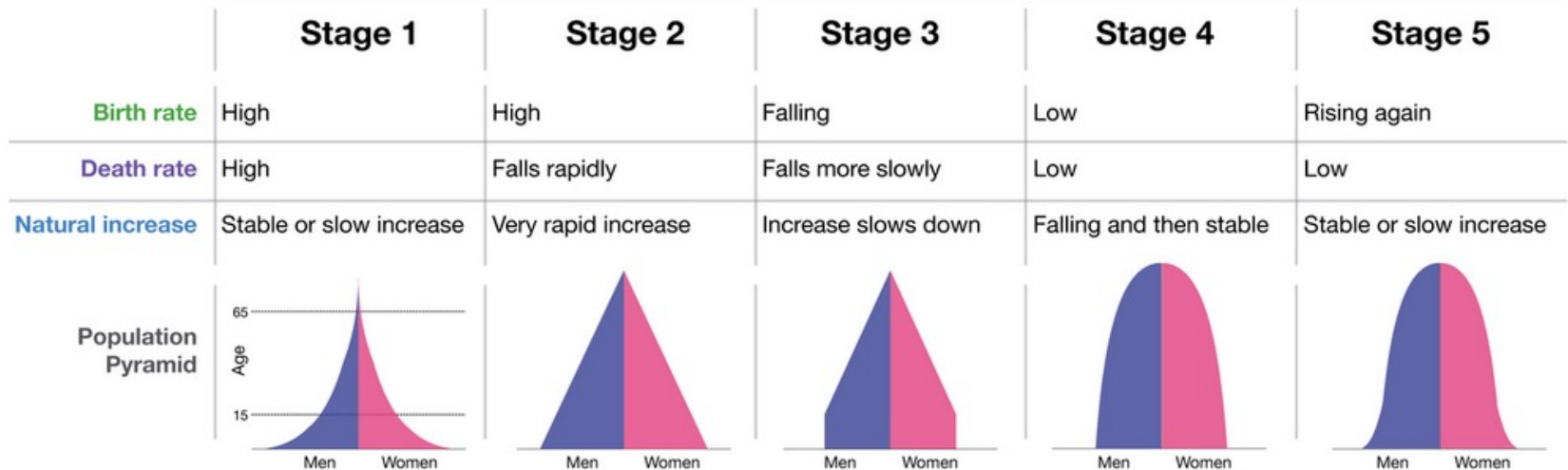
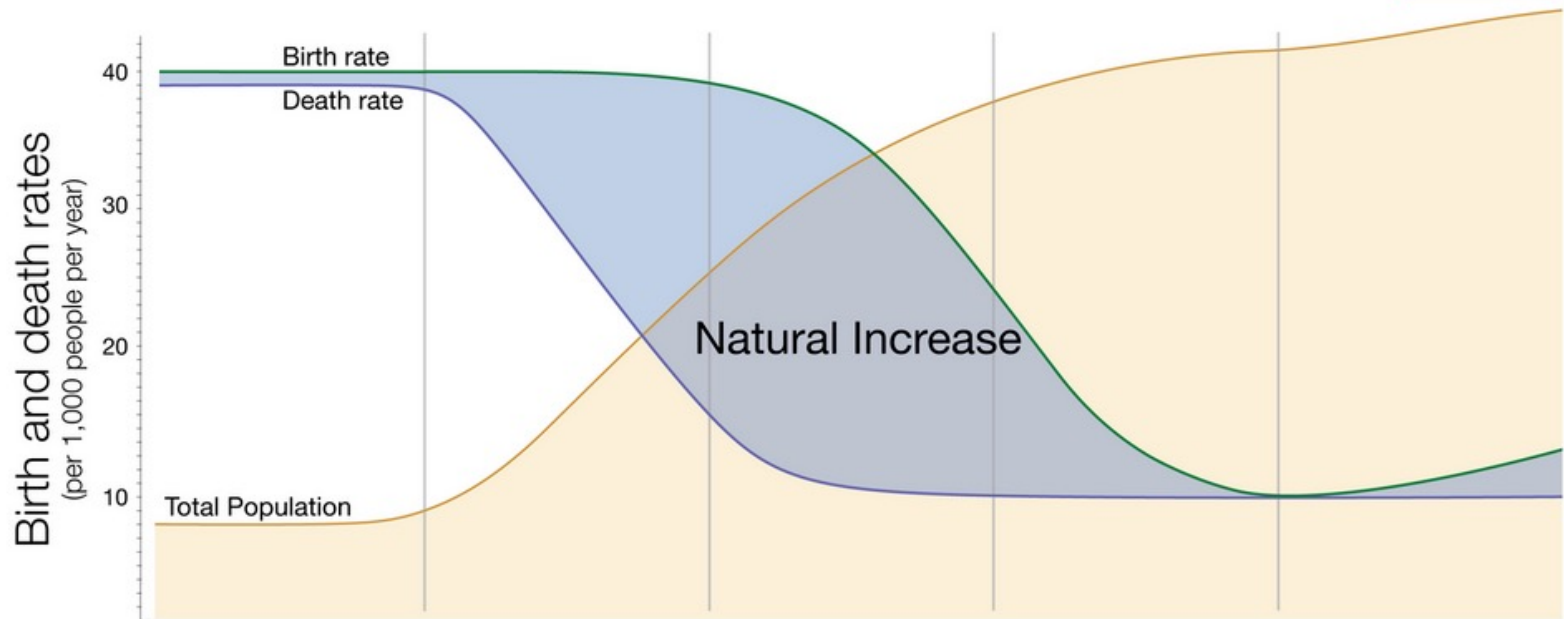


