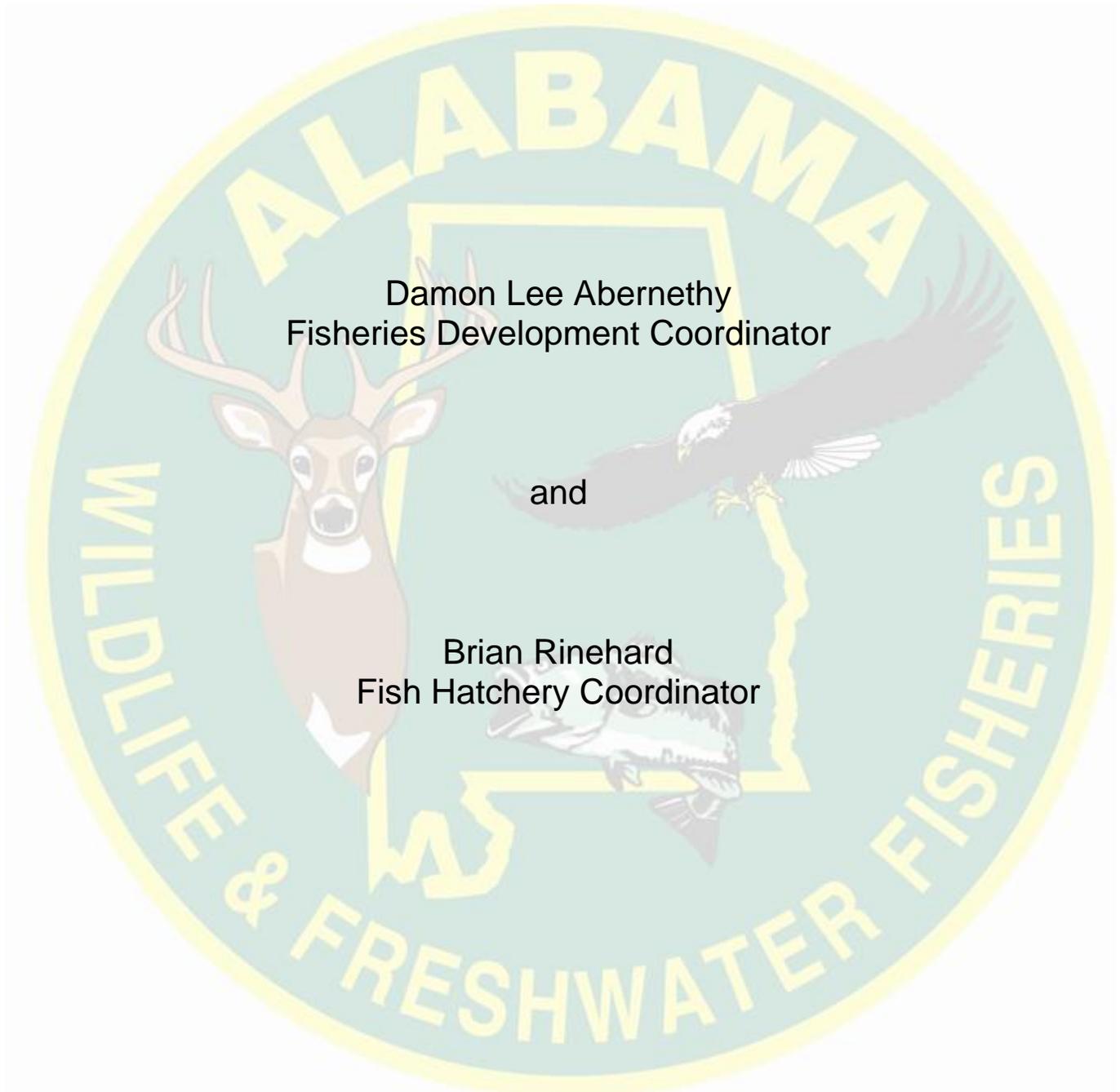


Recommended Fish Handling Guidelines for Bass Tournaments in Alabama Waters



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1. INTRODUCTION

With the rise in popularity of competitive bass tournaments, which typically practice catch-and-release, it is important that fish are handled in a way that gives them the best chance to survive. There are no State regulations that require tournament-caught fish to be released following the weigh-in; however, if a tournament organization chooses to self-impose this requirement on itself or its participants, it is important that it also take responsibility for ensuring that everything within reason is done to prevent mortality of tournament-caught fish. Although the addition of ice, salt, and other chemicals can certainly decrease the likelihood of bass mortality, the presence of adequate levels of dissolved oxygen is by far the most important factor leading to increased bass survival.

