

## **American Packrafting Association**

### **Packrafting Safety Code**

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(Adapted from American Whitewater Safety Code; Swiftwater Safety Institute curriculum; Roman Dial, author of Packrafting!; Todd Martin, author of Grand Canyoneering; Forrest McCarthy; Scott Solle of Solgear.com; Thomas Turiano; and Moe Witschard.)

By their nature, rivers and oceans have dangers that strike quickly and without warning. One minute everything is fine, the next you're locked in a struggle for survival. Even waters that seem gentle and serene can be hazardous. Apparent serenity presents a danger in itself by lulling one into a false sense of security. When it comes to water, when things do go wrong, they tend to go wrong very quickly. It's best to mitigate as many of these risks as possible in the planning and preparation stages of the trip, rather than attempting to react to them at the time they occur.

- I. Personal Preparedness and Responsibility
  - a. Packrafters should have specific training in paddling and swift water rescue.
  - b. Boating alone is discouraged. The minimum party is two craft.
  - c. Know and communicate your current physical and mental condition.
  - d. Know and improve your swimming skills and ability
  - e. Know and improve your paddling skills and ability
  - f. Train and practice self-rescue, including escape from an overturned packraft (wet exit), wet re-entry, and the ability to swim with your packraft and paddle.
  - g. Train and practice swift-water rescue skills, first aid, and CPR.
  - h. Wear an appropriate life jacket.
  - i. Wear a helmet when upsets are likely in rivers with obstacles.
  - j. Dress appropriately for weather and water temperature. Do not wear bulky jackets, ponchos, heavy boots, waders, or anything else that could reduce your ability to survive a swim.
  - k. Carry on your person equipment needed for unexpected emergencies, including a throw rope, knife, whistle, first aid kit, and survival kit (with waterproof matches).
  - l. Control your packraft
    - i. Be able to stop or reach the riverbank before encountering a hazard.
    - ii. Enter a rapid only if you are reasonably certain that you can run it safely or swim it without injury.
  - m. Learn to identify hazards:
    - i. Fast, high, or rising water from melt water run-off, rain run-off, and dam releases
    - ii. Strainers, sweepers, sieves, bridge pilings, undercut rocks
    - iii. Floating debris

- iv. Cold air and water temperatures
- v. Pinning your packraft against an obstacle
- vi. Dams, weirs, ledges, reversals, holes, and hydraulics. Escape to sides or by diving under reversal to catch downstream current.
- n. Assume personal responsibility for:
  - i. Whether to participate on a trip. This includes an evaluation of the expected difficulty of the rapids under the conditions existing at the time of the put-in.
  - ii. Equipment selection, including craft, rescue equipment, and survival gear.
  - iii. Scouting, running, portaging, putting in, or taking out.
  - iv. Communication regarding safety.

## II. Equipment Preparedness

- a. A packrafter's clothing selection is critical for comfort and survival.
  - i. Use a wet or dry suit for whitewater or ocean paddling
  - ii. In cold water, ensure proper foot insulation and consider neoprene gloves.
  - iii. Carry adequate shells for protection from rain and wind
  - iv. Have quick access to warm head and neck layers made of materials that can retain your heat when wet
  - v. Interior insulative layers should be made of materials that can retain your heat when wet
  - vi. In sunny conditions, wear shielding clothing, sun hats with wide brims, and sunscreen
  - vii. Pack dry backup clothing layers in waterproof stuffsacks
- b. Test new and unknown equipment under familiar conditions before relying on it during committing or challenging trips. (Packrafts, by the nature of their low volume, are more likely to flip than larger rafts, and therefore present unexpected hazards paddlers who are inexperienced with packrafts, or who are poorly conditioned.)
- c. Be sure your backpacking and boating gear are in good repair before starting a trip.
- d. Have strong, appropriate, and properly-sized paddles for controlling your packraft. Carry sufficient spares for your group size and length/difficulty of the trip.
- e. Multi-sport helmets approved for "water sports" are adequate up to Class III. Whitewater specific helmets are highly recommended for Class IV and up.
- f. Outfit your packraft to avoid entrapment.
  - i. Check spray deck release.
  - ii. Packraft fit must not be too tight to allow a fast exit
  - iii. Be sure that your cargo rigging (ie., backpack, skis, bikes, etc) does not restrict easy and fast exit.

