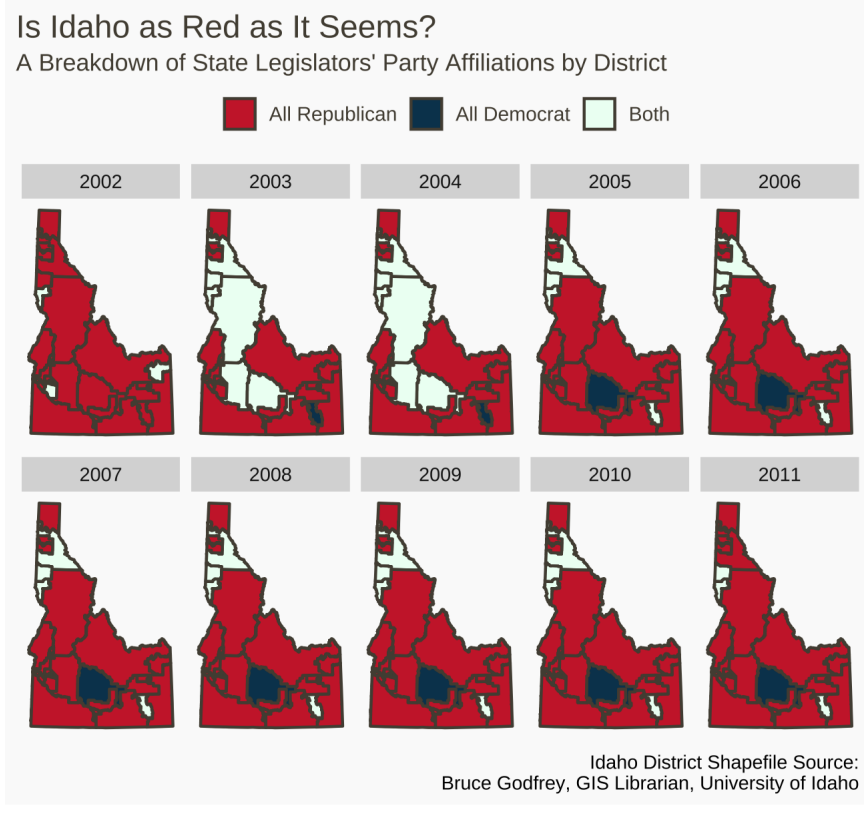
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa"))
```



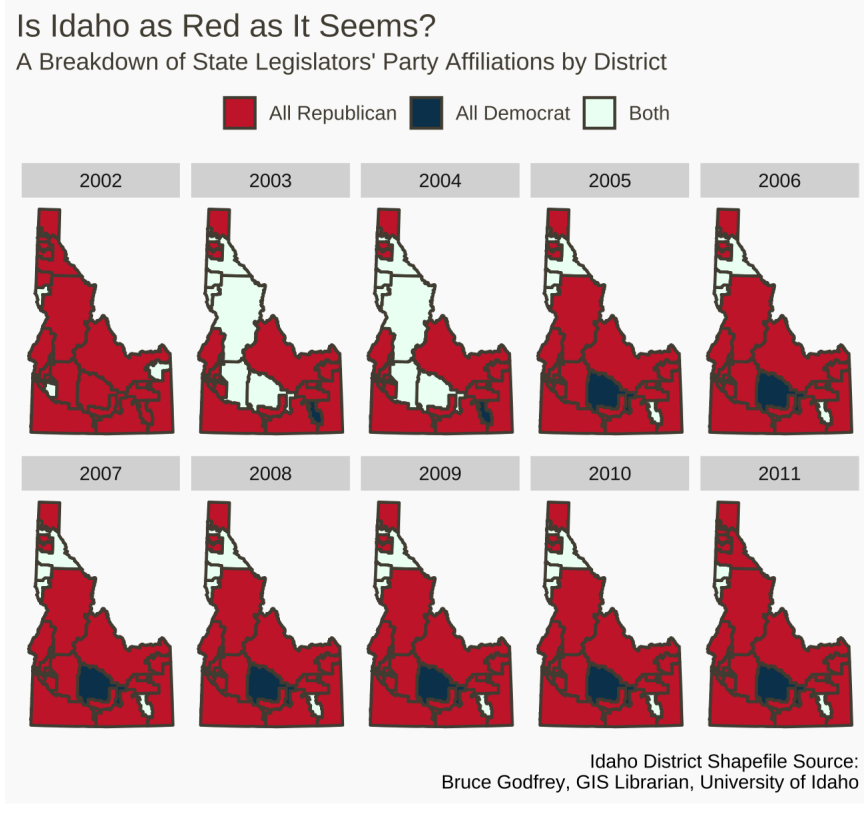
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10))
```



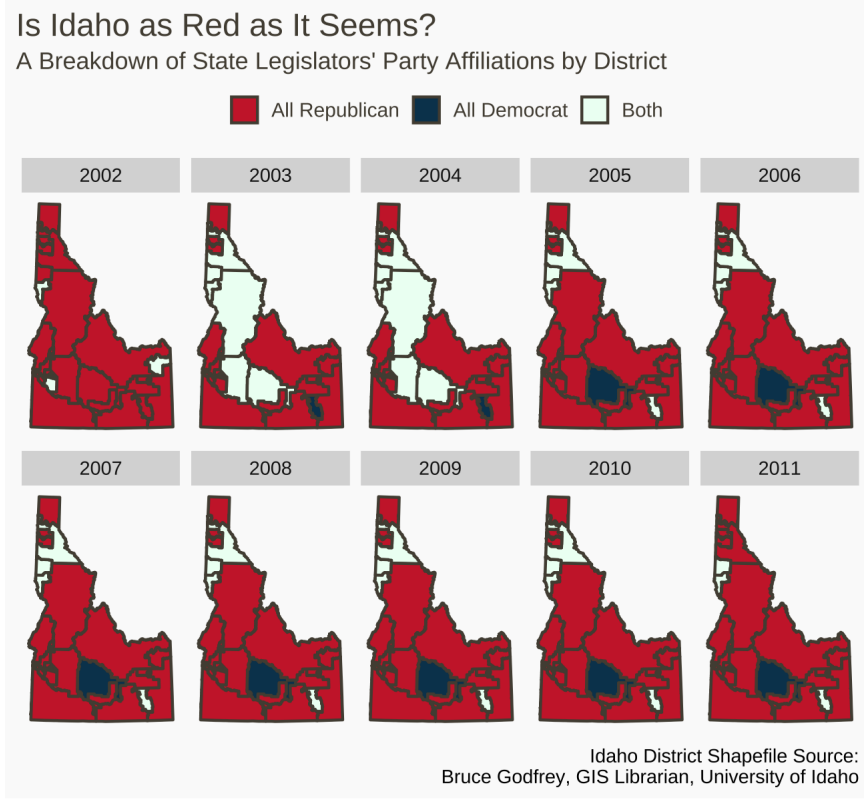
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10)
  theme(legend.key = element_rect(fill="#fafafa"))
```



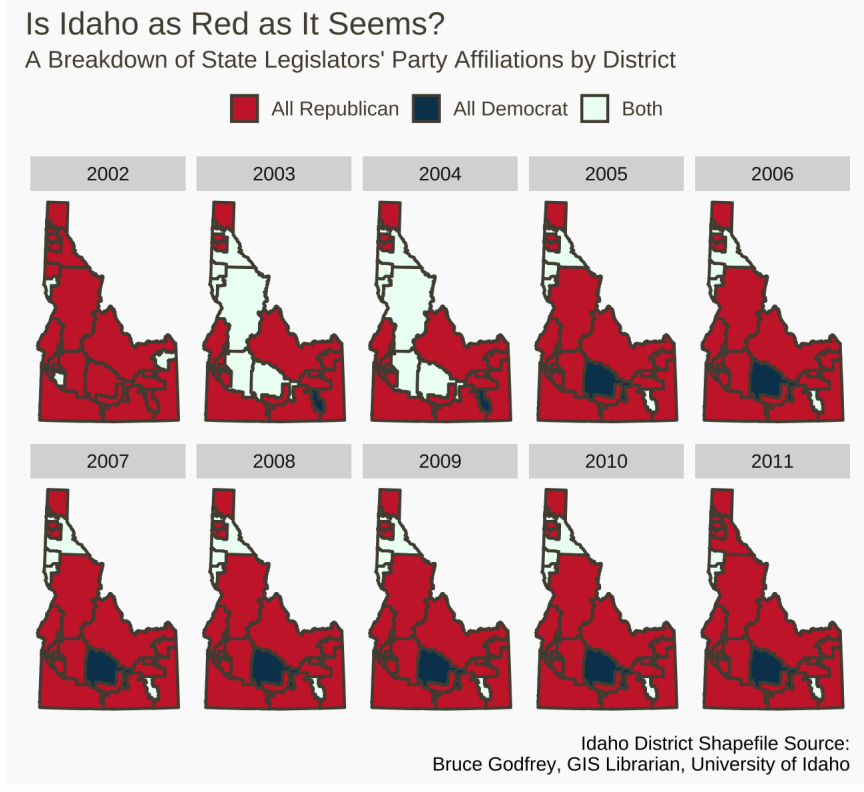
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10)
  theme(legend.key = element_rect(fill="#fafafa")) +
  theme(legend.key.size = unit(15, "points"))
```



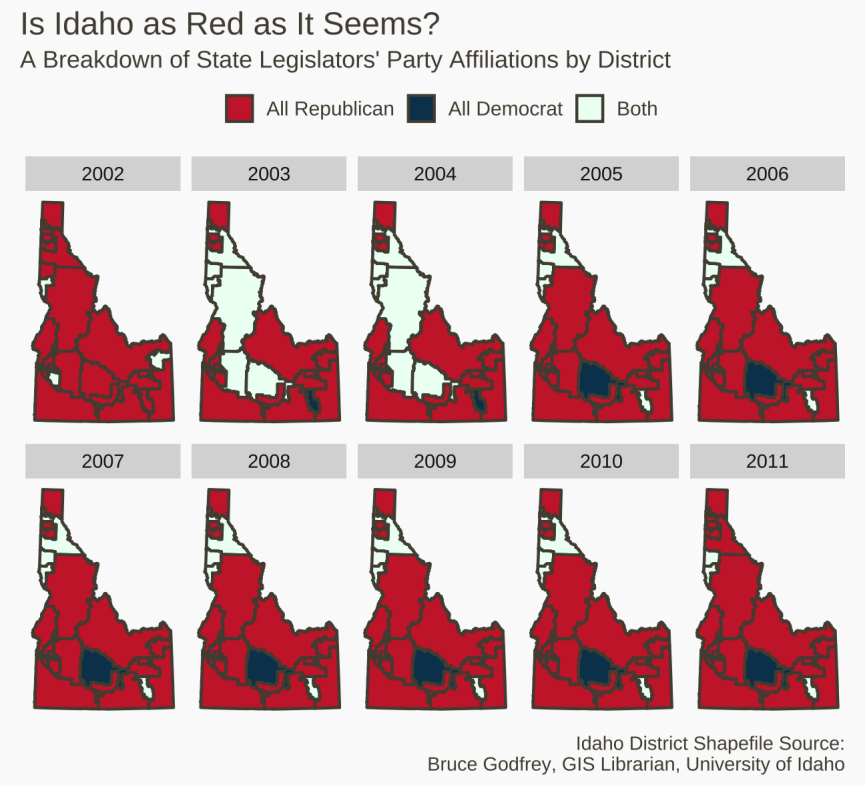
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10)) +
