

Welcome to the TBF Student Angler Federation boater safety and conservation study guide.



2012 High School Fishing World Finals

The information given to you in the following pages is designed to highlight the important safety features of boating and fishing as well as this specific event and its location on the Arkansas River. You will be given a twenty-five (25) question quiz on this information. This is not a complete certified boater safety course. However, we do highly recommend that all students take a US Coast Guard Approved certified boaters safety course before driving a boat for the first time.

GENERAL INFORMATION

THERE ARE FOUR BASIC GROUPS OF THINGS THAT EVERY BOATER SHOULD KNOW

1. Safety First – Every accident is preventable, knowledge and preparation are key, take a certified boater safety course, check the weather.
2. Know Your Boat & Equipment – Read the Owner's manual, get familiar with it.
3. Know the area you are boating in – Navigate safety, get a good map.
4. Know Local State & Federal Regulations. - Both the U.S. Coast Guard and local agencies have the authority to board your boat to ensure your compliance with safety equipment rules and regulations.

GENERAL GLOSSARY OF NAUTICAL TERMS:

United States Coast Guard = USCG – The Federal boating safety authority.

Fore = Toward the front or Bow of the boat.

Aft = Toward the back or Stern of the boat.

Port = The left side of the boat looking forward.

Starboard = The right side of the boat looking forward.

Navigation Rules - The regulations governing the movement of vessels in relation to each other, also called steering and sailing rules.

Aids To Navigation = Artificial objects to supplement natural landmarks indicating safe and unsafe waters.

Buoy's = An anchored float used for marking a position on the water or a hazard / shoal or other communication.

Day Markers = Usually, a marker sign (normally Red or Green) on a post, piling or Shoreline.

No Wake = The slowest possible speed a boat can go while maintaining control

Navigation or "Running" Lights - Lights required to be shown on boats between sundown and sunup.

SAFETY FIRST

BASIC SAFETY EQUIPMENT

Depending upon size, most vessels are required to have, state numbering & registration, fire extinguisher, navigation lights, a sound signaling device, a visual distress signal, a throwable flotation device, and a proper PFD (life jacket) - (1) one for everyone on board. Generally, the larger the vessel the greater the requirements so let's start off with the basics of boater and water safety, and they always start with the correct use of a Personal Flotation Device or PFD, (also known as a Life Jacket.)

PFD'S SAVE LIVESWEAR THEM! – 9 out of 10 drowning victims may have survived if they had been wearing a PFD.

There are many styles of PFDs available today and the USCG along with state agencies require different types of PFD s for different applications. It is definitely NOT a one size fits all. USCG

classifies PFDs into five (5) classes or "Types." They are listed as Types I, II, III, IV & V, generally speaking type I offers the most floatation and will normally turn an unconscious person face up, even in rough water. Type II would offer the next level of floatation, and then type III, and so on. What's important to remember for our purposes is choose a PFD that fits well, is comfortable enough to wear all day, rated for your size and weight and is the class rating TYPE required for the conditions you will be in. Nearly every fishing tournament organization in America requires at least a type III or GREATER PFD of all contestants. It is extremely important to remember that state laws, tournament rules and common sense must be followed. For the High School World Finals the tournament rules state that each competitor and boat captain is required to wear a Type III or greater Coast Guard approved chest type life preserver. The contestants must wear their life preservers anytime the combustion engine is operating. The preserver must be strapped, snapped or zippered securely and maintained in that condition until the competitors reach their fishing location and the combustion engine is shut off.



TBF HIGHLY recommends you wear your lifejacket at all times when on the water, it is better to be safe than sorry.

ALCOHOL AND DRUGS

Operating any boat or vessel on any waterway while under the influence of Drugs or Alcohol is illegal. Alcohol or drugs WILL substantially impair judgment, motor skills and reaction times.
- Use of all alcohol and/or illegal drugs are not permitted in any TBF, SAF or High School Fishing World Finals event and will be cause for disqualification.

