



# Competitive Fishing Events Best Management Practices



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## **Waterbodies Eligible for Competitive Fishing Event Licences**

**Issue:** Fisheries that are closed to harvest are in a recovery state and need all their fish to re-establish self-sustaining populations. The increased fishing pressure and potential mortality associated with Competitive Fishing Events (CFEs) is considered an unacceptable risk to the recovery of such fisheries.

**Guideline: Competitive Fishing Events will be permitted only on lake, river or stocked pond fisheries that allow harvest for the fish species designated as the target of the event (daily limit of 1 or more).**

- A CFE license will not be issued for any event that targets a species with a “0” limit.
- Organizers are encouraged to select alternate species rather than walleye for their fishing event.
- CFEs will not be licensed at any waterbody during a closed season or during spawning periods.
- CFEs are subject to the regulations that are specific to that waterbody daily limits, size limits, area and season closure.

**Monitoring and Accountability:** CFE organizers are responsible for seeking approval for CFEs from relevant government agencies. Fish and Wildlife is responsible for approving CFEs and issuing licenses. CFE organizers are responsible for being aware of all waterbody-specific regulations.

## **Location of Competitive Fishing Events**

**Issue:** Competitive Fishing Events (CFEs) generate increased activity at the event site. Fishing competitors, along with their families/friends, add to vehicle/boat traffic, parking demand, and the use of campgrounds and local establishments. CFE planning requires considerable attention to logistics in consideration of available facilities and other users.

**Guideline: Get permission to use all relevant facilities from private/provincial campgrounds, municipal districts, counties, etc.**

- Determine what facilities the event will need such as boat launches, campgrounds, weigh-in locations, event headquarters and spectator locations.
- Discuss event plans with resort owners and boat launch and marina managers.
- Anyone wishing to hold a CFE in a waterbody within a provincial park or protected area, or to access a waterbody via a park or protected area for such an event, must contact Alberta Community Development's Parks and Protected Areas Division (PPA) at 1-866-427-3582. PPA will provide event organizers with information as to whether or not a commercial guiding permit and/or a special event permit is required, and the process for obtaining such permits before advertising and holding the event. Based on the location and the nature of the proposed event, PPA may have additional conditions that must be met.

**Monitoring and Accountability:** CFE organizers are responsible for getting permission from the local authorities before advertising and holding a fishing event. You must include these contact names and phone numbers on the application form.

## Timing of Competitive Fishing Events

**Issue:** Temperature is one of the most critical factors influencing a fish's ability to cope with stress. From late June to August, temperatures in lakes generally exceed 18°C. Fish mortality tends to increase as temperature increases. Studies have shown that holding walleye in live-wells and weigh-in tanks during periods of high temperatures increases fish mortality (Figure 1).

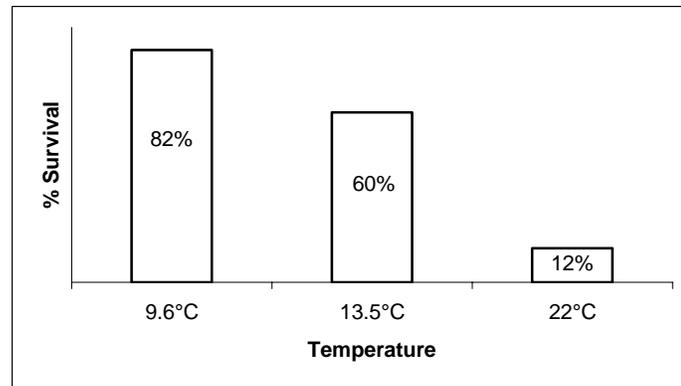


Figure 1: Effect of water temperature on survival of live-release walleye from tournaments held in Minnesota and South Dakota (adapted from Fielder and Johnson 1994).