Population Wrap up!

- “Population Bomb”==Book
- Tragedy of Commons
- Role of women
- Demographic Transition

The demographic transition in 5 stages

Our World
in Data



The author Max Roser licensed this visualisation under a CC BY-SA license. You find more information at the source: <http://www.OurWorldInData.org/world-population-growth>

Reminders about your very informal presentations!

Emerging Infectious Disease/Organisms List!

First, notice that in some cases the disease or condition induced by the organism is the term we are more familiar with and thus is the term I have put in the list. It is also the term that will likely yield the most when you Google info. For example, malaria refers to the condition you have when you are infected with a particular organism called a *Plasmodium* “parasite.” Plasmodium is actually the name of the Genus. We are *Homo sapiens* and *Homo* is our genus. There are 5 different Plasmodium species that can infect humans and cause malaria. In other cases we refer more often to the organisms than the condition. For example the organism *Cryptosporidium* (the name of a genus) causes a cryptosporidium infection or cryptosporidiosis. The Ebola virus causes ebola virus disease..or we might say you have an ebola infection (which we hope you do not have). Note...we do not give viruses the typical Genus species names. They are often named by the condition they induce or a series of letters and numbers!

FYI...SARS-CoV-2 is the name of the virus that is causing the current pandemic. The condition it causes, the “disease” is called COVID-19 (CO=Corona, VI=Virus, D=Disease)

Instructions for Slides

Do not focus on...

All the horrible symptoms or about how to diagnose whether you have this organism inside you-much of what you find on the internet will focus on this so beware!

Do share...

What kind of an organism causes this condition/disease/infection (bacterial, viral or perhaps a “parasite” and what does that mean)

Where does this organism come from? How does it get into us? What is its life cycle life? Where are we likely to encounter it? Common? Rare? In MN? Not in MN? In US? Not in US? (think holistically!)

Is it increasing in incidence?

Link to this course..

What human alterations to the environment might be influencing the distribution of this organism? When we think of the term “environment” remember to break this term down to its two components. Consider how we have affected **the biotic world** ...other species in terms of their populations sizes and distribution.

Then consider how we have affected the **abiotic world or the physical earth**...changes to the landscape, movement of water, temperature, rainfall etc...

Emerging Infectious Diseases!

