

## November-January 2026 Northern Michigan Search Interest Forecast

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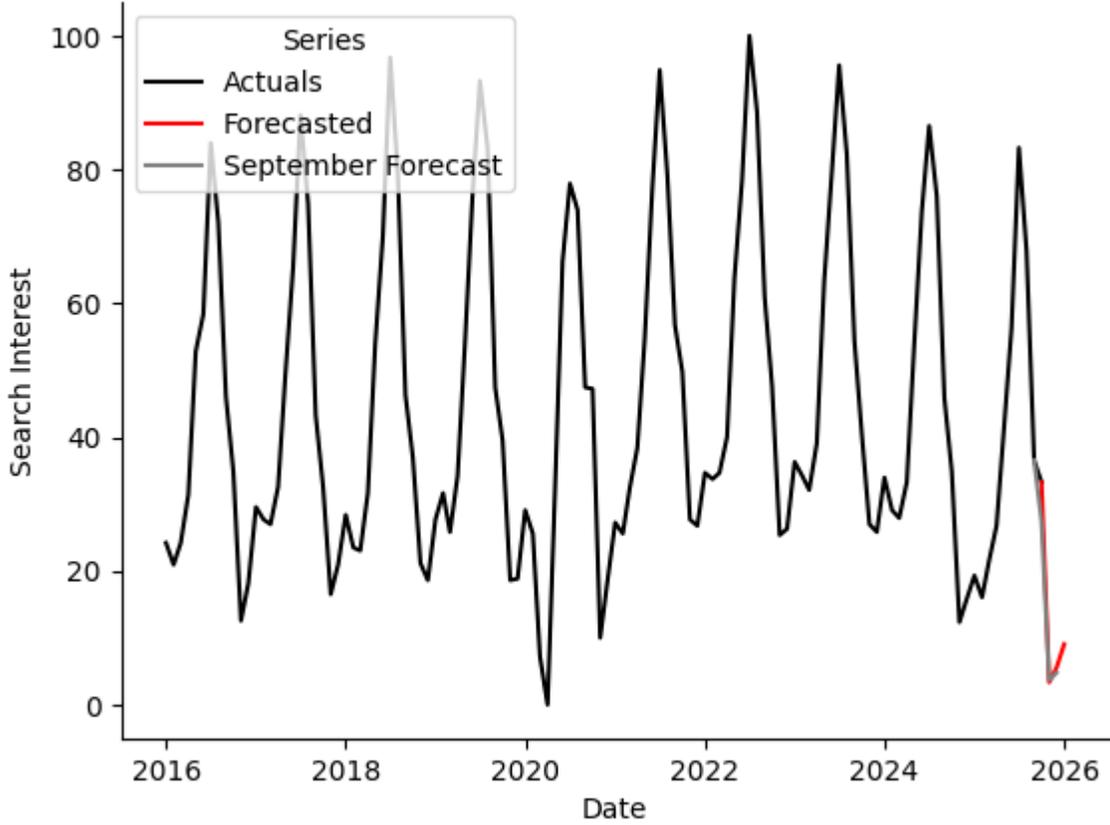
Below are my search interest forecasts for the combined Northern Lower and combined Upper Peninsula places for November, December, and January into 2025. Note that the possible range for historical search interest is normalized to a maximum of 100 and a minimum of 0, but forecasts outside this range are permissible as these values are forecasted to be outside the historical range.

For October, actuals were similar to forecasted for the Lower Peninsula and higher for the Upper Peninsula. It seems that as we head into the second half of 2025, we exceed the downward trend from the last few years more and more often. My 2025 forecast will continue to account for this average trend over the past 12 months and how the downward trend changes and eventually stabilizes or reverses itself.