Tournament-related mortality can be a problem at any time of year, but begins to occur more frequently when water temperatures exceed 80°F. Figure 1 shows a typical reservoir thermal profile and indicates that water temperatures can exceed 80°F from May through September, which is the time of year when proper fish care is most critical. As water temperature increases, its dissolved oxygen capacity is reduced. Figure 2 illustrates this relationship. Bass become stressed when the dissolved oxygen concentration drops to around 3 mg/L, and death will occur rapidly at concentrations of 1 mg/L or less. In addition to the effect of water temperature on dissolved oxygen concentrations, warmer water creates an ideal environment for disease and parasites to be transmitted from one fish to another when held in close proximity, such as livewells, weigh-in bags, or holding tanks.

There are a number of specific events that bass must endure if caught by a tournament competitor, that when done poorly, can result in the immediate or eventual death of these fish. In a typical bass tournament a fish may be handled more than seven times before it is released. Each handling event causes stress to the fish and elevates oxygen consumption and excretion of ammonia and carbon dioxide for up to 60 minutes. For this reason, it is imperative that each fish be handled carefully and as little as possible throughout the tournament event.

However, poor livewell conditions, poorly run weigh-ins, and improper use of live release boats also cause significant tournament-related fish mortality. The following guidelines are intended to help anglers and tournament officials limit handling frequency, improve water quality, and reduce overall mortality of tournament-caught fish.

The Alabama Division of Wildlife & Freshwater Fisheries supports three (3) specific sets of recommendations for conducting competitive bass tournaments. These recommendations are dependent upon the total number of fish expected to be present in the competitor's creels. Small tournaments are those with less than 25 anglers / teams (<100 fish); medium sized tournaments are those with 25 – 75 anglers / teams (100 - 300 fish); and, large tournaments are those with more than 75 anglers / teams (300+ fish). Collectively, the small tournaments have a much greater impact because they occur far more frequently; however, poor weigh-in practices during large tournaments can cause the death of hundreds of fish at a single event.

Tournament directors should hold themselves and those competing in their events to the highest possible standards of fish care, regardless of the size of the event. Directors of small tournaments should make every reasonable effort to incorporate as many practices as possible from the medium to large tournament guidelines offered in the following text. Any questions related to incorporating various practices into a weigh-in procedure should be directed to the local [District Fisheries Office](#).

2. ANGLER FISH HANDLING PROCEDURES

2.1. Hooking and Landing

- 2.1.1. When a fish is hooked, it should be hand-landed by gripping the lower jaw, or captured in a rubber or knotless nylon net and handled in a way that prevents it from landing on the carpet of the boat, which removes the slime coat that protects it from disease and pathogens.

2.1.2. Once landed, the fish should be released immediately or transferred to the livewell within 30 seconds of being caught.

2.2. Culling

2.2.1. Culling floats should be attached to the fish's lower jaw immediately after being landed; however, special care should be taken not to attach the clip in an area that may allow it to come in contact with the fish's gills. The clip-on style is much less harmful to the fish than the safety-pin style.

2.2.2. Digital scales should then be attached to the clip on the culling float (whenever possible) and the fish's weight recorded before adding it to the livewell.

2.2.3. Once a fish has been added to the livewell, it should not be disturbed again until it is either culled or removed for weigh-in.

2.2.4. Never remove a fish from the livewell by the culling float attached to its lower jaw. Fish should be calmly lead to the surface by the culling float so that it may be grasped by the lower jaw.

2.3. Fish Care

2.3.1. It is important for anglers to know the volume of water present in their boat's livewell. Most modern bass boats are equipped with recirculating livewells with 25 – 35 gallon capacities. Figure 3 illustrates reasonable carrying capacities for livewells of different sizes that take into account the influence of water temperature.

2.3.2. Exceeding the limits in Figure 3 places an angler in a situation where proper livewell water quality management is critical to the survival of their catch.

2.3.3. Once the reservoir water temperature exceeds 80°F the following steps should be taken.

2.3.3.1. Livewell temperature should be kept 5 – 7 °F cooler than the reservoir water temperature.

2.3.3.2. In a typical livewell, a rate of 8 pounds of ice every 2.5 hours is a good rule of thumb.

- 2.3.3.3. When using ice, it is imperative that a floating thermometer be used to monitor livewell temperature throughout the day.
 - 2.3.3.4. Livewell should be flushed for 30 minutes every 2.5 hours.
 - 2.3.3.5. 0.75 pounds of non-iodized salt should be added after each livewell flushing.
- 2.3.4. Using too much ice will cause more harm than good, so if anglers are not committed to monitoring and controlling livewell temperature and flushing rate, then it is best not to use ice at all. In this case, the best alternative would be to exchange livewell water as frequently as possible using the boat's aeration pumps. Some boat manufacturers have included livewell systems that allow pumps to run at all times allowing the introduction of fresh water into the livewell throughout the tournament day.

