

# Summary of Research



MONTANA FWP

## Results of a 2018 Survey of Montanans Regarding the Topic of Aquatic Invasive Species in Montana

HD Unit Research Summary No. 43

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**Abstract:** *In 2018, Montana Fish, Wildlife & Parks (FWP) cooperated with the Montana Department of Natural Resources Conservation (DNRC) to conduct a survey of Montanans regarding aquatic invasive species (AIS). Survey results show high public concern about the potential risks of AIS. Despite these findings, it is apparent that most Montanans have heard or read little about many aquatic invasive species that are impacting or could impact Montana. These results suggest a need for the state to do further work to educate the public regarding specific aquatic invasive species of concern. Survey results also show relatively high levels of knowledge among boaters and anglers regarding the need to clean, drain and dry their watercraft and fishing equipment. However, survey results revealed that boaters and anglers are not always taking the necessary steps to help prevent the spread of AIS. Again, these results stress the importance of the state's efforts to not only educate the public about AIS preventive measures, but also to support Montana's on-the-ground efforts at watercraft inspection sites across the state. Results of this important survey will assist FWP, DNRC, and others with future AIS education, outreach, management, and on-the-ground activities in Montana.*

## BACKGROUND INFORMATION

Montana is actively working to help prevent the introduction and/or spread of aquatic invasive species (AIS) in our great state. These efforts include public education and outreach, watercraft inspection stations, and a monitoring and early detection program. For more details, please go to the following location on the Internet: [www.cleandraindrymt.com](http://www.cleandraindrymt.com)

Several aquatic invasive species (AIS) are already present in some Montana waterbodies. They include: New Zealand Mudsnails, Eurasian Watermilfoil, Flowering Rush, Curlyleaf Pondweed, Fragrant Waterlily, and Whirling Disease. In addition to these species, some other species have been detected in the state. They include: Faucet Snail, Red-Rim Melania, Quagga Mussels, Zebra Mussels, IHN Virus, and American Bullfrog. And, other species such as Asian Carp, Tilapia, and Saltcedar (just to name a few) have the potential to impact Montana.

To aid Montana's AIS Program, in the late spring of 2018, the Montana Department of Fish, Wildlife & Parks (FWP) worked with the Montana Department of Natural Resources Conservation (DNRC) to conduct a survey of Montanans regarding the topic of aquatic invasive species (AIS) in Montana. Goals of the survey included:

- *To identify Montanans' perceptions of AIS risk and knowledge of specific aquatic invasive species.*
- *To learn more about what boaters and anglers are doing to help prevent the spread of AIS.*
- *And, with replication of the survey down the road, to assess whether or not state program(s) are leading to changes in behavior (e.g., Montanans doing more to help prevent the spread of AIS over time).*

To conduct the survey, FWP purchased a random sample of N=3,000 Montana households from Survey Sampling, Inc. for this effort. Two separate mailings of the survey were sent out to the study participants: (1) an initial mailing of the survey and (2) a replacement mailing of the survey sent out to all non-respondents approximately one month after the initial mailing. Surveys were successfully delivered to 2,274 households and a nearly 30 percent survey response rate was achieved.