“Lyme Disease”



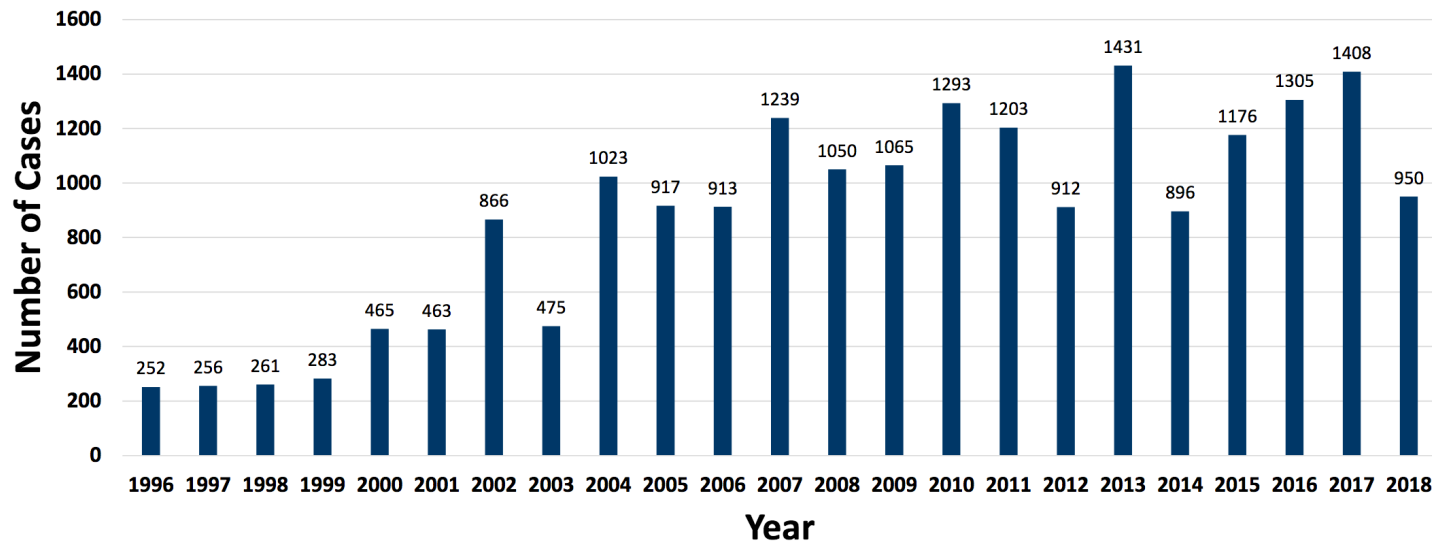
Black legged or deer tick is the one that transmits!

Not the dog tick (top).

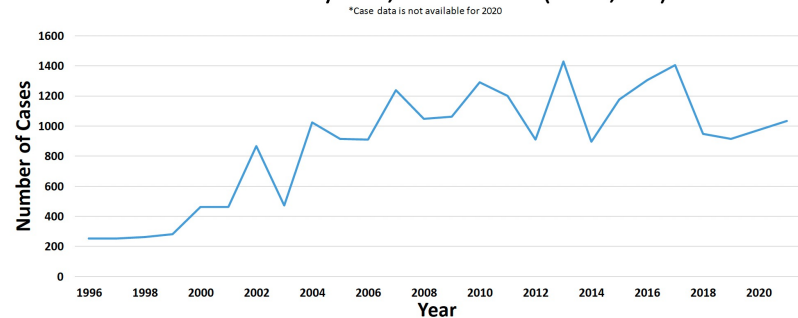
Introductory Lyme Disease Graphics

- Anyone had Lyme disease?
- Want to see my tick collection?

Reported Cases of Lyme Disease
in Minnesota by Year, 1996-2018 (n=20,102)