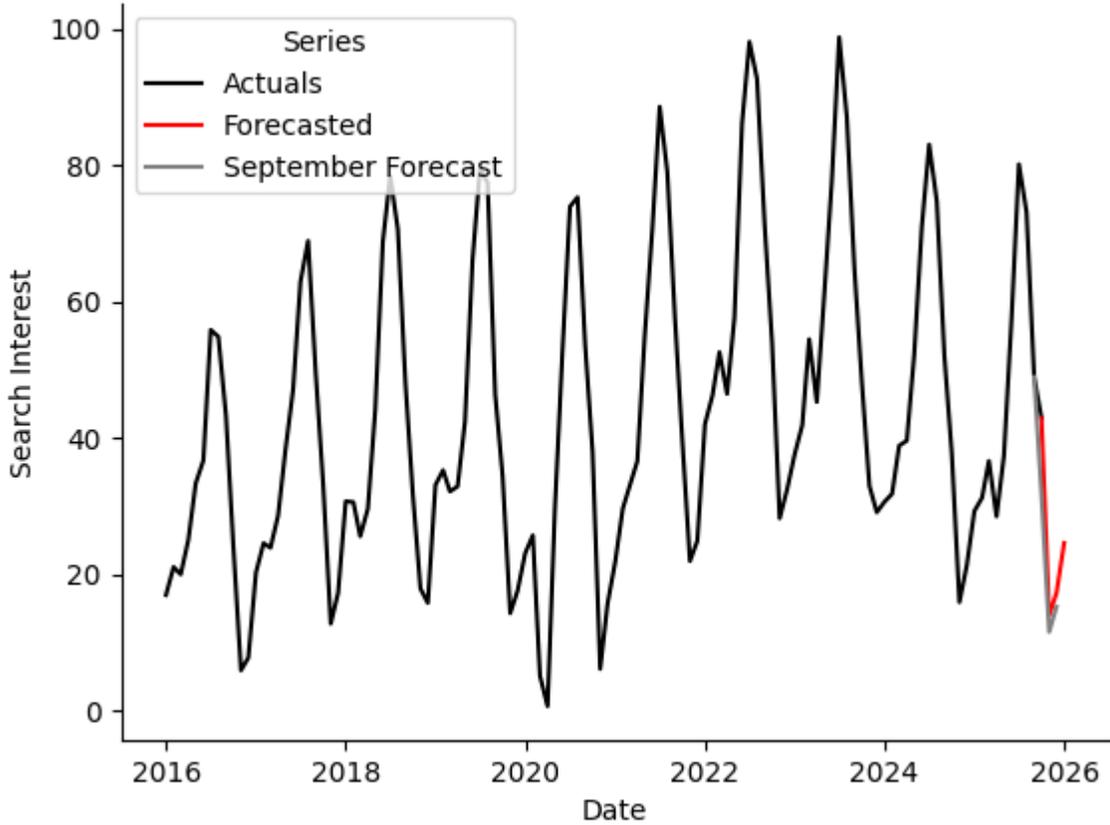
The charts below provide the current forecast and last month's forecast compared to actuals. Forecasts are similar to last month, but a little higher.

Also provided are barcharts comparing the average search interest for the forecast months (November, December, January) to the same months in previous years. For both peninsulas, the average is above 2024/5. This partially reflects that, on average, reduction in the downward trend in search interest from the past few years. It also reflects current weather forecasts for this winter that include normal temperatures and above average precipitation. Or, in other words, another winter of healthy snowfall and plenty of opportunities for winter sports such as snowmobiling, skiing, and ice fishing.

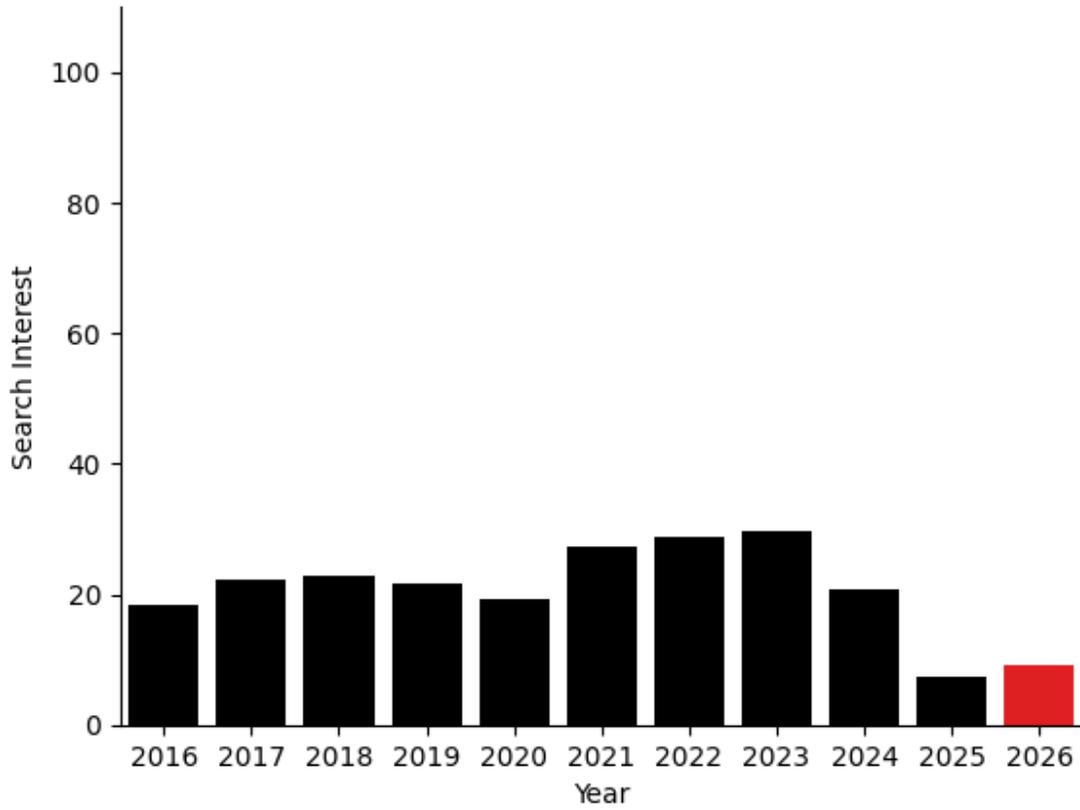
Northern Lower Places Google Search Interest Forecast



