

# Impacts of message framing on audience engagement

Tim Campbell

UWEX NRI

Wisconsin Sea Grant

Wisconsin DNR

Dr. Bret Shaw

UWEX NRI

UW LSC

Dr. Barry Radler

Barrold

Consulting



**STOP AQUATIC  
HITCHHIKERS!**

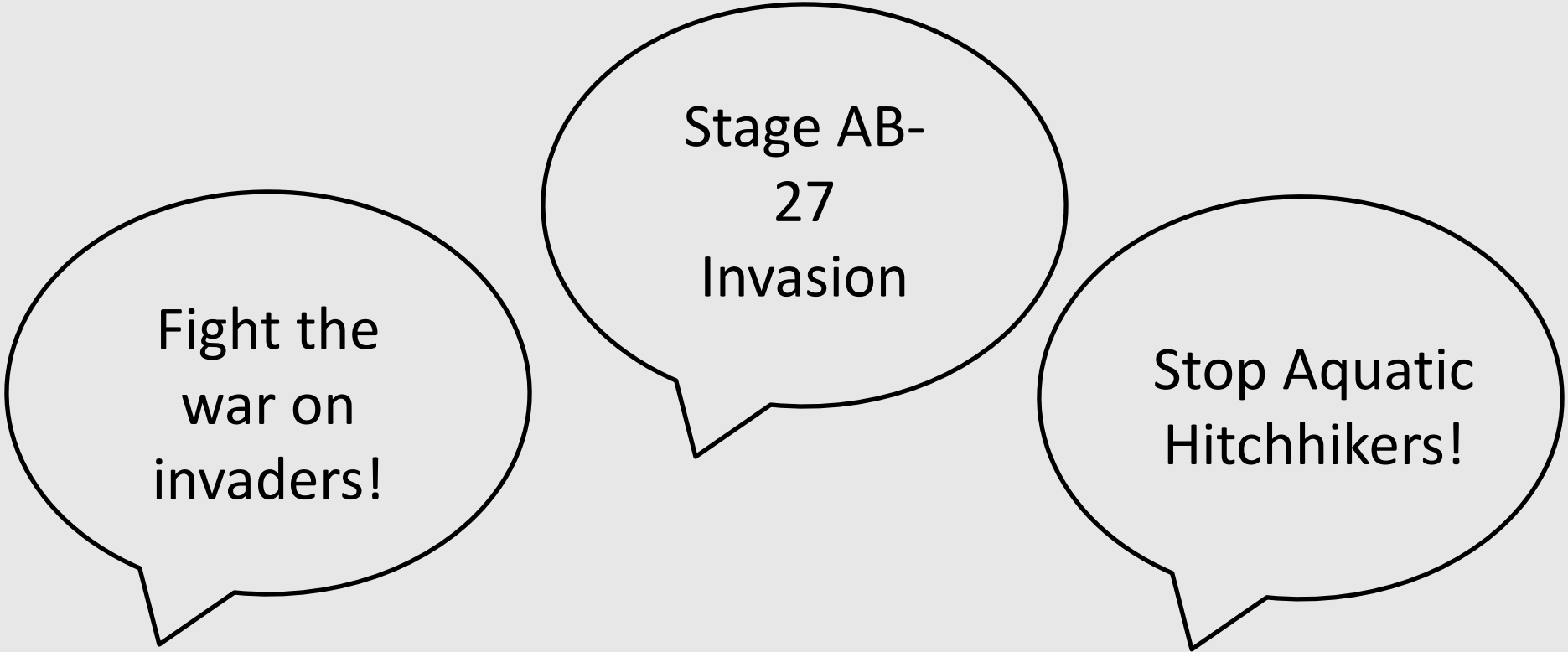
Prevent the transport of nuisance species.  
Clean all recreational equipment.  
[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)



