

5-2018

# The Montana Expression 2018: Aquatic Invasive Species and Water Recreation

Norma P. Nickerson

*University of Montana - Missoula*

Megan Schultz

*The University of Montana - Missoula*

Let us know how access to this document benefits you.

Follow this and additional works at: [https://scholarworks.umt.edu/itrr\\_pubs](https://scholarworks.umt.edu/itrr_pubs)



Part of the [Social and Behavioral Sciences Commons](#)

---

## Recommended Citation

Nickerson, Norma P. and Schultz, Megan, "The Montana Expression 2018: Aquatic Invasive Species and Water Recreation" (2018).  
*Institute for Tourism and Recreation Research Publications*. 368.

[https://scholarworks.umt.edu/itrr\\_pubs/368](https://scholarworks.umt.edu/itrr_pubs/368)

This Report is brought to you for free and open access by the Institute for Tourism and Recreation Research at ScholarWorks at University of Montana. It has been accepted for inclusion in Institute for Tourism and Recreation Research Publications by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact [scholarworks@mso.umt.edu](mailto:scholarworks@mso.umt.edu).

INSTITUTE FOR  
**TOURISM & RECREATION RESEARCH**  
UNIVERSITY OF MONTANA

# The Montana Expression 2018: Aquatic Invasive Species and Water Recreation

MT Expression Research Report 2018-4

Norma P. Nickerson and Megan Schultz

5/3/2018



Institute for Tourism & Recreation Research  
College of Forestry and Conservation  
The University of Montana  
Missoula, MT 59812  
[www.itrr.umt.edu](http://www.itrr.umt.edu)

# The Montana Expression 2018: Aquatic Invasive Species and Water Recreation

2018

## Introduction

Beginning in August 2016, Montana Fish, Wildlife and Parks (FWP) discovered a parasite in the Yellowstone River whitefish which killed thousands of whitefish, and then in November, larvae of aquatic invasive mussels were found in Tiber and Canyon Ferry Reservoirs with potential devastating effects on all waterways in the state. The results were closure of the upper portions of the Yellowstone River for a few weeks and the closure of Tiber Reservoir for a number of months. Following these occurrences, the Institute for Tourism and Recreation Research (ITRR) at the University of Montana conducted a study in the first quarter of 2017 to assess residents' awareness of the events, their participation in water recreation, and how closures affect their recreation

([https://scholarworks.umt.edu/itrr\\_pubs/354/](https://scholarworks.umt.edu/itrr_pubs/354/)).

Montana FWP stepped up their efforts for watercraft inspection stations in 2017, and now in 2018 have 35 stations with some staying open later, and one, the Ravalli check station, will be open 24 hours with the assistance of the Confederated Salish Kootenai Tribes.

Montanans love their water recreation. The advent of invasive mussels has caused MT Fish, Wildlife and Parks to regulate more and differently than in the past. Temporarily closing waterways is one outcome of these events, but more stringent monitoring and inspection of boats is now a part of daily life in Montana.

## Purpose

The main purpose of this study was to do a follow-up assessment of Montanans' awareness level of the invasive mussels. A second purpose was to assess awareness of boat check stations and rate of stopping at the stations as well as water recreation participation by Montanans.

## Methods

Data were collected by trained surveyors who ask a few questions to Montanans as they fill up their vehicle with fuel at gas stations or who stop at rest areas around the state. ITRR has permission from over 100 gas stations to talk to residents in the amount of time it takes them to fill their gas tank. During 8 weeks starting in February, 2018, any Montanan who stopped at gas stations or rest area had an opportunity to be surveyed about invasive mussels and water recreation in Montana. The respondent data was weighted to represent the county of residence and gender from the census, thus providing a representative sample reflecting the geographic population and gender of the state.

# The Montana Expression 2018: Aquatic Invasive Species and Water Recreation

2018

## Survey design

The survey was designed by ITRR personnel and loaded on iPads of the ten surveyors located around the state. The survey was short by design (due to the amount of time available) with only 10 questions. See appendix A for survey questions.

## Limitations

This study was limited to Montana residents 18 and older who either drive or are passengers in vehicles.

