

# Livestock depredation risk and public attitudes to lethal management

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Welcome to the Derse Foundation

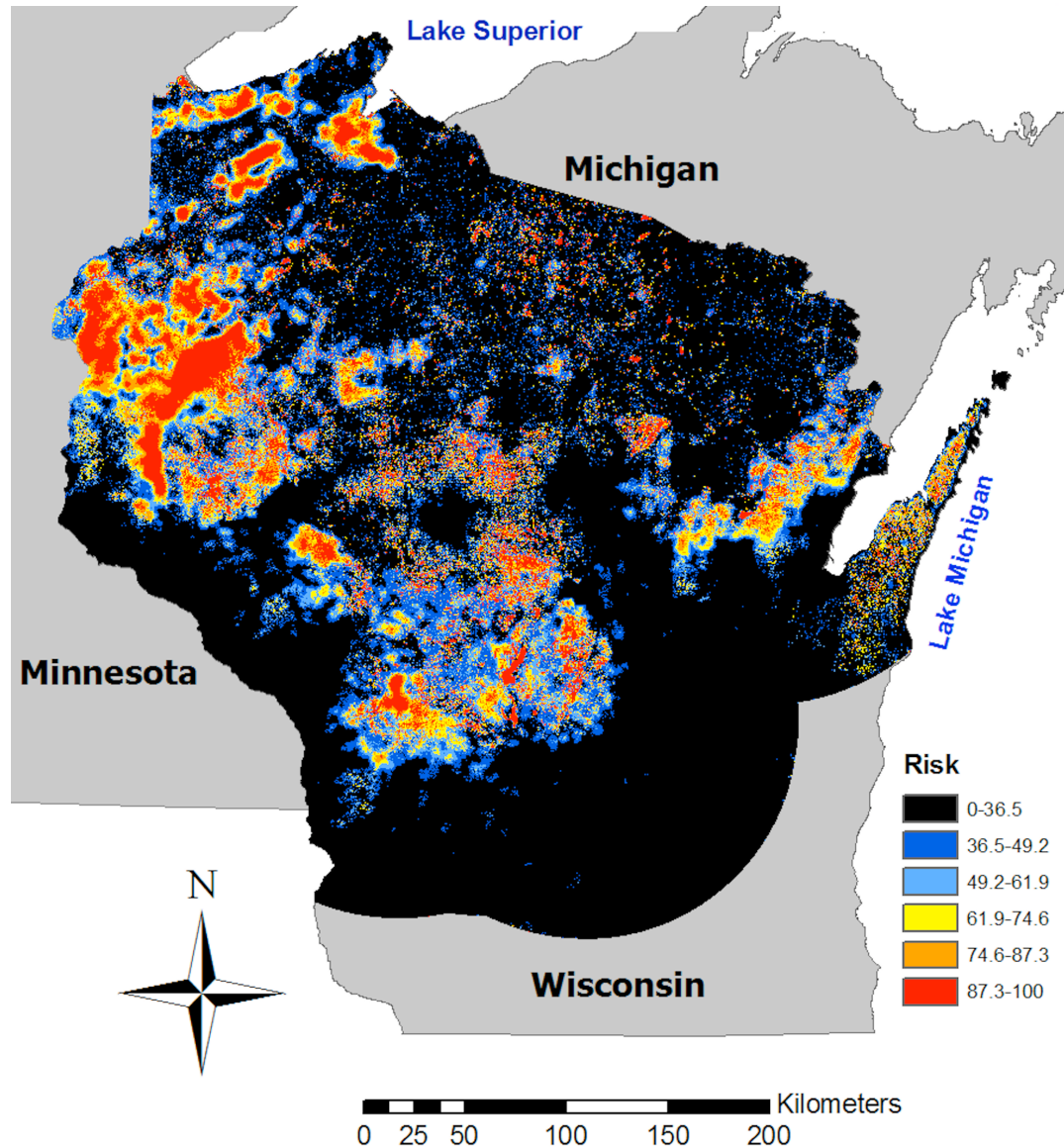


# OUTLINE

- Risk map update 2011: predicting locations at risk for livestock depredations and lethal control of wolves
- Did public hunting / trapping raise tolerance?
- Public opinion of hunting rules
- The public trust

$$P(\text{affected}) = \frac{1}{1 + e^{.7948 - 9.7366G - 12.0753DF + .0681DW + .6065(DW - 7.1806)(DF - .0544)}}$$

- Higher risk with more grassland, pasture, hay
- Higher risk closer to a known wolf pack range,
- Higher risk when farther from any forest, and
- Interaction of 2 and 3