ENGINE KILL SWITCH

All boats in the High School Fishing World Finals must be equipped with an operable Engine kill switch and lanyard. This lanyard must be connected to the boat captain's person anytime



the combustion engine is running. The purpose of the “Kill Switch” is to stop the engine from running in the event that the boats operator has been thrown from the driver’s seat.

NAVIGATION (RUNNING) LIGHTS

Navigation lights must be in good working order on all boats at all times. These lights consist of a RED port (left) front bow mounted light, a GREEN starboard (right) front mounted light and a rear mounted CLEAR/WHITE 360 degree view light on the stern (back) of the boat. The use of Navigation Lights is required any time between the hours of sunset and sunrise, anytime visibility becomes low or in congested areas\travel, such as a tournament take off. Just by seeing the lights you can tell in complete darkness which way a boat is heading and who has the right-of-way. On ships, aircrafts and manned spacecrafts, the red light is mounted on the left or port side of the craft

and the green light is mounted on the right or starboard side, along with a bright white light on the stern of the boat, which helps two water crafts on a collision course determine who has the right-of-way. If an operator sees a craft on a path crossing its own, he/she will see either its red and white running lights or green and white running lights. If he sees green\white, he is on the oncoming craft’s starboard side and has the right of way (Green means go). If the operator sees the red and white light, he knows that the approaching craft has the right-of-way, (red means stop) and he is required to deviate from his course to avoid the collision. If you can see BOTH the Red and the Green lights it means the other craft is headed straight toward you and immediate evasive action should be taken. IF a white light is all you can see you are directly behind another water craft or it could be a land based or stationary light, either way extreme caution should be exercised.

BOATER SAFETY GUIDELINES

KEEP AN ANCHOR ON BOARD ...AND ROPE

Anchors and ropes are not simply used for staying on your favorite fishing spot or mooring up in a secluded cove to sun bath. – An anchor has real safety applications in less than ideal scenarios while boating, especially where current is or might be present. Dropping an anchor if your boat is adrift due to mechanical failure can be life saving.

CAPACITY PLATE

Every boat has limits defined by a manufacturer’s capacity rating plate. This capacity plate is approved by the USCG and sets safe operating limits for that boat; like how many people, how much weight it can safely carry, maximum allowed horsepower of the engine and sometimes a map of the recommended on plane seating locations. Having an engine that is bigger than the recommended HP rating of the boat is illegal. These capacities and limit ratings are based on

the type of construction and the size and dimensions of the boat. It has absolutely nothing to do with the number of seats that are available in the boat.

PLAN & PREPARE - FILE A "FLOAT PLAN"

Let someone know where you are going. Have a good map of the waters you will be on to aid in navigation and check the weather before heading out.

NAVIGATION

Lake Dardanelle is a USCG navigable lock and dam system on the Arkansas River and it poses certain dangers, hazards, safety elements and rules that must be followed to use it safely. This is a flowing river system with current and it's open to commercial barge traffic, which in almost every case has the right-of-way over recreational boaters. The "Workboats" and "Barges" are usually very large and very heavy making it nearly impossible for them to stop in a short amount of time. Be very cautious



when crossing in front, traveling alongside or following \ crossing behind a workboat or barge in tow. Many times they cannot see you and they have very little ability to stop or change course suddenly if you should come to a stop in front of them. They often put out or "push" a very large and potentially dangerous wake of water, not only from their propeller "wash" but also due to the amount of water displaced because of their size and weight that could in fact "swamp" some pleasure and fishing boats. Give these vessels plenty of distance, **SPEED KILLS – SLOW DOWN** and show respect when you encounter them.