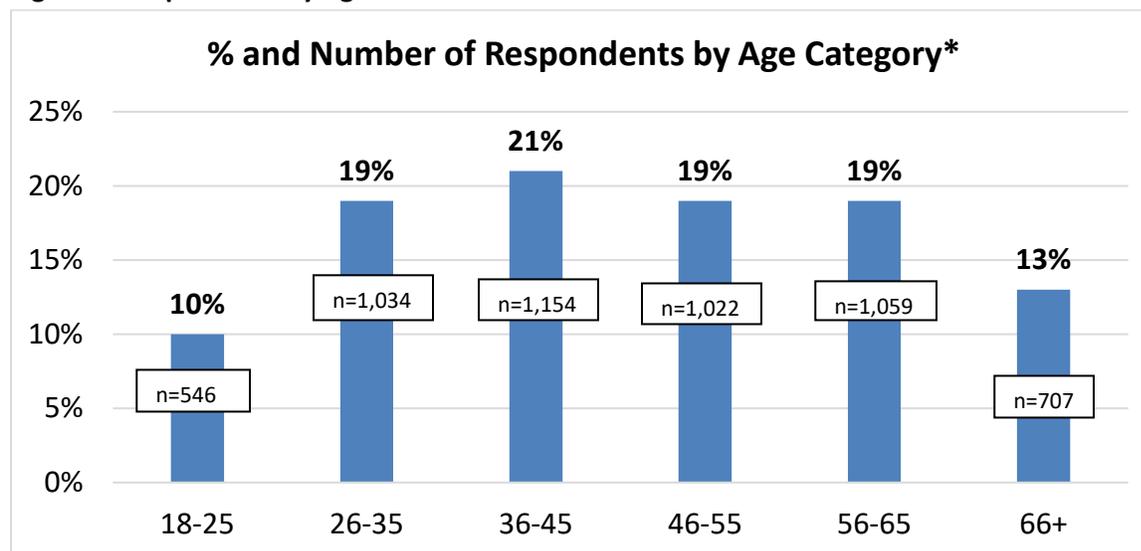
## Response rate

The response rate was 89% with 5,551 Montana residents responding to the survey during February and March 2018.

## Results

For this study, the gender breakdown was 50-50 male and females. Respondent ages ranged from 18-96 with an average age of 46.4 years. The number of respondents by age category is shown in Figure 1.