Treves, Martin, Wydeven, Wiedenhoft (2011) Bioscience

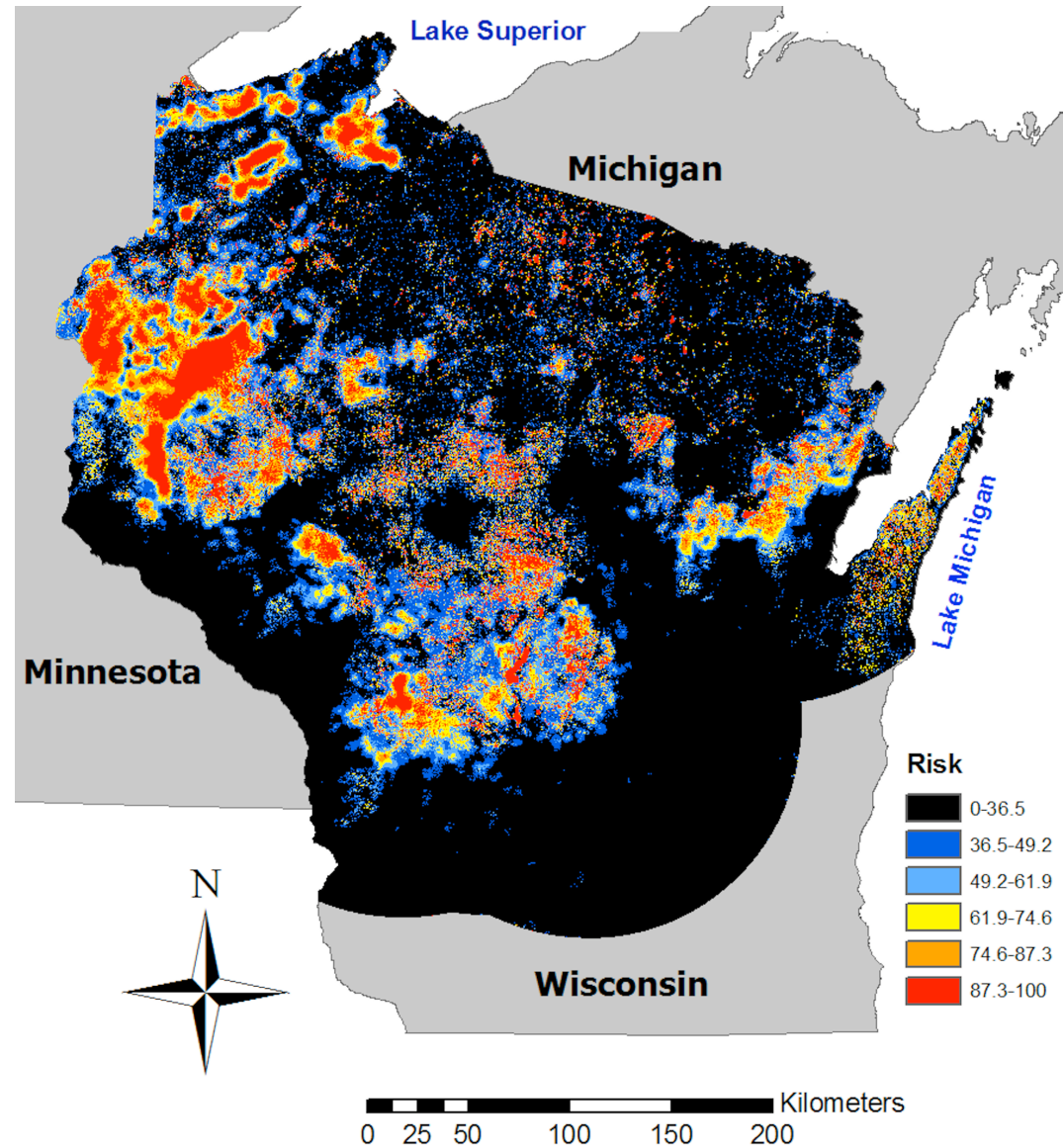
Nice models can fool you  
They have to predict the unknown



J L RODRIGUEZ / WPY

# 2006 risk map had 88% predictive ability

- 60 new Affected sites 2007–2009
- The risk map correctly classified 53 (88%) sites as *Affected* ( $p < 0.0001$ )



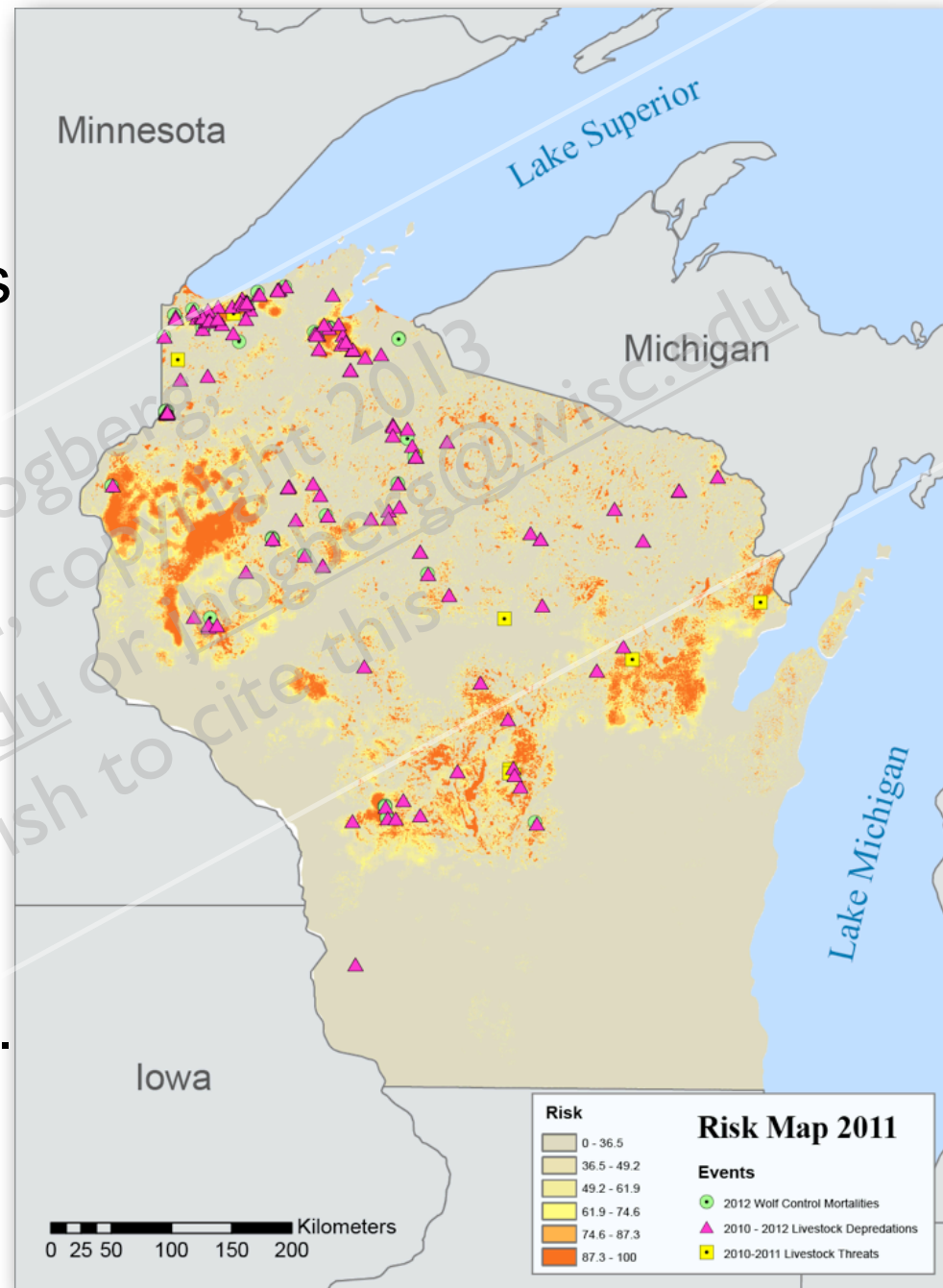
Treves, Martin, Wydeven, Wiedenhoft (2011) Bioscience

