

Proximity as a Driver for Local Seafood Consumption

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Introduction

Sustainable seafood can be largely defined as seafood from sources whose production can be maintained or increased without jeopardizing the overall structure and function of affected ecosystems (Seafood 2017). There are many factors that can determine whether a source can maintain or increase production, one of which is how local the source is in relation to the demand. In the United States, Farm to School programs, which are programs where students are served, educated on, and engaged with the production of local food, is one source of demand for local seafood. I hypothesize that all the Farm to School programs that serve local seafood will be within a 50-mile radius of major US ports with the largest number of commercial fishery landings.

Methods

I obtained my data from two datasets, one supplied by the USDA Food and Nutrition Service (USDA 2015), and one from the NOAA Fisheries Statistics Division (NOAA 2015). The USDA dataset details all US public school districts, private schools, and charter schools that completed the 2015 USDA Farm to School Census and said that they serve local seafood. The NOAA dataset details the commercial fishery landings for major U.S. ports for the year 2015. I used these two datasets to find the names of the schools and ports so I could find the locations for each school and port in decimal degrees using gps-coordinates.net. I imported the excel tables of the schools and ports with latitude and longitude locations into ArcGIS. The data was imported from the tables into ArcGIS as x, y points and connected to a shapefile. I projected the data to North America Equidistant Conic datum. I made a separate ArcGIS file with the same data as the previous one, but with only the Maine schools and ports imported as x, y points and connected to a shapefile. I projected this data to WGS_1984_UTM_Zone_19N. Around the ports for both files, I created a 50-mile buffer zone.

Results

Out of the total 214 schools with farm to school programs (F2S programs) that serve local fish, only 52.3% (112 programs) were within the 50-mile commercial port buffers (Figure 1). 47.7% (102 programs) were outside the 50-mile commercial port buffers (Figure 1). The states of Maine and Alaska had the highest numbers of F2S programs and commercial ports. Within Maine, out of the 28 total F2S programs, 85.7% (24 programs) are find inside the buffer, and 14.3% (4 programs) are outside. Within Alaska, out of the total 27 schools, 44.5% (12 programs) are inside the buffer, and 55.5% (15 programs) are outside the buffer.

The most common definition of local seafood for the F2S programs is “within state”, with 37.4% (80 programs) of the total 214 F2S programs (Figure 1). The least common definition is within the “same county/city”, with 3.3% (7 programs) of the total 214 F2S programs (Figure 1). The definition of local “within state” is also the most common definition of local inside and outside the 50-mile buffer, with 18.2% (39 programs) and 19.1% (41 programs) respectively (Figure 1). 100% of the F2S program that defined local as “same county/city” are found within the buffer, but only 41.5% (22 programs) of the total 53 F2S programs that define local as “within 50 miles” are actually found inside the 50-mile buffer.