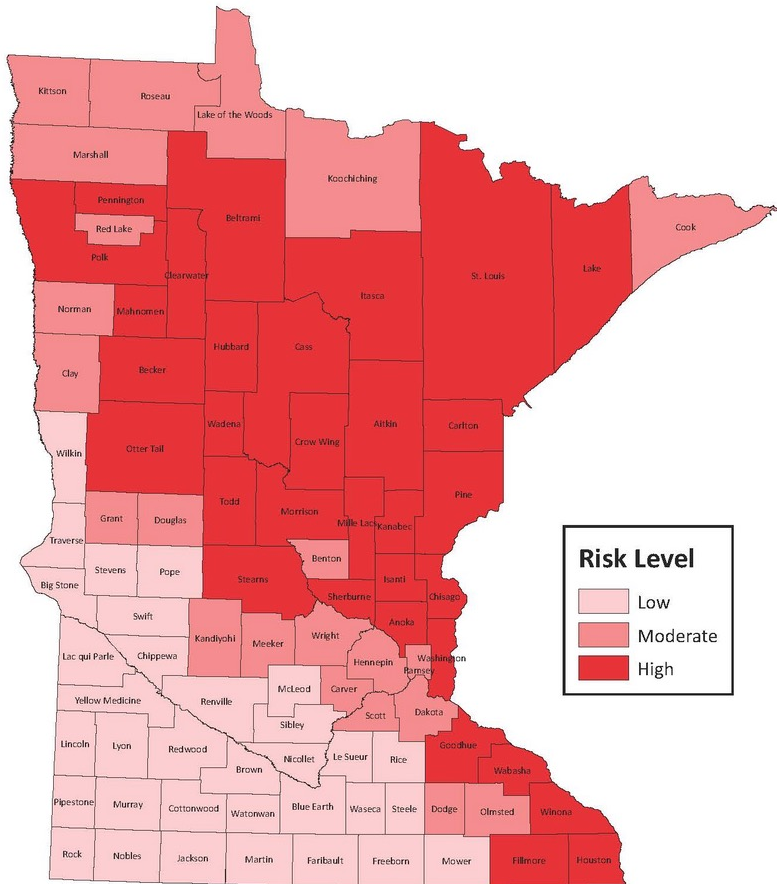


Reported Cases of Lyme Disease
in Minnesota by Year, 1996-2021* (n=22,050)



2017

Tickborne Disease Risk in Minnesota

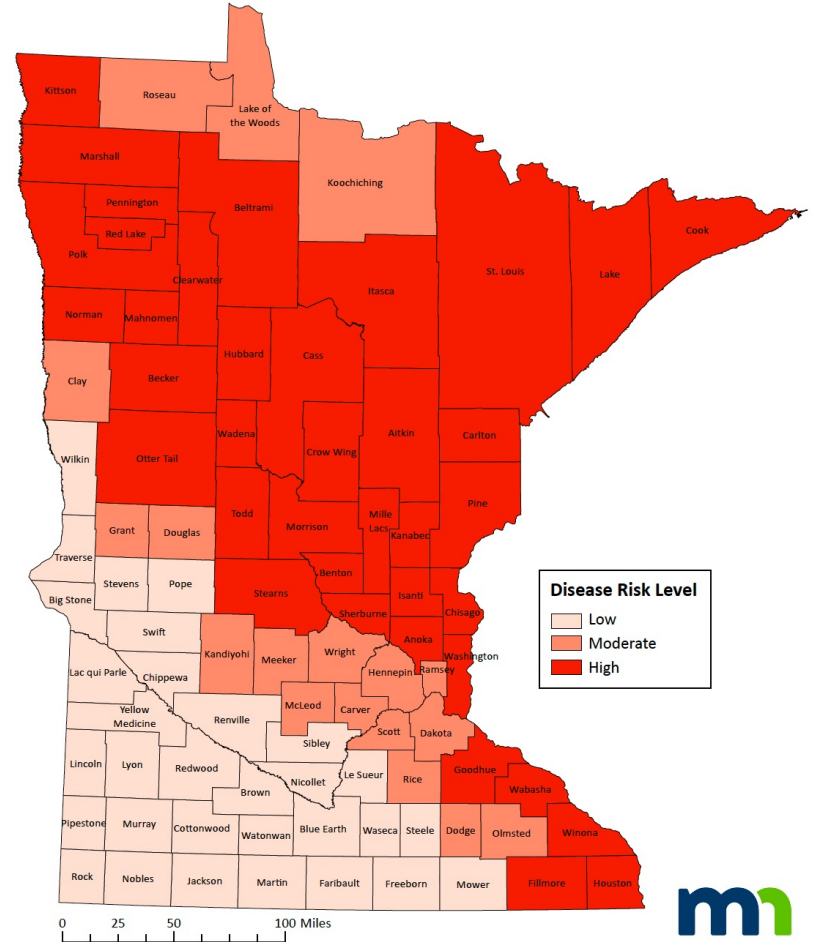


Risk is based on average incidence (cases/100,000 population) of Lyme disease, anaplasmosis, and babesiosis in Minnesota, 2007-2015.