# 2011 risk map predicts 2010–2012

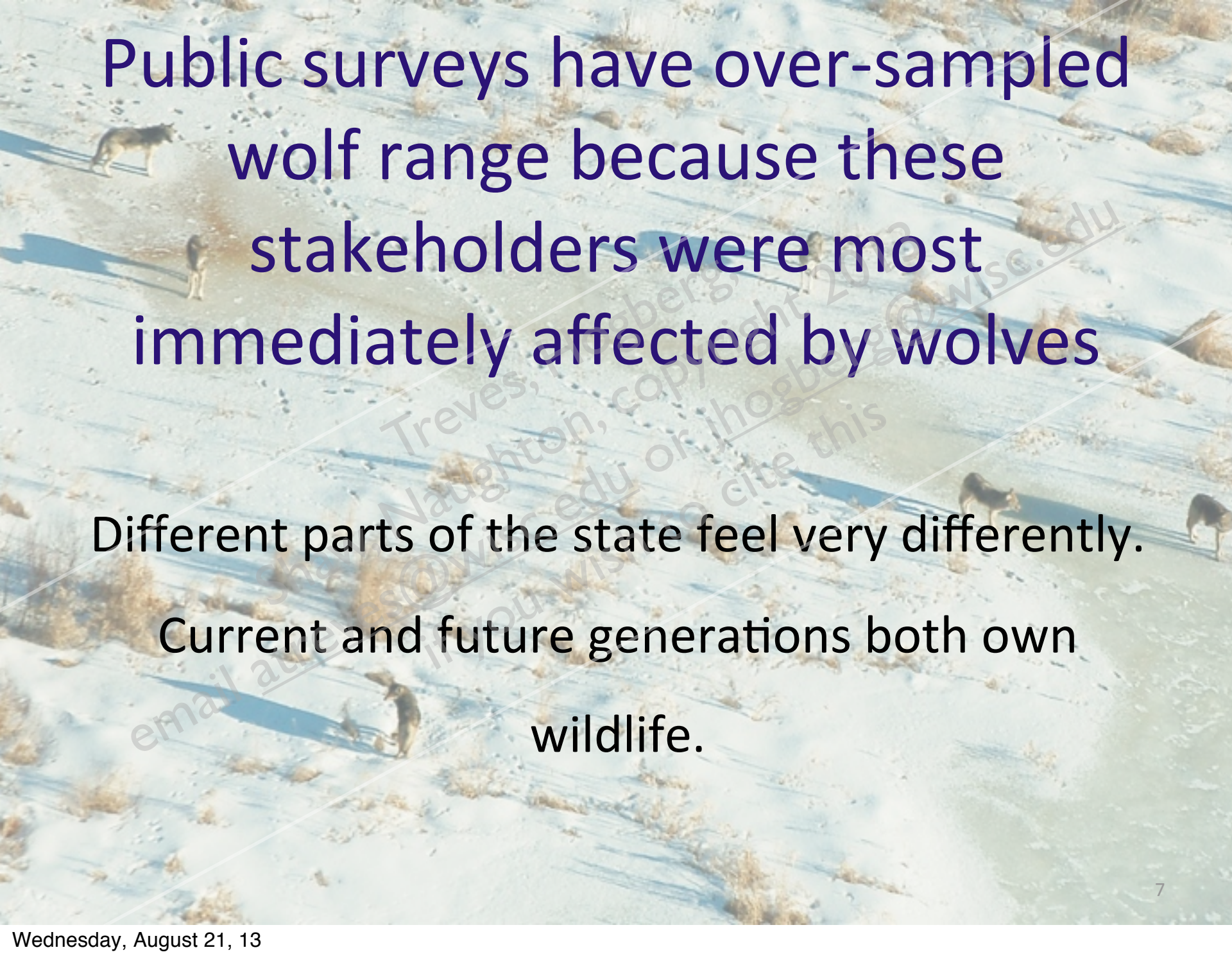
90% of 175 depredation sites  
were classified as risky

84% of 76 lethal control sites  
were classified as risky

Overall 69% of 251 sites  
appeared in top three risk  
categories and 33% occurred in  
the highest-risk (red) category  
which comprised 5% of the state.