- iv. Secure or eliminate loose ropes/straps on cargo and packraft that could become entangled with your body.
- v. Grab cords on perimeter of boat present entanglement and snagging hazard. If you must have them, minimize slack.
- vi. Paddle leashes present an entanglement hazard, and generally should not be attached to either the paddler or the packraft. During a swim, the paddle can become stuck in river obstacles trapping swimmers or damaging boats.
- vii. Carrying more than one paddler in a packraft when running rapids is not recommended.
- viii. Store climbing/canyoneering ropes inside your pack
- ix. To assist with conscious swimmer rescue, some packrafters outfit the stern of their boat with a grab loop, knotted grab cord, or dangling strap. However, packrafters should understand the risks and limitations of such measures. Be certain they are tight/short enough to reduce the risk of snagging.
  - 1. Grab loops pose a risk of catching on tree branches.
  - 2. Knotted grab cords pose a risk of jamming between rocks and branches.
  - 3. Dangling straps are difficult for swimmers to hold.
- x. Stern painters for towing other boats and swimmers, as well as tying off boats, are permissible if properly coiled and secured.
- g. An air mattress or closed-cell-foam pad can be used to cushion the floor of boat for added insulation and to raise your butt out of boat-floor puddle. However, the addition of these pads can raise your center of gravity making packraft tippy. The pads also can present a foot entrapment hazard, as well as become lost in the river during a flip.
- h. Spray decks
  - i. Increase whitewater capabilities and comfort but require training and practice.
  - ii. When properly fit and functioning correctly, spray decks keep large splashes and surges of water out of your boat, keeping the paddler warmer, and allowing the paddler to run whitewater with good control, and without having to eddy out to dump your boat.
  - iii. Packrafts filled with water make the paddler cold, do not handle well, and are prone to flipping.
  - iv. With practice, wet exit from a capsized packraft with the spray deck employed is not difficult, but it can be slower than a wet exit from a capsized packraft without a spray deck.
  - v. The compromised handling of a boat filled with water often is a greater liability than the risk of injury during delayed escape from a capsized boat with the spray deck employed, provided the paddler is wearing a helmet.

- i. Thigh/Knee Straps
  - i. Increase whitewater capabilities, but require training and practice.
- j. Packraft Care for Safety
  - i. Avoid strapping packrafts on the outside of your backpack. They may become damaged on rocks and sticks. Store packrafts inside your pack where they are out of harms way. Additionally, place ultralight flatwater packrafts in a stuff sack to protect them from abrasion inside your pack.
  - ii. Do not leave boats unattended without being adequately weighted or tied down. Wind gusts can blow them away or flog them against adjacent brush/rocks.
  - iii. Before launching, temper your raft by holding it in shallow water, and then re-inflate
  - iv. Do not leave fully inflated rafts in direct sunlight for extended periods.
  - v. Use care not to drag or puncture your boat while portaging.
  - vi. Keep your boat clean and free of abrasive sand and other debris.
  - vii. Carry an adequate repair kit with pieces of tube/floor material.

### III. Group Preparedness and Responsibility

- a. Organization. A river trip should be regarded as a common adventure by all participants, except on instructional or commercially guided trips as defined below. Participants share the responsibility for the conduct of the trip, and each participant is individually responsible for judging his or her own capabilities and for his or her own safety as the trip progresses. Participants are encouraged (but are not obligated) to offer advice and guidance for the independent consideration and judgment of others.
- b. River Conditions. The group should have a reasonable knowledge of the difficulty of the run. Participants should evaluate this information and adjust their plans accordingly. If the run is exploratory or no one is familiar with the river, maps and guidebooks, if available, should be examined. The group should secure accurate flow information; the more difficult the run, the more important this will be. Be aware of possible changes in river level and how this will affect the difficulty of the run. If the trip involves tidal stretches, secure appropriate information on tides.
- c. Group equipment should be suited to the difficulty of the river. The group should always have a throw rope available, and one rope per boat is recommended on difficult runs. The list may include: first aid kit, headlamp, folding saw, fire starter, maps, food, extra clothing, and any other rescue or survival items suggested by conditions.
- d. Keep the group compact, but maintain sufficient spacing to avoid collisions. If the group is large, consider dividing into smaller groups or using the “buddy system” as an additional safeguard. Space yourselves closely enough to permit good communication, but not so close as to interfere with one another in rapids.