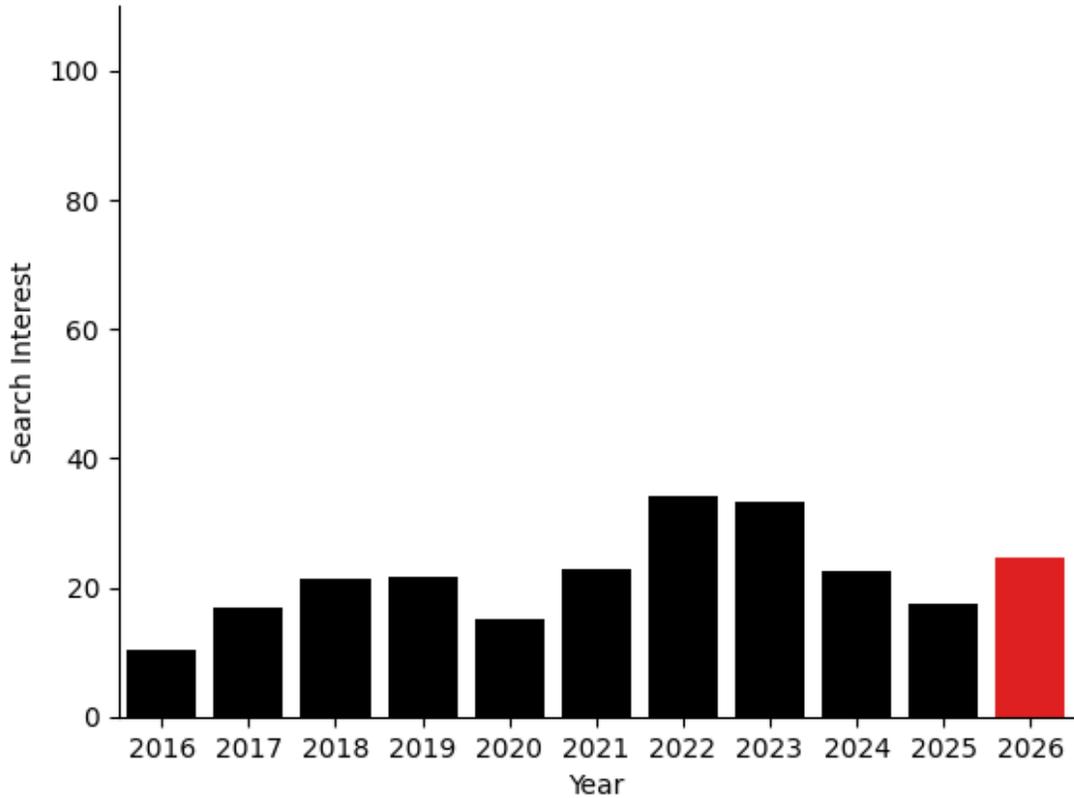
Upper Pensinsula Places Google Search Interest Forecast



Northern Lower Search Interest Averaged for November, December, and January



Upper Peninsula Search Interest Averaged for November, December, and January



The following table shows the top five places that are forecasted to have the highest search interest compared to the same time period in 2024. It's probable that searches for Greenland have been less related to the place in Michigan but rather recent popular press surrounding the territory of Greenland. Also, Free Soil likely references free soil for gardening or construction purposes. (I'm planning on removing places like Greenland, Free Soil, and Wolverine during my yearly model improvement early next year.)