2.4. Weigh-In

- 2.4.1. Do not place fish into weigh-in bags unless there is space available in the waiting line tanks.
- 2.4.2. Once fish have been placed into weigh-in bags, they should be taken immediately to the weigh-in stage or waiting line tanks.
- 2.4.3. A minimum of three (3) gallons of water should be used to transport fish in the weigh-in bags.
- 2.4.4. Weigh-in bags should have a capacity of at least 15 gallons, and include an interior mesh bag.
- 2.4.5. The mesh bag containing the fish should be removed from the water bag and placed:
 - 2.4.5.1. into the waiting line tank (when provided) as anglers wait their turn to weigh in
 - 2.4.5.2. into the bumptank for measuring, or
 - 2.4.5.3. onto the scales for weighing.
- 2.4.6. After the fish have been weighed, the mesh bag containing the fish should be placed back into the bag of water for transport to the release boat or temporary holding tanks.

2.4.7. The amount of time taken to weigh and photograph fish should last no more than 30 seconds.

3. WEIGH-IN PROCEDURES (LESS THAN 25 ANGLERS / TEAMS)

3.1. Tournament Format

3.1.1. Tournament duration should be limited to 6 hours or less when reservoir water temperatures exceed 80° F.

3.1.2. Due to temperature-related livewell capacity limitations (Figure 3), draw tournaments should be discontinued or bag limits should be reduced to three (3) fish per person when reservoir water temperatures exceed 80° F.

3.1.3. The weigh-in process should be conducted in a manner that prevents fish from being confined to weigh-in bags for more than three (3) minutes.

3.2. Post Weigh-In

3.2.1. Fish should be taken immediately to the release site and returned to the reservoir.

3.2.2. No dead **or dying** fish should be returned to the tournament waters under any circumstances. Dying fish are those that cannot immediately right themselves and swim away to deeper water.

3.2.3. Any dead fish should be separated and placed into a cooler of ice to be kept, given away, or properly disposed of. Tournament directors should notify the local [District Wildlife & Freshwater Fisheries Law Enforcement Office](#) if they anticipate having more than the legal possession limit of dead fish.

3.3. Staff Requirements

3.3.1. There should be at least two (2) workers present to conduct the weigh-in.

3.3.2. Suggested staff responsibilities are as follows:

3.3.2.1. Weighmaster – weighs fish.

3.3.2.2. Recorder to record or enter fish weights.

3.3.2.3. Bumptank (optional) – measures and examines fish to determine if they are legal prior to being weighed-in. This may also be done by the Weighmaster.

4. WEIGH-IN PROCEDURES (25-75 ANGLERS / TEAMS)

4.1. Tournament Format

- 4.1.1. Tournament duration should be limited to 6 hours or less when reservoir water temperatures exceed 80° F.
- 4.1.2. Weigh-ins should be in flights of no more than 50 anglers / teams.
- 4.1.3. Due to temperature-related livewell capacity limitations (Figure 3), draw tournaments should be discontinued or bag limits should be reduced to three (3) fish per person when reservoir water temperatures exceed 80° F.
- 4.1.4. It **will** be necessary to limit the total number of weigh-in bags to prevent lines from exceeding a length that can be accommodated by the waiting line tanks.
- 4.1.5. The weigh-in process should be conducted in a manner that prevents fish from being confined to weigh-in bags for more than three (3) minutes.

4.2. Waiting Line Tanks

- 4.2.1. There should be at least one (1) 100 gallon or larger holding tank for every 25 anglers/teams participating.
- 4.2.2. Each waiting line tank should include the following:
 - 4.2.2.1. A shaded area or covered canopy.
 - 4.2.2.2. Four (4) separate compressed air lines with diffuser stones to add compressed air to the tank water. If 150 gallon tanks are used, then each tank should include six (6) compressed air stones. Air should be introduced at a rapid rate.
- 4.2.3. Water temperature should be maintained at 5 – 7°F below the reservoir water temperature when it exceeds 80°F.

4.3. Post Weigh-In

- 4.3.1. Fish should be taken immediately to the release site and returned to the reservoir.
- 4.3.2. No dead or dying fish should be returned to the tournament waters under any circumstances.
- 4.3.3. Any dead fish should be separated and placed into a cooler of ice to be kept, given away, or properly disposed of.

4.4. Staff Requirements

- 4.4.1. There should be at least one (1) worker for every ten (10) anglers or teams participating in the tournament.
- 4.4.2. Suggested staff responsibilities are as follows:
 - 4.4.2.1. Weighmaster – weighs fish on stage.
 - 4.4.2.2. Recorder - record or enter fish weights and issue weigh-in slips.
 - 4.4.2.3. Bumptank (optional) – measures and examines fish to determine if they are legal prior to being weighed-in. This may also be done by the Weighmaster.
 - 4.4.2.4. Fish handlers – one (1) for every fifteen (15) anglers / teams participating. Responsible for transporting fish from the weigh-in to the release site and returning them to the reservoir.

