



Mosquitoes and Mosquitoborne Diseases of Minnesota

Vectorborne Diseases Unit

Last Updated May 2023

What is a mosquitoborne disease and why should you care about it?

- People can get a mosquitoborne disease when they are bitten by a mosquito that is infected with a disease agent
- Mosquitoborne diseases are a large threat to human health around the world and right here in Minnesota
- Personal protection methods can help keep you and your family safe from mosquito bites and the diseases they carry



Goals of Presentation

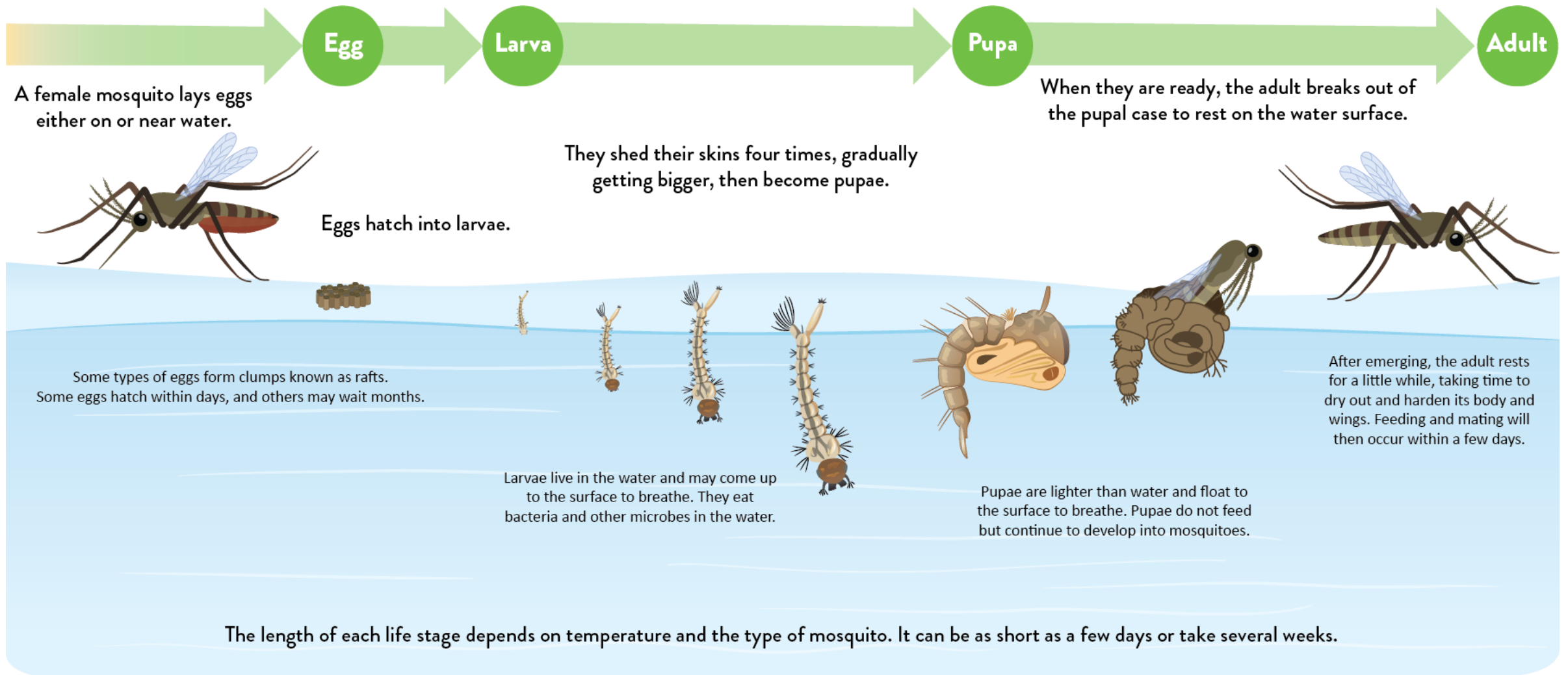
- Understand how mosquitoes live
- Be aware of the diseases spread by mosquitoes in Minnesota
- Recognize basic signs and symptoms
- Seek early diagnosis and treatment
- Know when and where mosquito-borne disease risk is highest
- Practice mosquito bite prevention methods
- Know who to contact for more information

