



Center for Land Use Education
College of Natural Resources
University of Wisconsin - Stevens Point



Extension
UNIVERSITY OF WISCONSIN-MADISON



Climate Change Impacts on Outdoor Recreation and Tourism in Wisconsin

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Outline

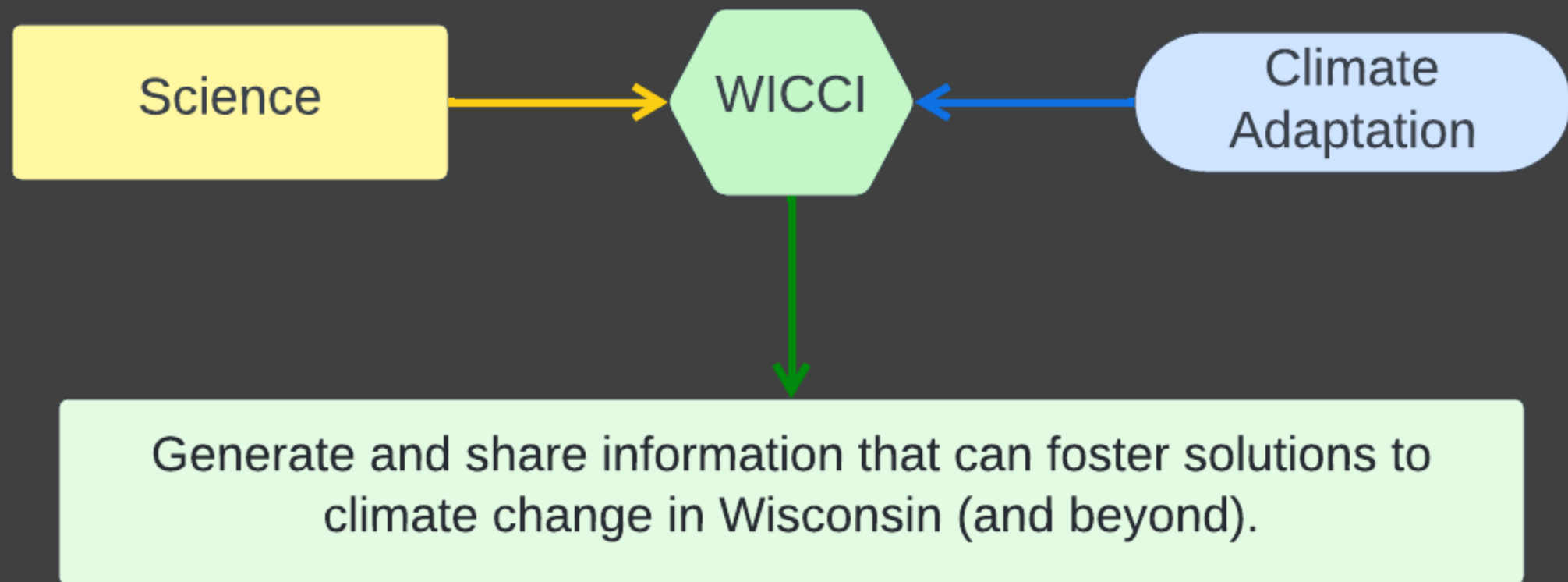
- Wisconsin Initiative on Climate Change Impacts (WICCI)
- How is climate change impacting tourism and outdoor recreation?
- What does this mean for Wisconsin?
- Current work & Future Partnerships
- Some examples of our work:
 - Wisconsin Downhill Skiing & Climate Change
 - Canoecopia
 - Biking & Trial map

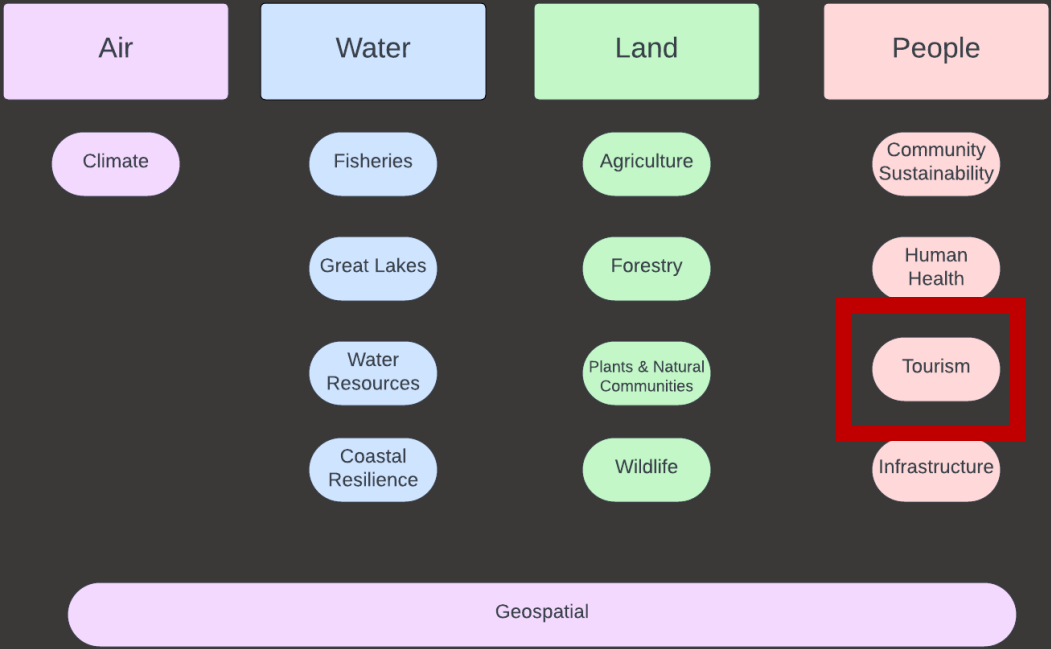


Background on WICCI

- Wisconsin Initiative on Climate Change Impacts (WICCI) was formed in 2007
- WICCI's goals are to evaluate climate change impacts on Wisconsin and foster solutions.







Why Focus on Tourism & Climate Change in WI?

Tourism Matters to Wisconsin




ECONOMIC IMPACT: 2019


Climate Change Impacts on Tourism and Outdoor Recreation in Wisconsin

Wisconsin Initiative on Climate Change Impacts (WICCI)
Tourism and Outdoor Recreation Working Group


March 11, 2022




\$7.8 billion is contributed to Wisconsin's GDP by the outdoor recreation industry, and it is growing faster than the overall economy.