  theme(legend.key = element_rect(fill="#fafafa")) +
  theme(legend.key.size = unit(15, "points")) +
  theme(plot.margin = margin(t=5,r=10,b=5,l=10,unit="pt"))
```



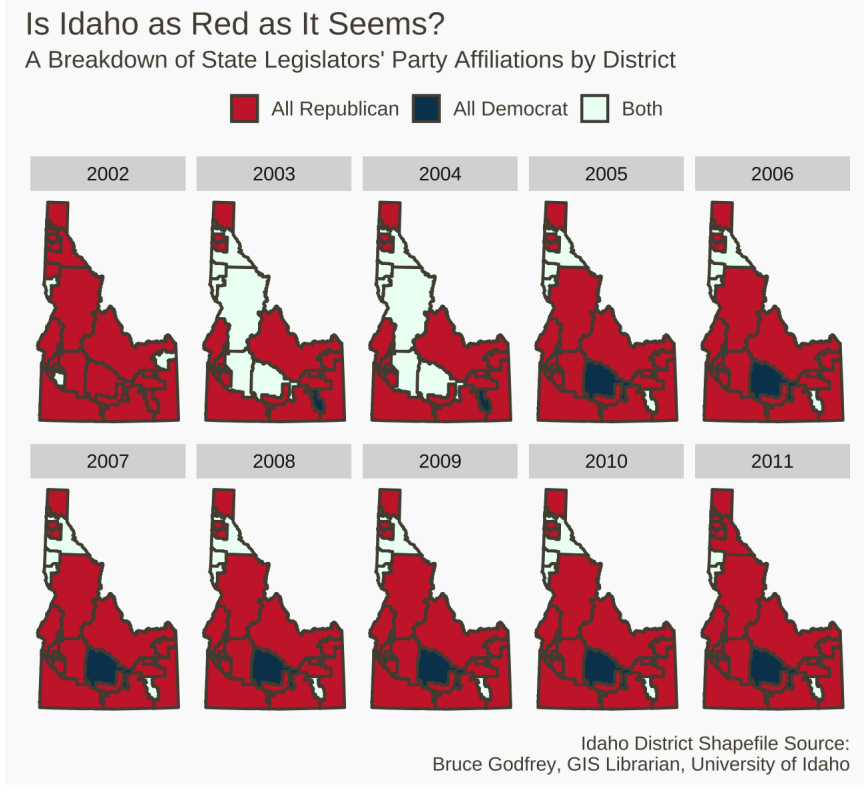
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10)) +
  theme(legend.key = element_rect(fill="#fafafa")) +
  theme(legend.key.size = unit(15, "points")) +
  theme(plot.margin = margin(t=5,r=10,b=5,l=10,unit="pt")) +
  theme(plot.caption = element_text(color="#534D41"))
```



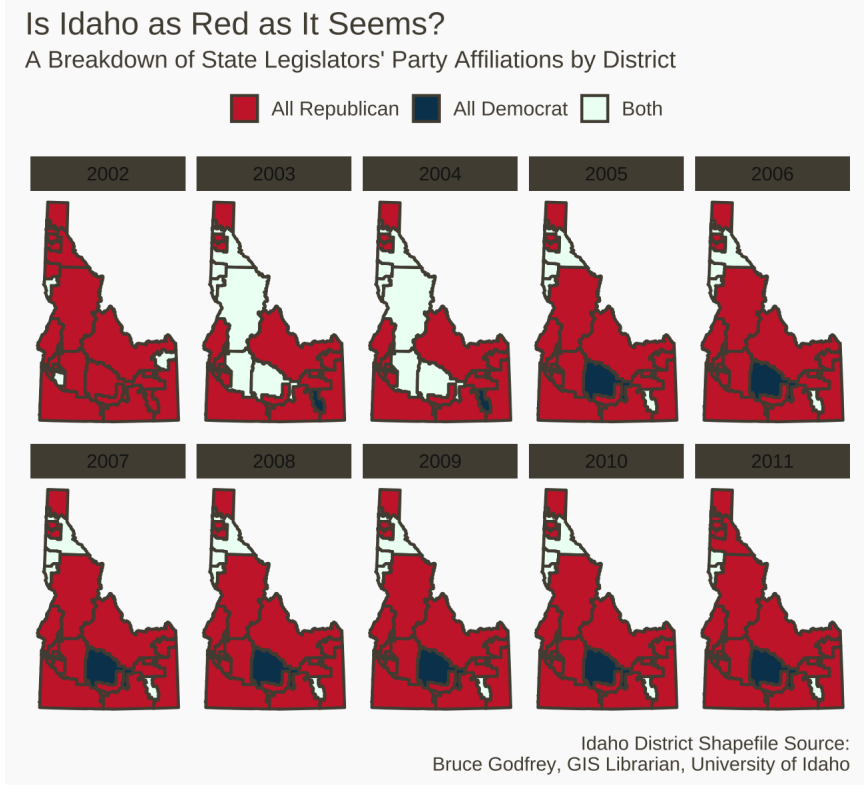
Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10)) +
  theme(legend.key = element_rect(fill="#fafafa")) +