Mosquitoes in Minnesota

- MN is home to about 51 species of mosquitoes
 - Approximately half will feed on people
 - Only a few of these species are able to spread disease



Mosquito Life Cycle



What are the symptoms of a mosquito-borne disease?

- Most people have no symptoms at all
- For people who do become sick, mosquito-borne diseases have similar symptoms
- Symptoms usually show up within 1-2 weeks of being bitten by an infected mosquito
- Watch for symptoms like:
 - Fever
 - Headache
 - Stiff neck
 - Rash
 - Disorientation
 - Seizures



How are mosquitoborne diseases diagnosed?

- If you think that you may have a mosquitoborne disease, contact your health care provider as soon as possible
- Your health care provider can determine if you have a mosquitoborne disease based on your:
 - History of being around mosquitoes or mosquito habitat
 - Physical examination
 - Laboratory tests



Are mosquito-borne diseases treatable?

- Not exactly
 - Most illnesses go away on their own
 - Viruses are not treated with antibiotics so treatment involves supportive care
 - Some patients with more serious symptoms may require hospitalization

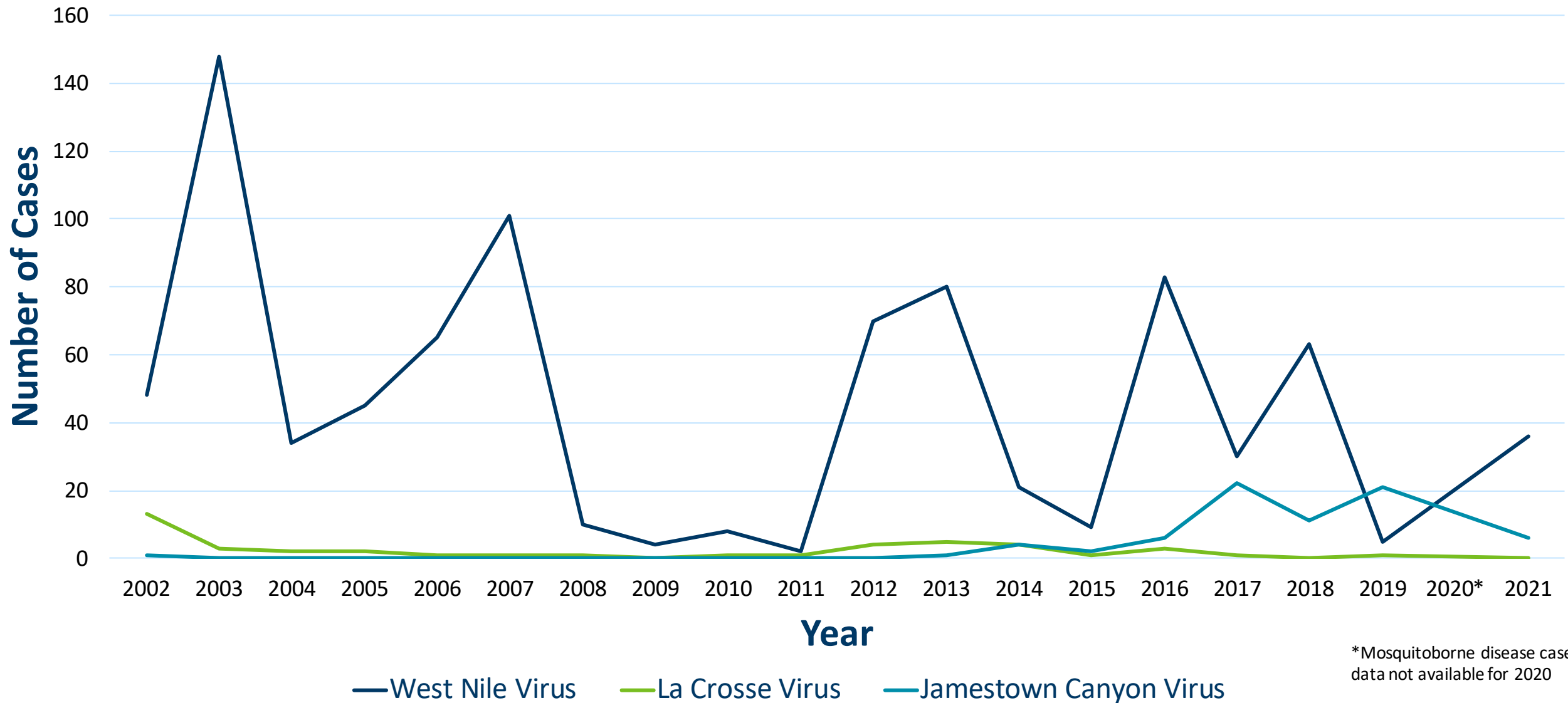


Top 3 Mosquitoborne Diseases in Minnesota

- West Nile Virus Disease
- La Crosse Encephalitis
- Jamestown Canyon Virus Disease