Wisconsin ranks 5th in the U.S. for the share of all jobs in outdoor recreation-related manufacturing.



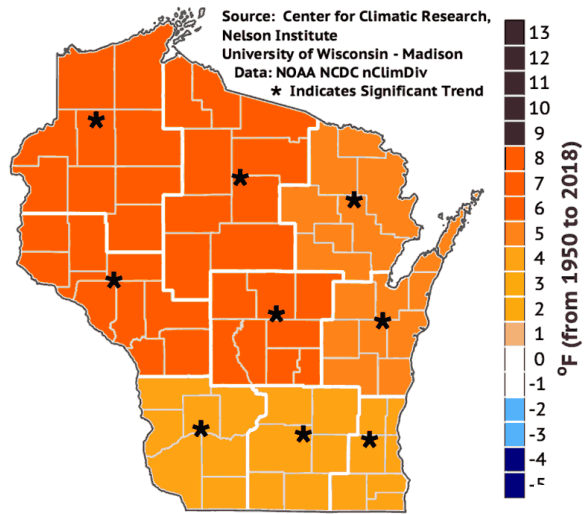
93,000 jobs are supported by outdoor recreation in Wisconsin, contributing \$3.9 billion in worker compensation.



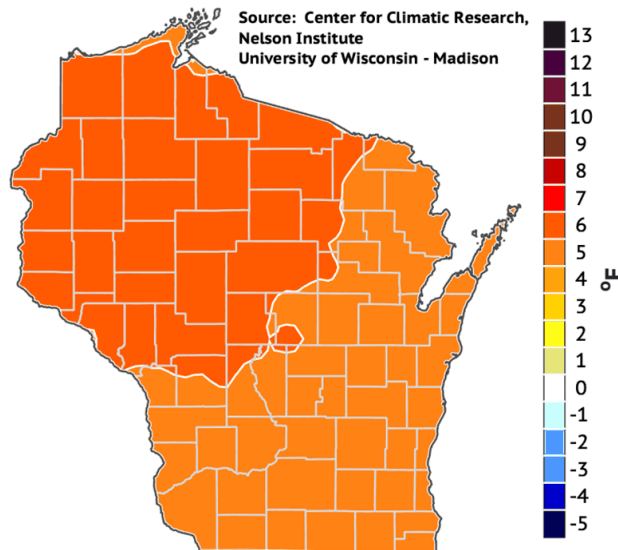
95% of Wisconsin residents participate in outdoor recreation, and it is a primary driver behind visitation to the state.

Temperature-Related Trends

Historical Change in DJF TMIN
from 1950 to 2018



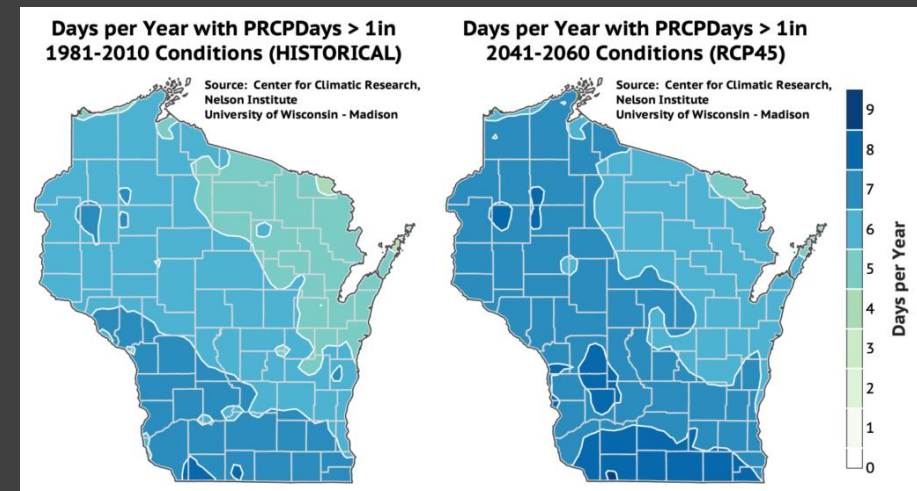
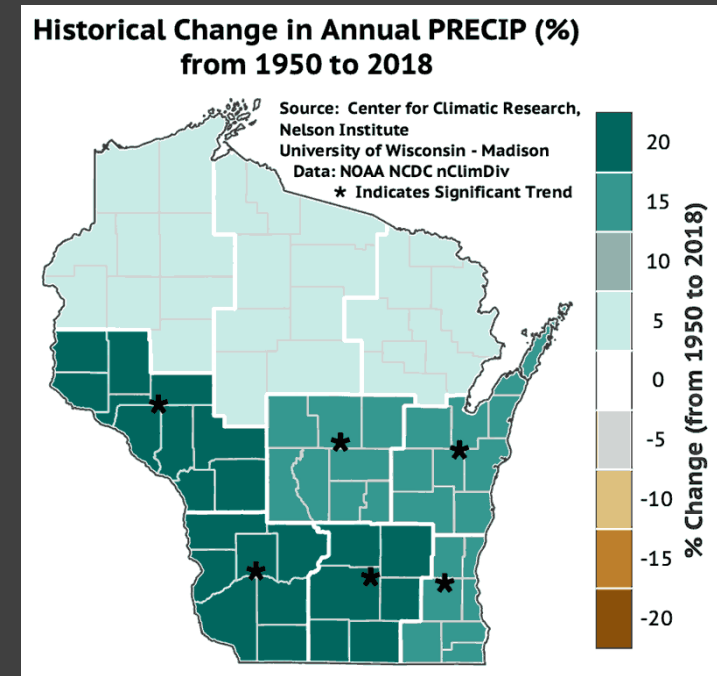
Change in DJF TMEAN, RCP45:
2041-2060 minus 1981-2010



- More extreme heat days
- Decrease in cold days
- Fewer days suitable for snowmaking
- More freeze-thaw days
- Fewer mild weather days
- Shifting seasons
- Warming water temperatures
- Losses in ice cover