**Above:** Inspectors examining a raft at a mandatory watercraft inspection station in Montana.

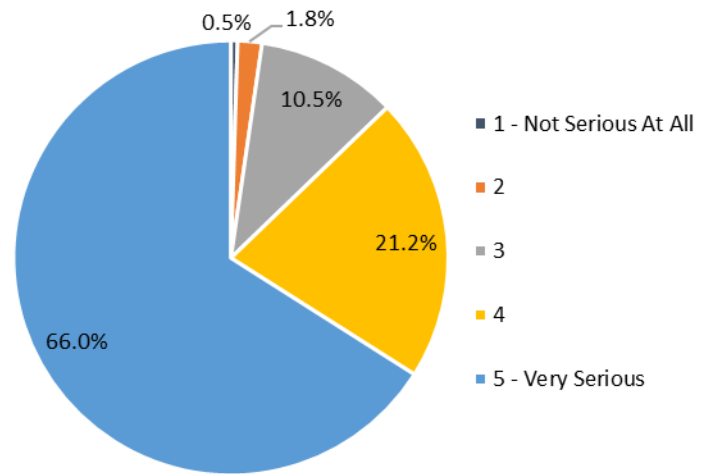
# SURVEY RESULTS

## MONTANANS PERCEPTIONS OF AIS RISK AND KNOWLEDGE OF SPECIFIC AQUATIC INVASIVE SPECIES

It is clear that most Montanans recognize the severity of AIS. Overall, 87 percent of the survey respondents reported they think AIS is a moderately serious to very serious issue (see Figure 1). Furthermore, 80-87 percent of the respondents agree or strongly agree that aquatic invasive species pose a serious risk to the environment; to local, state and regional economies; to the health and abundance of fish and wildlife; and, to the state of Montana.

Survey participants also were asked about how much they have heard or read about eight different AIS species that are already impacting Montana or could do so in the future. Many Montanans have heard or read very little about many of the AIS species listed in the survey (see Table 1 below). Respondents reported they knew the most about zebra mussels/quagga mussels, whirling disease, and Asian carp.

**Figure 1.** Response to: "On a scale from 1 (not serious at all) to 5 (very serious), how serious of an issue do you think aquatic invasive species are?"



**Table 1.** Response to: "Prior to receiving this survey, on a scale from 1 (nothing) to 5 (a lot), how much had you HEARD or READ about each of the aquatic invasive species listed below?"

<u>Aquatic Invasive Species:</u>	<u>(1)</u> <u>Nothing</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>(5)</u> <u>A Lot</u>
Zebra mussels / quagga mussels	15.7%	6.9%	18.8%	21.1%	37.5%
Eurasian watermilfoil	53.3%	14.2%	12.7%	8.5%	11.2%
Flowering rush	67.3%	16.5%	10.8%	3.0%	2.4%
Saltcedar	64.5%	14.2%	11.3%	4.6%	5.4%
Asian carp (bighead carp, silver carp, black carp, grass carp)	40.3%	15.6%	17.6%	13.1%	13.4%
Tilapia	61.1%	16.1%	13.5%	3.6%	5.8%
New Zealand mudsnails	61.6%	15.5%	10.6%	6.2%	6.1%
Whirling disease	27.0%	8.2%	15.6%	20.1%	29.1%

## BOATING AND AIS

A little over 46 percent of the survey respondents reported they use and/or operate watercraft. A majority of these respondents (74 percent) indicated they know quite a bit about the concept of "CLEAN, DRAIN, DRY" (see Figure 2 on the next page).

Boaters were also asked about steps they take to help prevent the spread of AIS. Results demonstrate that the more difficult the task, the less likely respondents were to report they always took this step (see Table 2 on the next page for more detailed results). When asked if there are times when they don't always take the steps necessary to help contain and prevent the spread of AIS when leaving a waterbody with their watercraft, boaters indicated the following reasons...

### Reasons:

- I don't use/operate watercraft on waters with aquatic invasive species (**28.3%**).
- The equipment needed to clean the watercraft I use/operate is not available (**26.3%**).
- I don't know exactly what I am supposed to do (**24.7%**).
- It's inconvenient (**15.2%**).
- I don't believe it will prevent the eventual spread of AIS (**3.0%**).
- I don't believe AIS is a problem (**1.0%**).
- Other reasons—boat only one waterbody, infrequently boat other waterbodies, infrequent use of watercraft, rent watercraft and/or watercraft used belongs to someone else (**26.3%**).