- e. Usually the most experienced paddler, the point paddler sets the pace, ascertains whether each section is runnable, establishes safest line of travel, directs those who follow with hand or paddle signals, and lends assistance to paddlers who flip. When in front, do not get in over your head. Never run drops when you cannot see a clear route to the bottom or, for advanced paddlers, a sure route to the next eddy. When in doubt, stop and scout.
- f. The last paddler is usually the second most experienced paddler in the party. They perform the function of clean up, lending assistance to stuck paddlers, swimmers, and retrieving lost gear.
- g. Keep track of all group members. Each boat keeps the one behind it in sight, stopping if necessary. Know how many people are in your group and take head-counts regularly. No one should paddle ahead or walk out without first informing the group. Paddlers requiring additional support should stay at the center of a group, and not allow themselves to lag behind in the more difficult rapids. If the group is large and contains a wide range of abilities, a “sweep boat” may be designated to bring up the rear.
- h. Courtesy. On heavily used rivers, do not cut in front of a boater running a drop. Always look upstream before leaving eddies to run or play. Never enter a crowded drop or eddy when no room for you exists. Passing other groups in a rapid may be hazardous; it's often safer to wait upstream until the group ahead has passed.
- i. Float Plan. If the trip is into a wilderness area or for an extended period, plans should be filed with a responsible person who will contact the authorities if you are overdue. It may be wise to establish checkpoints along the way where civilization could be contacted if necessary. Knowing the location of possible help and planning escape routes can speed rescue.
- j. Drugs. The use of alcohol or mind-altering drugs before or during river trips is not recommended. It dulls reflexes, reduces decision-making ability, and may interfere with important survival reflexes.
- k. Instructional or commercially guided trips. In contrast to the common adventure trip format, in these trip formats, a boating instructor or commercial guide assumes some of the responsibilities normally exercised by the group as a whole, as appropriate under the circumstances. These formats recognize that instructional or commercially guided trips may involve participants who lack significant experience in whitewater. However, as a participant acquires experience in whitewater, he or she takes on increasing responsibility for his or her own safety, in accordance with what he or she knows or should know as a result of that increased experience. Also, as in all trip formats, every participant must realize and assume the risks associated with the serious hazards of whitewater rivers.
- l. It is advisable for instructors and commercial guides or their employers to acquire trip or personal liability insurance.

#### IV. Guidelines for River Rescue

- a. Recover from a flip with an eskimo roll whenever possible.
- b. If an eskimo roll is not possible, perform a wet exit, right your boat if it is upside down, and perform a wet entry whenever possible. All four skills require practice. Practice in a safe environment before needing the skills in a real situation.
- c. If you swim, hold on to your boat. It is buoyant and is easy for rescuers to spot. Get to the upstream side of your boat so that you cannot be pinned between a river obstacle and your boat by the force of the current.
- d. If wet entry is not possible, actively attempt self-rescue whenever possible by swimming for safety. If holding onto your packraft is preventing you from swimming to a safe zone such as an eddy or bank, release your craft, especially if the water is cold or you are hurtling toward dangerous river obstacles or rapids. Be prepared to assist others who may come to your aid.
- e. Strainers are one of the greatest dangers packrafters face. While paddling, if there is unavoidable danger of being trapped against rocks, brush, or any other kind of strainer, evacuate your boat and lunge from the boat to the top of the obstacle if possible. Do not allow the current to sweep you under the obstacle.
- f. When swimming in shallow or obstructed rapids, lie on your back facing downstream with knees bent and feet held high to meet and absorb upcoming obstacles. Do not attempt to stand in fast moving water; if your foot wedges on the bottom, fast water will push you over and hold you there. For this reason, a packrafter should not use the bottom of the river as a stepping platform for wet entry. Get to slow or very shallow water before attempting to stand or walk. Look ahead! Avoid possible pinning situations including undercut rocks, strainers, downed trees, holes, and other dangers by swimming away from them.
- g. Make a decision beforehand about the order of importance of equipment, such as cargo, packraft, paddle.
- h. If paddle is lost, use your spare paddle, or improvise a new one using pot lids, bones, sticks, boards, etc.
- i. If the rapids are deep and powerful, roll over onto your stomach and swim aggressively for the bank. Look for eddies and slack water and use them to get out of the current. Strong swimmers can affect a powerful upstream ferry and get to the bank fast. If the bank is obstructed with strainers or under-cut rocks, consider if it might be safer to “ride the rapid out” until an escape can be found.
- j. If others capsize and swim, go after the boaters first. Rescue boats and equipment only if this can be done safely. While participants are encouraged to assist one another to the best of their ability, they should do so only if they can, in their judgment, do so safely. The first duty of a rescuer is not to compound the problem by becoming another victim.