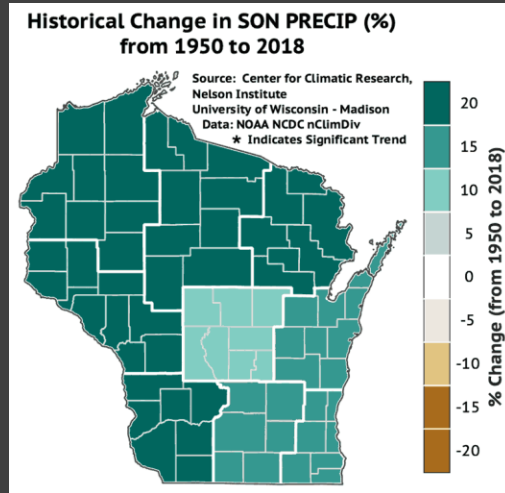
Precipitation: Related Trends

- More intense rain events
- More rain vs. snow
- More volatile changes in lake levels
- Variation:
 - Seasonally
 - Geographically

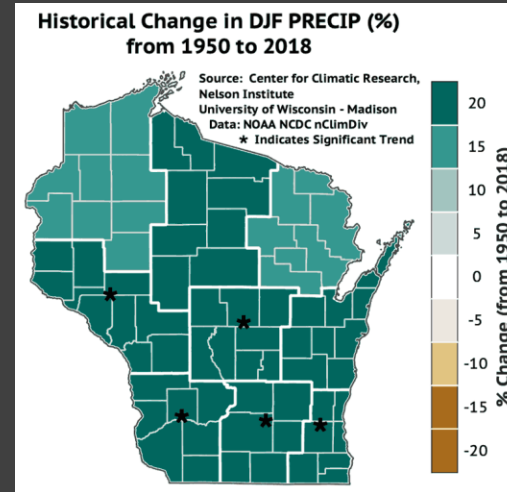


Precipitation:
Related Trends
Seasonal
Variation

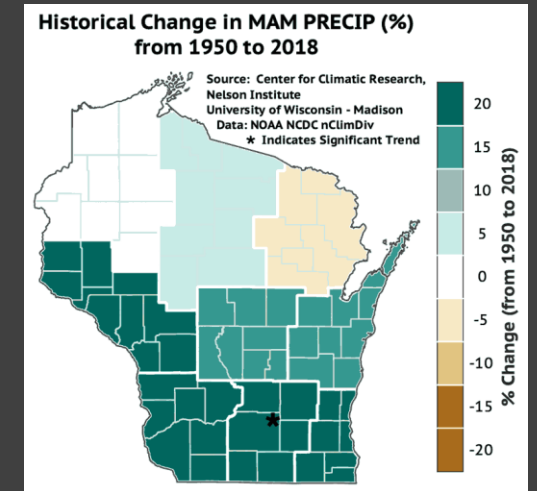
Fall



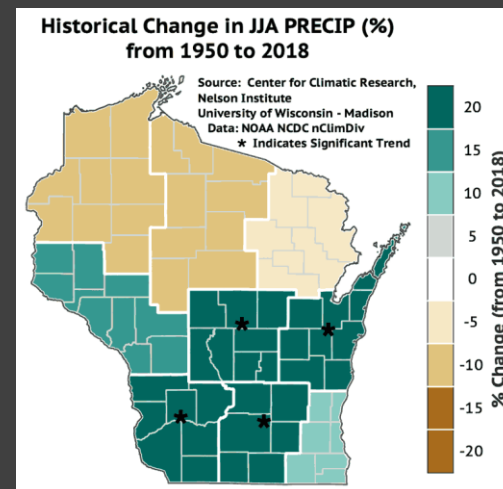
Winter



Spring



Summer



Combined Impacts by Season



Summer



Pro:

Heat can lead to recreation from competitive advantage



Con:

extreme heat & damaging storms



Fall



Pro:

Lengthening season

Con:

Decline in fall colors; impacts to wild rice, birch trees, fisheries



Winter



Con:

Major impacts to snow and ice-based activities



Spring

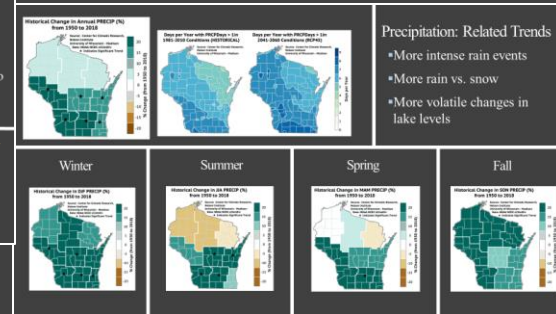
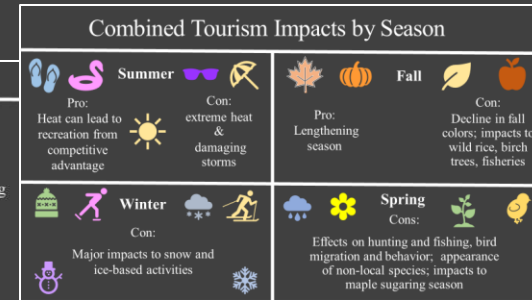
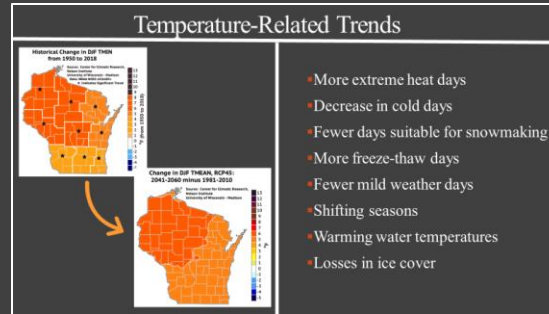
Cons:



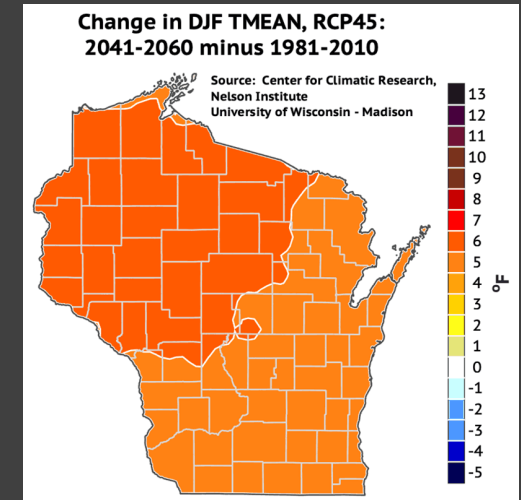
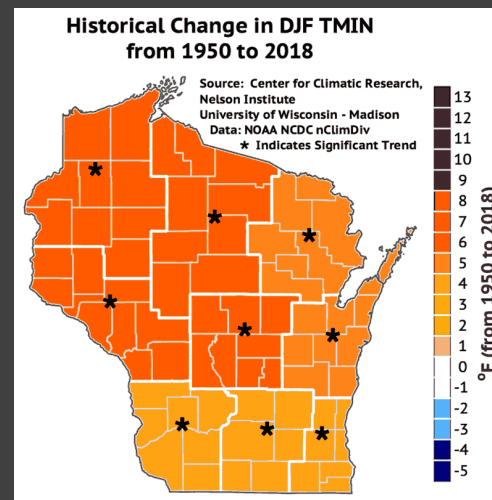
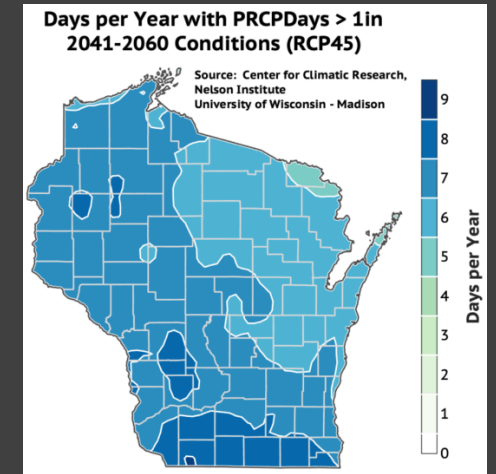
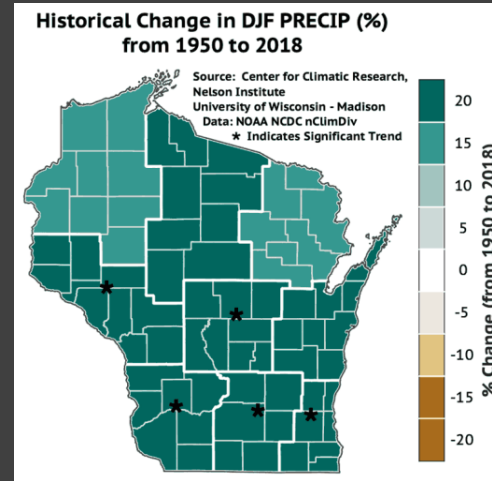
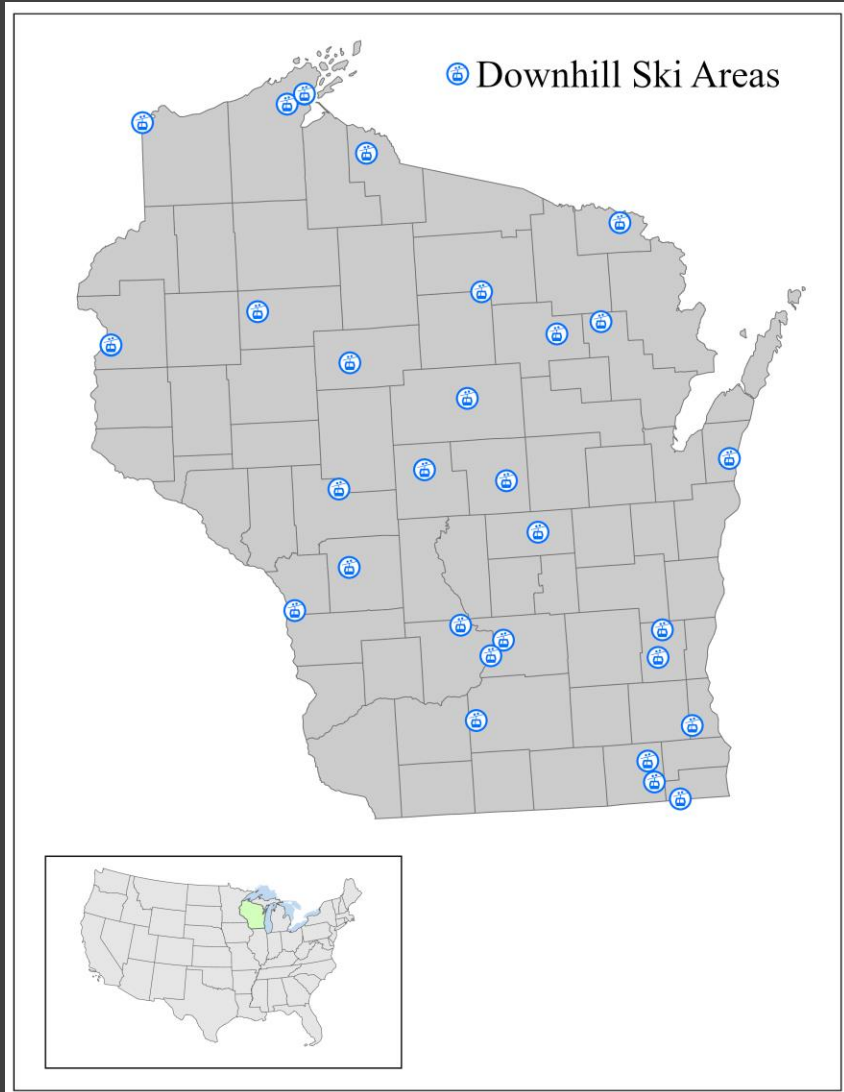
Effects on hunting and fishing, bird migration and behavior; appearance of non-local species; impacts to maple sugaring season

Creating Extension Materials

- Dr. Natalie Chin, Michelle Probst, and I worked on this question/idea
- How do we take ALL of this larger-scale information about trends into extension?
- Extension & Outreach
 - Local Stakeholders
 - Statewide industry-specific
- Started Gathering Information at both levels