Treves & Rabenhorst, unpublished



Public surveys have over-sampled  
wolf range because these  
stakeholders were most  
immediately affected by wolves

Different parts of the state feel very differently.  
Current and future generations both own  
wildlife.

# Public Opinion of Wolves in Wisconsin 2013 Survey Results

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Wednesday, August 21, 13



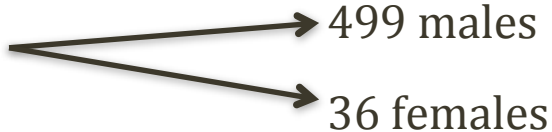
- Have attitudes changed since the 2012 wolf harvest?
- Has tolerance increased since the 2012 wolf harvest?

# 2013 Survey Sample

2004 Non-wolf range respondents

2009 Wolf-range respondents → includes 2001 & 2004 wolf-range panels

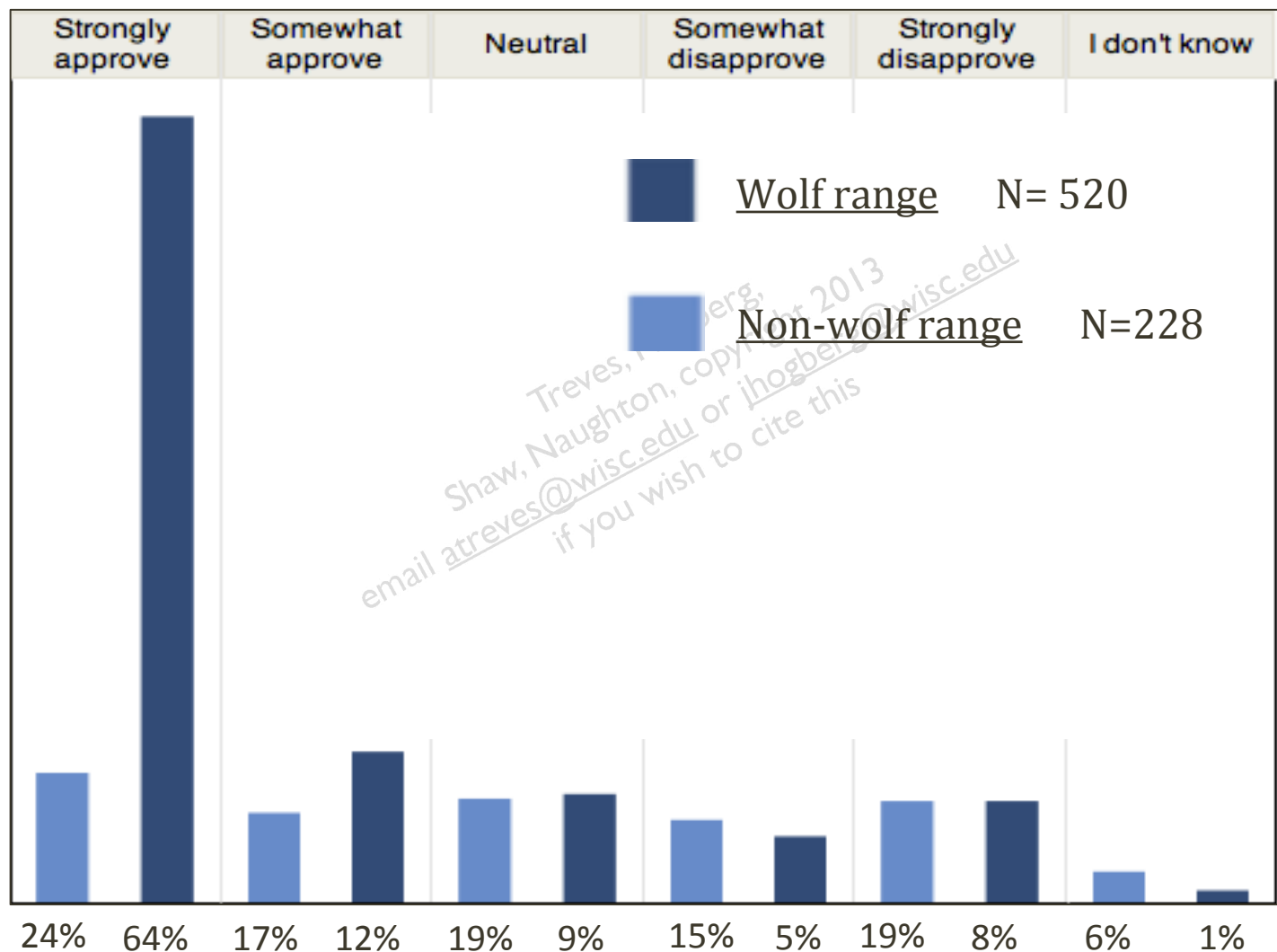
## Sample Size

- 1311 surveyed, 772 responses=59%
- Non-wolf range: 234 responses
- Wolf range: 538 responses
  
- 81% male, 19% female
- 70% hunters 
  - 499 males
  - 36 females

# A few quotes...

- “There is a reason our ancestors got rid of them in the first place. They stole our food and disrupted our livelihoods.”
- “I think the DNR has messed around too much with things the way it is. At this point nature has nothing to do with it.”
- “Being from Northwest WI, I have always enjoyed hunting and fishing around the Blue hills area. I love being able to see wildlife and now the wolf adds to that.”