**Guideline: CFEs should not occur during high water temperatures.**

- Avoid planning CFEs between July 1 and August 30.
- Schedule CFEs during cooler water periods.
- Postpone events or adjust format to reduce handling time if surface waters (measured at 0.5m) exceed 18° C.
- Develop an Adverse Weather Contingency Plan for warm water conditions, as described in [Managing Competitive Fishing Events Under Adverse Weather Conditions](#).
- Reduce handling and holding times, as described in [Strategies to Reduce Fish Mortality in Competitive Fishing Events](#).
- Record daily water temperatures.

**Monitoring and Accountability:** CFE planners (license applicants) are responsible for monitoring and recording water temperature conditions, and postponing or cancelling events as needed.

## Location of Weigh-In Stations

**Issue:** The number and location of fish weigh-in/registration stations affect fish mortality through retention time, immediate release of fish into good habitat, boat travel distance, potential exposure to rough water, and other harmful conditions.

**Guideline:** It is recommended that measuring or weigh-in stations should be located on the water during July and August (and preferably at all times). Shoreline weigh-in may be used during cooler water periods if fish can be released into good quality water habitat.

- Weigh-in stations should be of sufficient number, in relation to the geography of the CFE (such as the whole lake or a designated zone) to allow the following:
  - registered fish can be released immediately and directly back into the waterbody or stream from which they were caught
  - sufficient water depth (2 - 3m) and water quality (away from boat traffic)
- Weigh-in locations and the total area fished in the event should consider wind direction and speed to avoid exposure to excessively high waves. Weigh-ins should be located in sheltered waters along leeward shores.
- Weigh-in stations should be placed close to the more popular fishing areas to reduce competitors travel time thereby increasing fish survival. Also, tournament patrol boats do not have to travel as far (safety issue).
- Fish may not be released in tributaries to the lake.
- Floating weigh-in stations out on the lake are best.
- Participants must know where weigh-in stations are located, and the stations must have signs or be otherwise marked to ensure they are easily found.

**Monitoring and Accountability:** CFE organizers are responsible for determining and communicating weigh-in station location(s), along with the size of the fishing area.

## Weigh-In and Release Process

**Issue:** The weigh-in process is one of the most critical factors for fish survival in a live-release Competitive Fishing Event (CFE). The manner in which fish are handled and then released affects fish mortality rates. Event organizers should assign dedicated staff to the care and release of fish and provide facilities to care for stressed fish.

**Guideline: Avoid holding fish in tanks after weigh-in and transporting to release sites. Fish are to be transported, handled carefully without undue delay and released as soon as possible from the weigh-in site, according to the following criteria:**

- Appoint an active, designated weigh-in supervisor to be present at each weigh-in station and on duty at all times during weigh-in periods. Weigh-in supervisory duties may be transferred between individuals, but must be clearly assigned to ensure accountability. Supervisors should be visibly identifiable as they carry out their numerous responsibilities:
  - 1) Ensure careful handling of fish throughout the entire process and monitor handling process and exposure times.
  - 2) Ensure compliance with guidelines throughout all processes (judging, weighing, release).
  - 3) Assign specific duties and responsibilities to volunteers to cover all aspects of the weigh-in.
  - 4) Conduct an orientation with volunteers to ensure they are adequately prepared for duties.
- Minimize fish handling and always use good handling techniques:
  - Use wet cotton gloves for any fish handling.
  - Use a rubber-mesh dip net if fish need to be moved. Maximum one fish in dip net at a time.
- Judge fish for overall health while still in the livewell of the boat. Healthy fish should be weighed or measured and immediately released. For stressed fish, read [Treatment of Stressed or Dead Fish in Competitive Fishing Events](#).
- Do not expose fish to atmosphere for more than 30 seconds at any one time. To minimize air exposure, boat docking facilities and weigh-ins should be located close to each other.
- Use a staging tank that allows fish to be held in water while awaiting weigh-in at the station. The staging tank should be large and shaded, with the water constantly

exchanged with the waterbody. This minimizes any temperature fluctuations, maintains dissolved oxygen concentrations, and meets the following requirements:

- The temperature differential between holding tank and surrounding waterbody must not exceed +/- 2° C at any time.
- The dissolved oxygen concentration in the holding tank must remain between **9** and **11.5** milligrams per litre (mg/l).
- Water temperature and dissolved oxygen of holding tank and surrounding waters should be monitored hourly or more frequently.
- The holding tank water supply must come from a location away from boat traffic and boat landing areas to avoid the intake of water contaminated with gas, oil, and motor exhaust. Water exchange systems (intake and outflow) must be monitored regularly to ensure good function and flow.