- k. Rescue packrafts should turn backwards to a swimmer and allow the swimmer to reach for the grab cord or painter on the stern. Swimmers who latch onto the side of a rescue packraft can flip it.
- l. The use of throw bags requires training and practice; uninformed use may cause injury. Never tie yourself into a rope without a reliable quick-release system. Have a knife handy to deal with unexpected entanglement. Learn to place setlines effectively, to throw accurately, to belay effectively, and to properly handle a rope thrown to you.
- m. When attempting to revive a drowning victim, be aware that cold water may greatly extend survival time. Victims of hypothermia may have depressed vital signs and look/feel dead. Do not give up. Continue CPR for as long as possible without compromising safety.
- n. Medical
  - i. Know how to prevent, identify, and administer care for:
    1. dehydration
    2. heat exhaustion
    3. cold shock response
    4. cold incapacitation
    5. hypothermia
    6. drowning

## V. Universal River Signals

- a. STOP: Potential Hazard Ahead. Form a horizontal bar with your outstretched arms. Those seeing the signal should pass it back to others in the party. Wait for “all clear” signal before proceeding, or scout. Hold the paddle horizontally above your head to signal for the group to stop and hold their position.
- b. ALL CLEAR: Form a vertical bar with your paddle or one fist and arm held high above your head to signal that all is clear for your group to proceed. Paddle blade should be turned flat for maximum visibility.
- c. GO THAT WAY!: To signal direction or a preferred course around obstruction, hold the paddle at a 45 degree angle toward the side of the river with the preferred route. Never point toward the obstacle you wish to avoid. In the absence of other directions, read the river, and choose the best route.
- d. HELP/EMERGENCY: Give three long blasts on a whistle while waving a paddle, helmet, or PFD over your head if you require assistance. If a whistle is not available, use the visual signal alone. A whistle is best carried on a lanyard attached to your life vest. Assist the signaler as quickly as possible.
- e. EDDY OUT: Stir the air with an upturned index finger to indicate the need to eddy out. Then simply point with an outstretched arm or paddle to indicate where to eddy out.
- a. PORTAGE: Make an exaggerated walking motion with the hands and fingers in the direction of the side of the river on which to portage.

- b. ARE YOU OK?/YES, I AM OK: While holding the elbow outward toward the side, repeatedly pat the top of your head to ask the question if someone is ok and not hurt. An affirmative reply is to duplicate the head patting motion.
- c. LOOK!: Put one hand on brow over the eyes as if shading them from the sun while extending the other arm to point at what needs to be seen. May be used to point out obstacles or objects of interest.

VI. International Scale of River Difficulty: This is the American version of a rating system used to compare river difficulty throughout the world. This system is not exact; rivers do not always fit easily into one category, and regional or individual interpretations may cause misunderstandings. It is no substitute for a guidebook or accurate first-hand descriptions of a run. Paddlers attempting difficult runs in an unfamiliar area should act cautiously until they get a feel for the way the scale is interpreted locally. River difficulty may change each year due to fluctuations in water level, downed trees, recent floods, geological disturbances, or bad weather. Stay alert for unexpected problems! As river difficulty increases, the danger to swimming paddlers becomes more severe. As rapids become longer and more continuous, the challenge increases. There is a difference between running an occasional class-IV rapid and dealing with an entire river of this category. Allow an extra margin of safety between skills and river ratings when the water is cold or if the river itself is remote and inaccessible. It should be understood that there are limits to the size of features a packraft can run and remain upright. Large holes and eddy lines can easily overturn a packraft. These features can exist on class III rapids. Special consideration of risk should be given to rapids with these large features. There exist class IV and V rapids that can be run safely in a packraft and also class III rapids that will result in an overturned packraft. Feeling confident in a paddler's ability to swim a rapid should be one benchmark when deciding whether or not to packraft a rapid. When in doubt, the safest choice is to carry your packraft around and portage.