**Extension**  
UNIVERSITY OF WISCONSIN-MADISON



# How should we talk about invasions?

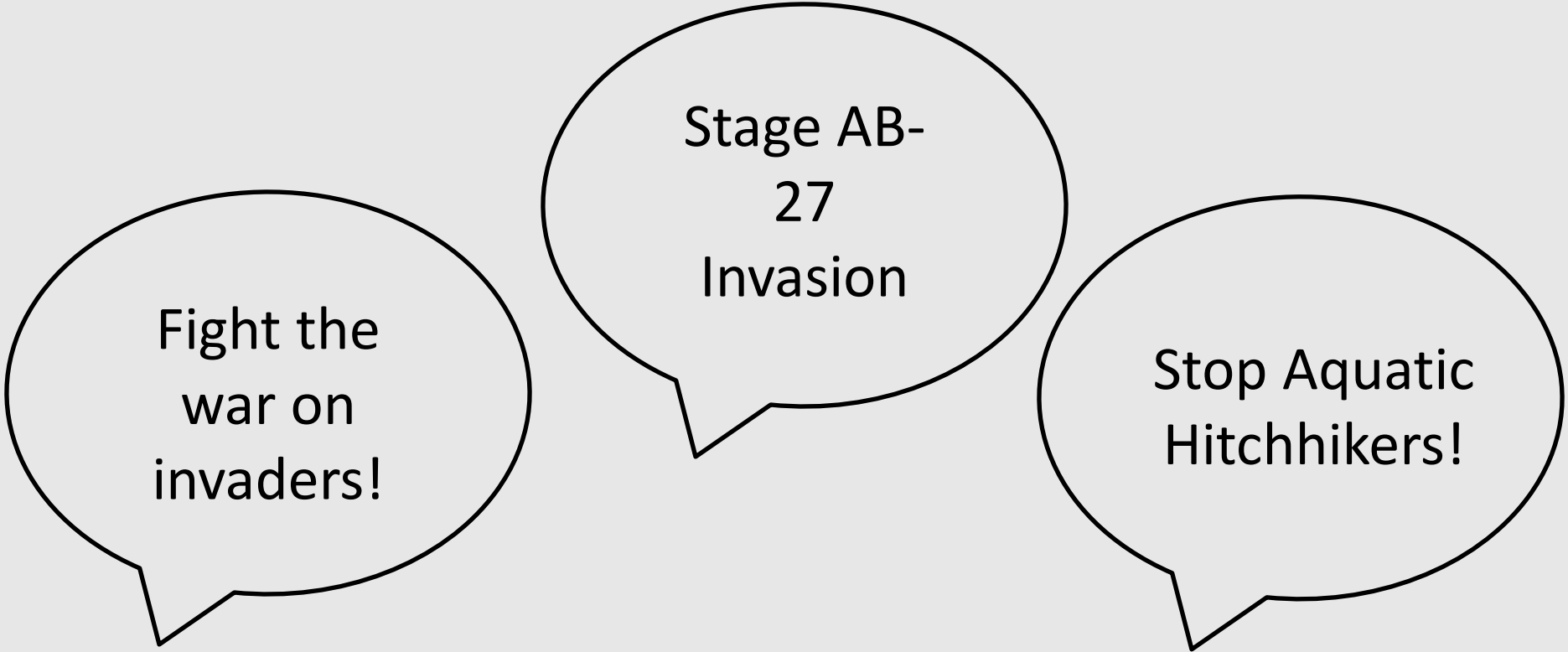


Fight the  
war on  
invaders!

Stage AB-  
27  
Invasion

Stop Aquatic  
Hitchhikers!

# We don't know how these messages impact thoughts and actions



Fight the  
war on  
invaders!

Stage AB-  
27  
Invasion

Stop Aquatic  
Hitchhikers!