The above process may add stress to the fish (because they are being held), and requires extra manpower to design, construct and monitor an efficient holding tank.

- Release fish immediately and directly back into the waterbody from which they were caught.
- Use staggered starts at large events to decrease and control the number of fishermen that weigh-in at the end of the day. Long boat line-ups produce poor water quality in marina/docking areas, especially during hot, calm days.

**Monitoring and Accountability:** The designated weigh-in supervisor is accountable for all aspects of fish handling and retention at weigh-in stations.

## Use of Livewells

**Issue:** Studies show that the length of time fish are retained in livewells, the number of fish held at any one time, and the practice of culling have a direct impact on increased fish mortality. Allowing anglers to hold their daily entry limit may cause some fish to be held most of the day, which increases stress and injury to those fish. Fish mortality decreases when anglers reduce the number of fish in a livewell and the amount of time that fish are held before weigh-in.

**Guideline: All participants in a live-release CFE must be equipped with a livewell (fish-holding container) that meets the following criteria and used in the manner described:**

- Able to aerate and recirculate or exchange water with the waterbody. The water exchange system should run continuously or for a minimum of five minutes every 20 minutes. Water temperature must be within 1 to 2 degrees Celsius of the lake surface temperature. If livewell water exchange and aerators are not run frequently enough, oxygen levels and temperature can rapidly change to lethal levels.
- Run livewell recirculation systems near weigh-in sites.
- Have a minimum volume of 13.5 litres of water per fish.
- Hold no more than two fish at any time. This encourages competitors to return to the "weigh-in station" more than once per day. Too many fish can easily depress oxygen levels in the livewell.
- Never use chemical fish stimulants; their use is not permitted.
- Lie perpendicular to the centre axis of the boat and placed in the back (stern) of the boat with baffles and padding.

**Monitoring and Accountability:** CFE participants are responsible for meeting livewell guidelines. Event organizers are responsible for ensuring participants are well informed of the requirements and monitoring compliance throughout the event.

## Strategies to Reduce Fish Mortality

**Issue:** Fish mortality is a result of injury and cumulative stresses. In Competitive Fishing Events (CFEs), fish are stressed as a result of hooking, exertion, low oxygen levels (livewells), air exposure (see Fig. 2) and increased handling and retention. Environmental factors, such as depth of capture and water temperature, affect fish mortality rates. Bait and hook type, and hooking location on the body of the fish also influence mortality. Most fish mortality from angling and CFEs is difficult to evaluate as it is often not immediate or readily visible. Competitive Fishing Events should always give primary consideration to minimizing immediate and delayed mortality. CFEs that use the following guidelines will cause the lowest mortality rates.

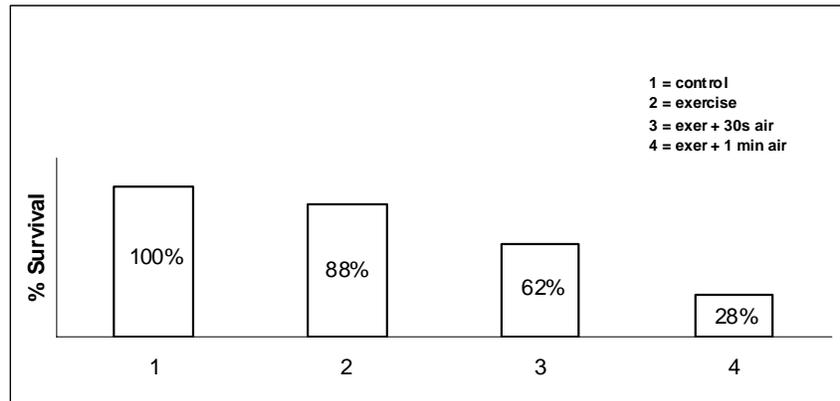


Figure 2: Effect of air exposure on survival of rainbow trout following exhaustive exercise. Redrawn from Ferguson and Tufts (1992).

