

Michigan Droughts and Agriculture Problems

By
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Abstract

Agriculture is an important source of income for many Michiganders, with 28% of its land dedicated to farm or cropland. This project looks at the Climate Divisions of Michigan and the many crops grown in the state. From this data, I can discover which of the Climate Divisions are at the greatest risk during and after a drought and which counties should have a plan in place in case of a drought to protect the livelihood of their residents.

Introduction

A drought is defined as “a water shortage caused by a deficiency of rainfall, generally lasting for an extended period of time.” There are four different types of droughts; meteorological, hydrologic, agricultural, and socioeconomic. These types of droughts are all connected to each other and can lead to crop degradation and loss.

In Michigan, droughts are not thought of as a large issue, we have such a large amount of fresh water surrounding the state and in the state droughts are not usually an issue. Even with our access to water we have had droughts in the state.

Droughts can lead to a loss in crop quality and quantity. This is an issue due to the amount of people in Michigan who rely on crops for not only their food but their livelihood as well.

For this, I looked at the crops to distinguish which crop division is the division that is in the most danger during a drought for the crops in Michigan.

Methods

I divided Michigan's counties into the ten climate divisions according to the Michigan Hazard Plan and made a map from that.

After that, I used the Michigan Department of Agriculture's Food and Agricultural Systems Profiles Report to divide the counties into the which crop was grown in of the seven crops I am studying. From that data, I made a layer for each crop grown showing the counties that grown each crop.

From this data, I figured out what climate division grows the most crops and has the most to lose in the case of a drought.

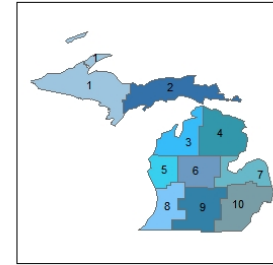
Conclusion

From my data I can conclude that the Climate Division that would suffer the greatest loss of the crops that I have studied is Climate Division 7.

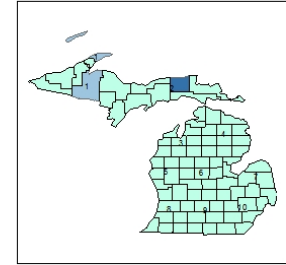
The farms in Climate Division 7 grows all of the seven crops I studied except for potatoes. Therefore in the case of a drought I can assume that this Climate Division would need the most assistance and preparation.

The maps show the different counties that grow each of the crops. This allows for me to look at which climate division has which crops and the larger variety of crops.

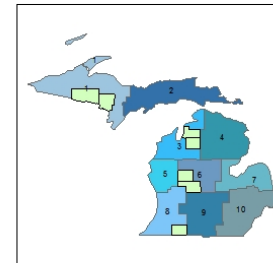
Climate Divisions



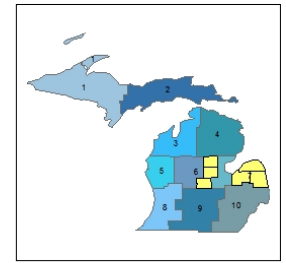
Corn, Soybeans & Wheat



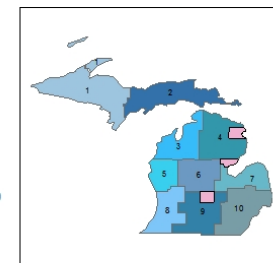
Potatoes



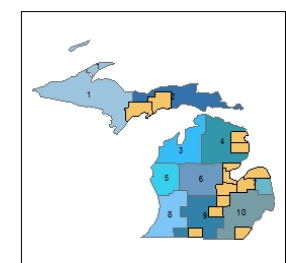
Sugarbeets



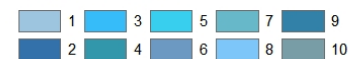
Hay



Beans



Climate Divisions



References:

Michigan Department of Agriculture “Michigan Food and Agricultural Systems Profiles”
Michigan Hazard Plan
Esri Sever