5. WEIGH-IN PROCEDURES (75 OR MORE ANGLERS / TEAMS)

5.1. Tournament Format

- 5.1.1. Tournament duration should be limited to 6 hours or less when reservoir water temperatures exceed 80° F.
- 5.1.2. Weigh-ins should be in flights of no more than 50 anglers / teams.
- 5.1.3. Due to temperature-related livewell capacity limitations (Figure 3), draw tournaments should be discontinued or bag limits reduced to three (3) fish per person when reservoir water temperatures exceed 80° F.
- 5.1.4. It **will** be necessary to limit the total number of weigh-in bags to prevent lines from exceeding a length that can be accommodated by the waiting line tanks.
- 5.1.5. The weigh-in process should be conducted in a manner that prevents fish from being confined to weigh-in bags for more than three (3) minutes without access to oxygen.

5.2. Waiting Line Tanks

- 5.2.1. There should be at least one (1) 100 gallon or larger holding tank for every 25 anglers/teams participating.
- 5.2.2. Each waiting line tank should include the following:

- 5.2.2.1. A shaded area or covered canopy.
- 5.2.2.2. Four (4) separate compressed oxygen lines with diffuser stones to add pure oxygen to the tank water. If 150 gallon tanks are used, then each tank should include six (6) compressed oxygen stones. Dissolved oxygen concentration in the tank water should be maintained at 5 ppm or greater; however, exceeding 8 ppm can be detrimental to the health of the fish. For best results, follow the flow rate recommendations provided with the oxygen diffusers being used.
- 5.2.3. Water temperature should be maintained at 5 – 7°F below the reservoir water temperature when it exceeds 80°F.
- 5.2.4. Dissolved oxygen and water temperature in the tanks should be monitored at 15 minute intervals.

5.3. Post Weigh-In

- 5.3.1. Fish should be taken immediately to the release boat or temporary holding tank area, and placed into the appropriate tank.
- 5.3.2. Any dead fish should be separated and placed into a cooler of ice to be kept, given away, or properly disposed of.

5.4. Use of Release Boats

- 5.4.1. Tournaments with more than 75 angler or teams participating should use a live release boat.
- 5.4.2. All nets used should be made of rubber or knotless nylon.
- 5.4.3. The boat must be equipped with a bottom tank release or chute-tube release to minimize handling stress.
- 5.4.4. Tank capacity should be a minimum of 500 gallons with individual compartment sizes no less than 100 gallons each.
- 5.4.5. Fish loading densities should follow the guidelines in Figure 4 or Figure 5. Please note that if more than one half of the fish spotted bass, smallmouth bass, or any combination of the two, loading densities should be reduced by 25 %.
- 5.4.6. Each tank or compartment on the release boat should be:

- 5.4.6.1. Filled with water from the reservoir where the tournament is being held.
- 5.4.6.2. Treated with non-iodized salt at a rate of 2.5 – 3.0 pounds / 100 gallon of water.
- 5.4.6.3. Maintained at 5 – 7 °F cooler than the reservoir water temperature when it exceeds 80° F. Achieve this by using ice as described below.
 - 5.4.6.3.1. Block ice should be used at a rate of approximately 10 –12 pounds / hour for every 100 gallons of water, depending upon temperature; or
 - 5.4.6.3.2. Crushed ice should be used at a rate of approximately 15 – 20 pounds / hour for every 100 gallons of water, depending upon temperature.
- 5.4.6.4. Designed with its own independent oxygen diffuser with a maximum pore size of 500 microns and a surface area ratio of at least 5 in² / 100 gallons of water. The AS101 oxygen diffuser manufactured by Point Four is ideal and can be obtained for about \$60.
- 5.4.6.5. Monitored for dissolved oxygen and temperature at 15 minute intervals. Dissolved oxygen concentration in the tank water should be maintained at 5 ppm or greater; however, exceeding 8 ppm can be detrimental to the health of the fish. For best results, follow the flow rate recommendations provided with the oxygen diffuser being used.
- 5.4.7. Tournament organization should have separate oxygen bottles for each release boat and any temporary holding tanks.
- 5.4.8. The total amount of available compressed oxygen should be greater than or equal to 0.5 ft³ for each angler or team participating in the tournament. An 80 ft³ tank should be enough for all but the largest tournaments. These can be purchased for less than \$200, or rented from a local welding supply shop.
- 5.4.9. If the release boat has multiple tanks or compartments, fish should be distributed evenly among them, making sure that each compartment or tank contains the same size-distribution of fish.