**Guideline: To minimize fish mortality, CFE organizers and participants of medium and large (catch and release) competitive fishing events should adopt the following strategies:**

- **Increase minimum size limit** – Raising the minimum size limit, for the purpose of the competition, decreases the number of fish eligible for scoring and reduces the number of fish subjected to tournament catch-keep and weigh-in stresses. This is strongly recommended.
- **Reduce the size of the fishing area** – The size of the fishing area you select for your event influences the length of time fish are held in live-wells, the distance traveled (possibly over rough water) and number of weigh-in sites. As wind and wave conditions worsen, the CFE area should decrease.

- **Reduce the duration of the event** – Holding a competitive fishing event over one day instead of two or three days reduces overall risk of fish mortality to the population.
- **Minimize time to play fish** – Retrieve fish quickly to avoid playing fish to exhaustion.
- **Fish handling** – All events must incorporate and communicate strategies to promote good fish handling practices:
  - Strive to minimize or eliminate fish exposure to air. Planners should closely critique the fish weigh-in process for your event.
  - Strive to reduce fish handling time. Fish handling brochures are available at Fish and Wildlife District Offices.
  - Stipulate the use of wet cotton gloves and rubber-mesh nets in boats and in transferring fish.
  - Recommend the use of needle-nose pliers or forceps for hook removal.
- **No pre-fishing harvest** – In many CFEs, participants may engage in fishing for a few days prior to the competition (pre-fishing) to locate good fishing spots and develop preferred fishing techniques. To prevent excessive harvest during pre-tournament fishing, event organizers should promote catch and release during this phase of the event.
- **Staggered starts** – For more information, read [Competitive Fishing Event Weigh-In and Release Process](#) .
- **More than one weigh-in period per day** – This reduces the amount of time that fish are in livewells, thereby decreasing fish mortality.
- **High wind/high water temperatures** – Before the event, event organizers should develop a contingency plan for adverse weather (including very warm water). Contingency plans outline changes to the operation of the event should windy or very warm water conditions occur, focused on actions to reduce stress on fish, such as reduced event hours, reduced fishing area, changing weigh-in station locations or numbers, and larger size limits. For more information, read [Managing Competitive Fishing Events Under Adverse Weather Conditions](#).

**Monitoring and Accountability:** CFE organizers are responsible for planning for minimal fish mortality, anticipating changing conditions, and communicating requirements to participants. Participants are responsible for following the requirements.

## Treatment of Stressed or Dead Fish

**Issue:** To ensure good handling practices and to evaluate Competitive Fishing Events (CFEs), all catch and release events must have criteria for defining, identifying and dealing with stressed and dead fish. To provide incentive for minimizing mortality, dead fish or those judged as stressed need to be ineligible for a competition and bring a penalty to the competitor. Such fish also need to be enumerated and handled according to standard practices.

**Guideline: CFE organizers and participants will evaluate the condition of all fish caught according to the following criteria, and handle stressed or dead fish in the manner prescribed:**

- **Stressed fish** are defined as showing **one or more** of the following symptoms:
  - 1) Inability to hold itself upright (belly up)
  - 2) Red coloration on fins or side of body
  - 3) Difficulty in sounding to bottom of tank
  - 4) Swimming at surface, gulping for air

These criteria should be understood by all competitors and judges, and rigorously enforced.