# How do you feel about the legislative decision to open the 2012-2013 wolf hunting and trapping season?

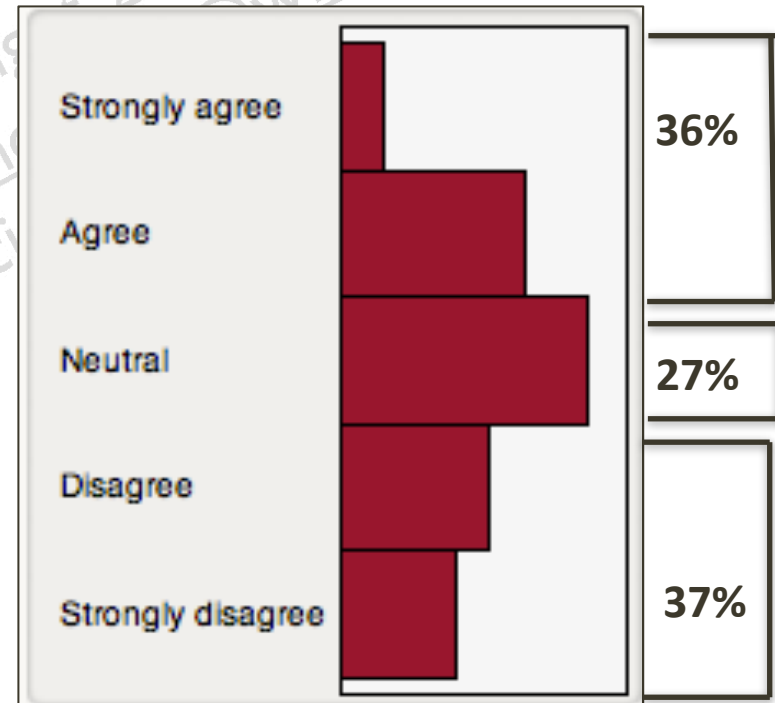
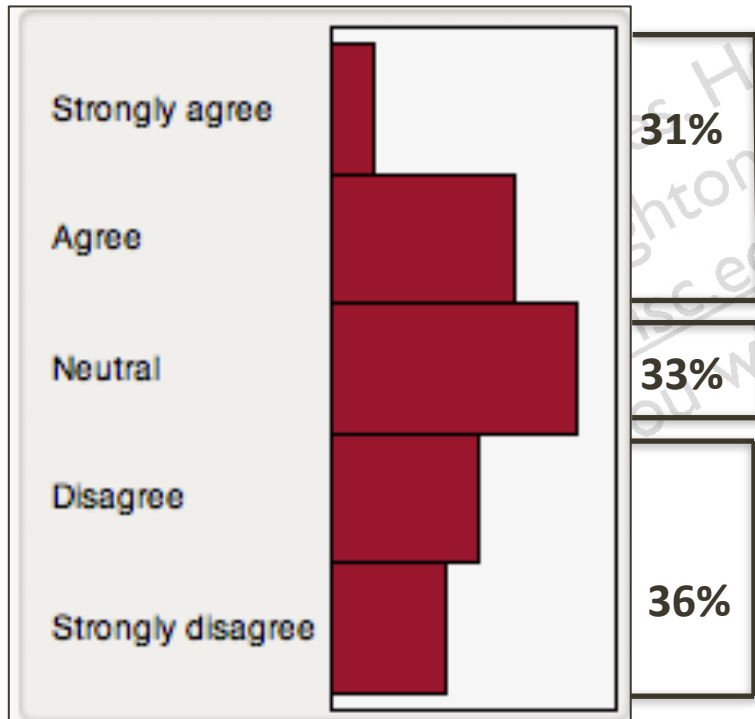