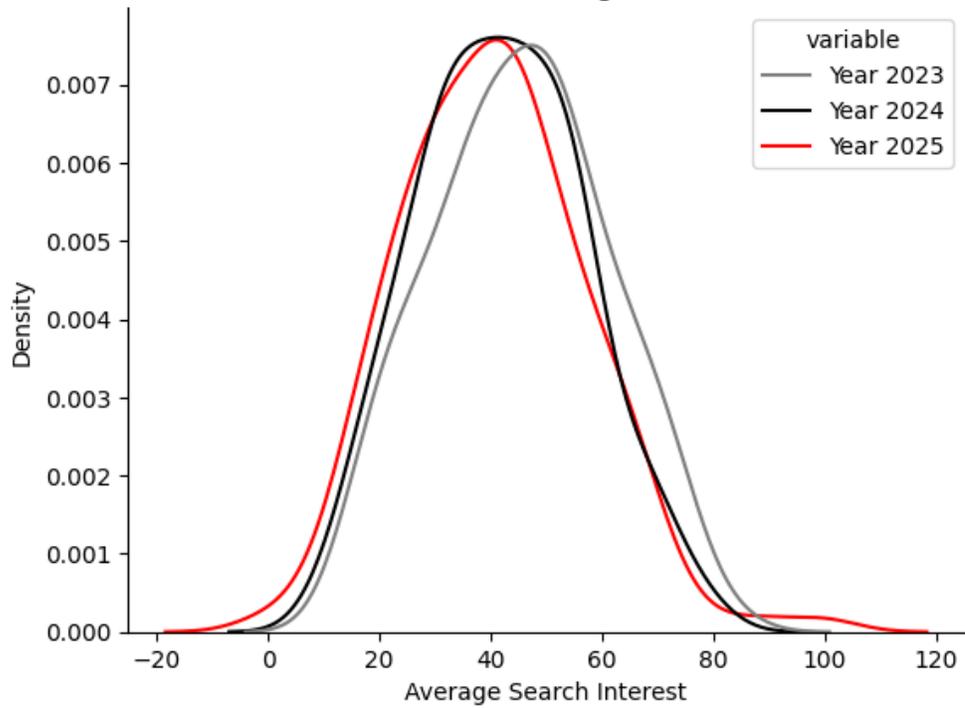
	Place	Peninsula	Difference
0	Rapid River	Upper	22.5
1	Greenland	Upper	19.0
2	Free Soil	Lower	15.3
3	South Range	Upper	11.1
4	Elberta	Lower	10.4

Three things impact the value of the search interest forecasts for each place.

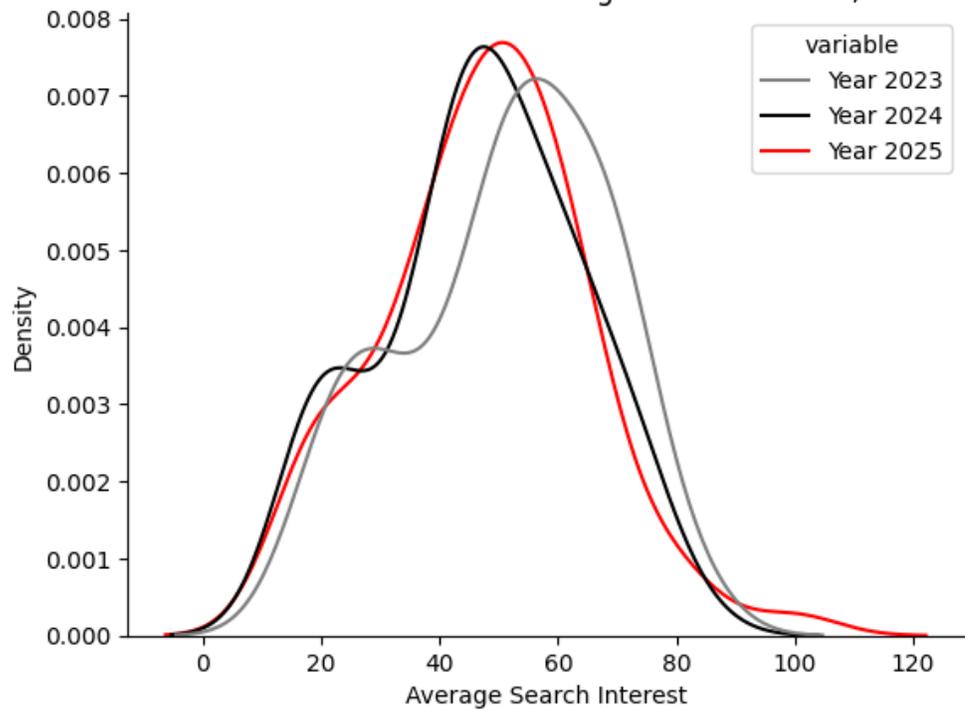
1. The previous year's monthly value for each individual place.
2. While not directly impacting the model forecast, seasonal (12 mo) differencing accounts for the fact that search interest is higher in some portions of the year than others (so previous year actual is impacted).
3. Model difference: based on forecasted weather and gas price changes, the model will predict 12 mo changes from the previous year for each individual place. These levels are adjusted for the previous 12 month trend. Then these new levels are aggregated via regression to the peninsula level series.

The two KDE plots below plot the distributions of the individual place actual values for the months of November, December, and January for the previous three years. Note that the values for 2024/5 serve as the last actual values for 2025/6. For both peninsulas, the last actuals for 2025 are lower than 2023 but fairly similar to 2024. I believe this shows the impact the downward trend in search interest since 2023/2024.