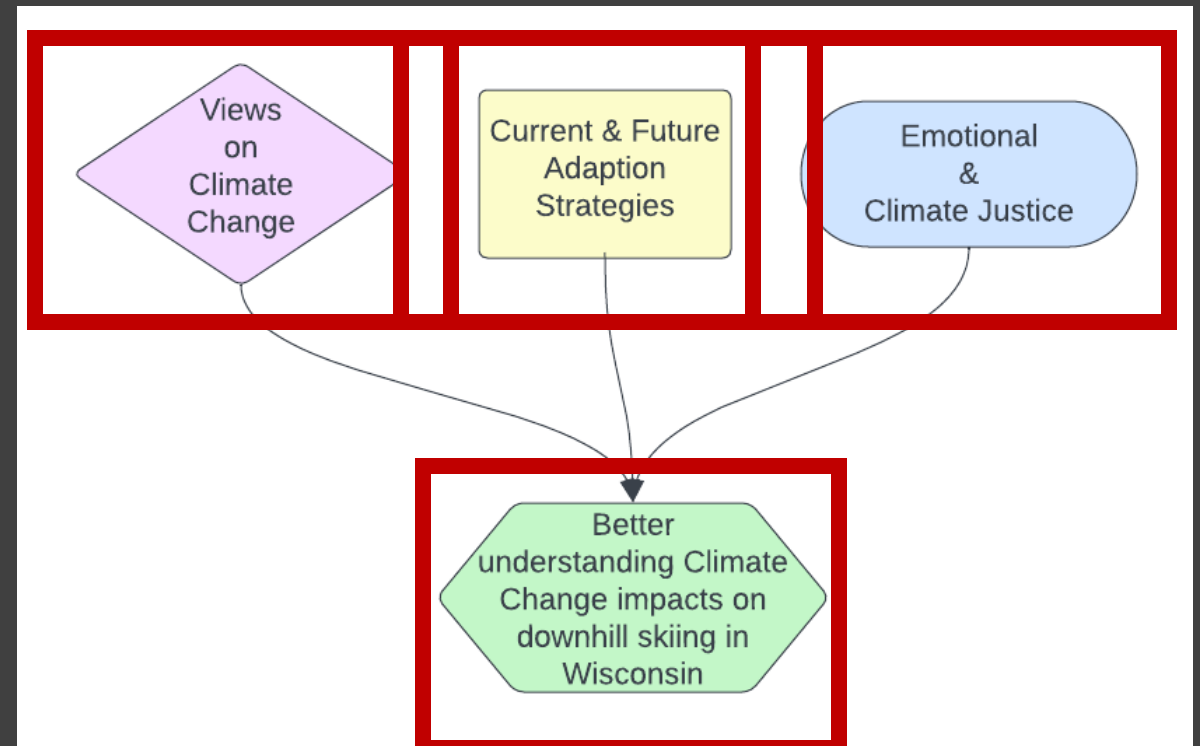


Statewide: Wisconsin Downhill Skiing & Climate Change



Statewide: Wisconsin Downhill Skiing & Climate Change

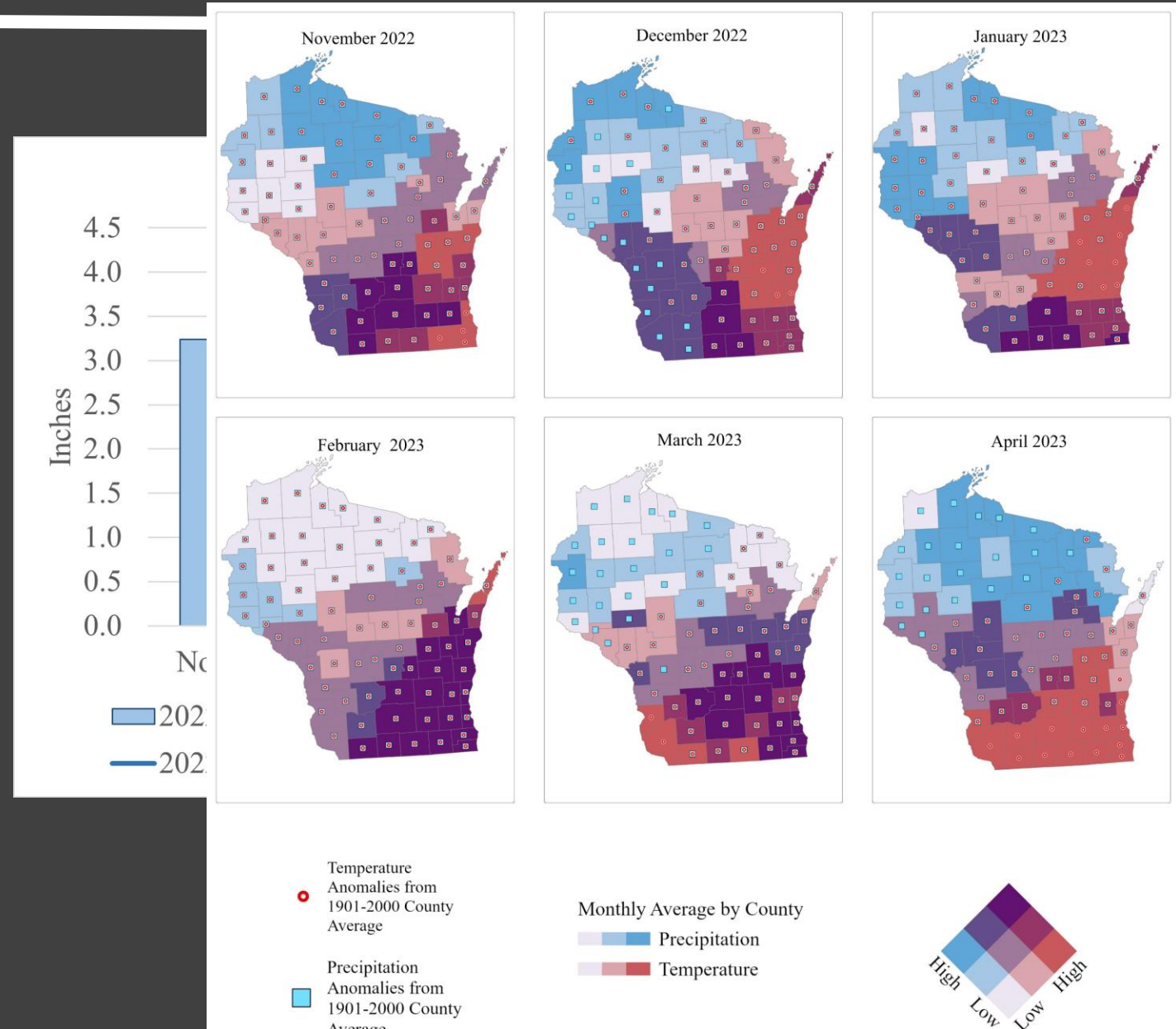
- Conduct a research project to understand downhill skiing in Wisconsin & Climate Change
- **Overall Goal**
 - Understand how this industry is being impacted by climate change
 - Provide solutions
- **Interviews**
 - Managers & Owners in WI
 - Final total 8 (~25% of total)