Wilcoxon 2 Sample Test with Normal Approx.  $Z=10.5$   $p<.0001$

# (2013) “My tolerance for WI wolves increased since people can hunt them”

2013 Non-wolf range N=219

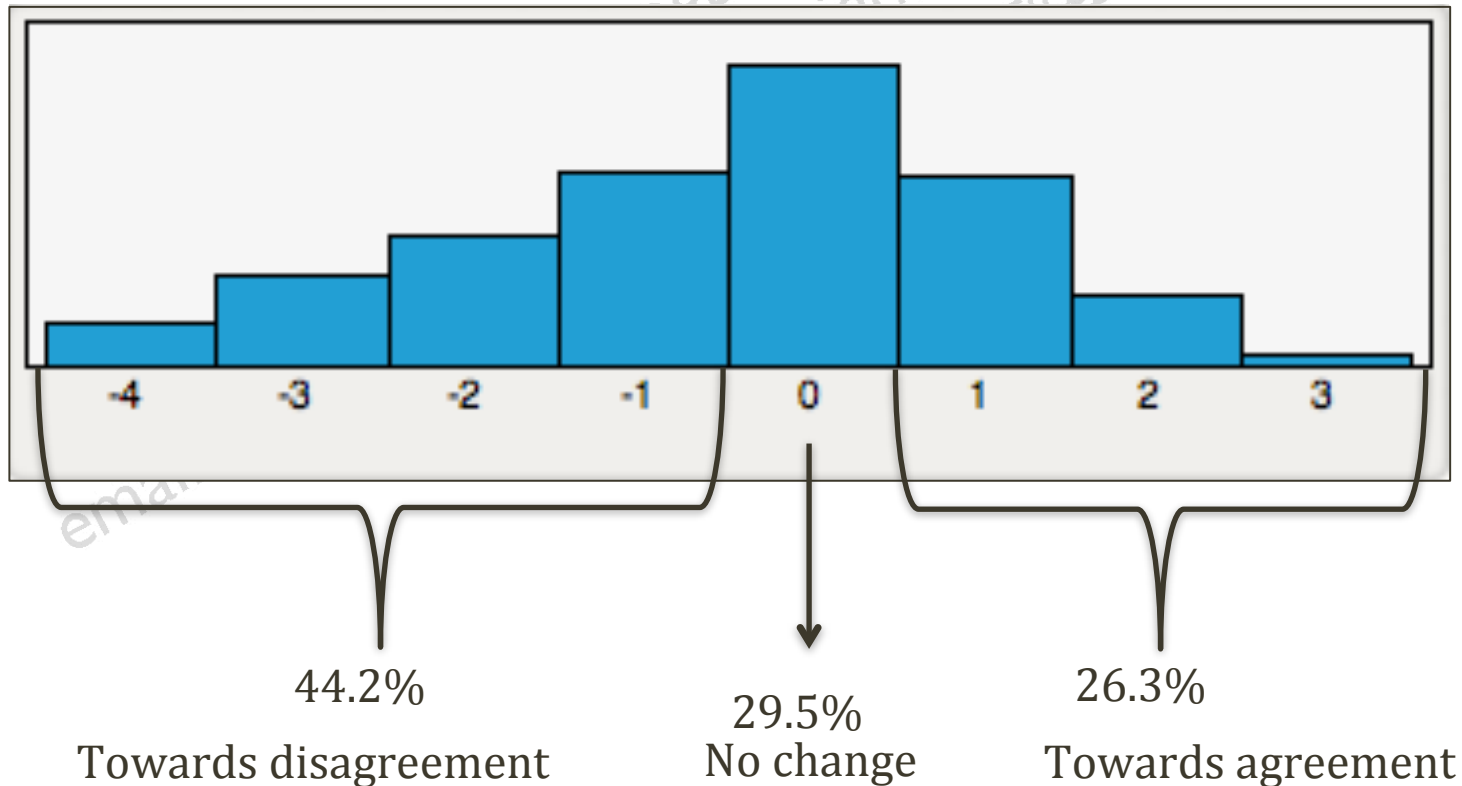
2013 Wolf range N=514



\*No difference between wolf range and non-wolf range response.  
Wilcoxon 2 Sample Test with Normal Approx.  $Z=.43$   $p=.66$

## Did tolerance change since 2009?

- (2009) “My tolerance for WI wolves would increase if people could hunt them”
- (2013) “My tolerance for WI wolves increased since people can hunt them”



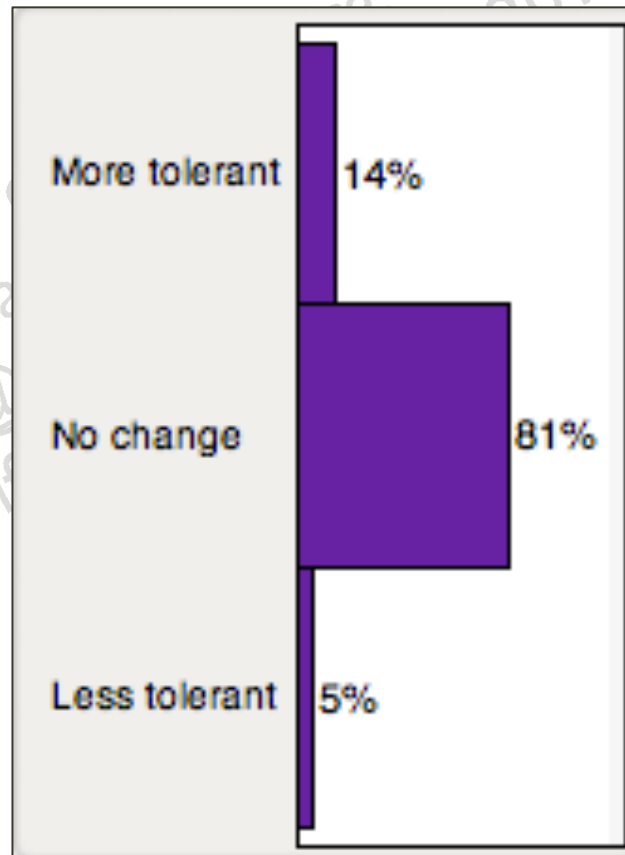
Wilcoxon Signed Rank paired samples test:  $T = 10110.0$ ,  $DF = 443$ ,  $P < .0001$