# Militaristic Fames

Actual examples



**Learn how to become a  
Weed Warrior!**





# Nativist Frames

Actual examples



# Hitchhiker Frame

Actual example

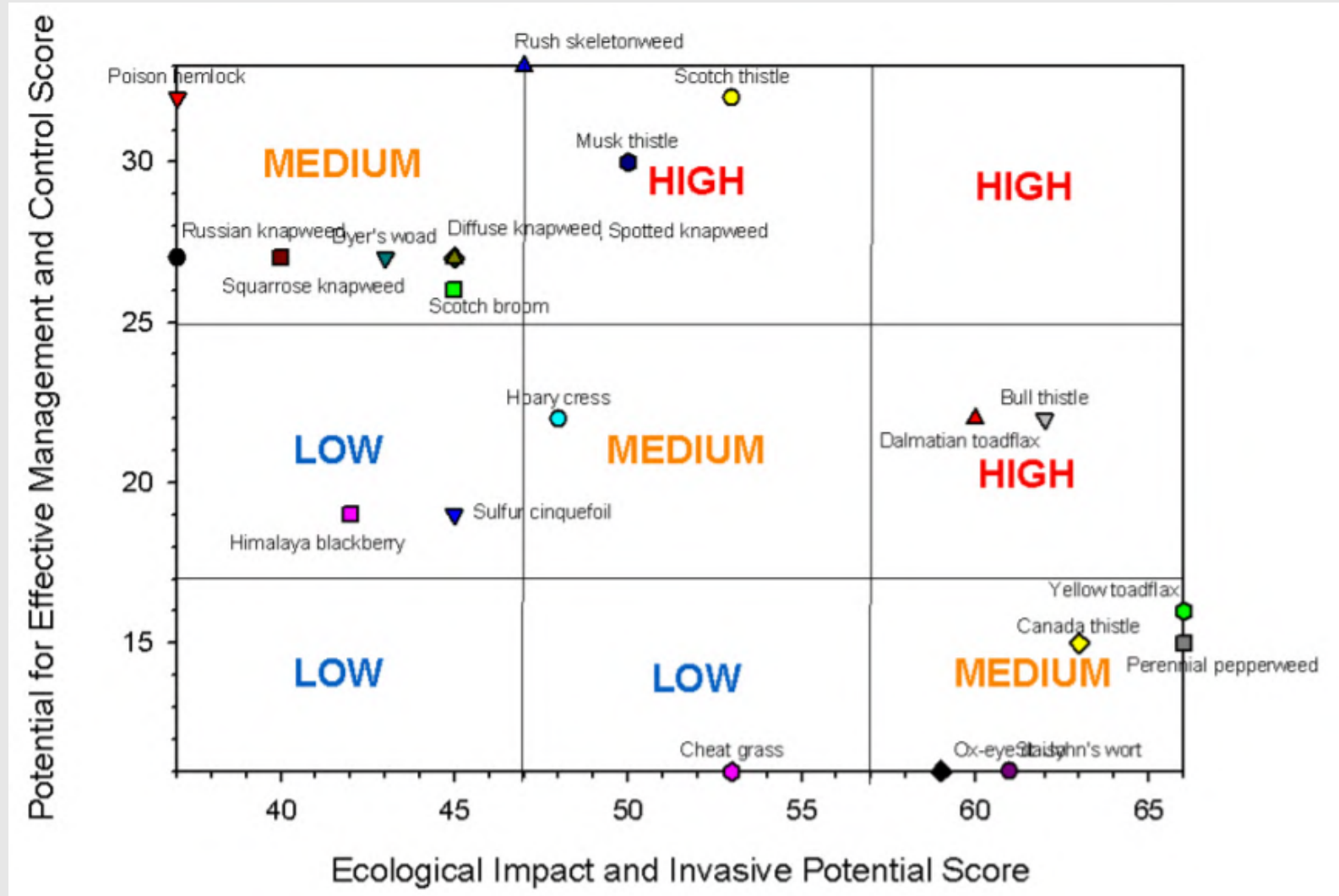


**STOP AQUATIC  
HITCHHIKERS!™**

Be A Good Steward.  
Clean. Drain. Dry.

[StopAquaticHitchhikers.org](http://StopAquaticHitchhikers.org)

# Scientific “Impact-based” Communications



## Science Message Frame

- Focus on known impacts of AIS
  - Fisheries, recreation, property values, water quality
- No metaphor
  - Straight-forward message about impacts of AIS
  - Hard to find real-world examples that don't use some metaphoric language
  - The word 'invasive' itself has some metaphorical meaning



# Protective Message Frame



## Project Goals

- Provide data on impacts of different invasive species message frames
- Facebook provides a great testing ground for this
- Test which frames are most effective at generating
  - Lowest cost per click
  - Engagement metrics
- Compare metrics by gender