2021

Minnesota Tickborne Disease Risk*

*Risk is based on average incidence (cases/100,000 population) of cases of anaplasmosis, babesiosis, and Lyme disease from 2007-2021.



0 25 50 100 Miles

For more information about ticks and preventing tickborne disease, please visit www.health.state.mn.us/ticks or call (651) 201-5414.

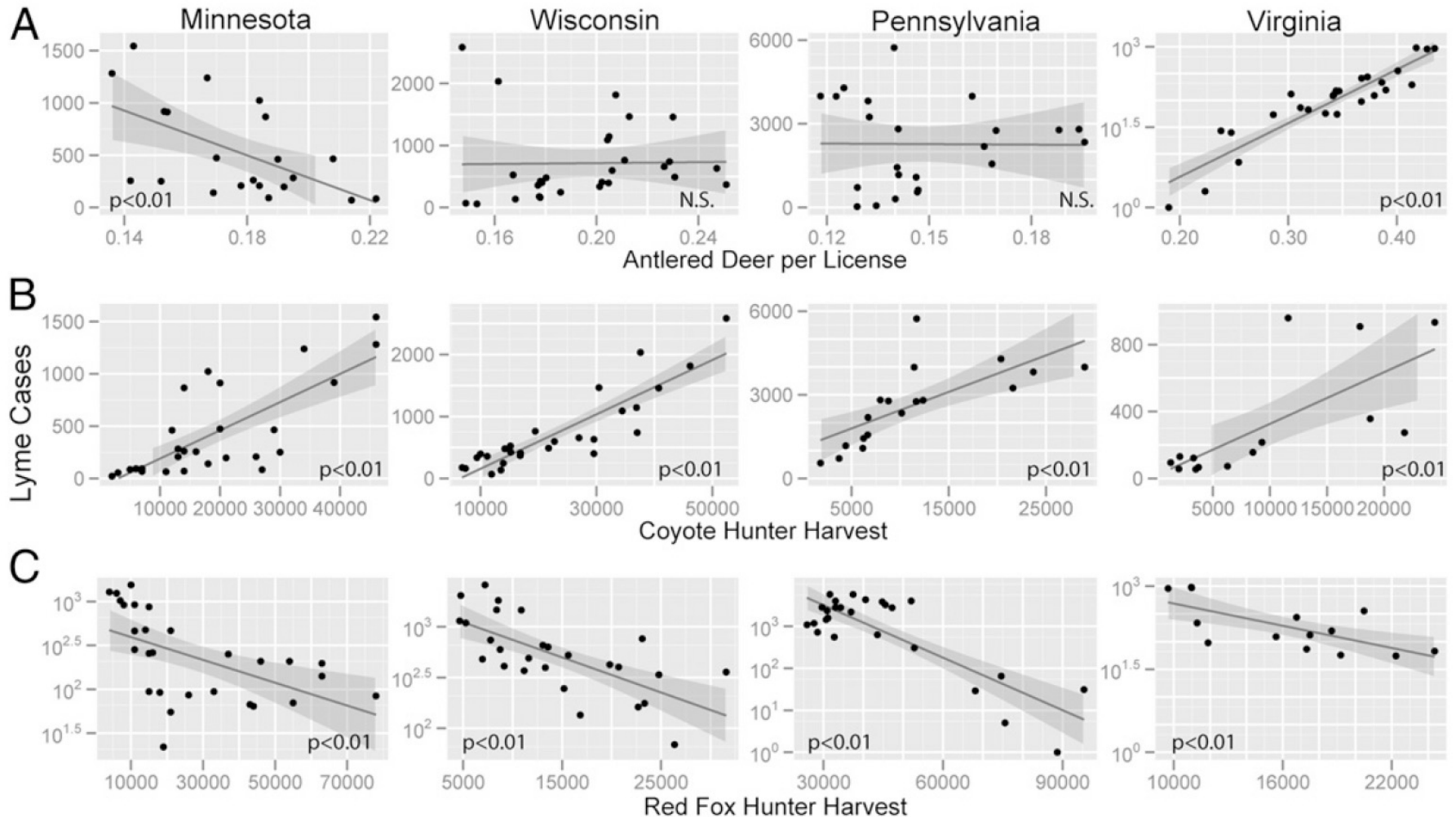


Get together with your group, respond to the questions on handout.

