

GEOGRAPHIC BIAS IN THE NFL DRAFT, 1970-2009

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ABSTRACT

The popularity of the National Football League (NFL) and its product has increased steadily since the American Football League merged with the NFL in 1970. Today the NFL is one of the wealthiest professional sports leagues in the world (Plunkett Research, 2009), and its annual draft is the most watched professional sports league draft on the planet (Nielsen Company, 2009). For NFL franchises, the draft is a critical ingredient for success on the field. With millions of dollars at stake, teams painstakingly evaluate potential draft picks on a number of physical and mental factors, and while a team's draft success is often measured by the level of influence their selections have on the game, there remains an unexplored avenue of investigating a franchise's draft behavior – geographic bias. This research examines the role that proximity has played in the selection of college football players among the twenty franchises that have operated continuously in one city since 1970. A number of statistical methods, including T-mode factor analysis and correlation and regression analysis, are employed to answer a number of questions, including which teams tend to draft out of their own "backyard" more frequently.

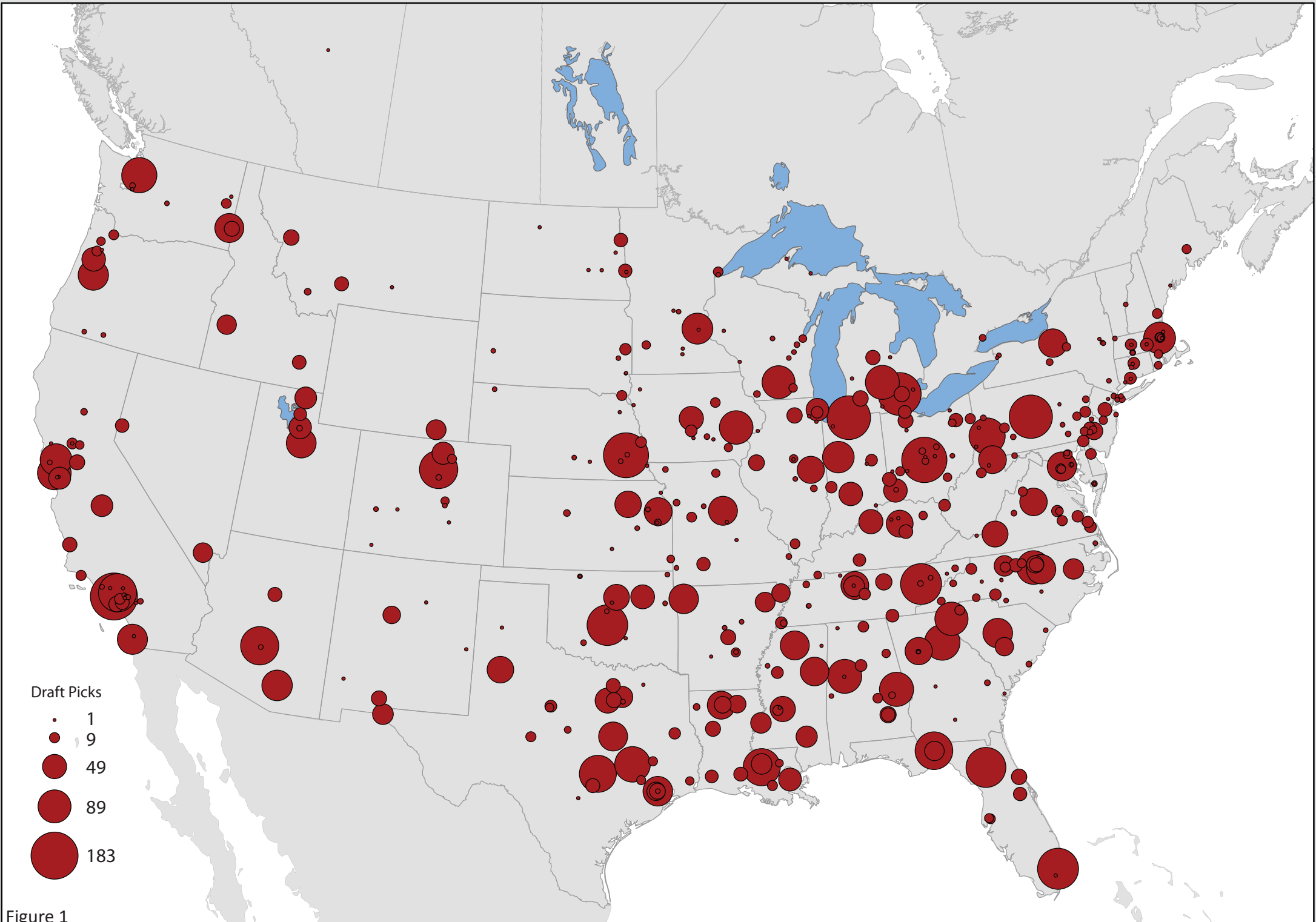
LITERATURE REVIEW, DATA, & METHODOLOGY

While geographers have written about the origins of college football recruits (Ferrett and Ojala 1992; McConnell 1983 and 1984; Rooney 1969 and 1970; Yetman and Etzen 1973), and geographical bias in college football rankings (Shelley and McConnell 1993), published examinations of the NFL Draft from a spatial perspective remain unaccounted for. Studies about the NFL Draft have been published by sociologists, economists, and historians who have revealed racial bias in televised coverage of Historically Black Colleges and Universities (Braddock 1978), evaluations of players by NFL staff (Dufur and Feinberg 2009; Hendricks et al. 2003), and media descriptions of African American quarterbacks (Bigler and Jeffries 2008).

To begin this project, lists of NFL teams and all NCAA Division I college teams were compiled. NFL Draft data from 1970 (the first draft after the NFL-AFL merger) to 2009 were collected from the NFL webpage and organized in a Microsoft Excel™ spreadsheet by team, year, and draft round. To preserve continuity in our data set, teams migrating or joining the NFL after 1970 were omitted from this study. Next, Google Earth™ was utilized to locate the latitude and longitude coordinates of each NFL and college team's stadium. These data were also compiled in an Excel™ spreadsheet so that they could be imported as a shapefile in ESRI ArcGIS™.

To determine the distances from colleges to the NFL franchise locations, their respective coordinates were imported as shapefiles in ArcGIS™ and the Proximity Toolset's Near Tool was run. The resulting table, which listed the distance from each NFL team to each college location, was exported to Excel™ and the distances were manually transcribed into the NFL Draft spreadsheet. Distances to non-Division I colleges with draft selections (typically smaller schools like Chadron State College in Nebraska) that were not included in the original compilation were measured on Google Earth™ and added. With the dataset complete, analysis commenced.