Reported Mosquitoborne Disease Cases in Minnesota, 2002-2021



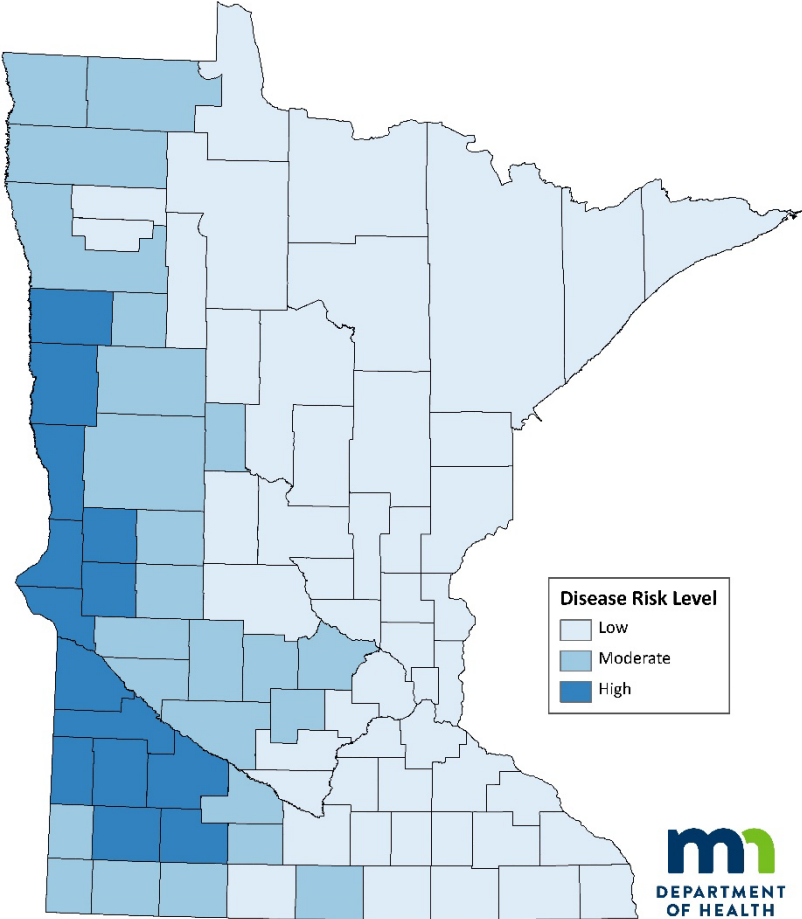
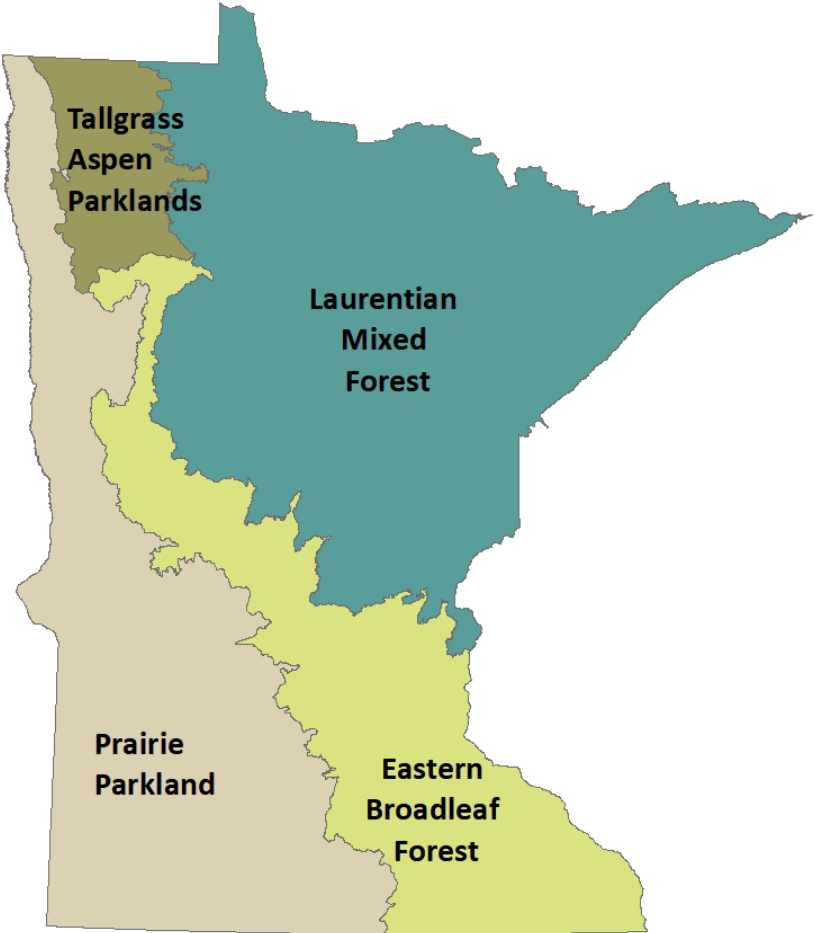
*Mosquitoborne disease case data not available for 2020

West Nile Virus Disease

- First case identified in Minnesota in 2002
- *Culex tarsalis* is the main mosquito of concern
 - Its habitat includes open agricultural land and prairie
- Disease is most severe in elderly patients or those with weakened immune systems
- Most cases occur later in the summer