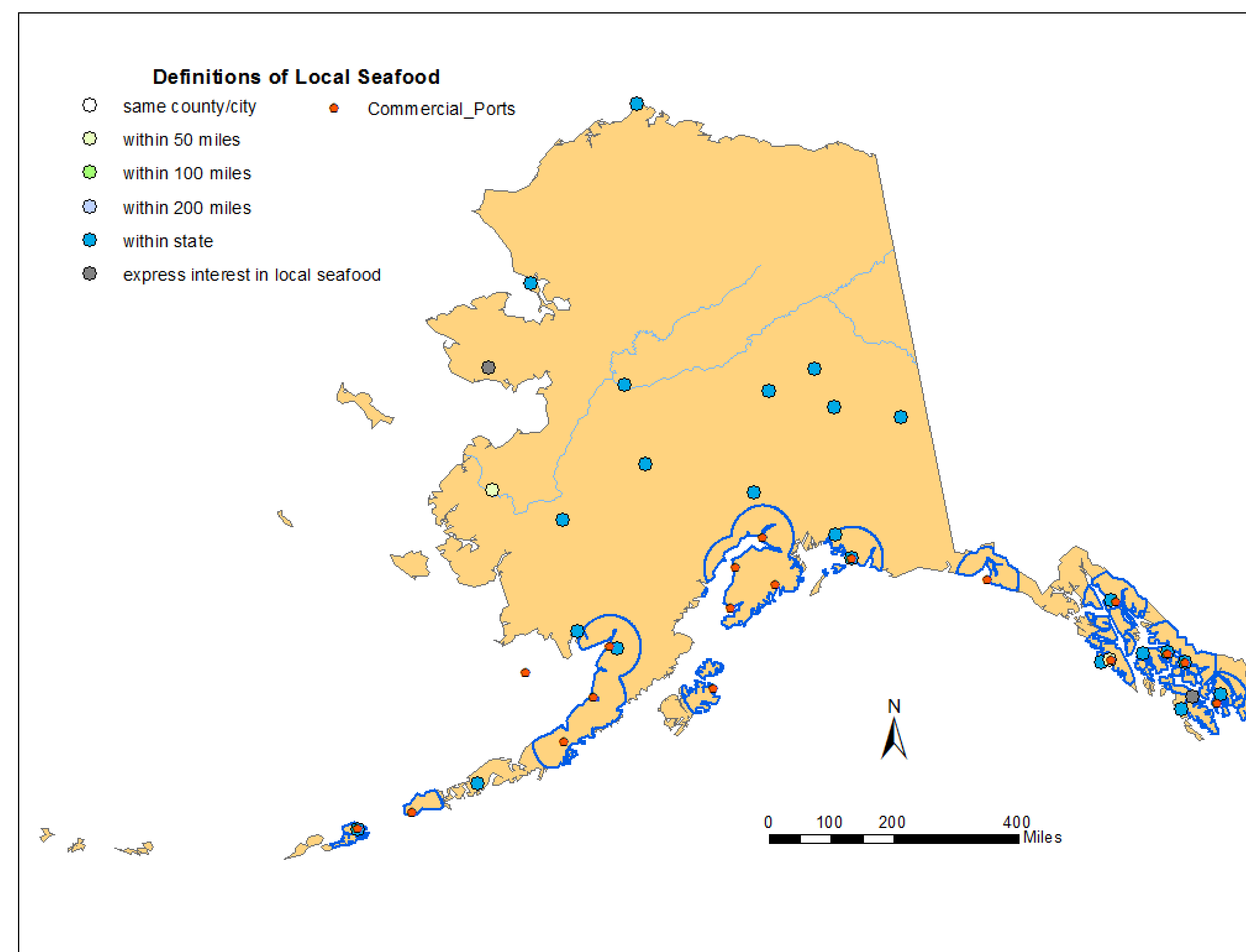


Figure 3: Farm to school programs in Alaska color coded based on their definitions of local seafood. All commercial ports (red) are surrounded by a 50-mile buffer.