N=444

# Did your opinion of wolves change since the 2012-2013 WI wolf season?

2013 Respondents

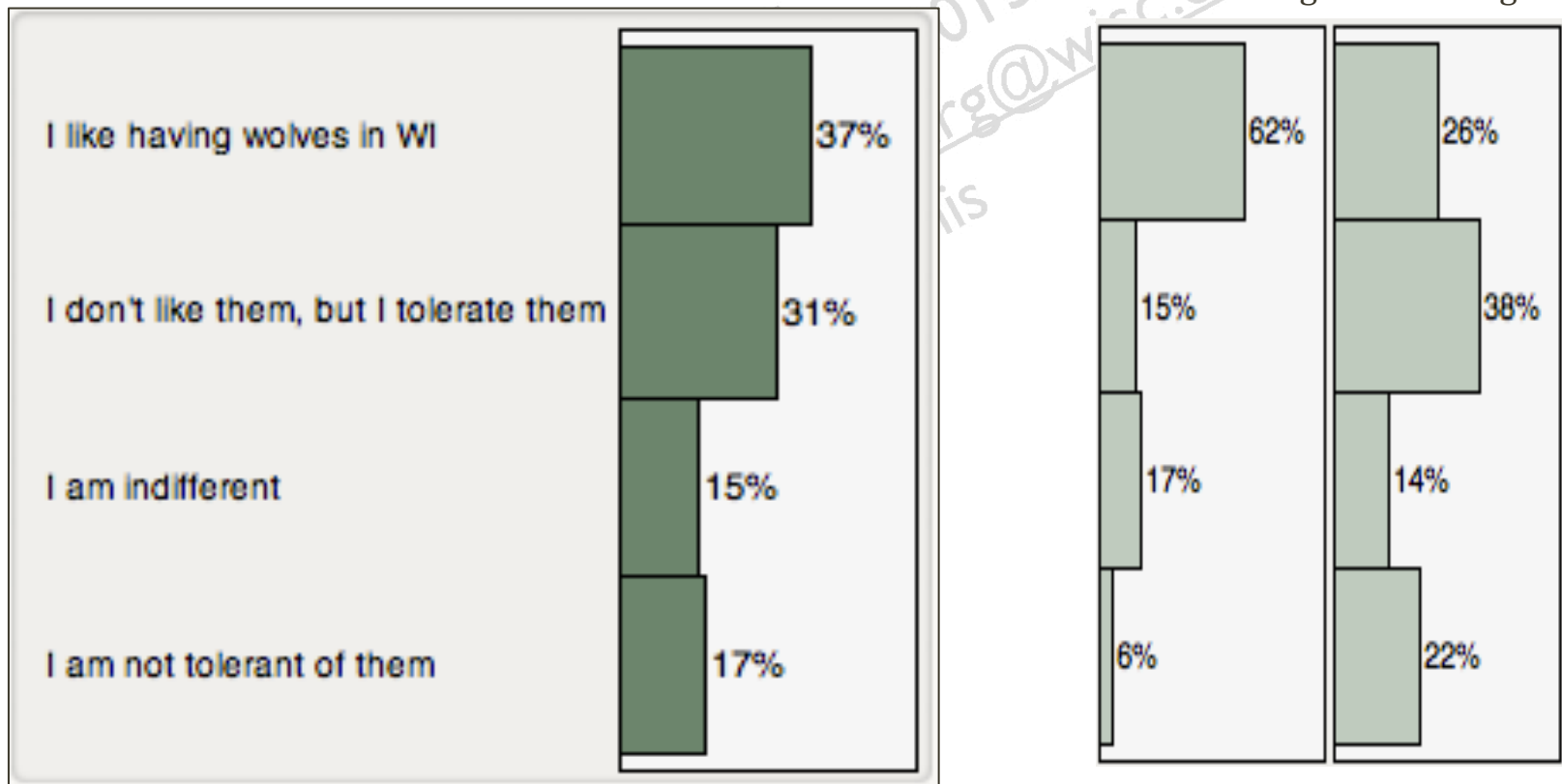
N=686



\*No difference between wolf range and non-wolf range response.  
Wilcoxon 2 Sample Test with Normal Approx.  $Z=-.3$   $p=.77$

# If no change, what is your opinion of wolves in the state?

## 2013 Respondents



\*Difference between wolf range and non-wolf range response.  
Wilcoxon 2 Sample Test with Normal Approx.  $Z=6.86549$   $p<.0001$

N= 607

Wednesday, August 21, 13



# Review of Preliminary Results

Majority of wolf range residents support the legislative decision to open the wolf season.

Fewer residents agree that their tolerance of wolves has increased since they can hunt them.

(no difference occurs between those that live inside/outside of wolf range)

Majority report no change in opinion of wolves following wolf harvest.

Majority report positive or tolerant attitudes towards wolves.

# Public opinion of wolf-hunting rules

2013 survey: 772 respondents

538 in wolf range (IN) and 234 outside (OUT)

6% of respondents applied for a 2012 tag and 39% know someone else who did

- “Which, if any of the following rules would you support for the 2013-2014 hunting and trapping season on wolves in WI? (Check ALL that apply)” respondents=5538 in wolf range (IN) and 234 outside (OUT)
- 52% “no hunting wolf pups” (44% in vs. 68% out)
- 48% “no hunting at night” (45% in vs. 57% out)
- 44% “no use of dogs” (37% in vs. 61% out)
- 44% **“not during the breeding & pregnancy season”** (37% in vs. 61% out)
- 39% “no out-of-state hunters” (37% vs. v 45% out)
- 36% “no use of traps” (28% in vs. 54% out)
- 29% “no use of bait” (22% in vs. 45% out)
- 26% “only wolves that have caused property damage” (20% in vs. 42% out)
- 18% “no use of predator calls” (14% in vs. 28% out)

# Change over time measured only among **residents** **in wolf range** surveyed in 2009 and 2013

- 2009: “If a public hunting or trapping season were planned for Wisconsin wolves, which, if any, of the following rules would you support? (Check all that apply)”
- 2013: “Which, if any of the following rules would you support for the 2013-2014 hunting and trapping season wolves in Wisconsin? (Check ALL that apply)”
- “no hunting wolf pups” +7%
- “no use of dogs” +7%
- “hunting only wolves that have caused property damage” +6%
- “no use of bait” +6%
- All other rules +3–5%

2013: “I want to be able to hunt wolves in Wisconsin without restrictions”

(31% agree, 21% neutral, 48% disagree)