- 5.4.10. There should be a dissolved oxygen / temperature meter kept on each boat, and one on shore for use in temporary holding tanks if they are used.
- 5.4.11. Dissolved oxygen levels should be maintained at 5 mg/L (ppm) or higher in all holding tanks throughout the entire event.
- 5.4.12. If the difference in temperature between the reservoir water and the holding tank water is greater than 5°F, then fish should be acclimated prior to release.
- 5.4.12.1. To acclimate, the holding tank water temperature should be lowered by not more than 1°F every five (5) minutes until the tank water temperature is equal to the lake water temperature.
- 5.4.12.2. Water exchange should be accomplished by gradually adding fresh water from the reservoir to the holding tanks.
- 5.4.13. Fish should be released in water at least ten (10) feet deep, a minimum of one (1) mile from the weigh-in site, and at least 300 yards from shore. The release boat should remain in the area for a minimum of 15 minutes to pick up any surfacing or struggling fish.
- 5.4.14. No dead **or dying** fish should be returned to the tournament waters under any circumstances. Dying fish are those that cannot immediately right themselves and swim away to deeper water.

5.5. Use of Temporary Holding Tanks

- 5.5.1. If the release boat(s) do not have the capacity to hold the entire tournament catch for a single post-tournament release, then temporary holding tanks may be necessary.
- 5.5.1.1. If reservoir water temperatures are above 70°F, then temporary holding tanks should be available to hold any surplus fish that cannot be accommodated by the release boats.
- 5.5.1.2. If reservoir water temperatures are below 70°F, then any surplus fish should be released into the reservoir at the weigh-in site once release boats have reached their maximum carrying capacity.
- 5.5.2. These tanks should be located as close to the release boat(s) as possible.

- 5.5.3. Tanks should be covered or placed in the shade to prevent them from being exposed to direct sunlight.
- 5.5.4. All nets used should be made of rubber or knotless nylon.
- 5.5.5. The same water quality standards that apply to release boat tanks should also be used for temporary holding tanks.
- 5.5.6. Fish loading densities should follow the guidelines in Figure 4 or Figure 5. Please note that if more than one half of the fish are spotted bass and/or smallmouth bass, loading densities should be reduced by 25 %.

5.6. Staff Requirements

- 5.6.1. There should be at least one (1) worker for every ten (10) anglers or teams participating in the tournament.
- 5.6.2. Suggested staff responsibilities are as follows:
 - 5.6.2.1. Weighmaster – weighs fish on stage.
 - 5.6.2.2. Recorders
 - 5.6.2.2.1. One (1) to record or enter fish weights and issue weigh-in slips.
 - 5.6.2.2.2. One (1) to record total weight of fish being placed into each holding tank.
 - 5.6.2.3. Bumptank – measures and examines fish to determine if they are legal prior to being weighed-in.
 - 5.6.2.4. Fish handlers
 - 5.6.2.4.1. One (1) on each live release boat at all times.
 - 5.6.2.4.2. One (1) for every pair of temporary holding tanks.
 - 5.6.2.4.3. Two (2) to shuttle fish from the stage to the various holding tanks.
 - 5.6.2.5. Water quality manager – monitors dissolved oxygen and temperature in all holding tanks.
 - 5.6.2.6. Ice handlers (2) – work in close coordination with the water quality manager to adjust water temperatures and dissolved oxygen concentrations, as needed.