Figure 1: Respondents by Age



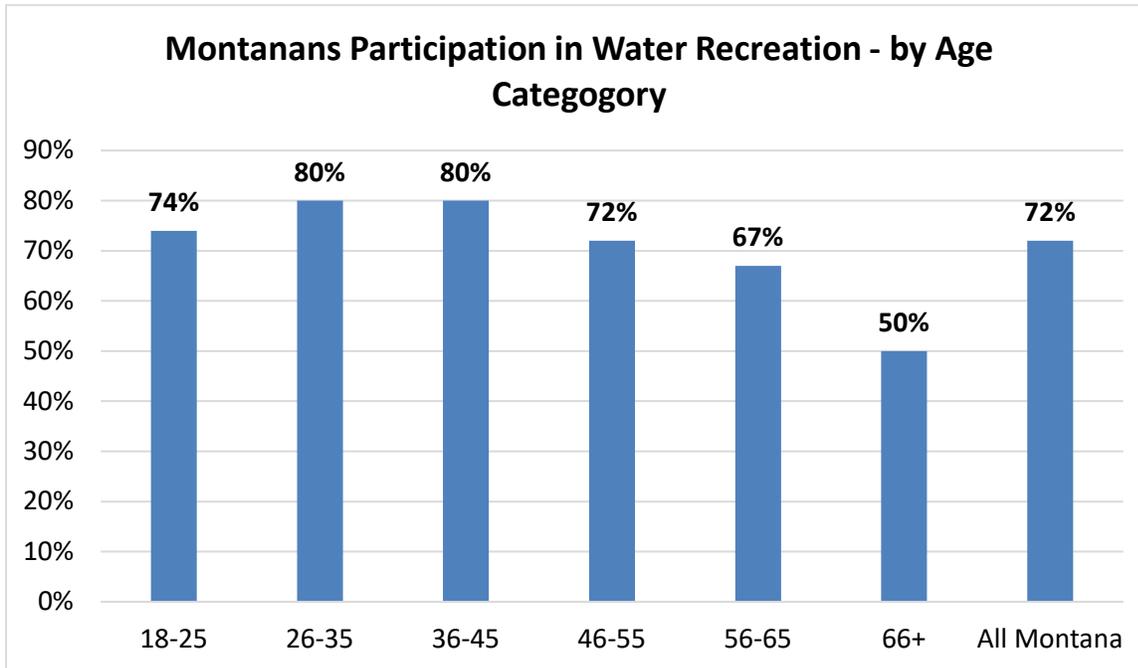
\*Does not add to 100% due to rounding

Respondents were asked if they participate in any outdoor water recreation activities. Nearly three-fourths (72%) said yes (compared to 73% in the 2017 study). Figure 2 shows that ages between 18 and 55 years have the highest participation.

# The Montana Expression 2018: Aquatic Invasive Species and Water Recreation

2018

Figure 2: Percent of Water Recreation Participation by Age Category



The variety of outdoor water activities participated in by Montanans ranged widely with 66% saying bank/wade fishing to 3% who indicated sailing (Figure 3). Figure 4 shows participation by age category.

Figure 3: Percent of all Montanans (18 yrs. +) who Participate in each Outdoor Water Activity