Current Impacts: Wisconsin Downhill Skiing & Climate Change

• Key Finding 1

- All mention climate change impacts
 - Vary by location
 - Volatility is the most difficult
 - Operating costs
- Key adaptation strategies
 - Snowmaking
 - More slope management
 - Heavy investment in technology for planning



Statewide: Wisconsin Downhill Skiing & Climate Change

• Key Finding 2

- Largest impact = Marketing
 - The public does not know that they have snow
 - Feel the impact of *Backyard Effect*
- Adaptation Strategies
 - Increase marketing
 - Education
 - Via Social Media

Examples of Backyard Effect

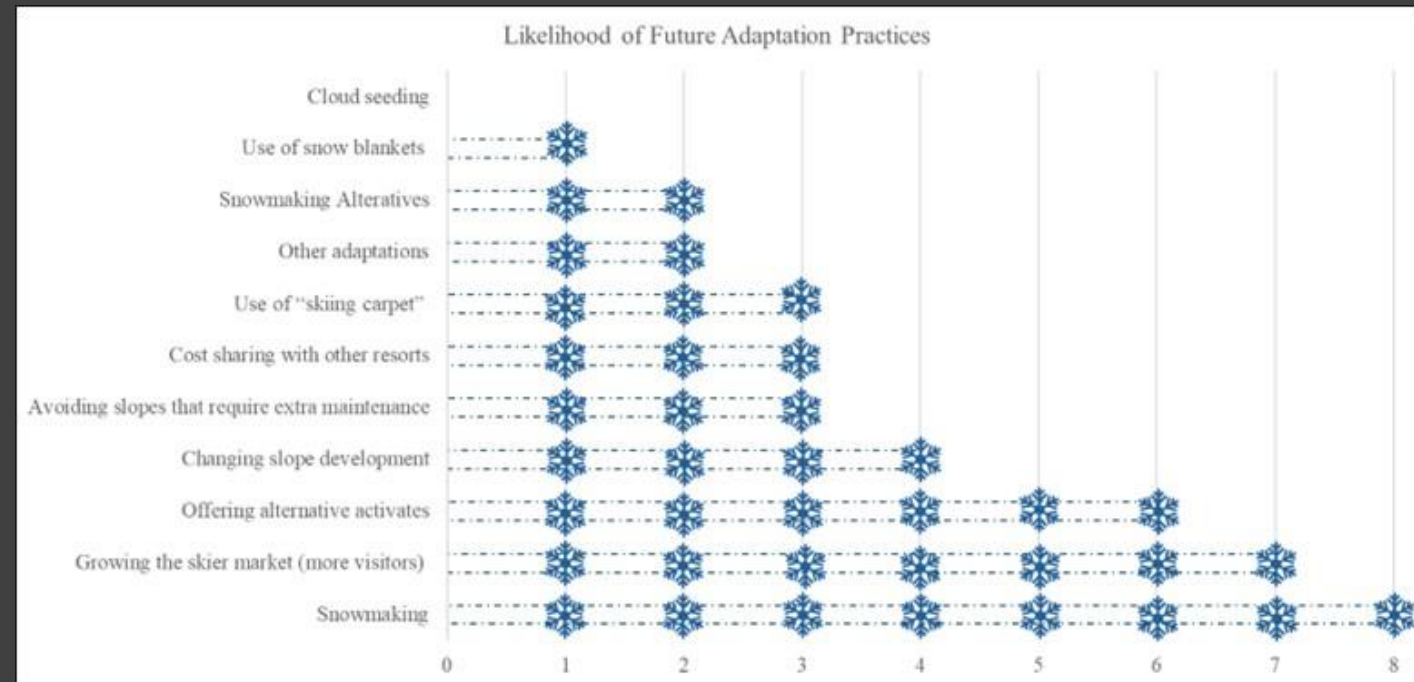
I think for our local customer base that we draw from for our ski resorts specifically it's a little bit of the sales and that we have really when we've been making a lot of snow. And it's not a heavy powder product. 3. And there's no doubt that all snow is still the number. Even though we've had snow for a while now it has grown and people are looking at grass in their backyard? Yes your backyard is a better marketing than two inches of snow in someone's backyard. Like there's nothing that beats it... I think if Chicago gets some snow, it makes people think we should go do something fun in the snow.



