



## Town of Wareham, Massachusetts

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### Cold Water Boating

#### OFF-SEASON BOATING, COLD SHOCK and HYPOTHERMIA



**The risk of falling overboard or capsizing may be small, but the threat-to-life of such accidents is most serious.**

There are no crowds of boaters on bays, lakes and rivers in the colder months of the year. Fishermen work their favorite coves nearly undisturbed. On inland waters, migrating waterfowl appear in the fall and return again in the spring as soon as the ice goes out. The fine, breezy days of spring and fall are the best of days for many open boaters. There are trade-offs for these blessings. The water is cold (less than 60 degrees F) in the off-season. More than half of the fatal boating accidents occur when the water is cold. Most such accidents occur in calm weather, relatively close to shore. Because fewer boaters are on the water, the likelihood of a prompt rescue is greatly reduced. Off-season boaters must be as self-sufficient as possible.

Immersion in cold water rapidly incapacitates and may kill boaters who are not wearing protective clothing. Surfers, sailboarders, and river paddlers wear wet suits or dry suits when the water is cold. Off-season sailors, fishermen, hunters, and other folks out in open boats can use these same precautions to greatly improve their safety on the water.

#### What happens in cold water?

Cold water removes heat from the body 25 times faster than cold air. About 50% of that heat loss occurs through the head. Physical activity such as swimming, or other struggling in the water increases heat loss. Survival time can be reduced to minutes. Strong swimmers have died before swimming 100 yards in cold water. In water under 40 degrees F, victims have died before swimming 100 feet.

#### Cold Shock

1. Without a life jacket, a victim may inhale while under water (involuntary gasping reflex) and drown without coming back to the surface. This can only be prevented by wearing a life jacket at all times on the water in the off-season. There is no second chance.
2. Exposure of the head and chest to cold water causes sudden increases in heart rate and blood pressure that may result in cardiac arrest.
3. Other responses to cold water immersion result in immediate loss of consciousness and drowning.

#### Hypothermia

Hypothermia (decreased body temperature) develops more slowly than the immediate effects of cold shock. Survival curves show that an adult dressed in average clothing may remain conscious for an hour at 40 degrees F and perhaps 2-3 hours at 50 degrees F (water temp.). The crisis is more serious than these numbers suggest. Any movement in the water accelerates heat loss. Survival time can be reduced to minutes. Hands rapidly become numb and useless. Without thermal protection, swimming is not possible. The victim, though conscious, is soon helpless. Without a life jacket, drowning is unavoidable. Even with a wet suit/dry suit on, one's hands rapidly become useless in water in the low 40's degrees F. Protective fingerless

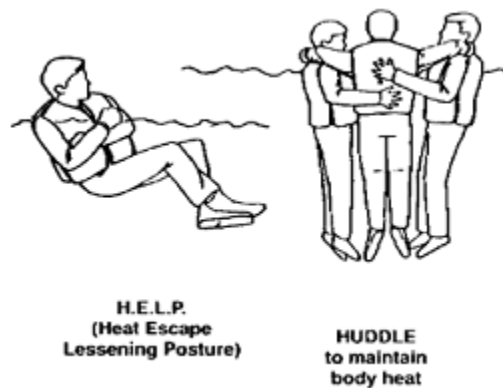
gloves for fishermen can be important. Shivering occurs as body temperature drops from 97 degrees F down to about 90 degrees F. Uncontrolled rapid breathing follows the initial gasping response and may cause loss of consciousness. The victim must attempt to recover control of his/her breathing rate. Muscle rigidity and loss of manual dexterity, physical helplessness, occurs at about 93 degrees F. Mental capacity also deteriorates at this point. Unconsciousness occurs when the body's core temperature reaches about 86 degrees F. If drowning doesn't occur first, death occurs at a core temperature of about 80 degrees F.

### How Fast Can it Happen?

On Memorial Day, 1996, an 18-year old canoeist capsized into 50 degrees F lake water. He sank to the bottom before a rescuer in a boat towing the canoe could reach him. He was wearing blue jeans, a light shirt and no life jacket. His body was recovered the next day by divers. Your ability to survive accidental immersion will depend on how you prepared yourself before going out. Dressing for the possibility of immersion helps buy time to work out a rescue in case of an accident. **Warm weather does not cancel out the danger of cold water. Instead, wearing lighter clothing on warm days may increase risk.**

### Once in the water

Try to get back in or on your boat immediately. Do not leave the boat. If you are not wearing thermal protection and can not get out of the water, stay as still as possible. Fold arms, cross legs and float quietly on the buoyancy of your PFD until help arrives (Heat Escape Lessening Posture; H.E.L.P.). If 2 or more people are in the water, put your arms around one another. Stay still and close together (Huddle posture).



### Treatment of Hypothermia

1. Mild hypothermia (victim shivering but coherent). Move victim to place of warmth. Remove wet clothes, give warm, sweet drinks; no alcohol or caffeine. Keep victim warm for several hours.
2. Moderate hypothermia (shivering may decrease or stop). Victim may seem irrational with deteriorating coordination. Same as above but no drinks. Victim should be kept lying down with torso, thighs, head and neck covered with dry clothes, coats or blankets to stop further heat loss. Seek medical attention immediately.
3. Severe hypothermia (shivering may have stopped). Victim may resist help or be semiconscious or unconscious). Removed from water, victim must be kept prone, on back and immobile. **Victim must be handled gently.** Cover torso, thighs, head and neck with dry covers to stop further heat loss. Arms and legs must not be stimulated in any manner. **Cold blood in extremities, that suddenly returns to the core, may induce cardiac arrest.** Seek medical attention immediately.
4. Victim appears dead. Little or no breathing or pulse, body rigid. Assume victim can be revived. Look for faint pulse or breathing for 2 minutes. **If any trace is found, do not give CPR.** It can cause cardiac arrest. Medical help is imperative. If pulse and breathing are totally absent, CPR should be started by trained medical personnel.

### Planning Ahead

Wear clothing that permits safe cold-water immersion and a life jacket. It is the only way to combat the risk posed by cold-water boating.

The common advice to wear layers of wool (nylon, polypropylene) is misleading. These fabrics do not effectively retard heat loss in cold water. They are warm when damp, after being wrung out, due to air trapped in the fibers. They must be worn inside

a waterproof barrier (shell) having neoprene or latex gaskets at ankles, waist, wrists and neck. Fleece-lined "wetsuit grade" polartec clothing is rated equal to 2.5 mm neoprene and is comfortable under outer clothes. Such clothing (\$100-300) may be found in catalogs & shops that serve river paddlers and windsurfers).

Carry dry clothing in a water proof bag. Tie a bailer and paddle to your boat. Evaluate the flotation in your boat. A short sling tied to the transom, with a foot rest in the loop, may assist boat reentry. Attach a whistle or horn to your life jacket.

Tell someone where you are going and when you will return. Inform them of your return. Check the weather forecast for the day.

***WATCH THE BOATS AROUND YOU.*** On cold water, you are depending on one another for prompt rescue in case of an accident.