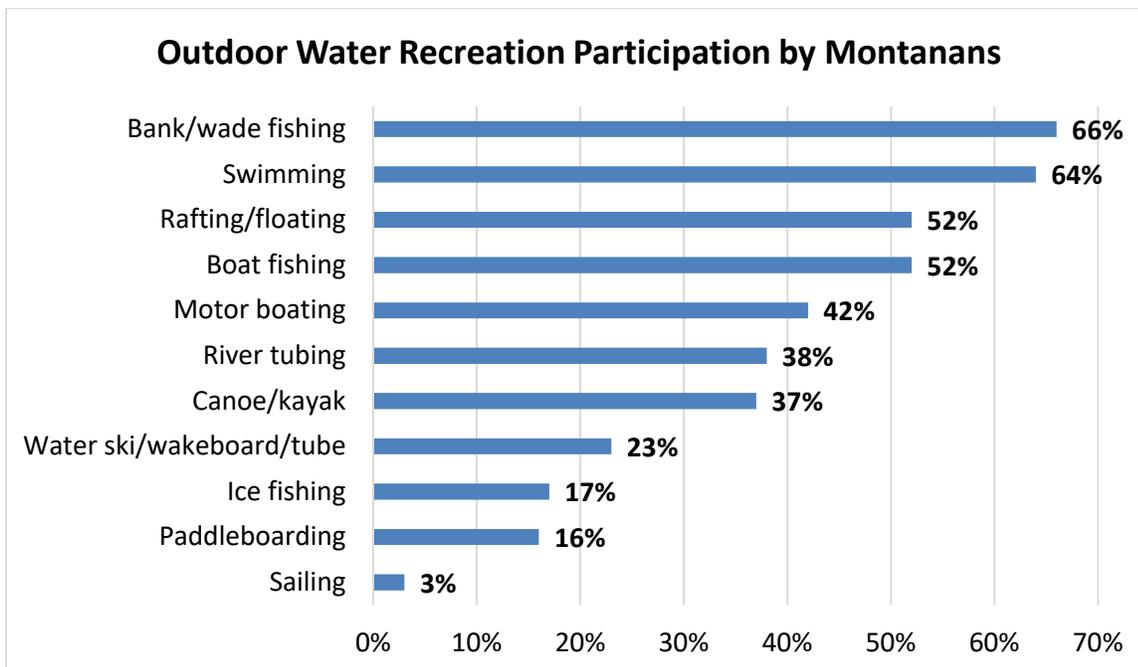
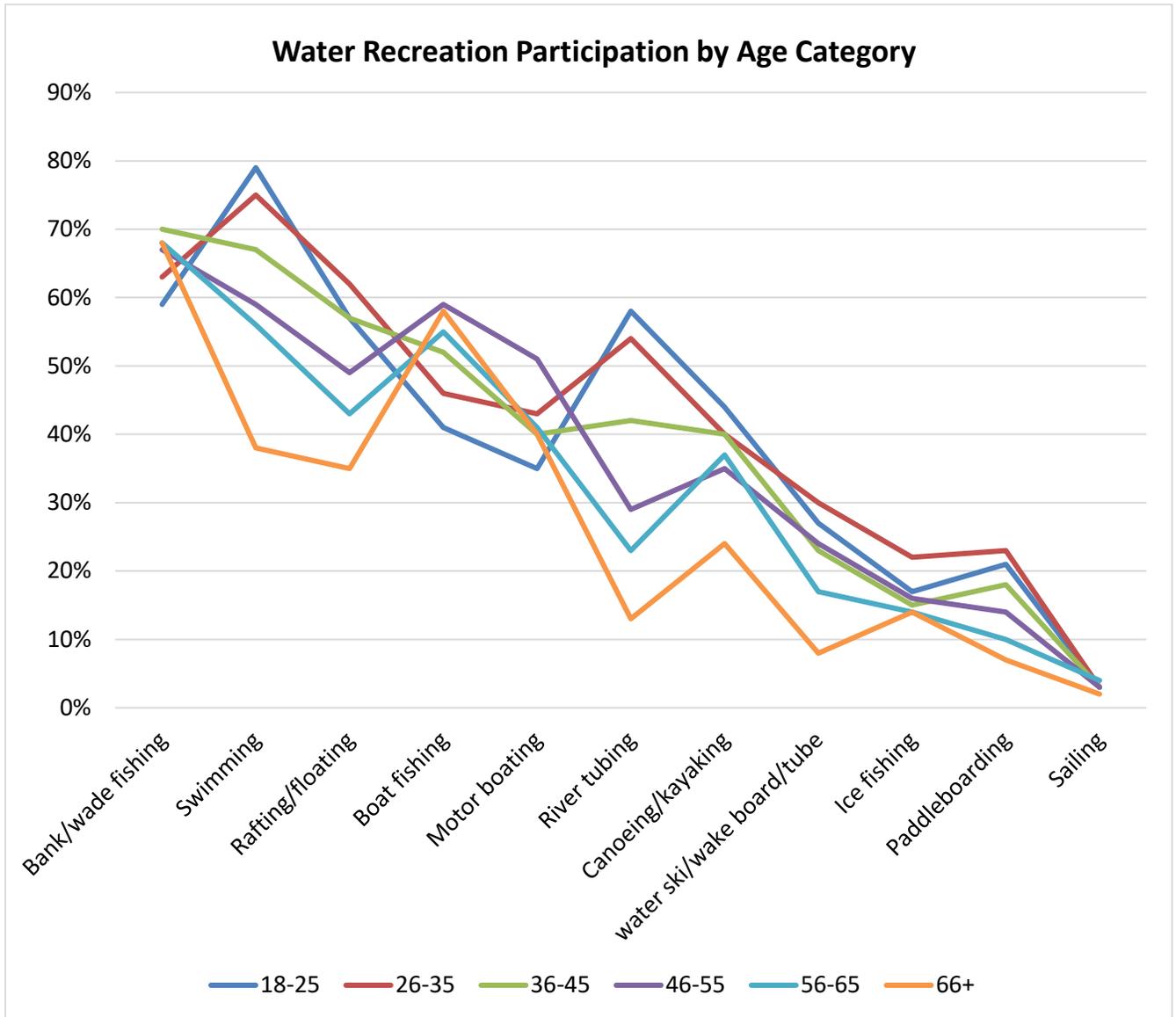