APPENDIX

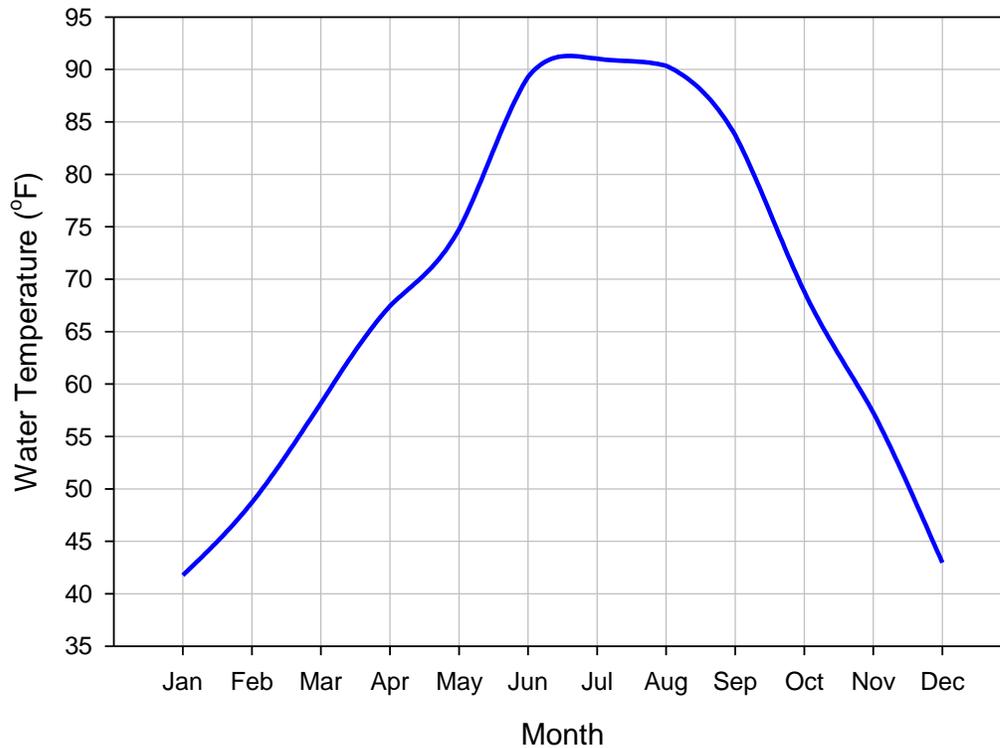


FIGURE 1. TYPICAL RESERVOIR TEMPERATURE PROFILE IN ALABAMA.

Reservoir water temperatures in most Alabama reservoirs typically exceed 80° F from mid-May to mid-September; however, these dates can vary widely from one year to the next. Whenever reservoir water temperatures exceed 80° F, proper fish care and handling is critical to the survival of tournament-caught bass.

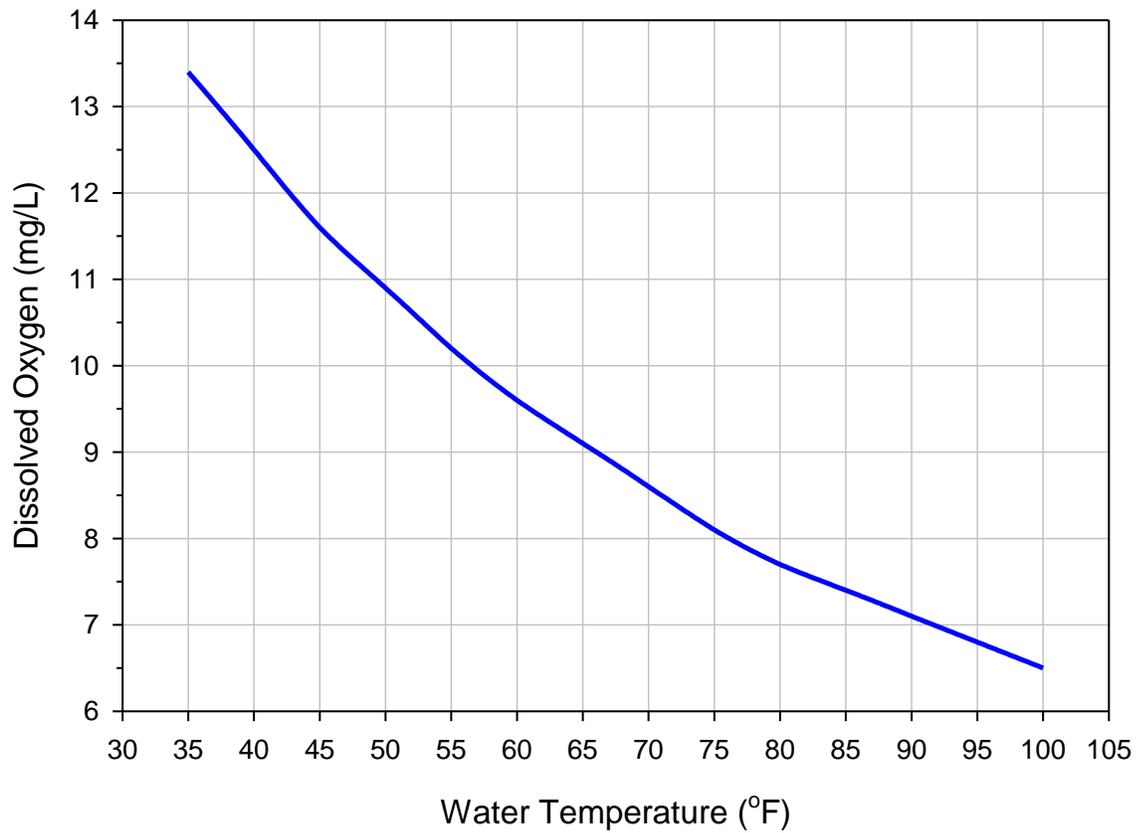


FIGURE 2. RESERVOIR DISSOLVED OXYGEN PROFILE AT SATURATION.

As water temperatures increase, its capacity to retain dissolved oxygen decreases. In reservoirs, dissolved oxygen is typically present in water at levels much lower than saturation. Bass become stressed when dissolved oxygen falls below 3 mg/L, and death will occur rapidly at 1 mg/L or below.