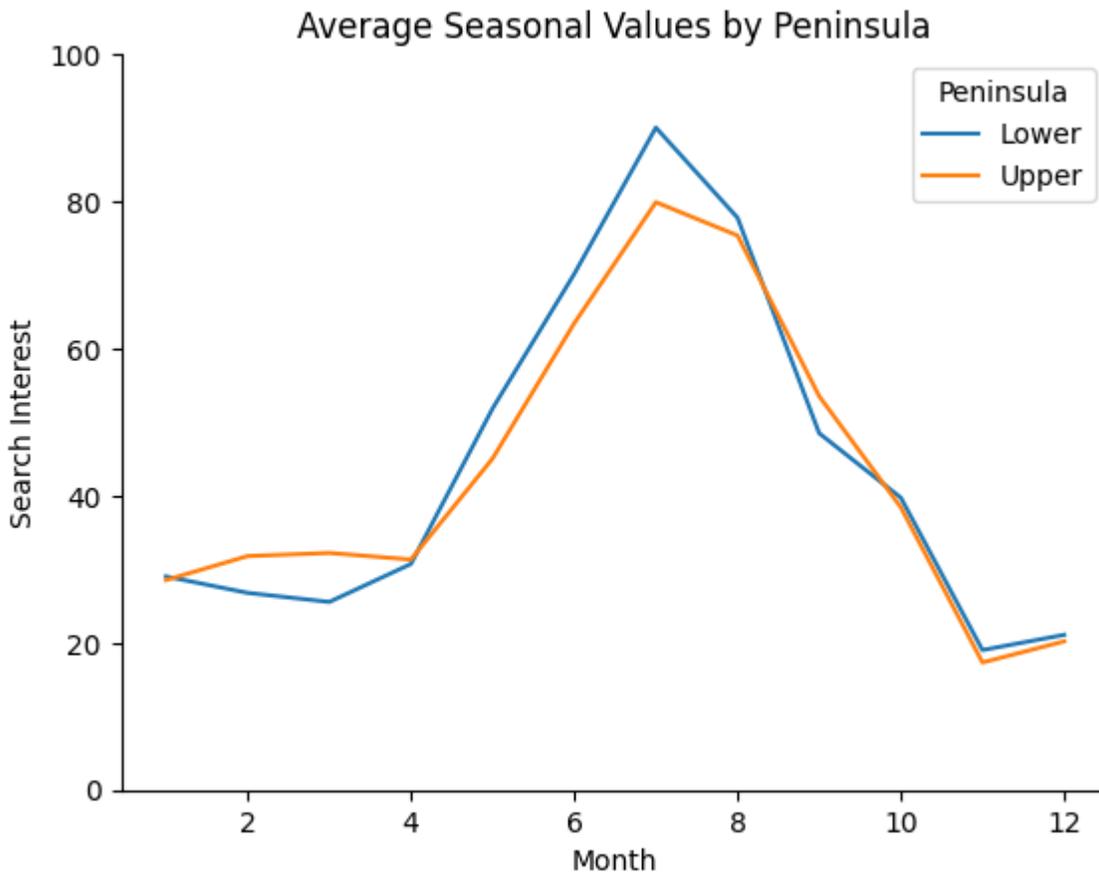
Lower Peninsula Place Level Search Interest Averaged for November, December, and January



Upper Peninsula Place Level Search Interest Averaged for November, December, and January