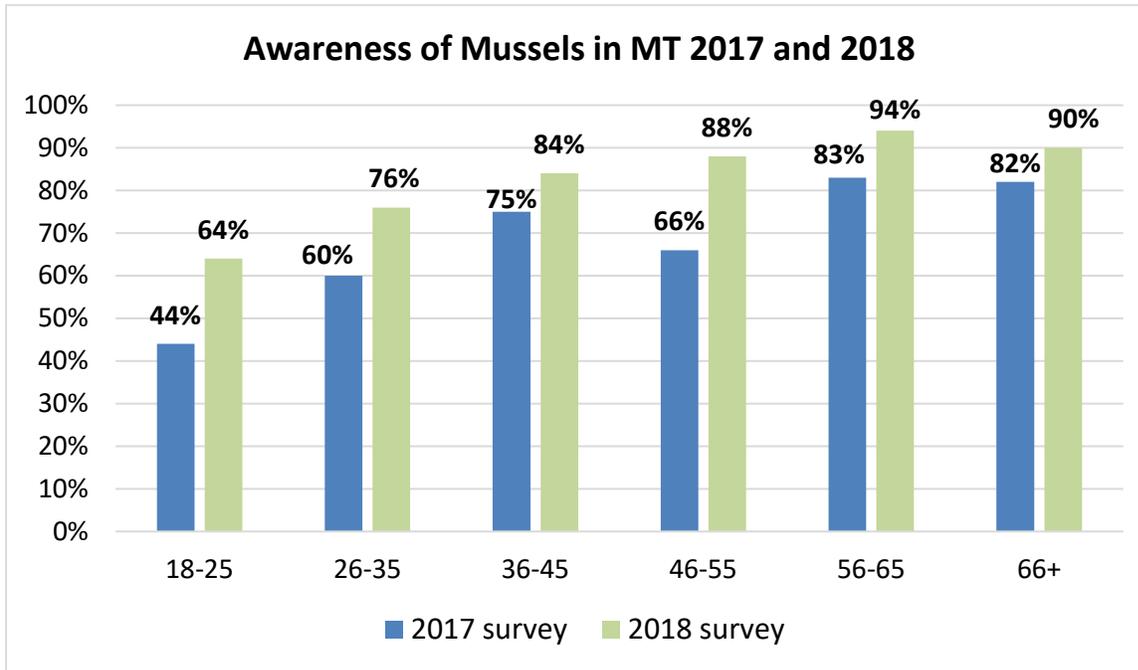