## Methods

- Five different message frames
  - Militaristic, nativist, hitchhiker, protective & science
- Five, four-day tests consisting of \$250 for each sex
  - \$50 per message frame, 5 message frames
  - Total of \$2,500 spent
  - Targeting
- Judged success based on cost-per-click and engagement
- Reached >270,000 people

## Operationalizing Frames:

## Combining Art and Science

- We know that visuals have a greater impact than text
- Worked with an artist since capturing these message frames with a photo would be difficult
- Pilot tested at fishing expo
- This was a lot of fun

## Science/Impacts



**Wisconsin Lakes Partnership**

Sponsored · 🌐

👍 Like Page

Zebra mussels are present in Wisconsin's lakes and can impact fisheries and recreation.



Prevent the spread of invasive species

Stop invasive species in your wake. The Stop Aquatic Hitchhikers campaign empowers recreational users to stop the transport and spread of these harmful aquatic invasive species.

[STOPAQUATICHITCHHIKERS.ORG](http://STOPAQUATICHITCHHIKERS.ORG)

[Learn More](#)



## Militaristic



**Wisconsin Lakes Partnership**

Sponsored · 🌐

👍 Like Page

Help fight the battle against zebra mussels.



### Stop the Zebra Mussel Invasion

Stop invasive species in your wake. The Stop Aquatic Hitchhikers campaign empowers recreational users to stop the transport and spread of these harmful aquatic invasive species.

[STOPAQUATICHITCHHIKERS.ORG](http://STOPAQUATICHITCHHIKERS.ORG)

[Learn More](#)

## Nativist



**Wisconsin Lakes Partnership**

Sponsored · 🌐

👍 Like Page

Keep them out of Wisconsin's lakes.



**Not Native. Not Welcome.**

Stop invasive species in your wake. The Stop Aquatic Hitchhikers campaign empowers recreational users to stop the transport and spread of these harmful aquatic invasive species.

[STOPAQUATICHITCHHIKERS.ORG](http://STOPAQUATICHITCHHIKERS.ORG)

[Learn More](#)



## Protective



**Wisconsin Lakes Partnership**

Sponsored · 🌐

👍 Like Page

Zebra mussels harm our waters.



### Help protect Wisconsin's lakes

Stop invasive species in your wake. The Stop Aquatic Hitchhikers campaign empowers recreational users to stop the transport and spread of these harmful aquatic invasive species.

[STOPAQUATICHITCHHIKERS.ORG](http://STOPAQUATICHITCHHIKERS.ORG)

[Learn More](#)

# Hitchhikers

**Wisconsin Lakes Partnership**  
Sponsored · 



Zebra mussels can hitch a ride on your boat and hurt our lakes.



**STOP ZEBRA MUSSELS  
FROM HITCHING A RIDE.**

**Stop Aquatic Hitchhikers!**

Stop invasive species in your wake. The Stop Aquatic Hitchhikers campaign empowers recreational users to stop the transport and spread of these harmful aquatic invasive species.

[STOPAQUATICHITCHHIKERS.ORG](http://STOPAQUATICHITCHHIKERS.ORG)

[Learn More](#)



 **Wisconsin Lakes Partnership**  
Sponsored · 🌐

Keep them out of Wisconsin's lakes.



stopaquatichitchhikers.org  
**Not Native. Not Welcome.**  
Stop invasive species in your wa...

[LEARN MORE](#)

Like Comment Share

 **Wisconsin Lakes Partnership**  
Sponsored · 🌐

Zebra mussels harm our waters.



stopaquatichitchhikers.org  
**Help protect Wisconsin's lakes**

[LEARN MORE](#)

Like Comment Share

Facebook “A/B” Message Testing



	Male	Female	Combined	M v. F ANOVA
	<b>Shares</b>			
Nativist	4.40	6.80	5.60	
Militaristic	5.60	5.20 *	5.40 **	
Science	5.20	5.40	5.30	
Hitchhiker	9.20	12.00 **	10.60 **	
Nurturing/Protective	6.20	7.60	6.90	
OVERALL	6.12	7.40	6.76	
	Male	Female	Combined	M v. F ANOVA
	<b>Page Likes</b>			
Nativist	6.20	2.80	4.50	†
Militaristic	7.00	2.20	4.60	*
Science	3.40 *	4.20 †	3.80	
Hitchhiker	3.60	2.60	3.10	
Nurturing/Protective	4.80	2.80	3.80	
OVERALL	5.00	2.92	3.96	
† = p<.1				
* = p<.05				
** = p<.01				