AIDS TO NAVIGATION

The entire Arkansas River System, including Lake Dardanelle, is equipped with many channel markers, buoys, Day Markers and Navigation Aids designed to keep vessels safely traveling in the correct directions and within water that is deep enough to safely operate in. These navigation aid markers are primarily made up of two different colored Buoys, Day Marker Signs or Lighted Beacons that may or may not contain navigation mile marker numbers on them. Any RED markers should be kept on your right or starboard side when you are traveling up stream. ("Red on the right upstream" is an easy way to remember). They indicate the right hand side of the channel or "safe to navigate waters." Green markers should be kept on your left (port) when traveling up stream/river; they indicate the left hand side of the channel or "safe to navigate waters." Usually traveling outside of these red or green buoys which designate the "main channel" will lead to uncertain water depths and potential dangers. Water depth can quickly go from 8' (feet) deep or more in the main channel to only one foot or less outside the channel markers. There could be rocks, rock piles, wing dams, concrete, stumps, trees or debris so proceed with extreme caution when traveling outside the navigation markers. Other Buoy marker types could be used to mark the CENTER of the channel and may vary in color.

LOCKS AND DAMS

There is a lock and dam at each end of Lake Dardanelle. As competitors of this event you are not permitted to “Lock Out” of this lake or to enter a lock. Depending on many factors the flow of water going through these locks and dams can vary greatly so there may or may not be a lot of current at any given time for anglers or boat captains to contend with. Any current or flow can often cause very turbulent flows near these locks and dams on either the upstream or downstream side. They can also create very dangerous undertows or currents that can disable a boat and entrap an angler who may have fallen in the nearby water. Give these buoyed areas and danger zones plenty of respect and obey the signs in the area when fishing close to a lock or dam. The lock areas associated with these dams can also contain an area of congested boat traffic. As other boats and barges leave and enter into a lock be very cautious and obey the directions of the lockmaster at all times.

FIRE EXTINGUISHERS

Marine power vessels are required to carry a fire extinguisher on board. These extinguishers should be Type B USCG Marine rated devices and sized to adequately extinguish potential flame and smoke occurrences on your vessel and should be located in a readily accessible location. Do you know where the fire extinguisher is at in YOUR boat?

SOUND PRODUCING DEVICES

Can be a horn, whistle or some other device capable of delivering a single sharp noise that can be distinguished from all other typical sounds. Three typical sounds are used by boaters as Navigation Aids have the following meanings.

One Short Blast: Means I intend to pass you one the port (left) side.

Two Short Blasts: Means that I intend to pass you the starboard (right) side.

Three Short Blasts: Means that I intend to backup.

VISUAL DISTRESS SIGNALS

Are designed to allow boat operators to signal for help in the event of an emergency. They are broken into two categories, day time signal devices and nighttime signal devices. A typical day time VDS would be a bright orange flag that can be “waved” during an emergency. A typical night time VDS could be a “Flare Gun” which is a pyrotechnic type device capable of dispersing a flame or flare, could also produce smoke and be used during the daytime. If a pyrotechnic device is used it must have a minimum of three charges (or shots) on board.

This is an overview of general TBF Student Angler Federation boater safety guidelines for this event. For more detailed information we highly recommend that every boater take an approved boater safety course in the state that they reside.

ANGLER RESPONSIBILITIES - TAKE CARE OF YOUR CATCH

HANDLING OF FISH

Proper fish care begins before we hook our first fish. The following steps should be taken to increase YOUR survival rates.



Fish care starts in your boat. It is your responsibility. An angler may have a fish in his/her livewell for up to 8 hours in a day, if the fish is properly cared for as outlined below no harm will normally come to them from their "boat ride." But if YOU do not take care of your catch all day, the weighin crew will be very limited to what they can do in the few minutes they have with your fish.

Here are a few easy steps that will help ensure as many fish as possible are released alive after every event.

1. Keep your live well full!

2. Fill your livewell away from the launch area, preferably at the first stop of the morning while the water is still at the lowest temperature of the day.

3. When you catch your first fish of the day, run the livewell pump on Recycle or Aeration only and run it continuously. Monitor the livewell temperature to ensure the temperature stays within +/- 5 degrees of the tournament water's surface temperature.

4. Do not play that fish to exhaustion if possible. The stress induced during this time period can be crucial in determining fish survival.