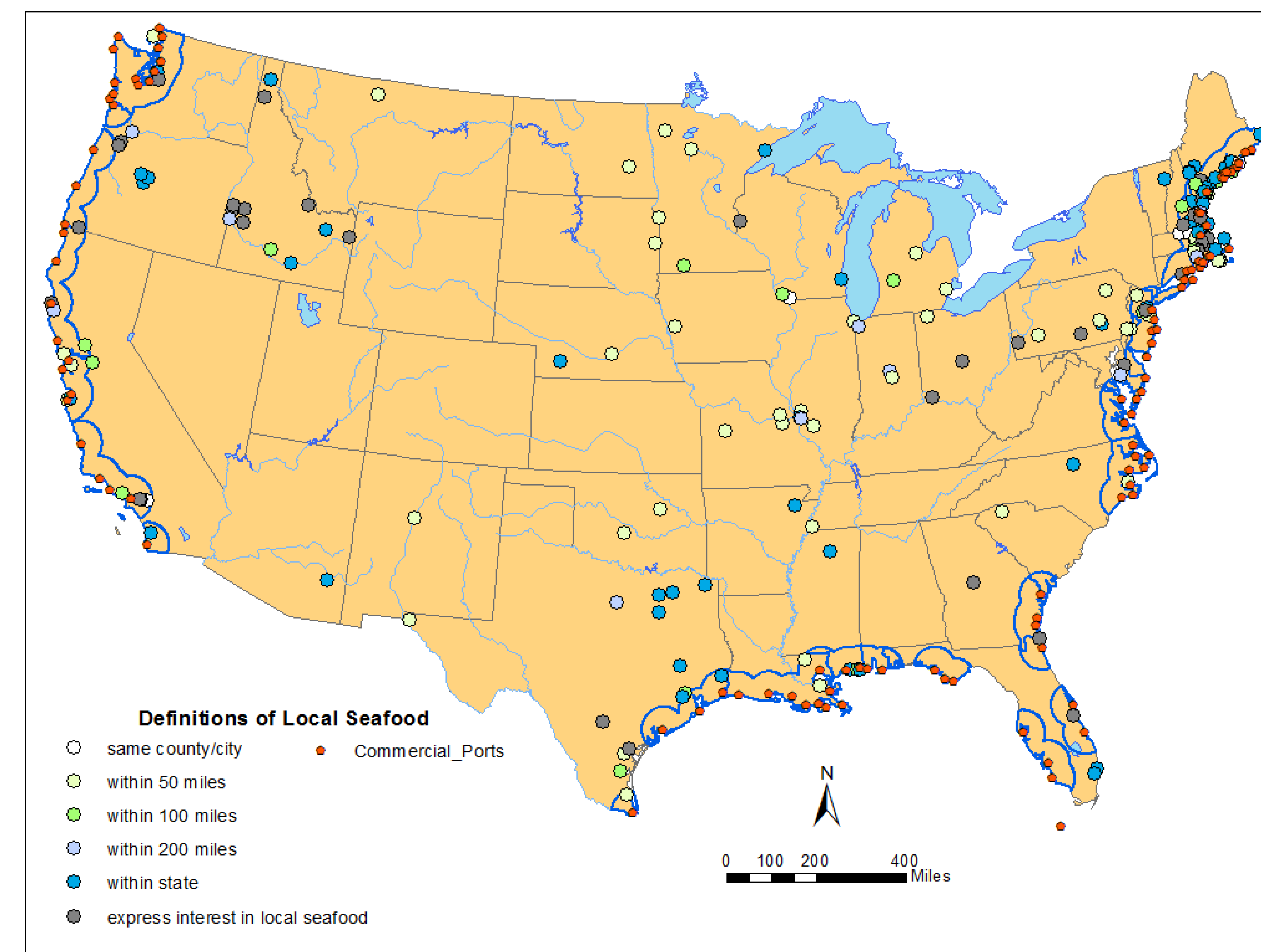


Figure 1: United States farm to school program locations color coded based on their definitions of local seafood. All commercial ports (red) are surrounded by a 50-mile buffer.