Results

	Cost per click (CPC) groupings for each message frame		
	<u>Least Cost Effective*</u>	<u>Average Cost Effectiveness</u>	<u>Most Cost Effective*</u>
Men	Hitchhikers Protective	Nativist	Science Militaristic
Women	Hitchhikers	Science Militaristic Nativist Protective	

Results

Men	CPC
Militaristic	\$0.54
Science	\$0.56
Nativist	\$0.68
Protective	\$0.91
Hitchhikers	\$0.91

Women	CPC
Science	\$0.79
Nativist	\$0.88
Militaristic	\$0.91
Protective	\$1.00
Hitchhikers	\$1.10

Men	FB Reactions
Nativist	32.8
Militaristic	31
Hitchhikers	28.8
Protective	28.4
Science	12.8

Men	Shares
Hitchhikers	9.2
Protective	6.2
Militaristic	5.6
Science	5.2
Nativist	4.4

Men	Likes
Militaristic	7
Nativist	6.2
Protective	4.8
Hitchhikers	3.6
Science	3.4

Engagement  
Data

Men	Comments
Nativist	4.8
Militaristic	4.6
Science	2.8
Protective	1.4
Hitchhikers	1

Men	FB Reactions
Nativist	32.8
Militaristic	31
Hitchhikers	28.8
Protective	28.4
Science	12.8

Men	Shares
Hitchhikers	9.2
Protective	6.2
Militaristic	5.6
Science	5.2
Nativist	4.4

Men	Likes
Militaristic	7
Nativist	6.2
Protective	4.8
Hitchhikers	3.6
Science	3.4



Anything but the facts  
generates a reaction

Something with some  
feeling

Men	Comments
Nativist	4.8
Militaristic	4.6
Science	2.8
Protective	1.4
Hitchhikers	1



Men	FB Reactions
Nativist	32.8
Militaristic	31
Hitchhikers	28.8
Protective	28.4
Science	12.8

Men	Shares
Hitchhikers	9.2
Protective	6.2
Militaristic	5.6
Science	5.2
Nativist	4.4

Men	Likes
Militaristic	7
Nativist	6.2
Protective	4.8
Hitchhikers	3.6
Science	3.4

Men	Comments
Nativist	4.8
Militaristic	4.6
Science	2.8
Protective	1.4
Hitchhikers	1

More shares for the socially  
desirable frames

Wants to be seen  
supporting this message



Men	FB Reactions
Nativist	32.8
Militaristic	31
Hitchhikers	28.8
Protective	28.4
Science	12.8

Men	Shares
Hitchhikers	9.2
Protective	6.2
Militaristic	5.6
Science	5.2
Nativist	4.4

Men	Likes
Militaristic	7
Nativist	6.2
Protective	4.8
Hitchhikers	3.6
Science	3.4

More page likes for the more controversial frames

Done in private

I want to see more content like this



Men	Comments
Nativist	4.8
Militaristic	4.6
Science	2.8
Protective	1.4
Hitchhikers	1

Men	FB Reactions
Nativist	32.8
Militaristic	31
Hitchhikers	28.8
Protective	28.4
Science	12.8

Men	Shares
Hitchhikers	9.2
Protective	6.2
Militaristic	5.6
Science	5.2
Nativist	4.4

Men	Likes
Militaristic	7
Nativist	6.2
Protective	4.8
Hitchhikers	3.6
Science	3.4

The more controversial  
frames generated more  
conversation



Men	Comments
Nativist	4.8
Militaristic	4.6
Science	2.8
Protective	1.4
Hitchhikers	1

Women	Reactions
Nativist	26.6
Hitchhikers	18.8
Militaristic	18.6
Protective	17.6
Science	11.4