FREQUENCY OF DRAFT PICKS BY SCHOOL



Top 25 player producing schools, 1970-2009		
Rank	College	Picks
1	University of Southern California	183
2	The Ohio State University	169
3	University of Nebraska, Lincoln	167
4	University of Notre Dame	158
5	Pennsylvania State University	156
6	University of Michigan	152
7	University of Miami (Florida)	139
8	University of Tennessee, Knoxville	138
9	University of Oklahoma	137
10	University of Florida	133
11	University of California, Los Angeles	122
12	University of Colorado, Boulder	122
13	Arizona State University	121
14	Florida State University	118
15	Louisiana State University	116
16	University of Texas at Austin	114
17	University of Pittsburgh	109
18	University of Georgia	106
19	Texas A&M University, College Station	106
20	University of Washington	103
21	Auburn University	98
22	University of Alabama, Tuscaloosa	96
23	Michigan State University	95
24	University of Iowa	93
25	Stanford University	93
26	University of North Carolina, Chapel Hill	93

Top 25 player producing schools by decade		
1970s		
Rank	College	Picks
1	University of Southern California	65
2	University of Michigan	59
3	University of Nebraska, Lincoln	58
4	Pennsylvania State University	55
5	The Ohio State University	55
6	University of Notre Dame	53
7	University of Colorado, Boulder	47
8	University of Oklahoma	46
9	University of Florida	41
10	University of California, Los Angeles	40
11	Arizona State University	40
12	University of Arkansas, Fayetteville	38
13	Georgia State University	37
14	University of Tennessee	34
15	University of Minnesota, Twin Cities	34
16	Stanford University	34
17	San Diego State University	33
18	University of Kansas	33
19	Purdue University	32
20	University of Tennessee, Knoxville	30
21	Texas A&M University, College Station	29
22	University of Houston	29
23	Michigan State University	27
24	University of Georgia	27
25	Boston College	27
26	University of Iowa	27
27	University of Missouri, Columbia	27
28	University of Pittsburgh	26

2000s		
Rank	College	Picks
1	The Ohio State University	45
2	University of Miami (Florida)	39
3	University of Southern California	37
4	Louisiana State University	34
5	Florida State University	33
6	University of Florida	33
7	University of Tennessee, Knoxville	32
8	University of Nebraska, Lincoln	26
9	University of Texas at Austin	26
10	University of Oklahoma	26
11	University of Missouri, Columbia	26
12	Virginia Polytechnic Institute & State University	24
13	Pennsylvania State University	23
14	Purdue University	23
15	University of Michigan	23
16	Michigan State University	21
17	University of Oregon	21
18	Auburn University	20
19	University of California, Berkeley	19
20	University of South Carolina, Columbia	19
21	University of Alabama, Tuscaloosa	18
22	University of Kentucky, Louisville	18
23	University of Iowa	18
24	University of North Carolina, Chapel Hill	18
25	University of Pittsburgh	18