Aggregated data over time for each state...

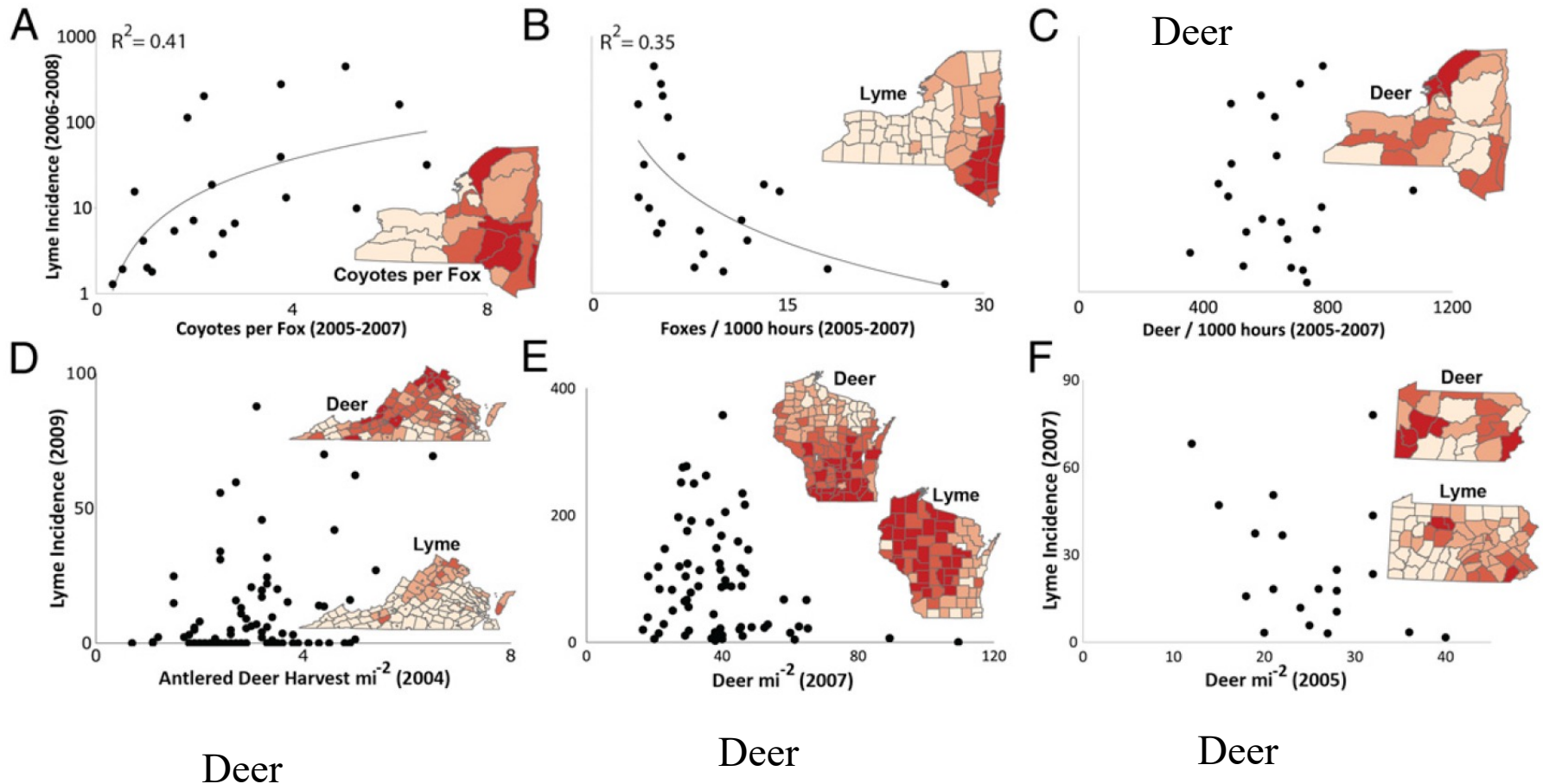
What is happening? Are deer driving cases of Lyme?