- a. Class I Rapids: Fast moving water with riffles and small waves. Few obstructions, all obvious and easily missed with little training. Risk to swimmers is slight; self-rescue is easy.
- b. Class II Rapids: Novice: Straightforward rapids with wide, clear channels which are evident without scouting. Occasional maneuvering may be required, but rocks and medium-sized waves are easily missed by trained paddlers. Swimmers are seldom injured and group assistance, while helpful, is seldom needed. Rapids that are at the upper end of this difficulty range are designated "Class II+".
- c. Class III: Intermediate: Rapids with moderate, irregular waves which may be difficult to avoid and which can swamp an open canoe. Complex maneuvers in fast current and good boat control in tight passages or around ledges are often required; large waves or strainers may be present but are easily avoided. Strong eddies and powerful current effects can be found, particularly on large-



volume rivers. scouting is advisable for inexperienced parties. Injuries while swimming are rare; self-rescue is usually easy but group assistance may be required to avoid long swims. Rapids that are at the lower or upper end of this difficulty range are designated “Class III-” or “Class III+” respectively.

- d. Class IV: Advanced: Intense, powerful but predictable rapids requiring precise boat handling in turbulent water. Depending on the character of the river, it may feature large, unavoidable waves and holes or constricted passages demanding fast maneuvers under pressure. A fast, reliable eddy turn may be needed to initiate maneuvers, scout rapids, or rest. Rapids may require “must” moves above dangerous hazards. Scouting may be necessary the first time down. Risk of injury to swimmers is moderate to high, and water conditions may make self-rescue difficult. Group assistance for rescue is often essential but requires practiced skills. A strong eskimo roll is highly recommended. Rapids that are at the lower or upper end of this difficulty range are designated “Class IV-” or “Class IV+” respectively.
- e. Class V: Expert: Extremely long, obstructed, or very violent rapids which expose a paddler to added risk. Drops may contain large, unavoidable waves and holes or steep, congested chutes with complex, demanding routes. Rapids may continue for long distances between pools, demanding a high level of fitness. What eddies exist may be small, turbulent, or difficult to reach. At the high end of the scale, several of these factors may be combined. Scouting is recommended but may be difficult. Swims are dangerous, and rescue is often difficult even for experts. A very reliable eskimo roll, proper equipment, extensive experience, and practiced rescue skills are essential.
- f. Class VI: Extreme and Exploratory Rapids: These runs have almost never been attempted and often exemplify the extremes of difficulty, unpredictability and danger. The consequences of errors are very severe and rescue may be impossible. For teams of experts only, at favorable water levels, after close personal inspection and taking all precautions.

## VII. Specific Packrafting Situations

- a. Open water paddling
- b. River crossings
  - i. When using one packraft to ferry people and gear across a river, use appropriate cord strength for current and be certain your rope length is adequate. Using ropes to assist in crossings will absolutely fail if the paddler’s distance across the river exceeds the length of the cord.
- c. Ultralight Flatwater Packrafts (Canyon Flatwater 2, FlytePacker, Klymit)
  - i. These boats are not designed for whitewater. Using them in whitewater is discouraged.
  - ii. The lightweight material in these boats does not allow for tie down points to secure gear. Most paddlers place their packs in the front of the

packraft over or between their legs. Cargo is likely to be lost if the boat flips.

- iii. These boats are somewhat fragile and must be treated with extra care. Rubber or vinyl rafts puncture easily and are not recommended.
- iv. These boats are slower than whitewater packrafts and do not track as well. This should be taken into account when planning trips.
- v. Because of their low profile and deck-less design, paddlers are likely to get wetter and colder in these boats.

## VIII. Wildlife

- a. Store food so that bears and other critters cannot obtain it.
- b. Educate yourself about wildlife behaviors (bears, moose, lions, etc) and have a plan in case of encounters.
- c. When traveling in bear country carry pepper spray. Keep it handy and know how to use it.