NFL AND COLLEGE STADIUM LOCATIONS USED IN THIS STUDY

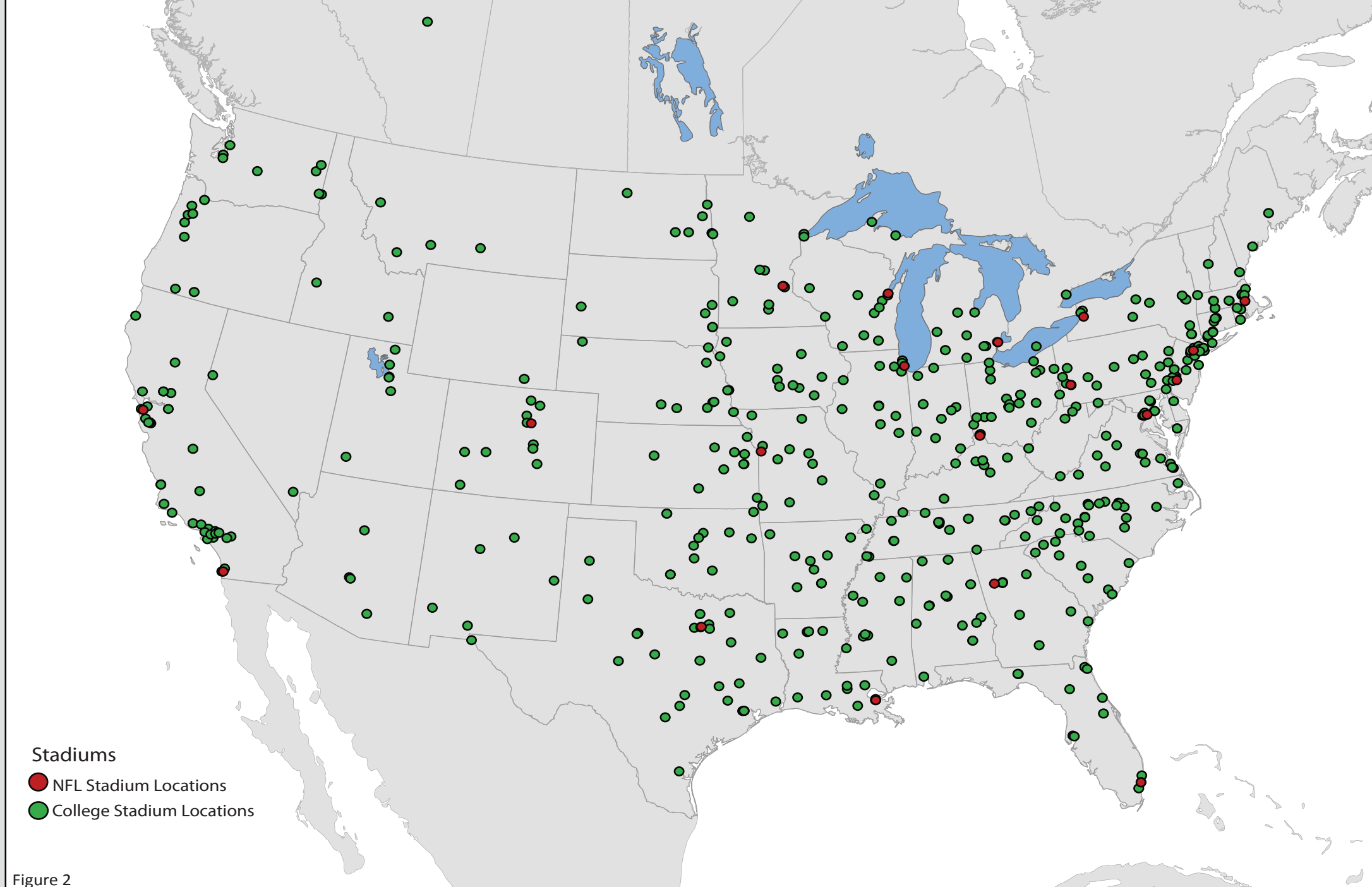


Figure 2 depicts the locations of the NFL franchises used in this study and the colleges from which players were drafted between 1970 and 2009. The NFL teams are represented by the red points, while the colleges are represented by the green points. The points were all collected using Google Earth™ as degrees, minutes, and seconds, converted to decimal degrees in Microsoft Excel™, and imported into ArcGIS™ as XY shapefiles. Once in ArcGIS™, the projection was redefined as WGS_1984 (as this is what Google Earth™ works with) to a USA Contiguous Equalidistant Conic. This process placed the points in the same projection as the country and state shapefiles and ensured that the distances between the NFL franchises and colleges were calculated correctly.