Figure 4: Participation rate of Water Activity by Age Category



In both the 2017 and 2018 studies we asked residents if they were aware of the invasive mussels in Montana. As you can see by Figure 5, awareness has gone up significantly for all age groups. The 46-55 age group had a 22% increase in awareness followed by the 18-25 age group with a 20% increase in awareness. It should be noted, however, that the younger residents are still less aware of the mussels than the older cohorts.

Figure 5: 2017 and 2018 Age Category Awareness of Invasive Mussels by Montanans



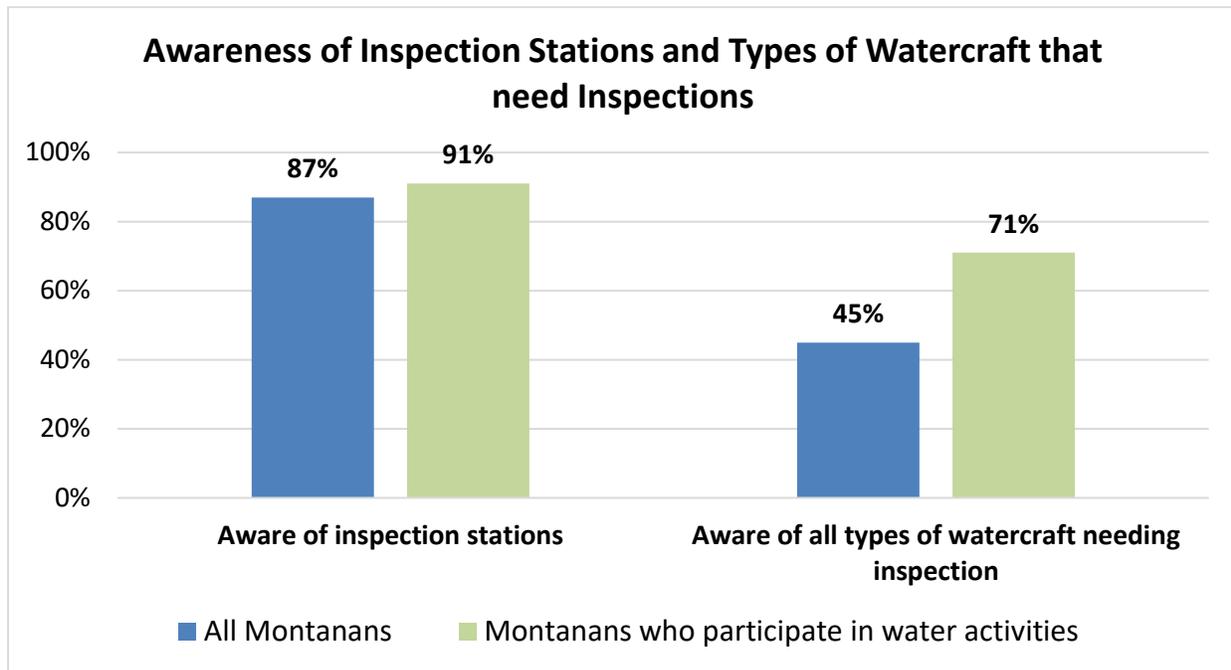
In this 2018 study, of Montanans who do participate in any form of outdoor water recreation, there is a 12% concern factor. In other words, 12% of those who recreate in Montana waterways are not aware of the invasive mussels in Montana’s water.

Table 1: Outdoor Water Recreation Participants’ Awareness of Invasive Mussels

	Not aware of mussels	Aware of mussels
Do not participate in water recreation	25%	75%
Do participate in water recreation	12%	87%

Eighty-seven percent of all Montanans are aware of the boat inspection stations, but of those who participate in water activities, there are still 9% who are not aware of the boat checks. In addition, about ¼ of Montanans who participate in water activities are not aware that the watercraft needing inspection includes all motorized and non-motorized crafts such as kayaks and paddleboards (Figure 6).

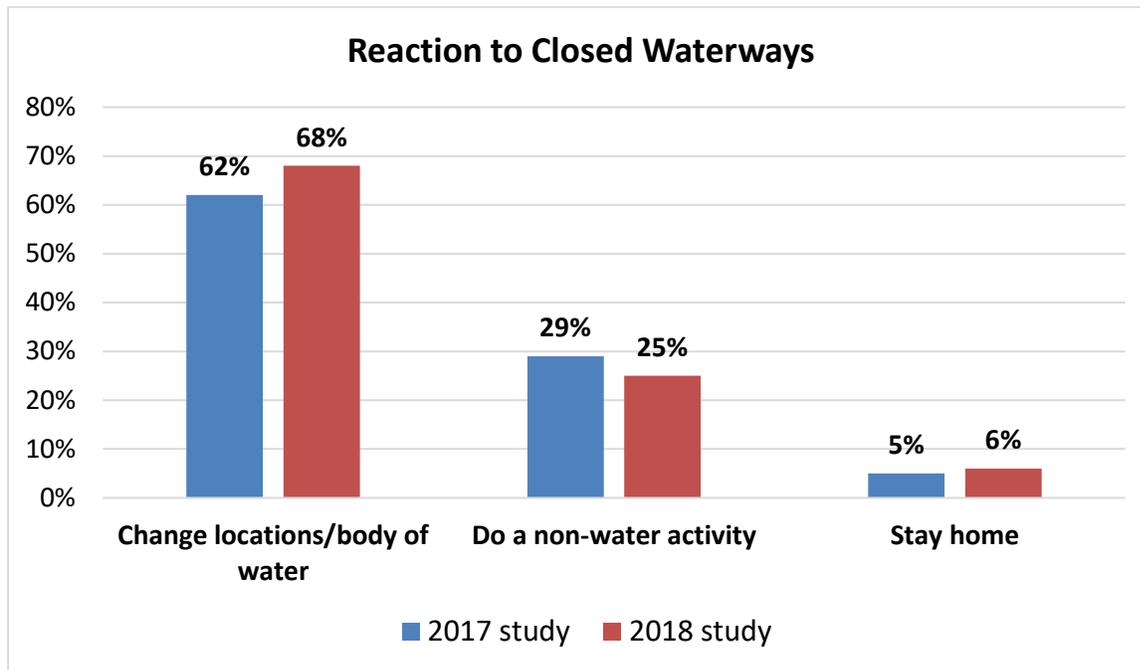
Figure 6: Resident Awareness of inspections