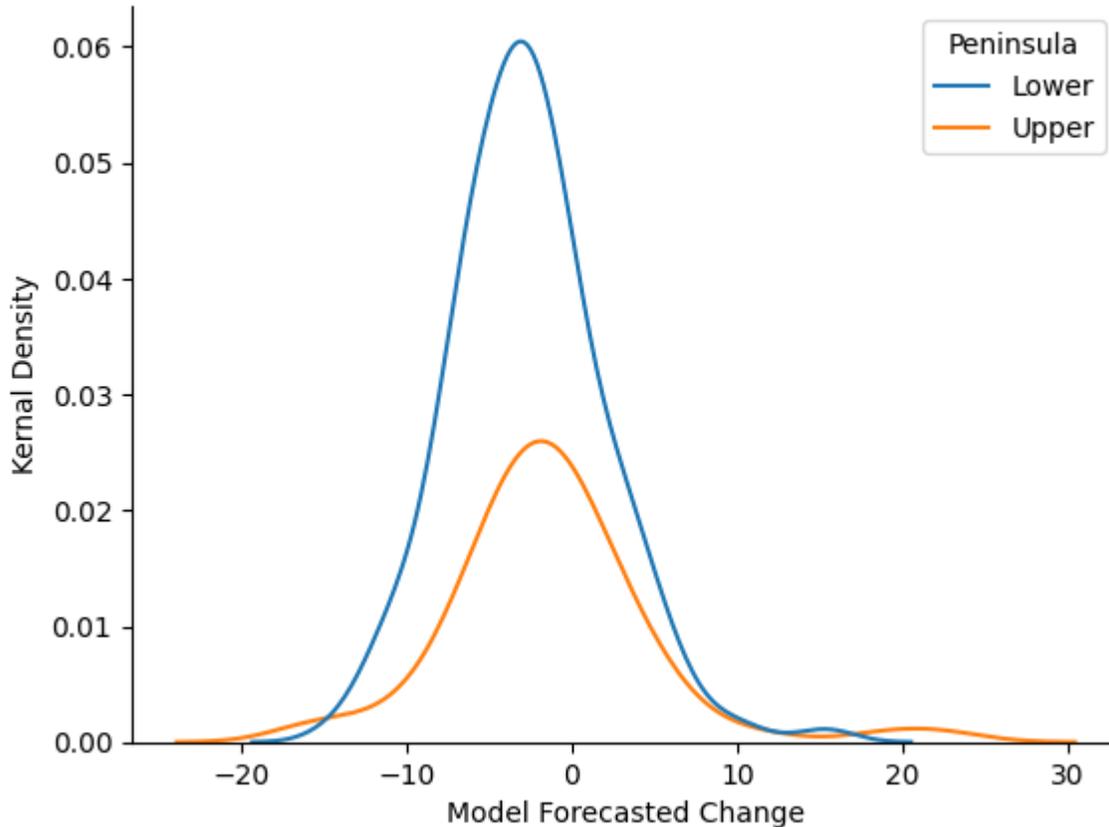


The following figure shows the aggregate average search interest for each calendar month. Both the Upper and Lower Peninsulas have a seasonal peak in July/August with the Lower Peninsula peak solidly in July. The Upper Peninsula has higher values for January-March likely due to winter snow sports like snowmobiling. For the November-January forecast period, we should see search interest dropping to its lowest levels, with some respite for snow sports in January for the Upper Peninsula especially.



Finally, forecasts are determined by the forecasted place level change from the previous year based on weather and gasoline prices and are adjusted based on the last 12 months of trends for each individual place. For both peninsulas, the most likely forecasted change from the previous year is now negative, because we are now adjusting for the aggregate negative trends during the last 12 months. (Note, however, that the final forecast numbers by peninsula are weighted by the size of the contribution of the place to total search interest.)

## Model Forecasted Change by Peninsula



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### Places Impacted by Weather and Gas Prices

In addition to the above more aggregated analysis, I will now look at places that are impacted by weather and gasoline prices. (Many places are not impacted by these factors in the model and instead have an average increase or decrease year over year.) After identifying the places impacted by weather or gas prices, I then divide these places projected to have higher or lower search interest (on average) during the forecast months from the previous year. This is due to both the impact of weather and gasoline prices and the average trend year over year.

For the Northern Lower Peninsula, 53 of 142 places are impacted by weather or gasoline prices in the model. Of these, 11 are forecasted to have higher search interest during these three months than last year. The remaining are forecasted to have lower search interest than last year. These places are listed and the chart shows their yearly average search interest values for the three forecast months. Here, the vertical line signifies the start of the forecast period.

#### Northern Lower Places with Weather Impact Higher Interest than Last Year

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['caberfae', 'leland', 'au sable', 'bay view', 'eastport', 'buckley', 'lakes of the north', 'hillman', 'tustin', 'norwood', 'vanderbilt']
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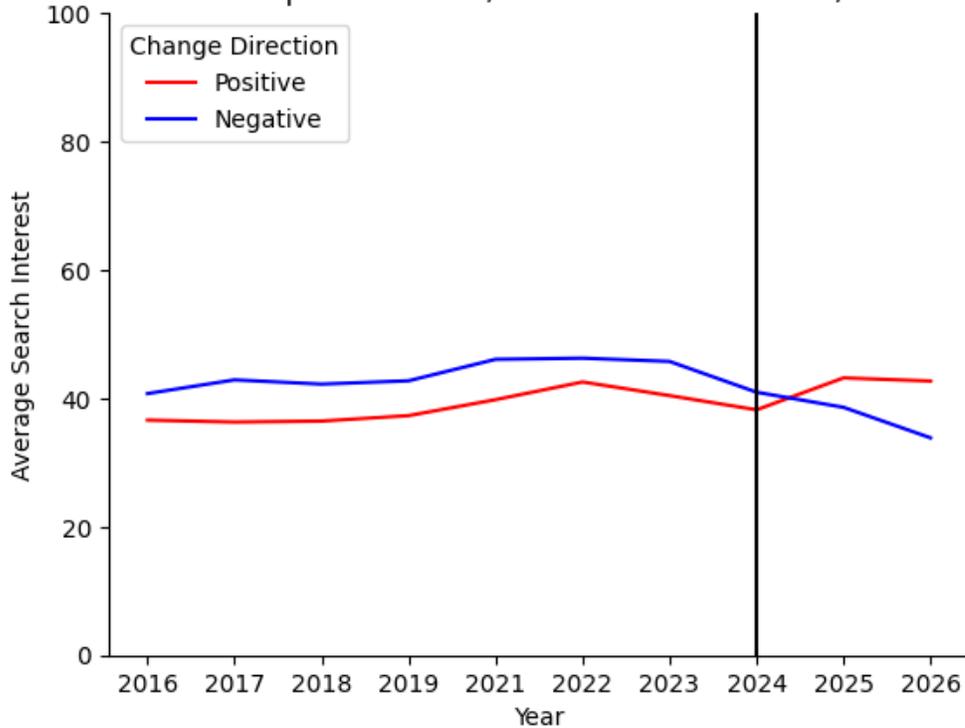
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Northern Lower Places with Weather Impact Lower Interest than Last Year