The density of universities sending players to the NFL on this map resembles the general population density of the United States. While the majority of schools are located east of 98° longitude, a concentration exists along the West Coast. Most NFL franchises have a number of universities located within 200 miles, but as Figure 4 depicts, a high frequency of schools near a franchise does not necessarily mean that it drafts locally.

DEVIATION FROM THE AVERAGE DRAFT PICK DISTANCE, 1970 -2009

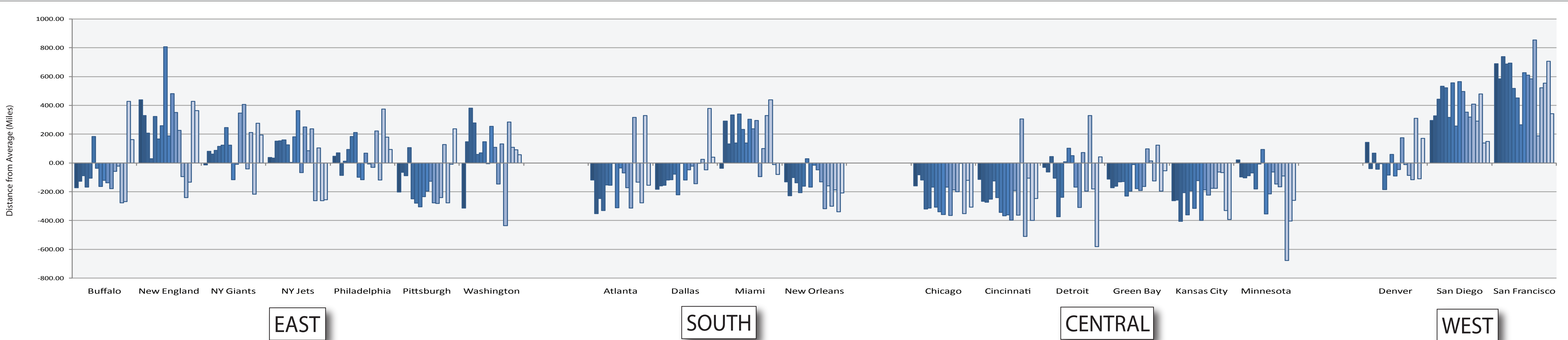


Figure 4

Our motivation for examining geographic bias in the NFL Draft began with the casual observation that many teams tend to draft locally in later rounds. To determine the degree to which franchises draft within their "backyards," the deviation from the average draft pick distance was calculated for each team's draft round between 1970-2009 (Figure 4). To produce this graph, the average draft selection distance for all twenty teams was calculated by adding the distances of all 8,910 drafters' schools to their respective NFL franchise. The average distance is 995 miles. Next, the average draft pick distance was calculated by round for each franchise. The overall average distance was then subtracted from the team's draft round average to determine its deviation. These data were then graphed.

The above graph is organized into regions, and teams within each region are listed in alphabetical order. A bar graph has been produced for each franchise, and each team has seven bars (one bar for every round of the draft). Each bar represents the deviation of the average distance of all draft picks in that round from the twenty team average. Average round distances that are less than the twenty team average are represented by bars that descend from the x-axis (labeled 0.00) on the graph. Conversely, average round distances higher than the twenty team average ascend from the x-axis. Teams whose average draft distances decrease from earlier rounds into later rounds exhibit a tendency to draft out of their "backyards."

Figures 10-13 show the final results of the average draft distance per team shown for all drafts and designated draft eras between 1970-2009. It is the same information shown in Figure 4, but incorporating a graph with a trend line can illustrate how these teams, on average, drafted in terms of location away from them. Figures 10 and 11 provide strong examples of geographical bias. As indicated by Figure 2, a majority of the colleges in the United States are located in the East to Northeastern Region of the United States. Therefore a fair assumption would be NFL teams closer to this region would be more likely to choose more players from Eastern and Northeastern schools. When comparing two teams, the Cincinnati Bengals (Figure 10), found closer to the Northeast and the New Orleans Saints (Figure 11) found in the southern United States, the opposite holds true. It shows that in fact the New Orleans Saints have tended to draft in their own "backyard" more so than the Cincinnati Bengals.