5. Use a livewell additive like Rejuvenade or a Non-Iodized salt solution of 3 to 5 % at all times regardless of the season. This is a great inexpensive way to promote slime protection and reduce tournament related mortality.



6. Minimize contact between you and the fish. The slime coat on fish is one of the most important barriers to the prevention of disease and infection. Abrasions from improper handling, net abrasions or carpet burn will remove its slime coat.

7. If you use a landing net, please try to use one of the recommended rubber mesh or "soft mesh" type nets available. Frabill has long been a leader in this technology so use a similar product if you can.

8. Wet your hands before handling your catch to protect the slime coat.

9. Lifting a Bass by the lower jaw is still considered to be one of the best methods of handling your catch. Never hold a fish horizontally by the lower jaw unless support is provided under the belly, especially a big fish. If you want to admire your fish for a picture please make it quick. Thirty seconds out of the water after a long struggle will put a tremendous amount of stress on the fish. (Imagine running a mile and then holding your breath for 30 seconds!)

BLACK BASS FISH CARE

HOOK REMOVAL

We should always strive to remove the hook from a fish and return it to the water as soon as possible. If this isn't a practical solution then cut the line as close as possible to the hook and leave it in the fish. In years past this was the recommended procedure but with today's high tech alloys, hooks are lasting much longer so removing them is usually our best option.

LIVE WELL WATER CONDITION

Black bass are known to survive in a wide range of water conditions from 35-97 Degrees F with the optimum temperature being in the 55 to 80 degree area. A general rule of thumb is that cooler is usually better than warmer provided we don't place the fish in a state of thermal shock by subjecting them to temperature swings greater than 8-10 degrees colder than their natural environment.

DISSOLVED OXYGEN

The reason cooler water is usually better is that oxygen is saturated more rapidly in cooler water. When a fish has been exposed to the stress of a fight they deplete oxygen from their blood just as we do when we run or exercise. In order to replenish this oxygen the fish has to be in water that is saturated in oxygen of at least 5ppm or higher for a specified period of time. The warmer the water the less oxygen that can be absorbed into it which results in Oxygen levels being less than 5ppm. In a nut shell the cooler the water the greater the potential to absorb oxygen. These amounts are very small but often they are the leading cause of livewell fatality. The greater the level of Oxygen the greater the potential survival rate of your catch.

Adding additives like Rejuvenade or a non-iodized salt solution also enhance a fish's survival rate. These additives increase the ability to absorb oxygen along with providing stress relieving chemicals to help calm the fish down and speed up the process of oxygen debt recovery and slime coat regeneration, all of which equals less stress. Another benefit of livewell additives is that they aid in the removal of hazardous gasses like ammonia that are released by fish in high stress environments. These amounts are very small but often they are the leading cause of live well fatality. An ammonia content of 0.1 ppm is stressful to a fish and a level of 1.0ppm is often deadly.



SUMMARY

Fill your livewell with clean cool water with an oxygen level higher than 5ppm and adding a livewell additive like Rejuvenade or a non-iodized salt solution to help with the stress reduction of the fish and ammonia dissipation is the recommended procedure. Recirculation of the water in your livewell while monitoring the temperature and dissolved oxygen concentration during the course of your day is a great way to keep your catch alive and preserve one of our most valuable resources.

INVASIVE SPECIES

An invasive species is like an unwelcome visitor. It would be like someone from some far off land or another planet coming to live in your house, eat your food, and use your stuff. These invaders do not share resources, they only take, take, take. They take up food that other creatures depend on. They take up living space that was occupied by native animals. This invader comes from Europe, from an area near the Caspian Sea (map). They came here in water in the bottom of oceangoing ships. The ships use this water called ballast water, to help maintain their balance at sea. The ship pumps on millions of gallons of water from a harbor in Europe. When they pump the water into the ship the organisms, like zebra mussels came along too.



Today, the ships are able to make the trip across the ocean in a relatively short time, less than two weeks. The creatures in the ballast water are able to live in the bottom of the ship. When the ship arrives here in the Great Lakes, the water is dumped out into our harbors. These hardy little animals are then free to take up residence in our lakes.