- Assess participants a penalty for dead fish or fish judged as stressed (e.g. loss of one fish that can be entered in the event). Another fish may not replace a dead or stressed fish.
- Hold stressed fish in a large, aerated holding tank in which there is water exchanged with the waterbody. This tank should be designated as the recovery tank.
- Record the number of stressed fish released.
- Hold stressed fish in recovery tanks until they recover (show no symptoms) or die. Fish that are identified as recovered should be released into quiet, calm water away from boat traffic. If the released fish becomes stressed and cannot hold itself upright (belly up), it should be retrieved and counted as dead.
- Retain and record all dead fish in a participant's or organizer's possession.
- Treat all dead fish as food, cleaning and dressing them in a manner that complies with sportfishing regulations, and storing them a clean, sterile container packed with ice. The disposal of the fish is part of license conditions. Event organizers should plan for the disposal of dead fish. **Fish and Wildlife decides the approved disposal method.**

**Monitoring and Accountability:** Participants are responsible for assessing and handling fish they catch and submitting stressed or dead fish to a weigh-in supervisor. Weigh-in

supervisors are responsible for assessing and classifying fish as stressed or dead, and handling fish brought to, and retained at, the weigh-in station. CFE organizers are responsible for maintaining records of stressed and dead fish, submitting that information as part of the CFE licensing requirements, and getting approval for disposal of dead fish.

## Fishing in Deep Water

**Issue:** Some species of fish such as walleye and northern pike are unable to rapidly adjust to air pressure in their swim bladders when they are quickly retrieved from deep water (> 7.5 metres of water). Because the air in the bladder cannot be released, the air bladder rapidly expands, causing internal injury. The expanded air bladder does not allow the fish to maintain an upright position or to descend back to deeper water. Recognizing the stress on fish caught from deep water, some anglers have used hollow needles inserted through the fish's belly to pierce the swim bladder and relieve air pressure. This practice is known as "fizzing". Alberta studies have revealed that fizzing increases stress and mortality, especially during warm water periods. Although fish appear to swim away healthy, post-event research has shown that there is a high mortality rate when fish are fizzed.

**Guideline: CFEs must be conducted in a manner that minimizes or eliminates risks of fish mortality resulting from deep-water retrieval, according to the following:**

- Fizzing is not permitted at Competitive Fishing Events (this is a condition of licence), and is discouraged at any time.
- Participants should avoid capturing fish from water greater than 7.5 metres in depth, particularly if water temperature exceeds 18° Celsius. If necessary, CFE organizers should define an eligible zone for the event that excludes anglers from deep-water areas.
- CFE organizers must make participants aware of these guidelines and rationale.

**Monitoring and Accountability:** CFE organizers are responsible for clearly communicating guidelines and rationale and determining the fishable area of the event.

## Managing for Adverse Weather Conditions

**Issue:** Rough water conditions created by high winds are a major stress and mortality factor on fish held and transported in livewells. Very warm water temperatures also increase fish mortality risk. Competitive Fishing Events (CFEs) need to consider weather conditions to minimize or avoid fish mortality caused by such weather. Extremely adverse weather also poses a risk to the safety of participants.

**Guideline: Organizers of Competitive Fishing Events need to develop an Adverse Weather Contingency Plan before the event, and implement the plan as soon as possible once adverse conditions occur.**

- Adverse weather caused by **wind**: A guideline for estimating and reporting wind speed (on land and water) is described in the Beaufort Scale (see table below).

Adverse weather caused by very **warm weather**: 18 degrees Celsius at 1 metre (depth) is the threshold for high water temperature. Higher temperatures cause rapidly increasing risk of fish mortality.

Should adverse wind or temperature conditions occur, the following is recommended:

- Restrict competitors to fishing areas close to the weigh-in stations (area of CFE is reduced).
- Move weigh-in stations close to the more popular fishing areas.

(Reducing the travel distance to weigh-in stations and the time fish are held and transported in live-wells will greatly increase fish survival).

- Should **extreme conditions** occur (wind speed greater than 40-50 km/h; water temperature at one metres (depth) greater than 22 degrees Celsius), it is strongly recommended that the event be cancelled or postponed until conditions improve.
- CFE organizers will ensure that all participants are aware of the definitions of adverse conditions and the nature of the contingency plan.