CASE STUDY: GREEN BAY PACKERS

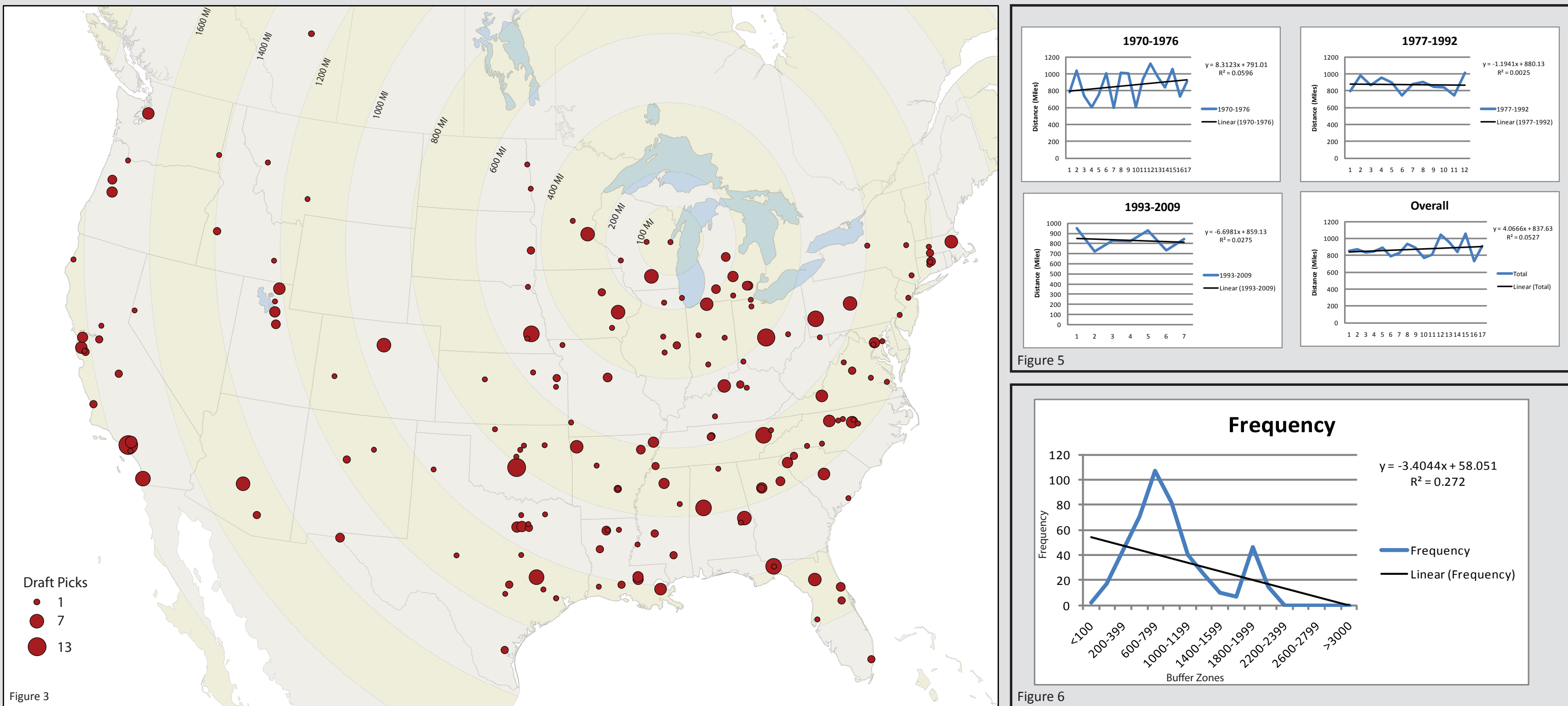


Figure 3 is a proportional symbol map that shows the number of draft picks that Green Bay has had from each school from 1970 to 2009. This map is overlaid with a multi-ring buffer map. This process is done using a point, in this case Green Bay's stadium location: by setting the desired number of buffers by the desired distances, the process makes rings around the stadium. Once the process is completed, the transparency is set at a value around 55% and then overlaid and clipped to the shape of the country shapefile. This map shows the frequency and the distance away from the stadium location that Green Bay has dispersed their draft picks from 1970 to 2009. Figure 6 is a graphic representation of the number of draft picks that Green has taken from within each of the buffer zones illustrated in Figure 3. Located in the Northern part of the United States limits Green Bay's "backyard" draft options, but a majority of the draft picks fall within 600-800 Miles buffer from Green Bay. Figure 5 is the average draft distance per round by draft era. The draft era of 1993-2009 is the only era that shows a slight tendency by Green Bay to draft closer to home. Yet, comparing all years the Green Bay Organization does not draft from their own "backyard" in later rounds.