Women	Shares
Hitchhikers	12
Protective	7.6
Nativist	6.8
Science	5.4
Militaristic	5.2

Women	Page Likes
Science	4.2
Nativist	2.8
Protective	2.8
Hitchhikers	2.6
Militaristic	2.2

Women	Comments
Nativist	1
Militaristic	0.6
Science	0.4
Protective	0.4
Hitchhikers	0

Engagement  
Data

Women	Reactions
Nativist	26.6
Hitchhikers	18.8
Militaristic	18.6
Protective	17.6
Science	11.4

Women	Shares
Hitchhikers	12
Protective	7.6
Nativist	6.8
Science	5.4
Militaristic	5.2

Women	Page Likes
Science	4.2
Nativist	2.8
Protective	2.8
Hitchhikers	2.6
Militaristic	2.2

Women	Comments
Nativist	1
Militaristic	0.6
Science	0.4
Protective	0.4
Hitchhikers	0



Similar pattern



Women	Reactions
Nativist	26.6
Hitchhikers	18.8
Militaristic	18.6
Protective	17.6
Science	11.4

Women	Shares
Hitchhikers	12
Protective	7.6
Nativist	6.8
Science	5.4
Militaristic	5.2

Women	Page Likes
Science	4.2
Nativist	2.8
Protective	2.8
Hitchhikers	2.6
Militaristic	2.2

Women	Comments
Nativist	1
Militaristic	0.6
Science	0.4
Protective	0.4
Hitchhikers	0



Similar pattern of  
sharing socially  
desirable things

Women	Reactions
Nativist	26.6
Hitchhikers	18.8
Militaristic	18.6
Protective	17.6
Science	11.4

Women	Shares
Hitchhikers	12
Protective	7.6
Nativist	6.8
Science	5.4
Militaristic	5.2

Women	Page Likes
Science	4.2
Nativist	2.8
Protective	2.8
Hitchhikers	2.6
Militaristic	2.2

Women	Comments
Nativist	1
Militaristic	0.6
Science	0.4
Protective	0.4
Hitchhikers	0

Less variability  
and almost  
opposite of men



Women	Reactions
Nativist	26.6
Hitchhikers	18.8
Militaristic	18.6
Protective	17.6
Science	11.4

Women	Shares
Hitchhikers	12
Protective	7.6
Nativist	6.8
Science	5.4
Militaristic	5.2

Women	Page Likes
Science	4.2
Nativist	2.8
Protective	2.8
Hitchhikers	2.6
Militaristic	2.2

Little discussion  
was generated



Women	Comments
Nativist	1
Militaristic	0.6
Science	0.4
Protective	0.4
Hitchhikers	0

# But not always the conversation we wanted



# It's better on some frames

**Wisconsin Lakes Partnership**  shared a link.  
Written by Tim Campbell [?] · July 6 at 6:03 AM · 



**ZEBRA MUSSELS IMPACT FISHERIES AND RECREATION**

STOPAQUATICHITCHHIKERS.ORG

**Prevent the spread of invasive species**

Stop invasive species in your wake. The Stop Aquatic...

[Learn More](#)

4 Shares 2 Comments

 Write a comment...




 **Wisconsin Conservation Warden Association**

    1


[Like](#) · [Reply](#) · [Message](#) · 1d

 **Kris Davis** Rob Waterbury

[Like](#) · [Reply](#) · [Message](#) · 2h

   Most Relevant ▾

14 Shares 2 Comments


 Write a comment...

The mussels clog intakes for water, at the cost of millions-billions of \$s. They've cleaned lakes so well that it has totally upset the natural balance. Seaweeds thrive deeper than usual because the water is clearer. Thus we have more green yuk on the ... [See More](#)

[Like](#) · [Reply](#) · [Message](#) · 5w

↪ 4 Replies

Yeah, whatever. Zebra mussels have cleaned up lakes that were so polluted now are clean almost good to drink.