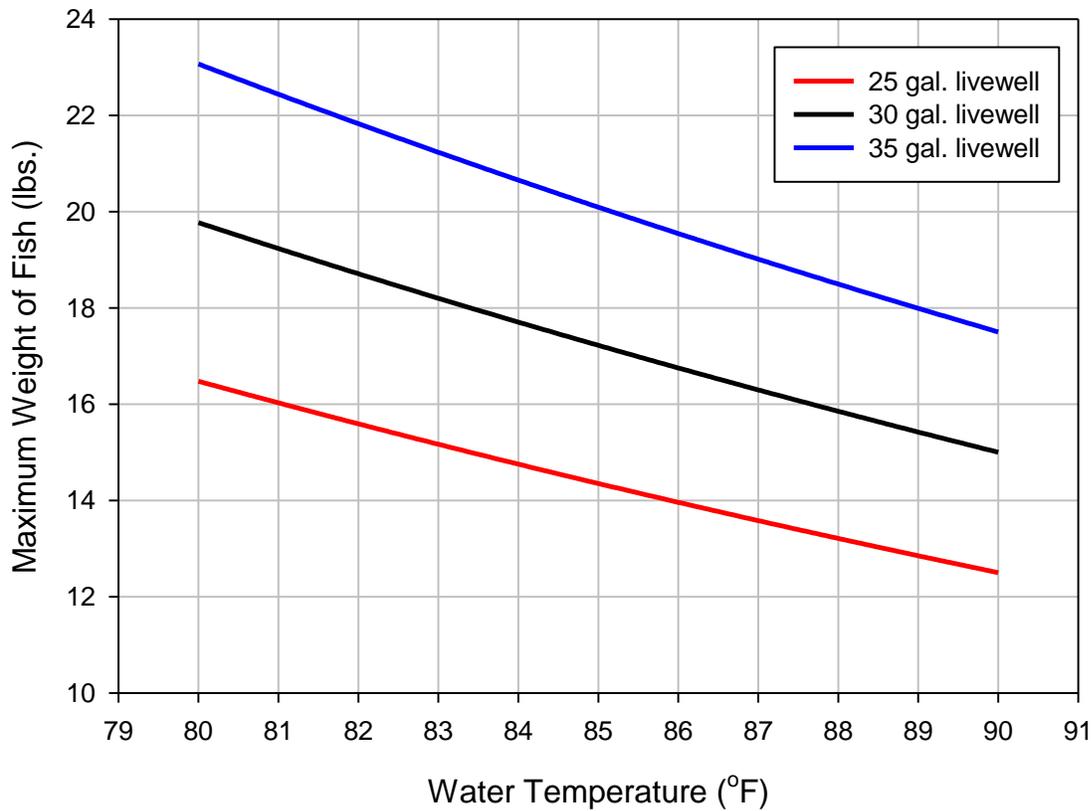


FIGURE 3. RECIRCULATING LIVEWELL CARRYING CAPACITIES IN TYPICAL MODERN BASS BOATS. The maximum weight of fish that can be safely confined in a livewell declines as water temperature increases. The rate of decline is roughly equal to a 2.8% decrease with each degree of increase in water temperature. Exceeding the carrying capacity for their livewells requires anglers to make fish care a high priority during the tournament day.