Future of Skiing in Wisconsin

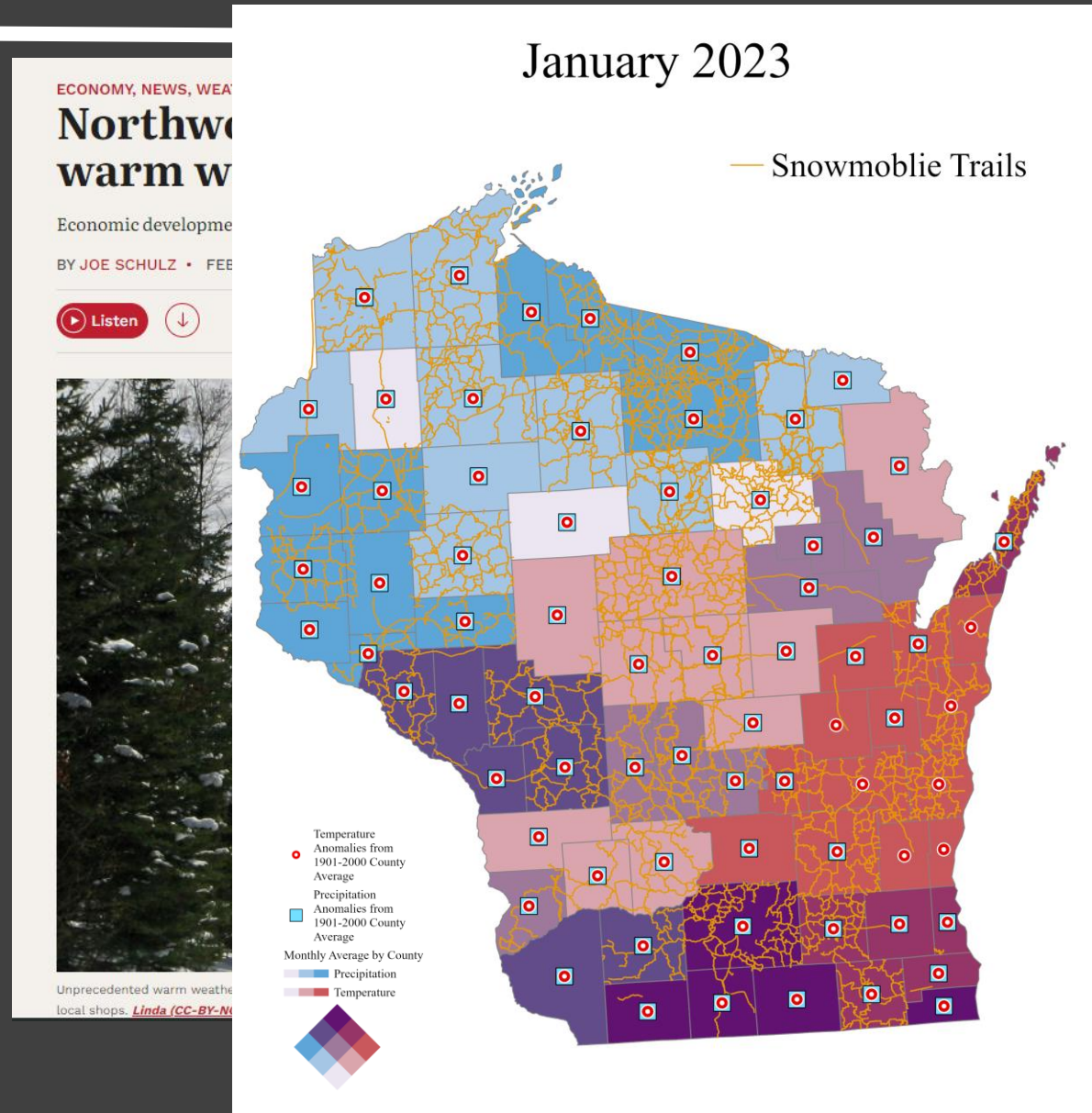


- **Key Findings**
- Overall positive about future
 - Still riding COVID bump
 - Worry for future
- **Future Adaptions**
 - Investing in snowmaking
 - Education & Outreach
- **Solutions**
 - State investment in k-12 programs
 - Incentives for upgrading equipment



Next Steps for Statewide Work

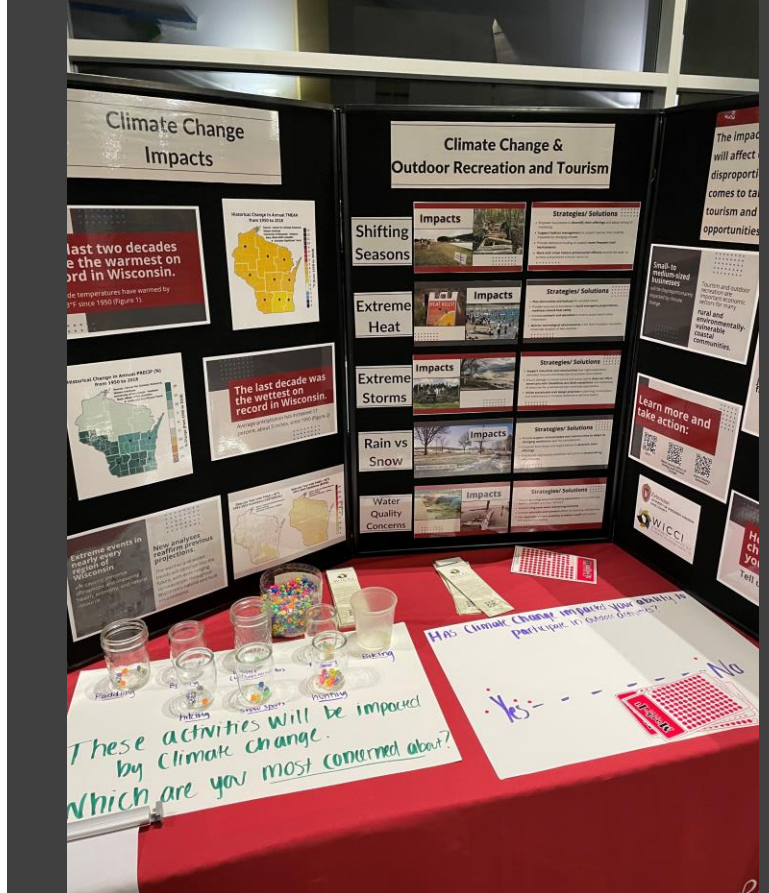
- Disseminate information
 - Work with industry to continue support
- Similar work in other areas
 - Ice Fishing
 - Snowmobiling
 - Cross-Country Skiing



Local Efforts

- Challenging topic
- Working to provide support within the local context as well
- Doing this by gaining input from stakeholders
- Creating tools to adapt to changes
- Brief example that we hope to expand upon in the future



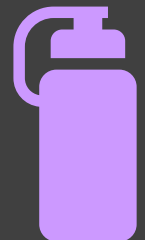
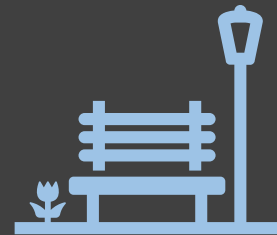
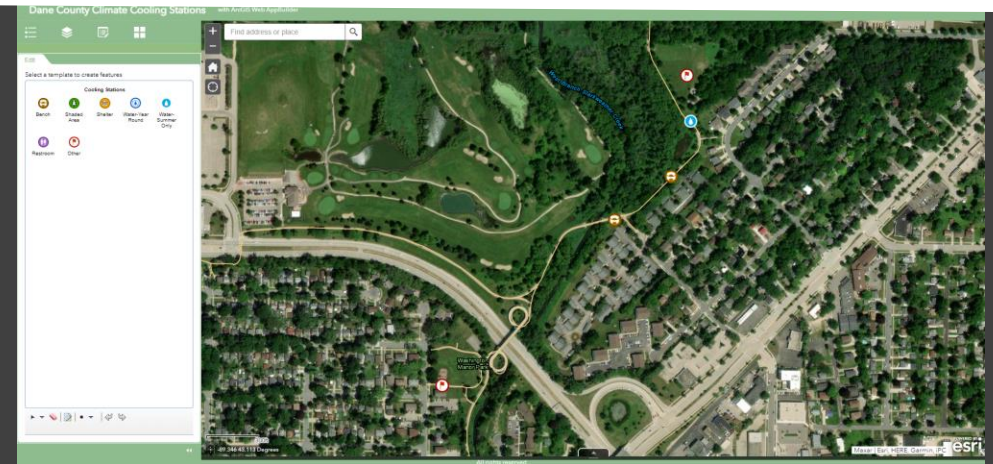