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['sand lake', 'ludington', 'crystal mountain', 'glen arbor', 'northport', 'suttons bay', 'traverse city', 'lake ann', 'onekama', 'manistee', 'tawas city', 'grayling', 'harrisville', 'cedar', 'alanson', 'omena', 'benzonia', 'cross village', 'alden', 'mesick', 'rogers city', 'wellston', 'harrison', 'maple city', 'ossineke', 'alpena', 'gladwin', 'clare', 'prudenville', 'skidway lake', 'brethren', 'boyne falls', 'ellsworth', 'central lake', 'wedgewood', 'reed city', 'pilgrim', 'sterling', 'lincoln', 'baldwin', 'falmouth', 'chums corner']

**Northern Lower Weather Impacted Places, Forecast for November, December, and January**



For the Upper Peninsula, 31 of 72 places are impacted by weather or gasoline prices in the model. Of these, 13 are forecasted to have higher search interest during these three months than last year. The remaining are forecasted to have lower search interest than last year. These places are listed and the chart shows their yearly average search interest values for the three forecast months. Here, the vertical line signifies the start of the forecast period.

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Upper Peninsula Places with Weather Impact Higher Interest than Last Year

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['big bay', 'gwinning', 'mohawk', 'rapid river', 'bessemer', 'dollar bay', 'atlantic mine', 'laurium', 'three lakes', 'kincheloe', 'greenland', 'south range', 'ewen']

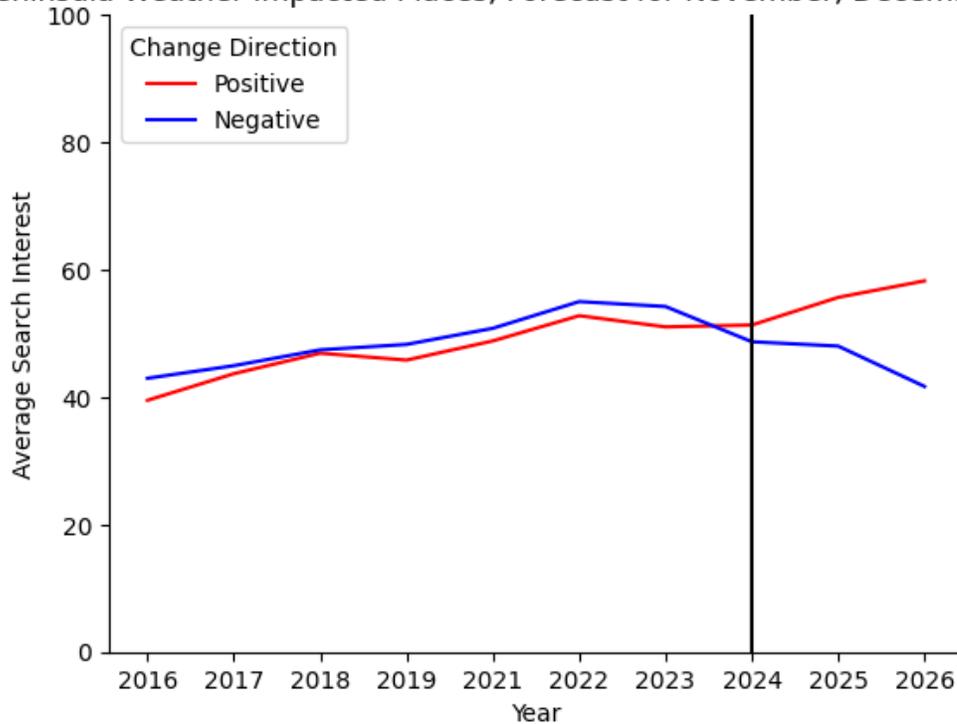
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Upper Peninsula Places with Weather Impact Lower Interest than Last Year

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['munising', 'copper harbor', 'newberry', 'sault', 'manistique', 'lake gogebic', 'gladstone', 'baraga', 'white pine', 'ironwood', 'ishpeming', 'palmer', 'menominee', 'iron river', 'negaunee', 'republic', 'mass city', 'carney']