Zebra mussels were first found in Lake St. Claire on the east side of Michigan in 1988. From there, they have spread throughout all the Great Lakes. Once in Lake Michigan, they were able to spread down the Illinois River through the Chicago River into the Mississippi River. Now these little European mussels are present from the headwaters of the Mississippi to the Gulf of Mexico. Though they can't swim upstream, they are able to hitch a ride on boats and barges.

These vessels unknowingly transport them upstream to new areas. Once established, the zebra mussel can reproduce and infest new areas down stream simply by floating on the water currents.

There are other animals and plants invading our shores. Some of them you might have heard of already. Fish like round gobies, the ruffe and white perch are recent invaders. Other fish like the sea lamprey and alewife have been here for decades. Plants like purple loosestrife and Eurasian milfoil are invaders too. There are even very small animals called zooplankton that arrived in water from Africa and Europe that are invading our rivers and lakes. All of these are unwelcome, but permanent additions to lakes and streams. Sometimes these invaders are called exotic species. Exotic means it is different from what we find here normally.

Sometimes people introduce exotic species for very specific reasons. Fish managers introduce new fish species in lakes to control other species that are too abundant or to try to fill a habitat

niche that isn't already occupied by a native fish. An example is the coho and chinook salmon in the Great Lakes. These fish are considered an exotic species because they are not native to the lake. After careful consideration, they were brought here from the Pacific Coast, and were stocked into the lakes to control the alewives. Alewives are those little silvery fish that we see wash up on the beach in the spring. Without the salmon to control them, there would be many, many more of these little fish washing up on the beach.

Salmon are considered a form of biological control for alewives. This means that instead of using chemicals or trying to catch all the unwanted animals by hand, we introduce another kind of animal or plant to control the invading species. Scientists have to be very careful about what animals or plants are introduced, because if the biological control animal is not specific enough, it may do more harm to the environment. Another intentional introduction is a small beetle that eats only purple loosestrife. The scientific name of the beetle is *Galerucella*. There are two species; one eats the leaves of the plant, and the other eats the roots. Before introduction of the beetles, they went through rigorous testing in highly controlled laboratory conditions. These tests ensured that the beetles would only eat purple loosestrife and not consume desirable native plants.

ZEBRA MUSSEL LIFE CYCLE

Zebra mussels get to be about 2 inches long, but they can begin to reproduce at only a fraction of an inch in size. Though they look the same on the outside, there are male and female zebra mussels. Zebra mussels are usually able to reproduce by the end of their first year. Zebra mussels produce young from early in the spring until winter. The peak of the spawning season occurs when water temperatures are about 20 °C (68 °F). A fertilized egg results in a free-swimming, planktonic larva called a veliger. Veligers are about the diameter of a human hair; they are so small you can't see them without a microscope.

This veliger floats about in the water column for 1-5 weeks, and then begins to sink and search for a stable surface (e.g., rocks, aquatic weeds, water intakes, boat hulls) on which to live, grow, and reproduce. They attach to the surface using a sticky filament called a byssal thread. Once they attach, they begin to feed and grow.

Because the veligers are small, they are easy to spread. They can be in anything that has lake water in it, like in the bottoms of boats, or bait buckets, on ropes or on weeds that get hung up on a boat trailer. This is one of the reasons we have to be so careful about not transporting water and weeds from one lake or stream to another. It is one way we can help prevent the spread of zebra mussels as well as other animals or plants.

EFFECT OF EXOTIC SPECIES

Nonindigenous species force our native species out of their home habitats. They compete with them for food and living space. Some species, like zebra mussels, change the physical features of the habitat. Zebra mussels grow in colonies attached to hard surfaces. They get very numerous, with 1000's and 1000's growing in a single square foot area. First, they cover the bottom, and then they start growing on each other. As they cover the lake bottom and rocks, they change the quality of the habitat for our native clams and fish, making it less suitable for them to live there.