West Nile Virus Disease Risk in Minnesota



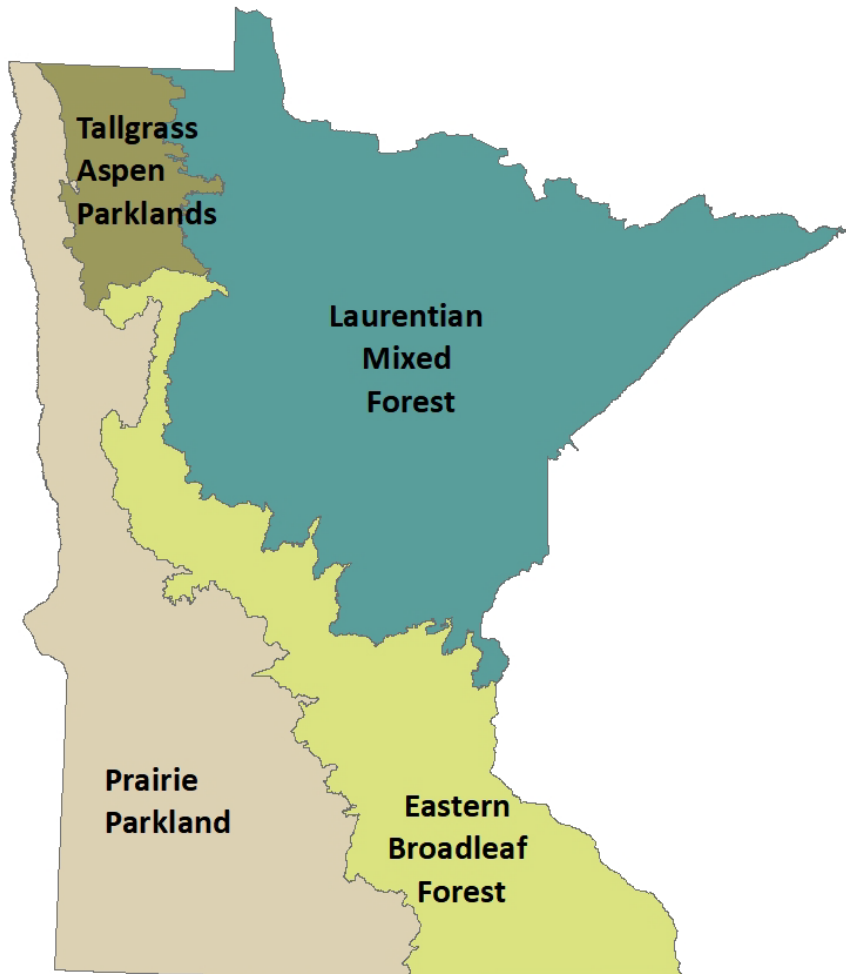
Source: Ecological Sections of Minnesota, Minnesota Department of Natural Resources (DNR)

La Crosse Encephalitis

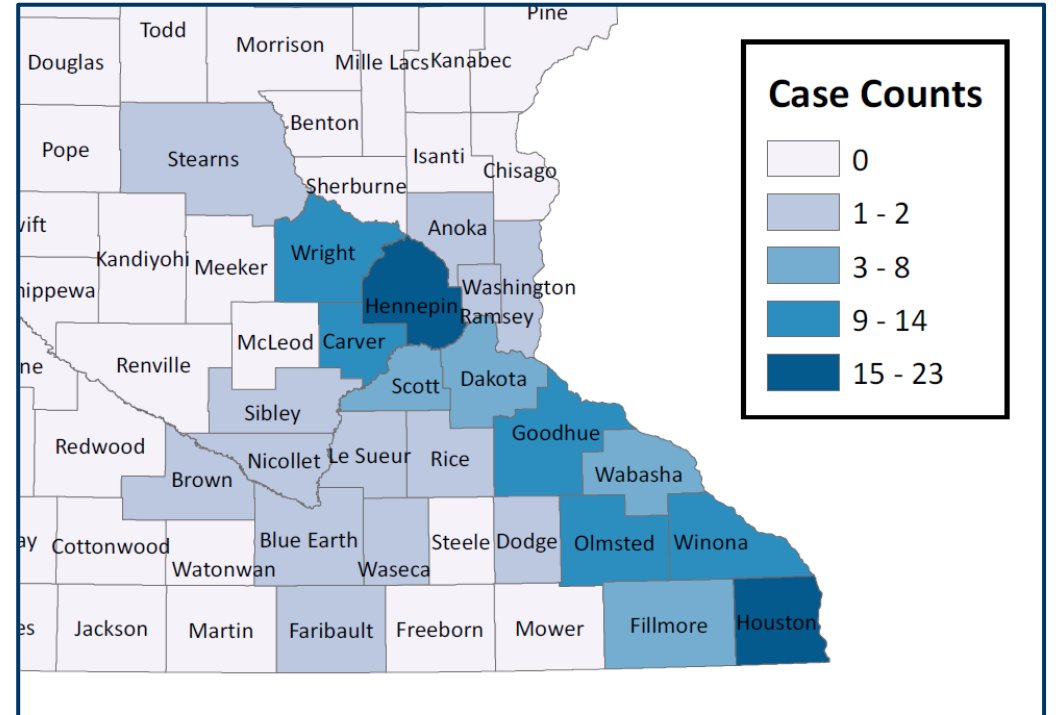
- Identified for the first time in 1964
- *Aedes triseriatus* is main mosquito species of concern in Minnesota
 - Its habitat includes treeholes and other water-holding containers in wooded or shaded areas
- The disease primarily affects children 16 years of age or younger
- Most cases occur later in the summer