CASE STUDY: MINNESOTA VIKINGS

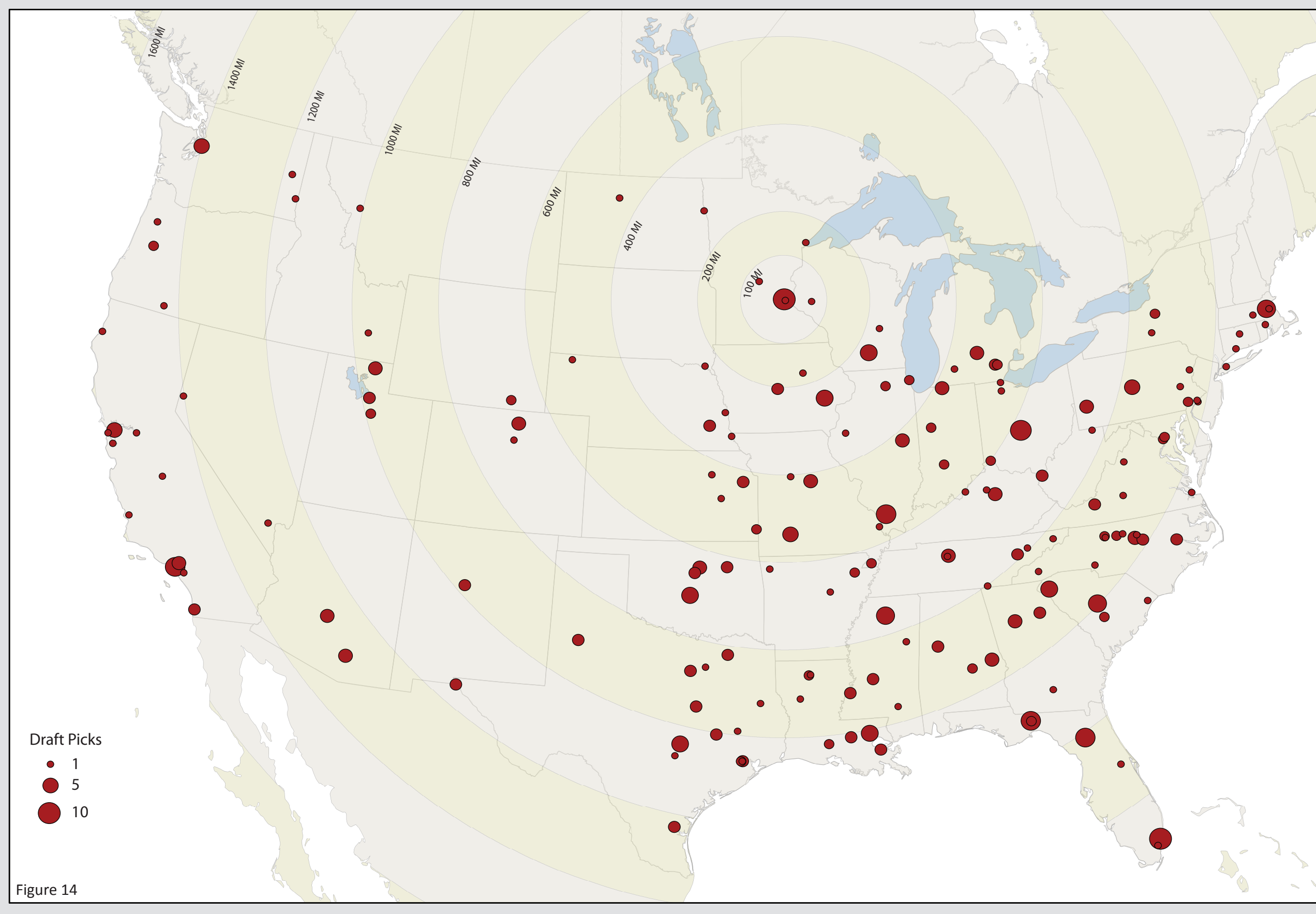