## FISHING AND AIS

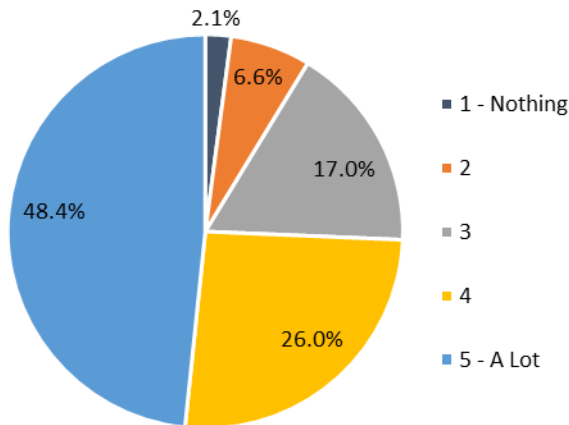
About 48 percent of the survey respondents reported they fish. A majority of these respondents (60 percent) indicated they know quite a bit about the concept of “CLEAN, DRAIN, DRY” (see Figure 3). However, knowledge of this concept amongst anglers was somewhat lower than what was identified for boaters.

Anglers were also asked about steps they take to help prevent the spread of AIS. Again, the more difficult the task, the less likely respondents were to report they always took this step (see Table 3 on the next page for more detailed results). When asked if there are times when they don't always take the steps necessary to help contain and prevent the spread of AIS when leaving a waterbody after fishing, anglers indicated the primary reasons were as follows...

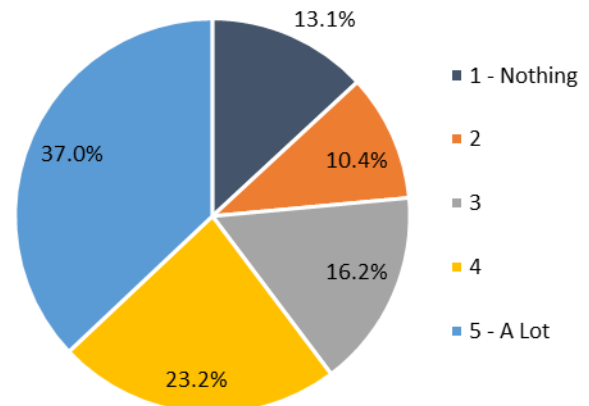
### Reasons:

- I don't know exactly what I am supposed to do (37.2%).
- I don't fish on any waters with aquatic invasive species (36.2%).
- It's inconvenient (14.3%).
- The equipment needed to clean my fishing gear is not available (12.8%).
- I don't believe it will prevent the eventual spread of AIS (3.6%).
- I don't believe AIS is a problem (0.5%).
- Other reasons—fish only one waterbody, infrequently fish, fishing equipment used is rented and/or owned by outfitter/guide (14.8%).

**Figure 2.** Boater response to: "On a scale from 1 (nothing) to 5 (a lot), how much did you know about the need to CLEAN, DRAIN, and DRY the watercraft you use/operate to help contain and prevent the spread of aquatic invasive species?"



**Figure 3.** Angler response to: "On a scale from 1 (nothing) to 5 (a lot), how much did you know about the need to CLEAN, DRAIN, and DRY your fishing gear and equipment to help contain and prevent the spread of aquatic invasive species?"



**Table 2.** Boater response to: "Upon leaving a waterbody with any of the watercraft you use/operate, on a scale from 1 (never) to 5 (always), how often do you take the following potential steps to prevent the spread of aquatic invasive species?"