**Monitoring and Accountability:** CFE organizers are responsible for monitoring and assessing weather and water conditions and judging when to initiate the contingency plan. Participants share in this responsibility and must make event organizers aware of adverse conditions or safety concerns.

## Beaufort Wind Scale

Note: Wave heights apply to the open sea; waves in sheltered waters will be lower and steeper. Other factors such as swell and depth can also change wave heights.

Force	Speed			Name	Conditions at Sea	Conditions on Land
	knots	km/h	mi/h			
0	< 1	< 2	< 1	Calm	Sea like a mirror.	Smoke rises vertically.
1	1-3	1-5	1-4	Light air	Ripples only.	Smoke drifts and leaves rustle.
2	4-6	6-11	5-7	Light breeze	Small wavelets (0.2 m). Crests have a glassy appearance.	Wind felt on face.
3	7-10	12-19	8-11	Gentle breeze	Large wavelets (0.6 m), crests begin to break.	Flags extended, leaves move.
4	11-16	20-29	12-18	Moderate breeze	Small waves (1 m), some whitecaps.	Dust and small branches move.
5	17-21	30-39	19-24	Fresh breeze	Moderate waves (1.8 m), many whitecaps.	Small trees begin to sway.
6	22-27	40-50	25-31	Strong breeze	Large waves (3 m), probably some spray.	Large branches move, wires whistle, umbrellas are difficult to control.
7	28-33	51-61	32-38	Near gale	Mounting sea (4 m) with foam blown in streaks downwind.	Whole trees in motion, inconvenience in walking.
8	34-40	62-74	39-46	Gale	Moderately high waves (5.5 m), crests break into spindrift.	Difficult to walk against wind. Twigs and small branches blown off trees.
9	41-47	76-87	47-54	Strong gale	High waves (7 m), dense foam, visibility affected.	Minor structural damage may occur (shingles blown off roofs).
10	48-55	88-102	55-63	Storm	Very high waves (9 m), heavy sea roll, visibility impaired. Surface generally white.	Trees uprooted, structural damage likely.
11	56-63	103-118	64-73	Violent storm	Exceptionally high waves (11 m), visibility poor.	Widespread damage to structures.
12	64+	119+	74+	Hurricane	14 m waves, air filled with foam and spray, visibility bad.	Severe structural damage to buildings, wide spread devastation.

## Planning during Ice-Covered Conditions

**Issue:** Ice fishing creates a unique challenge for fish survival with environmental factors such as freezing temperatures and blowing snow as normal conditions. The use of two lines for ice fishing can also increase mortality because of delayed hook sets. Competitive Fishing Events (CFEs) planned for ice-covered waters should be conducted to minimize fish mortality.

**Guideline: CFE organizers and participants of medium and large (catch and release) ice fishing events should eliminate risks of fish mortality by incorporating the following strategies:**

- Coolers with lids (not buckets) must be used to hold and retain fish for the purposes of measuring or weighing, or both. Coolers should be of sufficient size to fit the targeted fish species (when fish is fully extended).
- Transport angled fish to the weigh-in site in a cooler filled with a sufficient amount of water (fish is submerged), measured and released at the weigh-in station as quickly as possible into the same waterbody where they were caught. Depth of water at release site should be 2–3 metres.
- Process fish immediately. Fish should not be held in coolers for extended periods of time.
- Never cull fish.
- Handle, unhook and measure all fish underwater in the cooler. This protects sensitive fish tissues (i.e. gills and eyes) that can freeze quickly during cold temperatures.
- Place the boundary of the fishing area no more than 800 metres (0.5 miles) from the weigh-in site to reduce competitor travel time.
- Use a maximum of one line for ice fishing. Unattended lines and delayed hook set result in fish swallowing lures and bait. Deeply hooked fish are at a high risk of mortality.

**Monitoring and Accountability:** CFE organizers are responsible for clearly communicating guidelines and rationale. Participants are responsible for the care, handling and transportation of fish to the weigh-in location during winter events