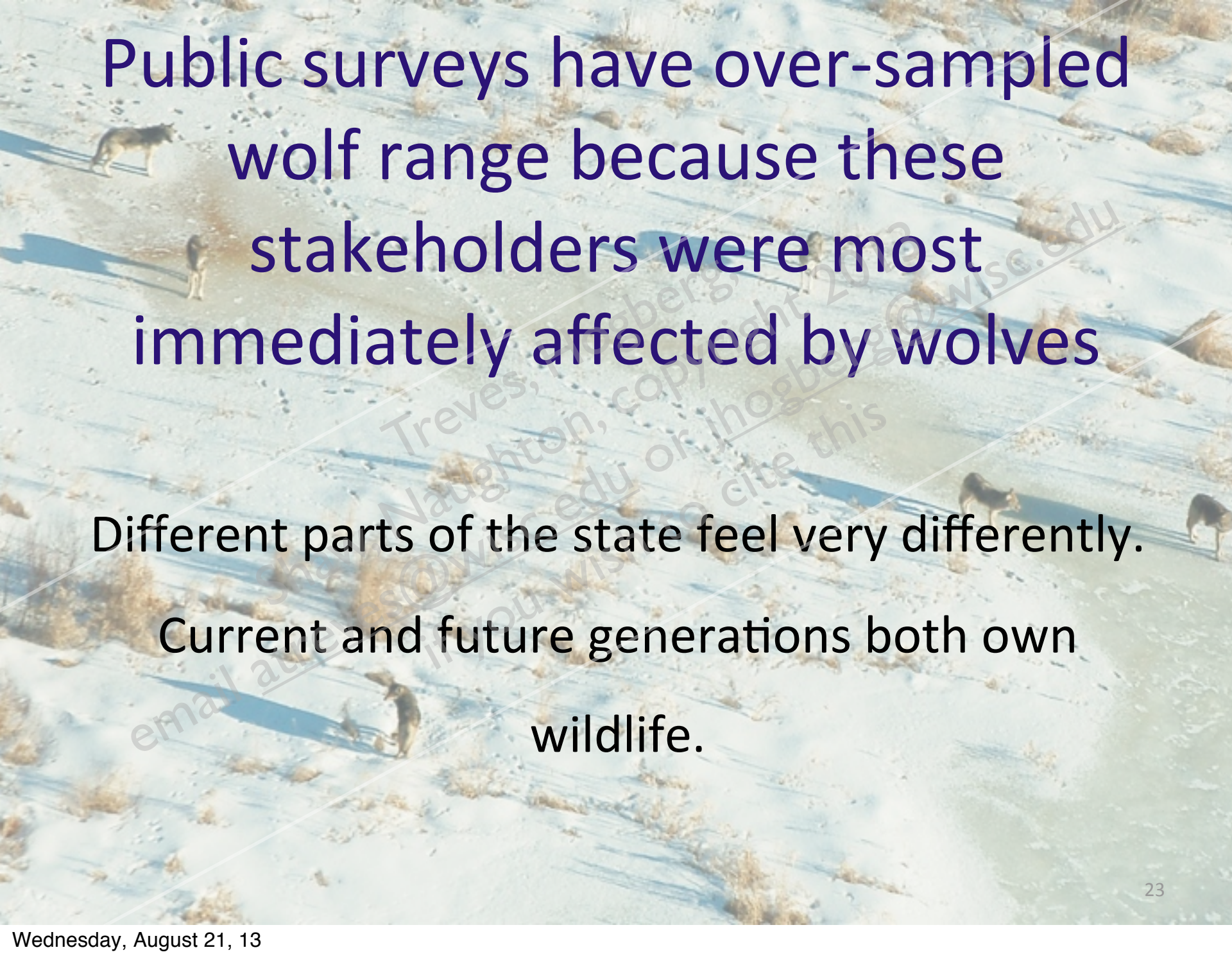
Agree = 40% in vs. 11% out;

Disagree = 38% in vs. 70% out

Change in agreement with this statement since 2009, measured only in residents of wolf range +7%

# Assessing public opinions

- Conversations involve similar people (biased samples)
- Public meetings attract vocal minorities (biased samples)
- Gold standard in scientific surveys:
  - ✓ Large sample sizes
  - ✓ Anonymous, peer reviewed methods and results



Public surveys have over-sampled  
wolf range because these  
stakeholders were most  
immediately affected by wolves

Different parts of the state feel very differently.  
Current and future generations both own  
wildlife.

# Wildlife as a public trust in Wisconsin

U.S. Supreme Court rulings vested the government with **fiduciary trust responsibility over wild animals** to ensure long-term sustainable use in the public interest.\*

WI statute: “[Wisconsin] holds title to, and the custody and protection of, all wild animals in the state, to regulate their **enjoyment, use, and conservation**” \*\*

WI Supreme Court ruled a **fiduciary trustee** “...must always be able to make a full accounting of his stewardship. When a trustee's accounts are not clear and accurate, all presumptions are against him and the obscurities and doubts are to be taken adversely against him” \*\*\*

\* (Geer v. Connecticut 1896 withstanding Hughes v. Oklahoma 1979)

\*\* (WIS. STAT. ANN. § 29.011(1) West 2004 and State v. Lipinske, 249 N.W. 289, 291 Wis. 1933)

\*\*\* (191, 39 Wis. 2d 437; 159 N.W.2d 660; 1968)



Science-based, representative, and participatory decision-making and management are challenging tasks

## Recommendations

- Document decisions and their rationale using..
- Adaptive management principles (transparent goals, assessments, and criteria for revision of decisions)
- Integrated social and ecological sciences