

# PREVENTING AQUATIC INVASIVE SPECIES WITH EFFECTIVE AWARENESS CAMPAIGNS

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## HOW TO USE THIS PUBLICATION

This publication is intended to serve as a guide for County Extension Agents, homeowner associations, recreational clubs, non-profits, professional societies, and other entities when creating communications associated with preventing the spread of aquatic invasive species (AIS) via watercraft. Research shows that boaters do believe that AIS impact them and prevention is very important, but there are several obstacles boaters report for taking action. Below we outline constraints identified in AIS prevention along with recommendations at both general and key target audience levels. General guidelines are beneficial to use around areas that are designated as multi-use and may experience a high volume of several key target audiences per day as well as for general social media outreach. Recommendations at key audience levels are beneficial to use at entry or launching sites that may receive traffic from one to two specific groups or for targeted outreach (e.g., social media) to best tailor to their identified constraints.

## GENERAL GUIDELINES

### Normalizing Clean, Drain, Dry Behavior

To prevent the spread of AIS, boaters are legally required to drain all water from their boat and gear before approaching or leaving a public freshwater body in Texas and immediately remove any prohibited exotic aquatic plants from their boats, trailers, and vehicles. Boaters are also recommended to implement clean, drain, dry (CDD) strategies (<https://tpwd.texas.gov/regulations/outdoor-annual/boating/clean-drain-dry-your-boat>). Most boaters are familiar with CDD and self-reported usually implementing CDD procedures. While they viewed these procedures as at least moderately effective and easy, there were constraints identified within this process.

CONSTRAINTS	RECOMMENDATION
<ul style="list-style-type: none"> <li>▶ Belief that others aren't taking action</li> <li>▶ Drying is considered the most difficult part of the CDD process</li> <li>▶ Lack of cleaning stations and crowding at boat ramps</li> </ul>	<ul style="list-style-type: none"> <li>▶ Create messaging emphasizing the prevalence of CDD actions. <i>Potential Messaging:</i>  <i>75% of western boaters report taking action to CDD to prevent the spread of AIS. It is critical for all boaters to take action to stop the spread of these harmful invasive species.</i></li> <li>▶ Create messaging emphasizing the effectiveness and simplicity of CDD actions, specifically drying fully between water bodies. <i>Potential Messaging:</i>  <i>It only takes a few minutes to clean and drain your boat at the ramp before leaving a lake, and drying your boat is easy—just open up the compartments when you get home to let the boat dry.</i></li> <li>▶ When possible, increase the number of cleaning stations and strategically locate stations to prevent traffic or overcrowding. Please visit the <i>Wildlife Forever Access Enhancement Guidebook</i> for guiding decisions on prioritizing placement of cleaning stations (<a href="http://www.wildlife forever.org/wp-content/uploads/2017/05/AccessEnhancement-Guidebook.pdf">http://www.wildlife forever.org/wp-content/uploads/2017/05/AccessEnhancement-Guidebook.pdf</a>).</li> </ul>

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## Science-based Outreach Campaigns

Various messaging is used in outreach campaigns with the goal of getting the attention of boaters and encouraging CDD behavior to prevent the spread of AIS. Research shows that providing science-based messaging within campaigns, including social media, may perform better in reaching this goal. Messages promoting protecting nature or the ecological benefits of taking action to prevent AIS and framing messaging around impacts on aquatic ecosystems and the state's economic health are also shown to captivate key audiences. Below are several examples of science-based messaging using AIS commonly found in Texas that can be used in CDD initiatives to prevent AIS from spreading. For a current list of prohibited AIS species, please visit the Texas Parks & Wildlife Department website ([https://tpwd.texas.gov/huntwild/wild/species/exotic/prohibited\\_aquatic.phtml](https://tpwd.texas.gov/huntwild/wild/species/exotic/prohibited_aquatic.phtml)). For more science-based information, including distribution maps, on AIS found in Texas, visit [TexasInvasives.org](https://www.texasinvasives.org/) (<https://www.texasinvasives.org/>).