Input From Stakeholders

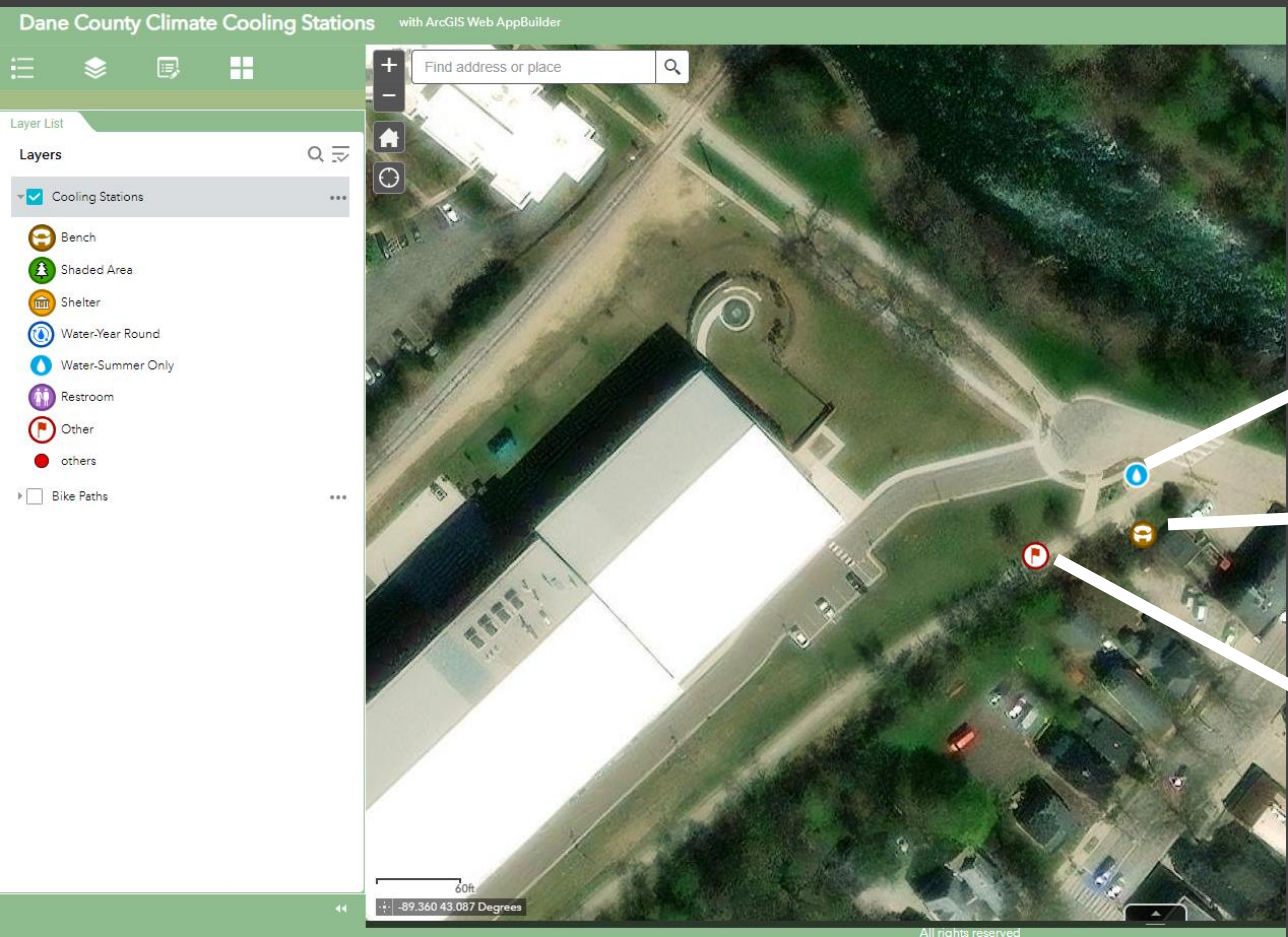
- Tall Task!
- Where to start?
- We decided to gain input from recreationist
- Canoecopia 2023

Local: Biking & Trial Map

- Learned that **planning** was a key component to changing conditions
- **Aid Planning Efforts**
- Cooling Centers for Bike Paths Pilot Project

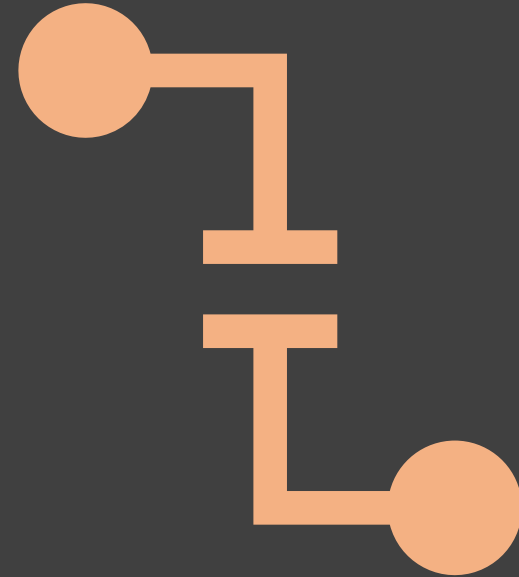


Local Programming: Biking & Trial Map



Local: Biking & Trail Map

- **Lessons Learned**
 - Good: Application/workflow works
 - Bad: Data collection takes a long time!
 - Working on Ways to Crowd Source data collection
- **Currently Halted**
- **Next Steps**
 - Looking for partner counties/local areas



Next Steps in General for Exentionsion

- **Lessons Learned**

- Climate change programming is challenging, but **needed**
- Can be impactful
- Local & State stakeholders were **positive/receptive**

- **Local Efforts**

- Pivot to a new location and create crowd sourcing event
- Participation from local biking community

- **Statewide Efforts**

- Analyze data
- Disseminate information via report & presentations
- Identify next community to research
- Create regional specific information for impacts and paths forward

Acknowledgments

Thank you!

Project Partners

- Dr. Natalie Chin
- Michelle Probst
- Hannah Higgins
- WICCI Tourism & Outdoor Recreation Working Group Members

Participants

- Booth Visitors at Canoecopia
- Downhill Skiing Stakeholders

Any Questions