La Crosse Encephalitis Risk in Minnesota



Minnesota La Crosse Encephalitis Cases, 1985-2021



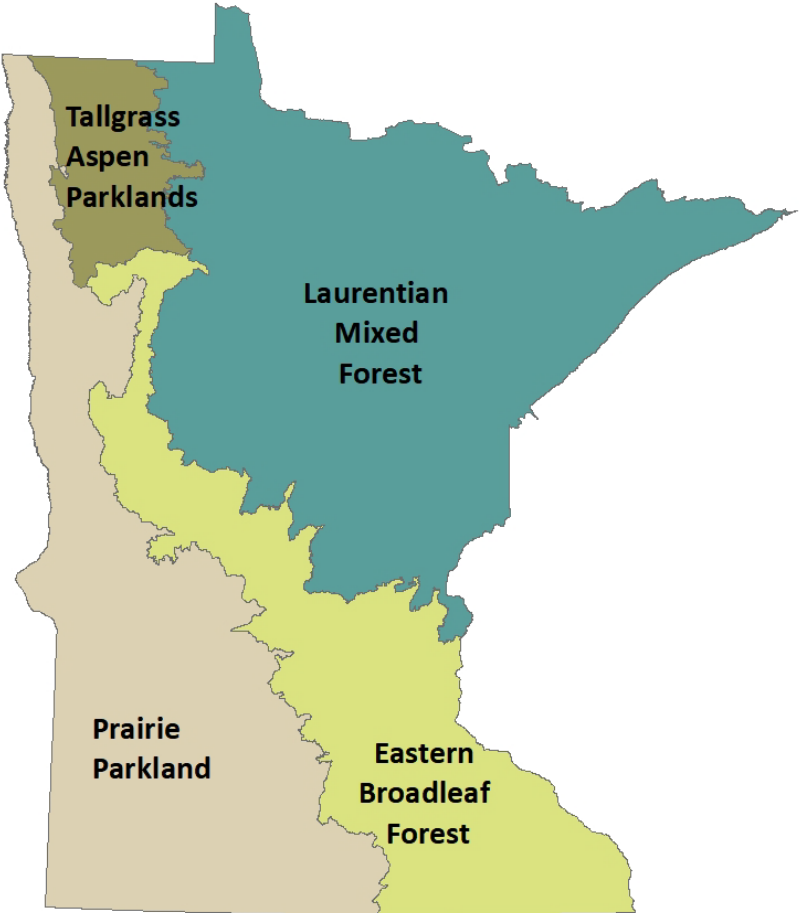
Source: Ecological Sections of Minnesota, Minnesota Department of Natural Resources (DNR)