Why are there more coyotes?



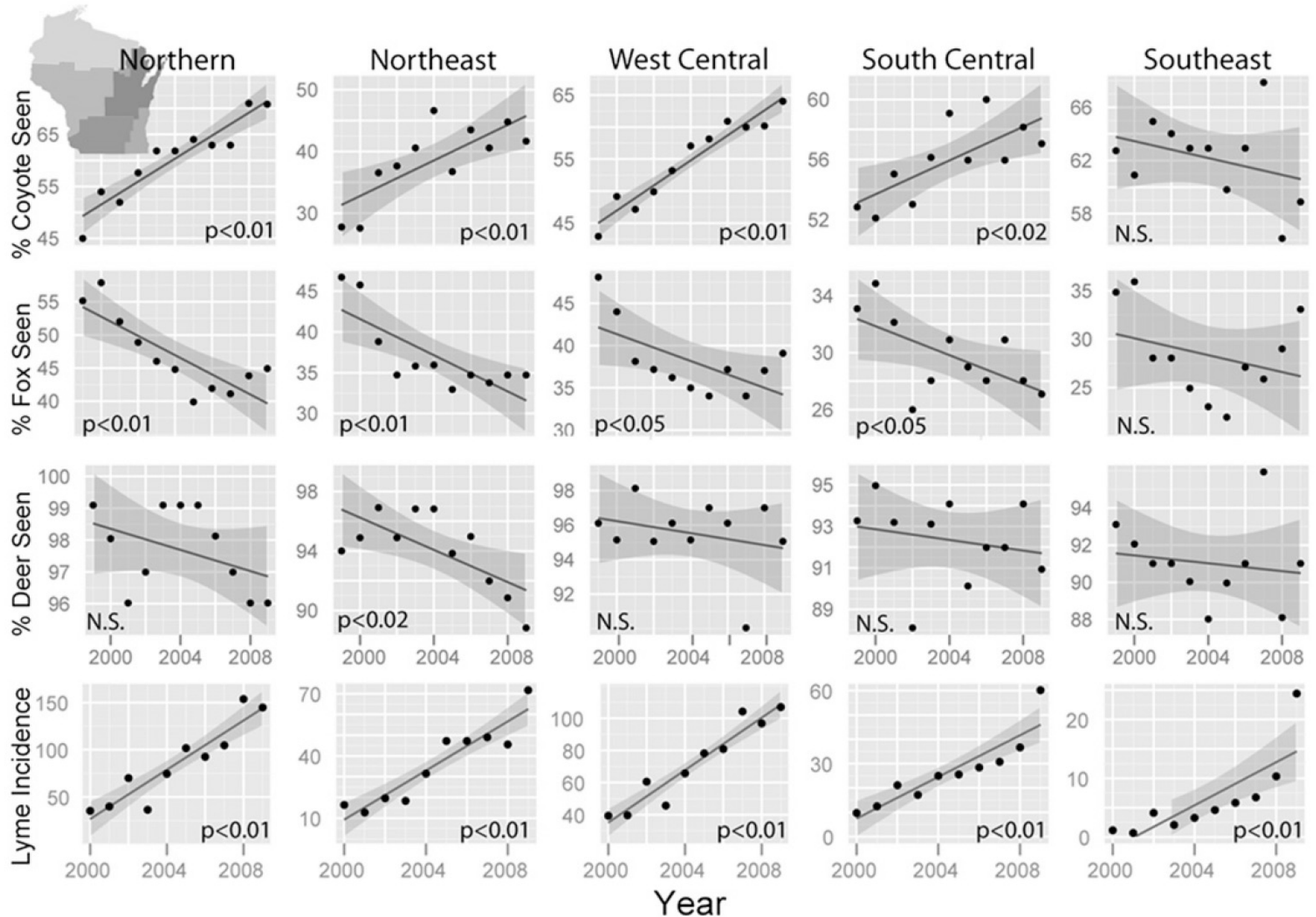
Aggregating data by Regions within states...

All New York –top row!



A, B and C data are from bow-hunter wildlife surveys

Just Wisconsin...Different locations. Had a cool survey!



Rural land owner survey conducted by WI DNR