Residents who participate in water activities were asked how many times they stopped at a check station in the past year. There were 42% who said they stopped zero or more times at the check stations with four stops on average last year. Some said zero because even though they were going fishing, they were meeting their friend who brought the boat so they personally didn't have to stop. About 50% of Montanans indicated they didn't need to stop because they didn't have a boat. Nine percent did not answer the question.

Finally, those who do participate in water recreation were asked what they would do if future closures affected the waterways they use. The majority of Montanans would change locations/body of water (68%) while 25% would do a non-water activity instead. Only 6% would do nothing or just stay home. These are very similar results when compared to the 2017 study (Figure 7). This indicates that pressure on waterways not impacted by closures would increase which has the potential of creating a crowding situation elsewhere.

Figure 7: What Montana Residents would do if their Waterway was closed in the Future



## Conclusions

This study surveyed nearly 5,551 Montana residents and found that bank/wade fishing, swimming, rafting/floating, and boat fishing are participated in by 50% of Montanans or more.

As in the 2017 survey, this study found that younger Montanans are less aware of the invasive mussels, however the awareness level went up significantly in each age group. Montana FWP and the media have obviously been busy getting the word out, but in the case of invasive mussels, it only takes one boat to distribute the mussels to additional waterways. The job of education is not complete.

Nearly three quarters of Montanans who participate in water activities were aware of the multitude of watercrafts that need to be inspected. But, that leaves one-quarter who did not know that their kayak or paddleboard needs inspection. This is an area of education that could be enhanced.

This study did not survey nonresidents who visit the state with watercraft. It is the hope that the check stations scattered around the state are able to capture those folks who could have a serious impact on Montana waters.

Overall, the message regarding aquatic invasive species is being heard by most Montanans. This is a big, positive step in the 'assault' on the invasive mussel growth in Montana.

## Appendix A: Survey Questions

AIS Questions asked Q1 2018 (Feb 1-March 31, 2018)

1. Do you participate in any outdoor water recreation activities?
  - a. Yes
  - b. No
  
2. What type of outdoor water recreation do you typically participate in?
  - a. Bank/wade fishing
  - b. Boat fishing
  - c. Canoeing/kayaking
  - d. Ice fishing
  - e. Motor boating
  - f. Paddleboarding
  - g. River tubing
  - h. Rafting/floating
  - i. Sailing
  - j. Swimming
  - k. Water skiing/wakeboarding/tubing
  
3. Are you aware that invasive species of mussels have been found in Montana waters in the recent past?
  - a. Yes
  - b. No
  
4. Were you aware of the watercraft inspection stations setup around the state last year (Spring-Fall 2017)?
  - a. Yes
  - b. No
  
5. How many times did you stop at a check station last year (Spring-Fall 2017)?
  - a. N/A (no boat, didn't need to stop)
  - b. 0 or more
  
6. Number of times they stopped (if selected B above)
  
7. Were you aware that all watercraft (motorized and non-motorized) including kayaks, paddleboards, and the like are required to stop? If you're going to float on it in the water, it needs to be inspected.
  - a. Yes
  - b. No

# The Montana Expression 2018: Aquatic Invasive Species and Water Recreation

2018

- 
8. In the past, mussel discovery has caused closures of waterways to recreation. In the event of future closures on waterways you sue, would you be most likely to... (select the MOST likely response)
    - a. Do nothing/stay home
    - b. Change locations/body of water
    - c. Do a non-water activity
  9. What county do you currently reside in?
  10. May I please ask your age?
  11. Gender (observed)
  12. Site code (ITRR use only)
  13. Date (ITRR use only)
  14. Comments