Jamestown Canyon Virus Disease

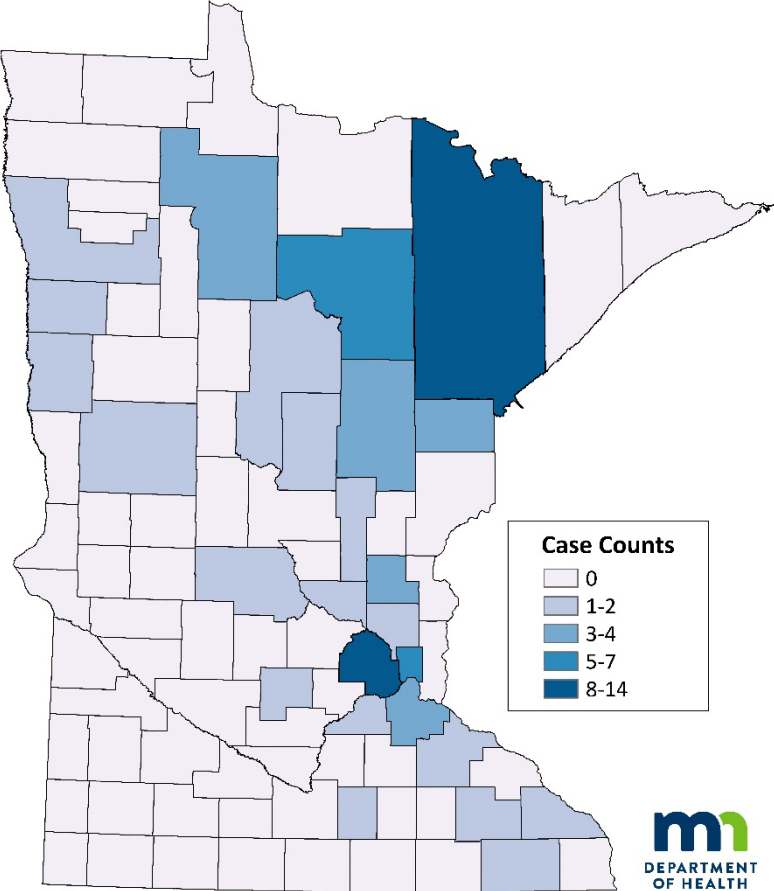
- The virus was first identified in Colorado in 1961
- Snowmelt *Aedes* mosquitoes are likely the main species of concern in Minnesota
 - Wooded and shaded areas provide the best habitat for these mosquitoes
- Persons of any age may become sick
 - More severe disease may occur in older patients or those with weakened immune systems
- Cases occur during warmer months of the year, from May through September



Jamestown Canyon Virus Disease Risk in Minnesota



Minnesota Jamestown Canyon virus disease cases, 2013-2021



Source: Ecological Sections of Minnesota, Minnesota Department of Natural Resources (DNR)



Other Potential Mosquitoborne Diseases in Minnesota

- Eastern Equine Encephalitis Virus
- St. Louis Encephalitis Virus
- Western Equine Encephalitis Virus



Travel-Associated Mosquitoborne Diseases Affecting Minnesotans

- Chikungunya
- Dengue
- Malaria
- Yellow Fever
- Zika



Protect Yourself from Mosquitoborne Diseases

1) Know when and where you're at risk

- Primarily July through September
- Open, agricultural areas – West Nile virus
- Wooded areas – La Crosse & Jamestown Canyon viruses

2) Wear EPA-registered bug spray

- DEET 20-30% on skin or clothing
- Permethrin 0.5% on clothing

3) Dress in appropriate clothing

- Wear loose-fitting, long-sleeved shirts and pants



Protect Your Family from Mosquitoborne Diseases

Remove mosquito breeding habitat

- Frequently empty or remove water holding containers like:
 - Flower pots
 - Bird baths
 - Fountains and kiddie pools
 - Tires
- Remove debris from gutters to prevent stagnant water
- Make sure tarps are tight to prevent pooling water



Thank You!

Vectorborne Diseases Unit

651-201-5414

health.bugbites@state.mn.us

www.health.state.mn.us/mosquitoes

 **DEPARTMENT
OF HEALTH**