COMMON NAME (SCIENTIFIC NAME)	POTENTIAL MESSAGING
Giant Salvinia ( <i>Salvinia molesta</i> )	Giant salvinia can be spread by small fragments and can double its infestation area in about a week.
Hydrilla ( <i>Hydrilla verticillata</i> )	Even a tiny fragment of hydrilla can cause a new infestation that can rapidly clog waterways, so it is important to carefully remove all visible plant fragments from boats and dry thoroughly to kill hidden fragments.
Zebra Mussel ( <i>Dreissena polymorpha</i> )	Every liter of residual water in a boat can contain hundreds of microscopic zebra mussel larvae that can be transported to a new lake.  Zebra mussels hide in small crevices on boats—be sure to thoroughly dry your boat between trips to the lake to kill any hidden mussels.  Zebra mussels attach to aquatic plants and can be transported with plants to new lakes—be sure to remove all visible plants before leaving a lake, even native plants.



Recreational fishing, boating, and duck hunting can be severely affected by aquatic invasive species, including Giant Salvinia, pictured here. Photo courtesy Texas Parks and Wildlife Department © 2023

## Effectively Reaching Key Target Audiences

### Non-motorized Users

Many non-motorized (e.g., canoe, kayak, paddleboard) owners report that they receive and trust information from conservation organizations, but research shows that there is still a need to increase AIS prevention awareness for this group of watercraft users.



Photo courtesy Texas Parks and Wildlife Department © 2023

CONSTRAINTS	RECOMMENDATION
<ul style="list-style-type: none"> <li>▶ CDD is not expected or normal behavior for this group</li> <li>▶ Not knowing what to look for in terms of AIS</li> </ul>	<ul style="list-style-type: none"> <li>▶ Use imagery of non-motorized watercraft in targeted outreach.</li> <li>▶ Identify and develop targeted outreach partnerships with conservation organizations at local, regional, state, and national levels (e.g., friend groups, conservancies, foundations) to extend messaging reach.</li> <li>▶ Provide quick-reference identification websites (i.e., <a href="https://www.texasinvasives.org/">Texasinvasives.org</a> and <a href="https://www.aquaplant.tamu.edu/">AquaPlant.tamu.edu</a>), include identification photos with simple key characteristics on signage, and provide a list of known AIS species for particular waterbodies.</li> </ul>

## Jon/Bass Boat Owners

Jon and bass boat owners also report that they receive and trust information from conservation organizations, but also from boat ramp signage. There is a need to increase motivation for AIS prevention action within this audience.



Photo courtesy Texas Parks and Wildlife Department © 2023

CONSTRAINTS	RECOMMENDATION
<ul style="list-style-type: none"> <li>▶ Low personal or moral obligation or motivation to help prevent the spread of AIS</li> </ul>	<ul style="list-style-type: none"> <li>▶ Develop targeted outreach partnerships with conservation organizations (e.g., B.A.S.S. and Ducks Unlimited) and highly influential members within these organizations or those with an increased social media following. <i>Potential Messaging:</i> <i>You can make a difference in preventing the spread of aquatic invasive species that harm native ecosystems and can alter fish populations to favor bottom feeders. Take a few minutes before leaving the lake to clean and drain your boat and allow everything to dry thoroughly before visiting a new lake.</i></li> <li>▶ Provide highly visible signage around boat ramps and highly visible CDD/AIS information on websites.</li> </ul>

## Ski/Wakeboard Boat Owners

Water skiing and wakeboarding boat owners thought AIS were a threat and CDD is effective and somewhat normalized behavior yet reported the highest perceived difficulty of taking action.



Photo courtesy Texas Parks and Wildlife Department © 2023

CONSTRAINTS	RECOMMENDATION
<ul style="list-style-type: none"> <li>▶ Perceived unimportance of preventing the spread of AIS through CDD</li> <li>▶ Lack of cleaning stations and ramp crowding make CDD difficult</li> </ul>	<ul style="list-style-type: none"> <li>▶ Provide clear, relatable reasons for prevention (e.g., impeding recreation). <i>Potential Messaging:</i> <i>Aquatic invasive plants can spread rapidly, clogging lakes with dense mats of vegetation that make boating and water sports impossible or dangerous. (Insert CDD message)</i></li> <li>▶ Simplify CDD actions or processes. (See general guidelines)</li> </ul>

## Hunters

Hunters are identified as a key demographic to target with outreach efforts, as they report a low sense of obligation or motivation to prevent the spread of AIS and don't see CDD as common behavior.