  theme(legend.key.size = unit(15, "points")) +
  theme(plot.margin = margin(t=5,r=10,b=5,l=10,unit="pt")) +
  theme(plot.caption = element_text(color="#534D41")) +
  theme(plot.caption.position = "plot")
```



Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10)) +
  theme(legend.key = element_rect(fill="#fafafa")) +
  theme(legend.key.size = unit(15, "points")) +
  theme(plot.margin = margin(t=5,r=10,b=5,l=10,unit="pt")) +
  theme(plot.caption = element_text(color="#534D41")) +
  theme(plot.caption.position = "plot") +
  theme(strip.background =element_rect(fill="#534D41"))
```



Designing the Map

```
idaho_map +
  theme(axis.title=element_blank()) +
  theme(axis.text = element_blank()) +
  theme(axis.line=element_blank()) +
  theme(axis.ticks=element_blank()) +
  theme(panel.grid = element_blank()) +
  theme(legend.background = element_rect(fill="#fafafa")) +
  theme(legend.text = element_text(color="#534D41", size=10)) +
  theme(legend.key = element_rect(fill="#fafafa")) +
  theme(legend.key.size = unit(15, "points")) +
  theme(plot.margin = margin(t=5,r=10,b=5,l=10,unit="pt")) +
  theme(plot.caption = element_text(color="#534D41")) +
  theme(plot.caption.position = "plot") +
  theme(strip.background =element_rect(fill="#534D41")) +
  theme(strip.text = element_text(colour = '#edfff4'))
```