Potential steps taken:	(1) Never	2	3	4	Always (5)
Conduct visual inspection of watercraft and equipment for aquatic plants, animals, and mud	7.0%	6.3%	10.3%	19.2%	57.2%
Drain water from watercraft, including motor, live wells, bilge, and bait buckets	5.7%	2.2%	3.5%	11.5%	77.1%
Dispose of unwanted bait, worms, and fish parts in the trash	7.5%	2.2%	8.1%	12.9%	69.4%
Remove aquatic plants and animals from watercraft and equipment	7.1%	2.0%	7.1%	9.5%	74.2%
Wash or rinse watercraft, trailer and equipment	16.0%	6.9%	22.9%	18.7%	35.5%
Wash or rinse watercraft, trailer and equipment with high pressure and/or hot water	44.0%	14.3%	19.0%	6.7%	15.9%
Flush motor's cooling system with tap water	37.2%	17.2%	20.0%	8.3%	17.2%
Dry watercraft and equipment for at least five days	9.3%	6.6%	17.1%	21.7%	45.3%
Wipe down watercraft and other equipment with a towel	33.0%	12.7%	19.5%	13.9%	21.0%

**Table 3.** Angler response to: “Upon leaving a waterbody after fishing, on a scale from 1 (never) to 5 (always), how often do you take the following potential steps to prevent the spread of aquatic invasive species?”

<u>Potential steps taken:</u>	<u>(1) Never</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Always (5)</u>
Conduct visual inspection of fishing gear and equipment for aquatic plants, animals, and mud	13.2%	6.8%	13.2%	23.1%	43.8%
Drain water from bait buckets	15.8%	1.3%	6.6%	13.2%	63.2%
Dispose of unwanted bait, worms, and fish parts in the trash	7.0%	5.7%	9.3%	17.2%	60.8%
Remove aquatic plants and animals from fishing gear and equipment	10.8%	1.8%	5.8%	19.1%	62.6%
Wash or rinse fishing gear and equipment	24.8%	12.8%	17.4%	17.4%	27.7%
Wipe down fishing gear and equipment with a towel	35.1%	15.2%	19.9%	13.1%	16.7%
Dry fishing gear and equipment to the touch	25.0%	12.3%	13.7%	13.0%	35.9%

## DISCUSSION

AIS is clearly an important issue for Montana, our aquatic and recreational resources, environment and economy. The detection of invasive mussel larvae in Tiber Reservoir and suspected detection of mussel larvae in Canyon Ferry Reservoir triggered a Governor’s Emergency Declaration in 2016. Prior to that time, the state already had an active AIS program in place. Since the emergency declaration, Montana has expanded its efforts to help prevent the introduction and/or spread of AIS in our great state. These efforts include public education & outreach, watercraft inspection stations, early detection and monitoring, and rapid response planning. For more detailed information regarding what Montana is doing to address AIS, please check out the following link on the web: [www.cleandraindrymt.com](http://www.cleandraindrymt.com)

To aid Montana’s AIS Program, in the late spring of 2018, FWP worked with DNRC to conduct a survey of Montanans regarding the topic of aquatic invasive species. Survey results show high public concern about the potential risks of AIS. Despite these finding, it is apparent that most Montanans have heard or read little about many aquatic invasive species that are impacting or could impact Montana. These results suggest a need for the state to do further work to educate the public regarding specific aquatic invasive species of concern.

Survey results also show relatively high levels of knowledge amongst both boaters and angler regarding the need to clean, drain and dry their watercraft and fishing equipment. However, survey results revealed that boaters and anglers are not always taking the necessary steps help prevent the spread of AIS. In particular, the more difficult the task, the less likely respondents were to report they always took the step needed to help prevent the spread of AIS. Again, these results stress

the importance of the state’s efforts to not only educate the public about AIS preventive measures, but support Montana’s on-the-ground efforts at watercraft inspection sites across the state.

Clearly, results from this important survey will assist FWP, DNRC, and others with future AIS education, outreach, monitoring, management, and on-the-ground activities in Montana. In the future, a replication of this survey will be conducted to monitor trends and to assess whether or not state program(s) are leading to changes in behavior (e.g., Montanans doing more to help prevent the spread of AIS over time).

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Contact the Human Dimensions Unit of FWP by phone (406) 444-4308 or visit FWP’s website at [fwp.mt.gov](http://fwp.mt.gov) (and click on the following links...“Doing Business”, “Reference Information”, “Surveys”, Social & Economic Surveys”).