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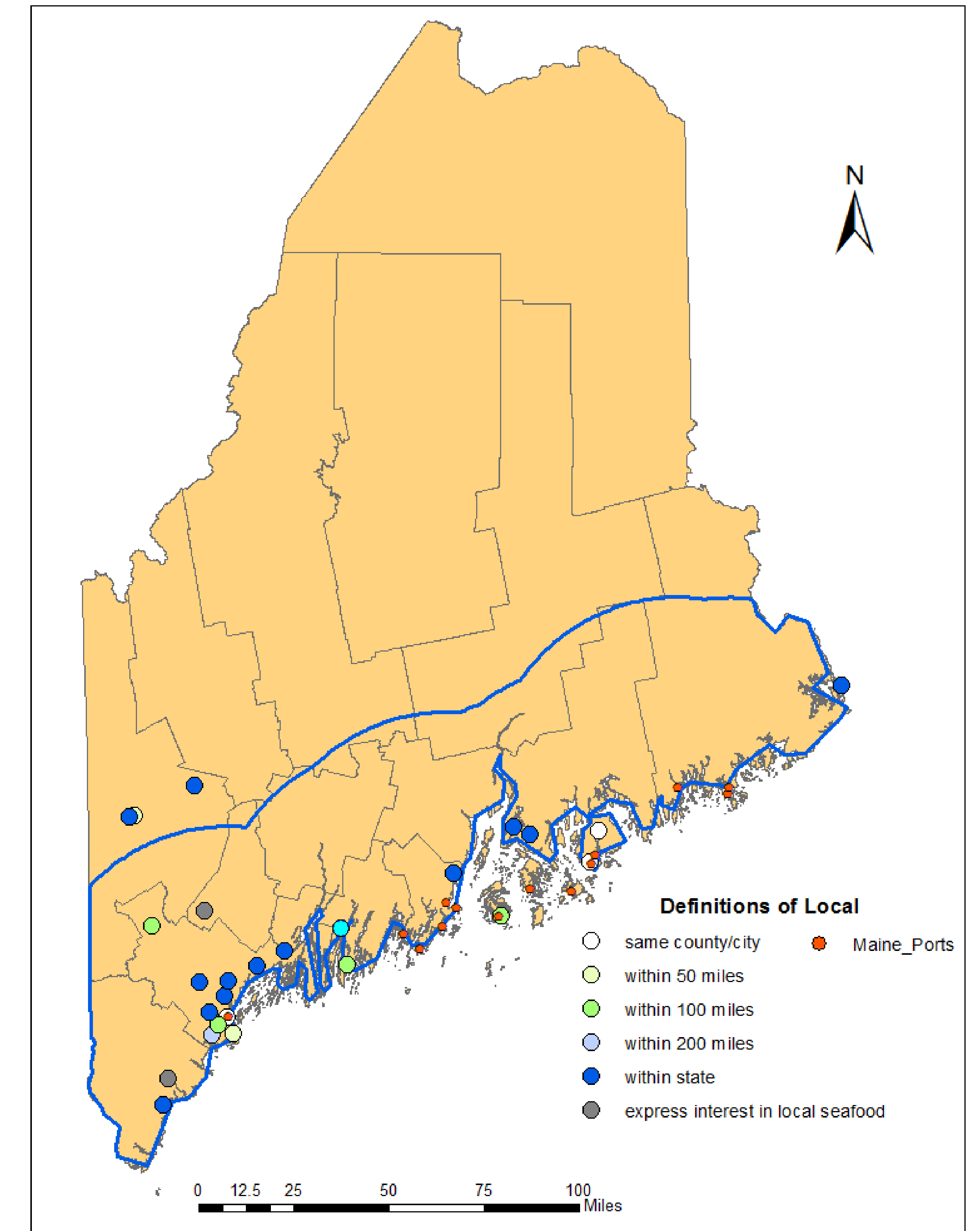


Figure 2: Farm to school programs in Maine color coded based on their definitions of local seafood. All commercial ports (red) are surrounded by a 50-mile buffer.

Discussion

Only 52.3% of the total 214 F2S programs are actually found within 50-miles of major US commercial ports, which rejects my hypothesis. Out of the 102 F2S programs found outside of the buffer, only 30.4%, i.e. the 31 schools that define local as “within 50 miles”, do not define local as distances 100 miles or greater. It seems then that proximity to commercial ports is not the defining factor for the distance at which a F2S program will consider seafood to be local, though 100% of all F2S programs that define local as “same county/city” are found close to large US commercial ports, so it may still be a factor all the same.

This result may be due to other elements influencing how a F2S program defines what local seafood is, such as the locations they are getting the seafood or proximity to aquaculture facilities. Further research should be done as these elements and other ones that may be influencing how F2S programs define local seafood.

References

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