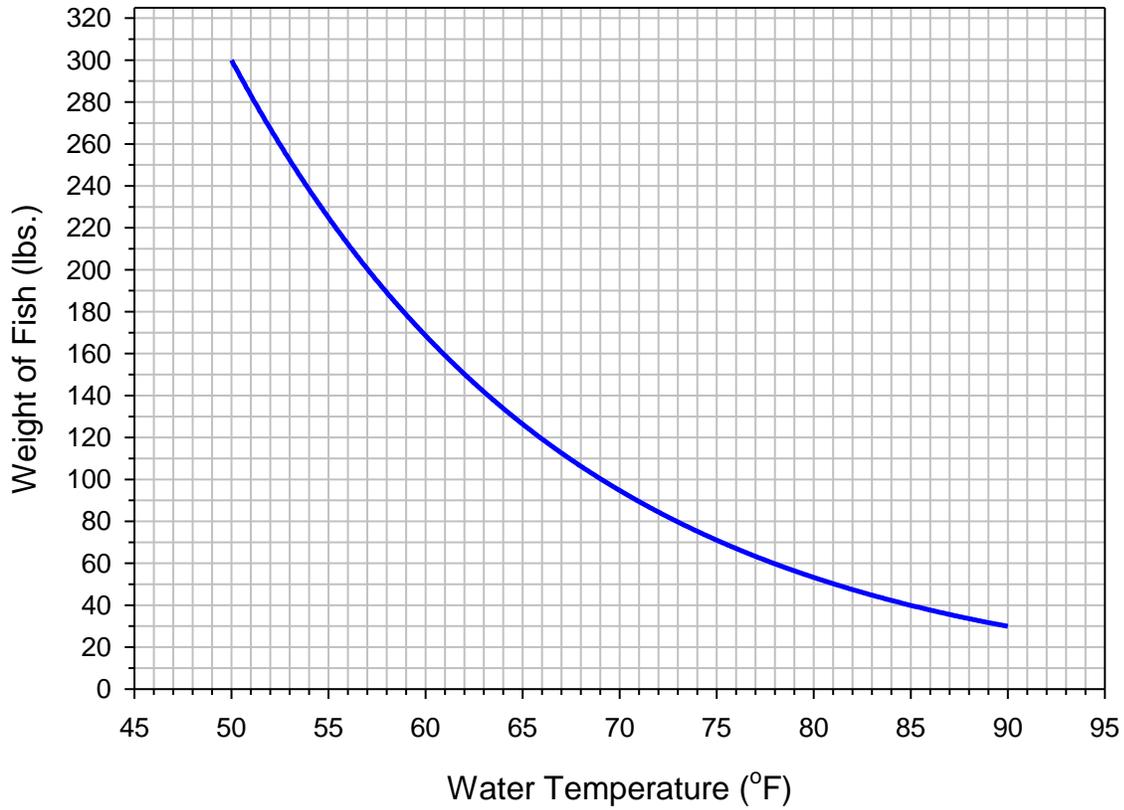


FIGURE 4. MAXIMUM WEIGHT OF FISH PER 100 GALLONS OF RELEASE BOAT TANK OR COMPARTMENT VOLUME. This amount should be reduced by 25% if more than half the fish are spotted bass and/or smallmouth bass.

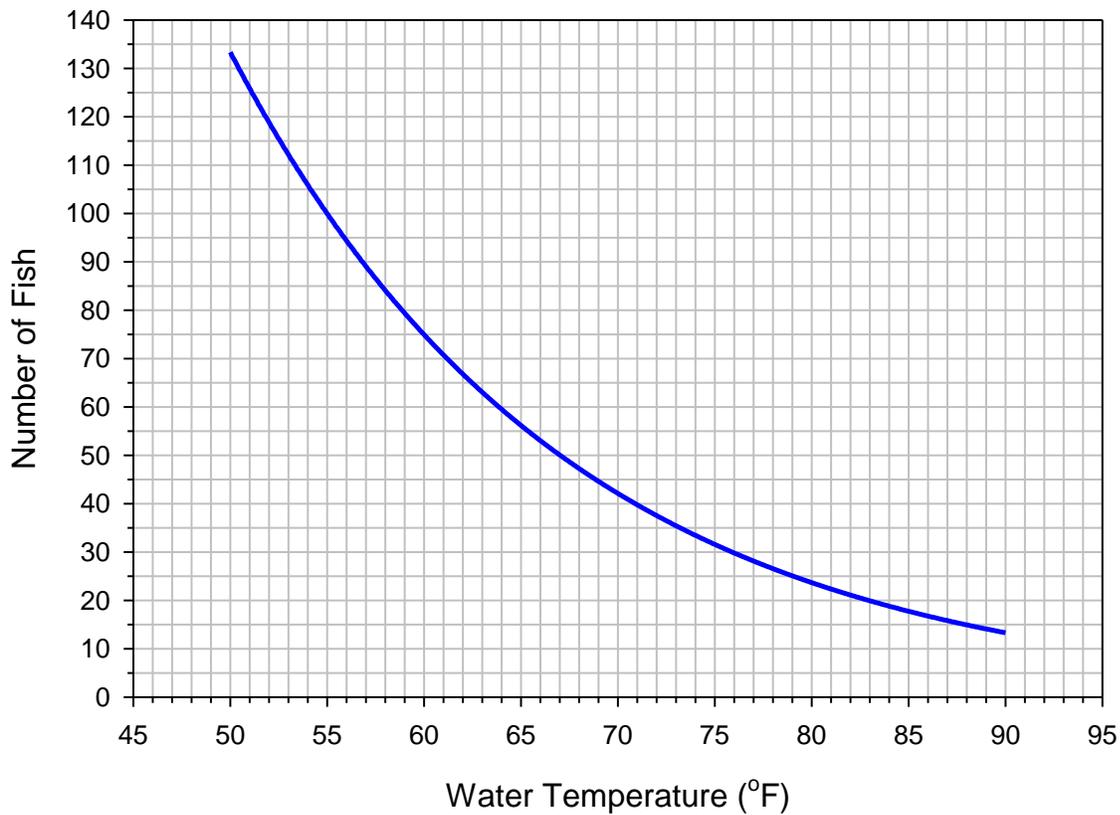


FIGURE 5. MAXIMUM NUMBER OF FISH PER 100 GALLONS OF RELEASE BOAT TANK OR COMPARTMENT VOLUME. These amounts should be reduced by 25% if more than half the fish are spotted bass and/or smallmouth bass. The recommendations above assume an average bass weight of 2.25 pounds. If the average weights in a particular tournament do not approximate this statewide average it is recommended that tanks be loaded according to weight as illustrated in Figure 4.