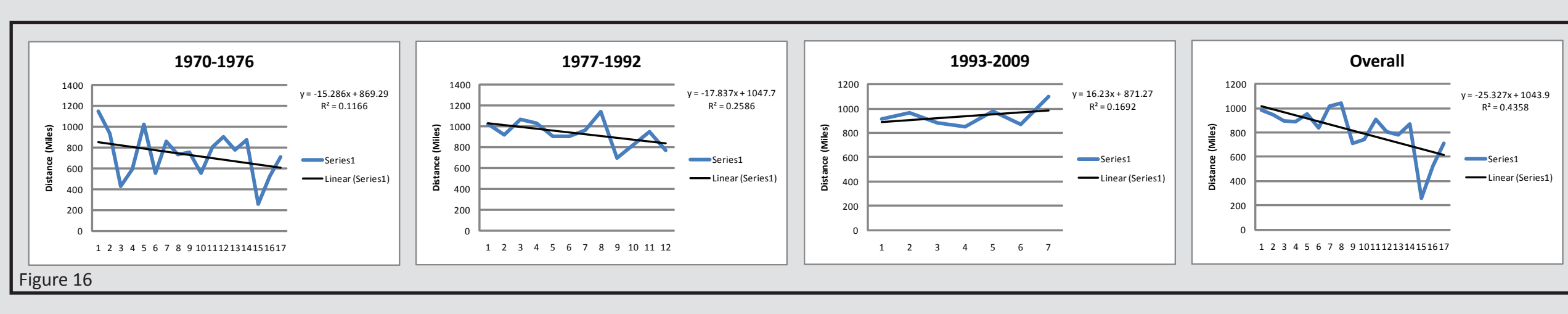
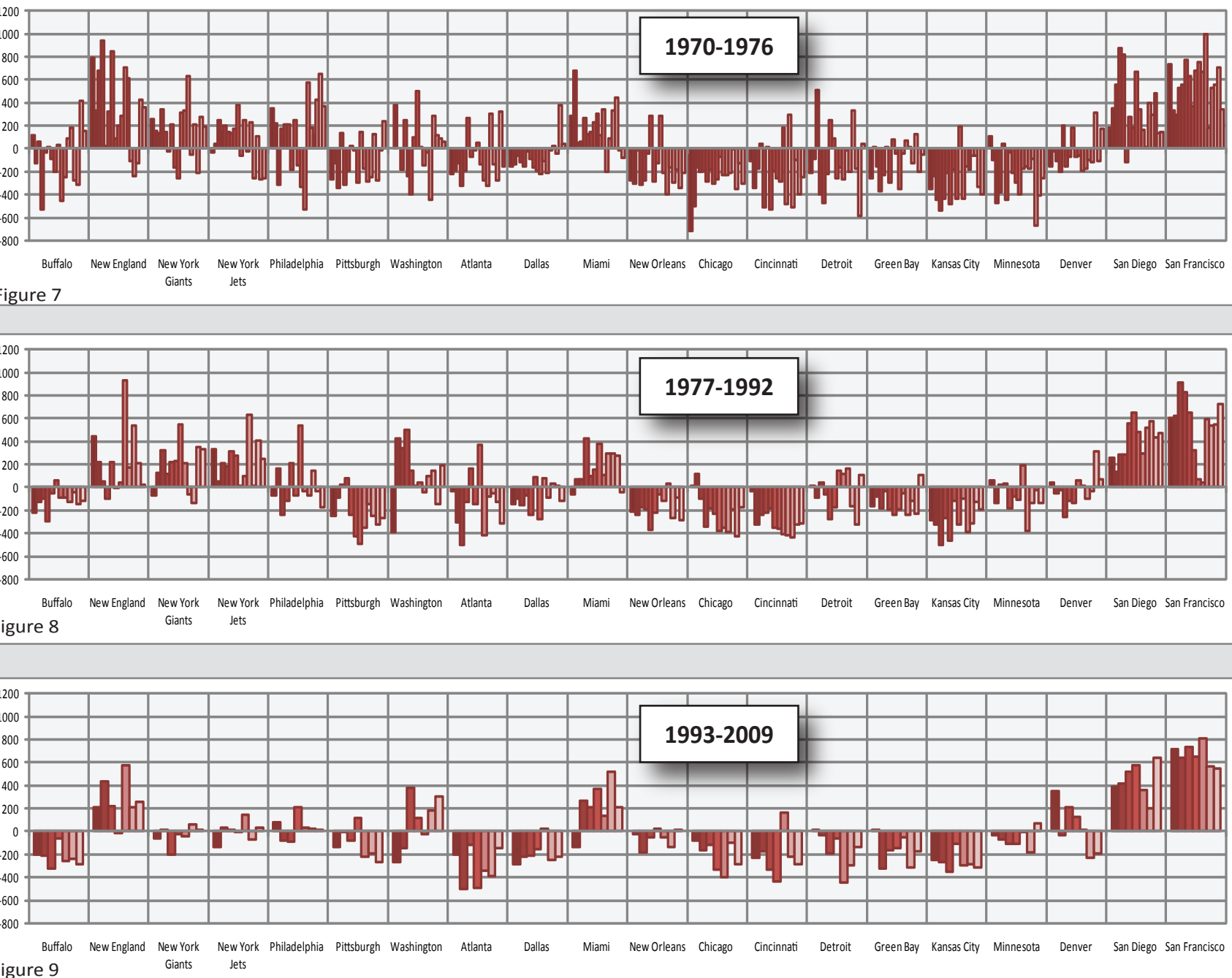