## Upper Peninsula Weather Impacted Places, Forecast for November, December, and January

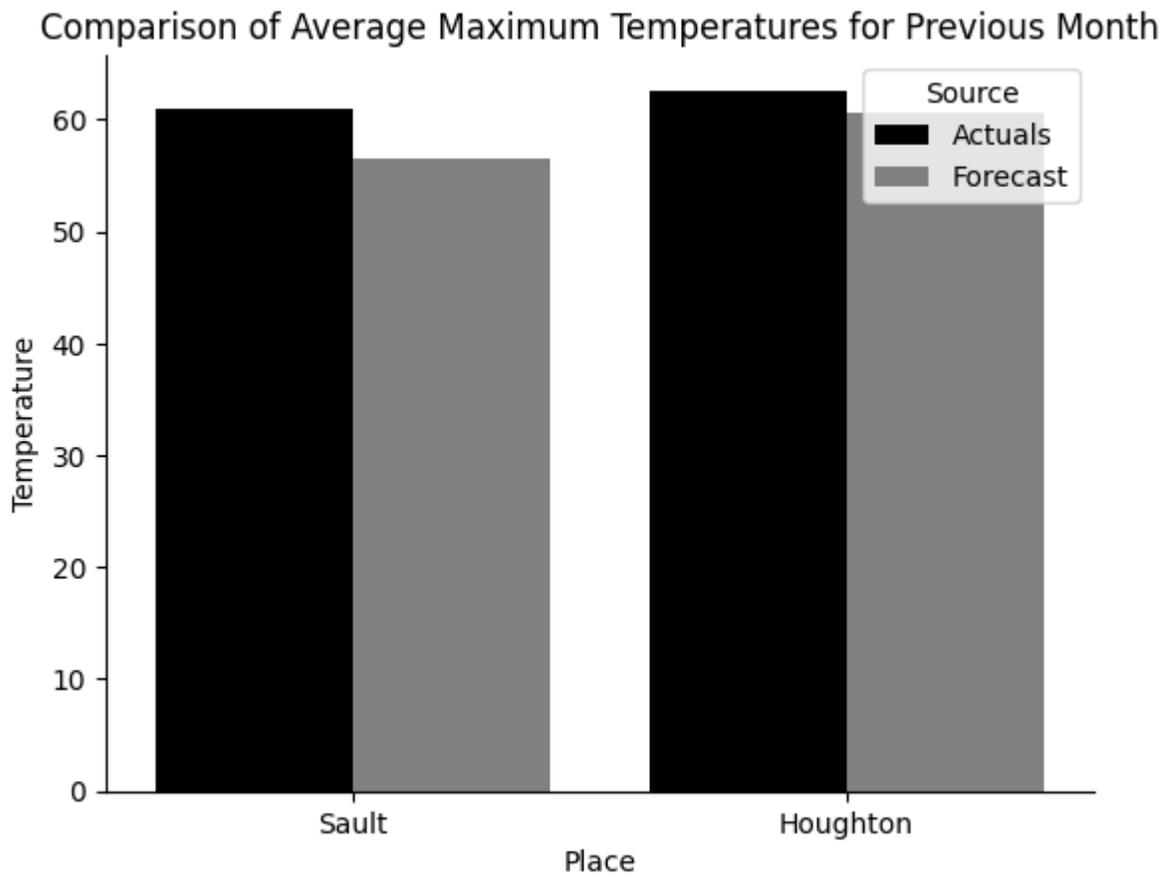


One last factor to consider is my source for weather forecasts, with a focus on temperature. All of my historical weather data used to train my models is from weather.gov. However, I source temperature forecasts from both weather.gov (average of averages) and accuweather (average maximums and average minimums). To some degree, it's difficult to compare these sources because average, maximum, and minimum temperatures are different statistics. Nonetheless, throughout this project, I've found that weather.gov usually forecasts above normal temperatures. To some extent I wonder if forecasts from a government agency are more likely to be high given politics surrounding issues like global warming.

Therefore, I will roughly track the one month forward predictive performance of the weather.gov and accuweather forecasts. First, I will look at the previous month's average temperature and determine if it actually was above historical normals. Next, I will compare the previous month's forecasted accuweather average max and min temperatures to actual values.

Starting in late August, I don't see average temperature populated in weather.gov for the Houghton Lake or Sault St Marie. Then, for October we had a government shutdown. Therefore, I will skip this comparison for average temperature this month, again. This does not have a significant impact on my current forecasts which are based on the same months last year, which have data. If this problem persists I'll probably have to remove average temperature from the model.

Based on the accuweather forecasts, maximums were higher than forecasted last month while minimums were lower than forecasted.



Comparison of Average Minimum Temperatures for Previous Month