Zebra mussels can attach to living things as well, like weeds, crayfish and other clams. They can get so dense on clams and crayfish that they make it difficult for the clam to pump water. This is how clams feed, so if it can't pump water it will die.

Zebra mussels pump water through their bodies to feed too. They have gills, much like fish. As they pump water past their gills, they also filter out food. This is called filter feeding. The food they filter out of the water is called plankton. Plankton is composed of very small plants and animals. Plankton is so small it is difficult to see the separate parts without a microscope. We see it as colored or maybe less clear (turbid) water. Water with plankton in it is usually greenish. Zebra mussels are very effective feeders; a single mussel can filter over a quart (1L) of water a day. There can be so many zebra mussels in a lake that they can start to reduce the amount of plankton in the water. This makes the water clearer.

Clear water looks nice, and often we relate clear water to clean water. However, this is not always true. For animals that depend on the plankton, like the clams, insects and small fish, it means less food is available for them to eat. This is called competition. The zebra mussels compete with our native animals for food.

This would be like having someone come into your home take your seat at the table, and start eating your dinner. This person would sleep in your room or even in your bed. Unlike a visitor the person would not leave, he or she would just invite more relatives to stay in your house. If you could not adapt to having all these extra people in your house you would have to move. This is just what zebra mussels and other exotics do to the habitat in lakes and streams. They make it less livable for our native fish, clams and other invertebrates.

INVASIVE SPECIES

When zebra mussels die their shells wash up on beaches. The shells are sharp and can hurt or cut your feet. The same is true for zebra mussels attached to rocks in the water. They can cut your feet and toes if you step on them while you're swimming. Not only are the shells sharp, but also the small bits of animal tissue in the shell get smelly until it dries up. This makes the beach a less pleasant place to be.

Zebra mussels affect things that people do too. Zebra mussels are called fouling organisms. They like to attach, live and grow best where there is flowing water. This could be along lake a lakeshore where waves keep the water moving, in a stream or river, or inside pipes. As the zebra mussels grow inside pipes, they begin to clog it, like a stopped up drain in your sink. They can get so dense that they almost stop the flow of water in the pipe. Once they are established, they are difficult to clean out.

The best thing we can do about invasive species is not let them get into our lakes and streams in the first place. We need to learn how to prevent the spread of European species into our waters. Once an exotic is established, it is very difficult if not impossible to eliminate. For example, now that zebra mussels are here we need to learn how to prevent their spread to other lakes and streams and how to live with them. They are too small and too numerous to get rid of all of them.

PREVENT THE SPREAD OF INVASIVE SPECIES!

As anglers there are several things that we can do to help prevent the spread of invasive species. Most of these all center on your ability to thoroughly clean your boat and the trailer before entering a body of water.

Let's start with the trailer. A great deal of the invasive plant life is transported from one lake to another by weeds, algae, and other plants that attached to a boat trailer when it is backed into the water to launch or remove a boat from the water.

Thoroughly cleaning this material from your trailer with a high pressure water spray or by physically removing them by hand will do a great deal to prevent the spread of unwanted plants and organisms. Be sure to check those hard to reach areas around the trailer bunks and rollers and inside of the fenders. Within the boat itself there are several areas that make great hiding places for these unwanted hitchhikers. Primarily the live wells, bait wells, and the bilge of every boat are favorite hiding spots. To clean these areas it is recommended that you use a combination of warm water and a solution of common household bleach with a 5% concentration. Thoroughly rinse all bait and live wells and especially the bilge of every boat with this solution and then drain them onto the ground. (Not back into another lake, river or stream).

Never release your bait into the water. Never transport fish from one body of water to another to release. This is the duty of your local Department of Natural Resources or Fish and Game Commission.

Let them manage the species in each lake or river as they have all of the tools and necessary data to effectively manage these bodies of water.

CONCLUSION

Doing these simple steps can really facilitate stopping the spread of unwanted invasive species. Make sure you do your part to help stop these unwanted hitchhikers from entering your favorite body of water!