Photo courtesy Texas Parks and Wildlife Department © 2023

CONSTRAINTS	RECOMMENDATION
<ul style="list-style-type: none"> <li>▶ CDD is not expected or normal behavior from this group</li> <li>▶ Low moral obligation or motivation to help prevent the spread of AIS</li> <li>▶ Believe CDD is difficult</li> </ul>	<ul style="list-style-type: none"> <li>▶ Use messaging emphasizing high percentages of boaters CDD and the importance of taking action. <i>Potential Messaging:</i> <i>Aquatic invasive plants can choke waterways, degrading waterfowl habitat and making boating access difficult. You can help stop the spread of invasive species. (Insert CDD message)</i></li> <li>▶ Use messaging emphasizing simplicity and ease of taking CDD action. (See general guidelines)</li> <li>▶ Develop targeted outreach partnerships with conservation organizations (e.g., Ducks Unlimited).</li> <li>▶ Provide quick AIS/CDD references (e.g., QR codes) around boat ramps or with purchases of park passes, license sales, and boater registrations.</li> </ul>

## Other Target Demographics

### Younger Boaters

Younger boaters are identified as a key demographic to target with outreach as they were less aware of AIS and CDD. Many younger boaters reported trusting information from conservation organizations.

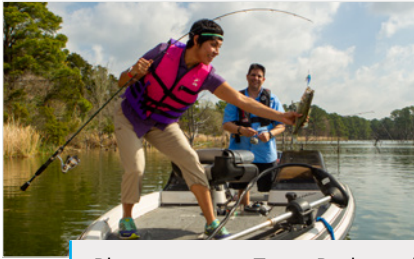


Photo courtesy Texas Parks and Wildlife Department © 2023

CONSTRAINTS	RECOMMENDATION
<ul style="list-style-type: none"><li>▶ Less aware of AIS and CDD</li><li>▶ Constrained by time</li></ul>	<ul style="list-style-type: none"><li>▶ Develop targeted outreach partnerships with conservation organizations.</li><li>▶ Use messaging emphasizing simplicity and ease of CDD actions. (See general guidelines)</li><li>▶ Include AIS and prevention information in youth outreach programs (e.g., Bass Brigades) or target young professional societies (e.g., Stewards of the Wild) to lead short informative outreach programs.</li></ul>

### Tournament Anglers

Tournament anglers are a key demographic to reach as they are at higher risk for AIS spread by visiting multiple waterbodies in a single day or weekend.

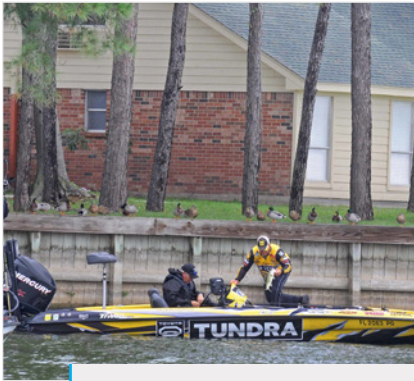


Photo courtesy Texas Parks and Wildlife Department © 2023

CONSTRAINTS	RECOMMENDATION
<ul style="list-style-type: none"><li>▶ Were more likely to use their social world as an information source (may be difficult to reach via other outreach)</li></ul>	<ul style="list-style-type: none"><li>▶ Implement outreach using groups or influencers on social media or other digital media (e.g., YouTubers, Facebook groups).</li></ul>

Photos to use in messaging or signage can be found here with the proper credit:

- ▶ <https://aquaplant.tamu.edu/>
- ▶ <https://www.takemefishing.org/corporate/resource-center/marketing-materials/photo-library/>

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