Figure 14 is a proportional symbol map that shows the number of draft picks that Minnesota has had from each school from 1970-2009. This map is overlaid with a multi-ring buffer map. This process is done using a point, Minnesota's stadium location for this case; by setting the desired number of buffers by the desired distances, the process makes rings around the stadium outward. Once the process is completed, the transparency is set at a value around 55% and then overlaid and clipped to the shape of the country shapefile. This map shows the frequency and the distance away from the stadium location that Minnesota has dispersed their draft picks from 1970 to 2009.

Figure 15 depicts Figure 14 in graphic form. The chart demonstrates the number of draft picks taken by Minnesota from within each buffer zone. Much like Green Bay, Minnesota is geographically isolated due to its Northern location, leaving "backyard" picks limited. Also, much like Green Bay, a majority of Minnesota's picks fall within 600-800 Miles.



DEVIATION FROM THE AVERAGE DRAFT PICK DISTANCE BY DRAFT ERA



To determine if the number of rounds in the draft influenced the proximity of the players teams drafted, the draft data were broken down into three eras (1970-1976, 1977-1992, 1993-2009) based on this variable. Between 1970 and 1976 the NFL Draft consisted of 17 rounds. In 1977 the draft was shortened to 12 rounds, and this practice continued until 1992. The 1993 draft included 8 rounds. In 1994, the draft was shortened again to 7 rounds, and this has remained consistent since. In our study, 1993 draft data were grouped with 1994 data to avoid an era of one year.

Figures 7, 8, and 9 breakdown the deviation from the overall average draft selection distance by draft era. Examining these graphs reveal some interesting decisions made by team executives. For instance, while New Orleans exhibits a high degree of "backyard" picks when compared to other franchises, the average distance of their picks has decreased since 1970. This trend is, in fact, noticeable for most franchises. Future research will investigate the influence of media on this pattern.

Comparing the New York Giants and New York Jets reveals similarities and differences. While the average draft pick distance has decreased for both franchises since 1970, it is clear that the Jets tended to draft closer to home than the Giants in the late rounds of drafts between 1970 and 1976.

CONCLUSIONS

Our research suggests that many NFL franchises do indeed draft from their own "backyards." Teams that draft from their own "backyards" include Buffalo, the New York Jets, Pittsburgh, New Orleans, Chicago, Cincinnati, and Minnesota. Teams like Washington, San Diego and San Francisco have a slight tendency to draft from their own backyards, but it is not as great as the few mentioned teams. A number of franchises – most noticeably the New York Giants, Philadelphia, Atlanta, Dallas, Detroit, and Kansas City – exhibit the inclination to draft locally in the early rounds of the draft and "dial long distance" in later rounds.

Comparing the two New York franchises highlights the role that managerial decisions play in the selection of players. These teams share the same stadium and the distance to all universities is the same. Their average draft pick distance is also similar; the Giants' average is 1,110 miles, the Jets' average is 1,094 miles. Despite these parallels, these teams exhibit different drafting tendencies. Whereas the Jets have a tendency to draft out of their own "backyard" (Figure 13), the New York Giants do not (Figure 12).

Super Bowl XLIV Champion New Orleans stands out as a franchise with a tendency to draft close to home (Figure 11). Despite its location on a coast and having a comparatively limited number of colleges within 200 miles, team executives have decided to draft closer to home than most franchises over the past 39 years. The average draft pick distance for New Orleans is 841 miles, well below the 995 mile twenty team average.

As Figure 4 shows, a majority of the twenty teams examined do in fact have a tendency to draft in their own "backyard" as the draft goes moves into later rounds. This suggests that geographic bias in the NFL Draft does exist.

FUTURE RESEARCH

There are many avenues that exist for future research. For example, it would be interesting to see a study done with the colleges and the number of picks per decade and the effect that school winning percentages have on the number of players picked from that university. Another interesting research would be to see if there are any patterns in NFL team draft habits over time and if relationships exist between the people running or managing the NFL franchise and the school that they are drafting from. On a more GIS-based research opportunity, it would be interesting to conduct a "what if" example of if the NFL were to expand by, say, five teams. Using the NFL data, the college data, city population data and other demographic data, select locations in the United States that meet a distinct set of stipulations and see which cities would be chosen.

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