[Like](#) · [Reply](#) · [Message](#) · 5w  1

## Limitations

- Tested what is most cost effective at gaining people's attention rather than what to do once you have it
- While efforts were made to equivalently capture the visual 'essence' of a message frame, art is inherently subjective
  - Different visual executions could provide different results
  - Would have been impossible to do with photos

## Bringing it home

### Differences in people “taking action”

- Cost effective is not the same as most engaging

### Differences in other engagement

- Page likes, sharing, comments
- People may engage with the “weird” thing, but not share it
- People share things that seem more desirable/less “weird”

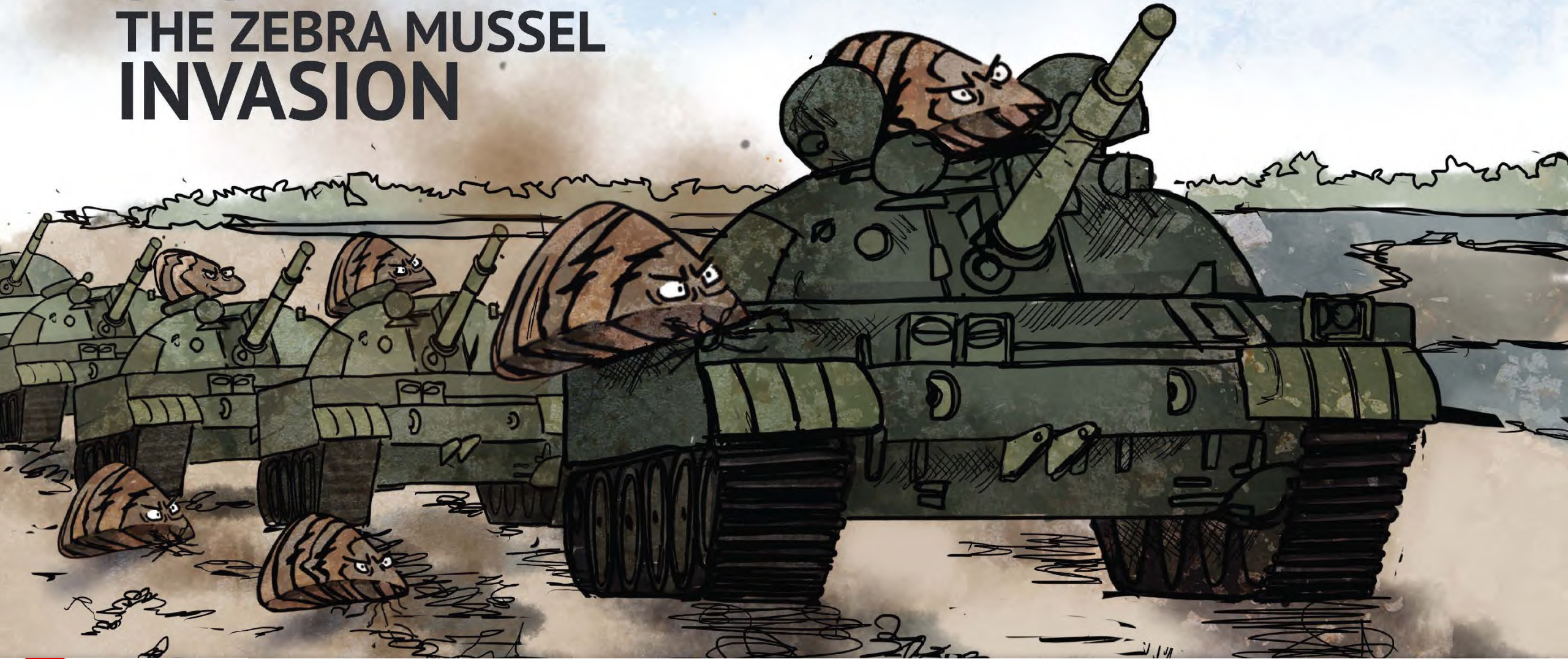
### Differences in type of conversations

- Conversations reflect frame

We believe message frames can impact how people feel about AIS & the actions they take



# STOP THE ZEBRA MUSSEL INVASION



**STOP AQUATIC  
HITCHHIKERS!**

Prevent the transport of nuisance species.  
Clean all recreational equipment.  
[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)

Tim.Campbell@wisc.edu

@t\_campy



**Sea Grant**  
University of Wisconsin