

## APPENDIX E. BIOPHYSICAL IMPACT DATA COLLECTION PROTOCOLS

The bio/physical data will be gathered as follows along the Chattooga River corridor on Forest Service lands.

### a. Trail Conditions:

#### Designated Trails (DT)

- Trail locations will be recorded using GPS where possible. Existing GPS/GIS trail locations and data will be used where available.
- Substandard areas of tread causing erosion or water quality degradation will be recorded as a point in GPS, digitally-photographed, and an estimated length of problem area in feet will be recorded.
- Trailheads and parking areas will be recorded as GPS point and a capacity will be recorded (# of vehicles)

#### User-Created Trails (UCT)

- Defined as bare-soil treads that intersect the river designated trail, campsite, waterfall, or other feature.
- Trail locations will be recorded using GPS to the extent possible. Total linear feet of UCT will be estimated by walking to the river or other feature.
- Areas of tread causing erosion or water quality degradation will be recorded as a point in GPS, digitally-photographed, and an estimated length of problem area in feet will be recorded.

### b. Campsites:

- Defined as having bare soil and evidence of a campfire along a DT or UCT or accessed by the river.
- Cleared area (any vegetation removed) and area of bare soil would be estimated (square feet) and recorded.
- Number of damaged trees (human-caused) within cleared area would be estimated and recorded.
- Campsite would be recorded as a GPS point and digitally photographed.

### c. Litter:

- Quantified in terms of number of occurrences and volume (e.g., less than one gallon, 1-5 gallons, etc) per section of trail (UCT or DT), campsite, or feature.

### d. Water Quality:

- Human pollution (fecal coliform) data needs would be met by utilizing existing DHEC data
- Bank erosion data (human-caused) would consist of an estimate of linear feet
- Significantly-impacted areas may be digitally-photographed and recorded as a GPS point.

## **APPENDIX F. EXPERT PANEL FIELD ASSESSMENT PROTOCOL**

### **1. PURPOSE AND OBJECTIVES**

The purpose of the expert panels is to gain information about boating and angling opportunities on the upper Chattooga River, with particular attention to flows. The expert panels will include two separate panels, a whitewater boater panel and an angler panel. The panelists will conduct field assessments, complete individual assessments, and discuss open-ended questions about the field assessments with other panelists.

The objectives of the angler assessment include the following:

- Describe angling opportunities on the upper Chattooga segments and compare them with other angling opportunities within the region, including the lower Chattooga River.
- Estimate acceptable and optimal flow ranges for different types of fishing activities.
- Identify key access points.
- Qualitatively describe safety concerns related to flows and access.
- Qualitatively describe available opportunities for angling at different flows.
- Review flow information needs and the ability of existing gages to predict fishable flows.
- Compare angler flow preferences with the preferences of other recreational users.

The objectives of the boater field assessment include the following:

- Describe whitewater boating resources on the upper Chattooga and estimate typical trip durations, numbers of portages, likely “attraction” rapids, or other places where boaters are likely to stop or travel on land.
- Estimate acceptable and optimal flow ranges for different types of whitewater boating opportunities (e.g., for different skill levels, boat types, or types of boating).
- Identify key access points.
- Qualitatively describe safety concerns related to flows and access.
- Qualitatively describe available opportunities for boating at different flows.
- Review flow information needs and the ability of existing gages to predict boatable flows.
- Compare boater flow preferences with the preferences of other recreational users.

The boater and angler panels will not be used to assess potential boating impacts on angling, hiking, or other recreation uses in the corridor, which are being examined through other “elements” in the Upper Chattooga capacity analysis effort. Similarly, the panels are not being used to assess tolerances for various recreation impacts in the corridor. The focus in this element is to assess how flows affect these two highly flow-dependent activities.

## 2. UPPER CHATTOOGA RIVER CHARACTER

For the purposes of field assessment, the upper Chattooga River is the approximately 21-mile reach closed to whitewater boating in 1976. The reach has been divided into four reaches as follows (see Attachment A for a figure of the upper Chattooga River with the locations referenced as part of this field assessment protocol):

1. **Chattooga Cliffs Reach:** Grimshawes Bridge to Bull Pen Bridge (about 5 miles) (Note: The assessment will not include the segment adjacent to 1.7 miles of private land immediately downstream of Grimshawes Bridge, and boaters will be expected to put-in at the confluence of Mill Creek and the Chattooga);
2. **Ellicott Rock Reach:** Bull Pen Bridge to Burrell's Ford Bridge (about 6 miles);
3. **Rock Gorge Reach:** Burrell's Ford Bridge to Lick Log (about 7 miles); and
4. **Nicholson Field Reach:** Lick Log Creek to Highway 28 Bridge (about 3 miles).

Aside from potential access at the four bridges (Grimshawes, Bull Pen, Burrell's Ford, and Highway 28), there are hiking trails along most of the river, with additional spur trails from several trailheads. A complete discussion of access in the corridor is available in the Sumter and Francis Marion Forest Plan (USFS, 2004).

The upper Chattooga River provides some areas with wilderness-like fishing experiences (low use levels, little to no development) and others that are better described as "front country fishing" settings with road-access and higher use levels. Anglers fish the entire Upper Chattooga, with higher fishing levels at Burrell's Ford, the hike-in area near the confluence with the East Fork Chattooga, and the "delayed harvest" area of the Nicholson Fields segment (from Highway 28 upstream about two miles). Target species include rainbow trout (which are enhanced by stocking, particularly in the non-wilderness sections accessible by road) and wild brown trout (a self-sustaining population). Native brook trout historically occurred in the upper Chattooga River, but state biologists believe that most remain only in small, coldwater tributaries (where enhancement efforts are on-going).

According to anglers who fish the upper Chattooga, the entire reach (aside from the 1.7 miles of private land) is accessible for fishing, although some areas are more difficult to reach than others. Anglers also report that they target different areas depending on the flow – some areas are better to fish at lower flows and others are best at higher flows. The best times to fish the river are fall, winter, and spring, when water temperatures are cooler and the fish are more active. Many anglers do not fish the river during the warm summer months, because the warmer water temperatures are marginal for trout, and these anglers want to minimize stress on the trout populations at that time. More information about fishing opportunities is available in the Sumter Revised Land and Resource Management Plan (USFS, 2004) and DNR reports (e.g., Durniak, 1989).

Whitewater boaters were known to have paddled the river prior to the 1976 boating closure and runs have also occurred subsequent to the closure. Based on available information, boaters classify the run as primarily Class III-IV with a few gorge areas or waterfalls in each of the four reaches that are Class V. Existing information suggests that the lower two segments (Ellicott Rock and Rock Gorge/Nicholson Fields) are boatable from about 800 cubic feet per second (cfs) at the Highway 76 Bridge gage, but more water may be necessary for the Chattooga Cliffs reach. Information also suggests

that all of the drops on the river have been run, but portages around difficult rapids or wood strainers / log jams may be necessary, depending upon flows and boater skill levels. At most flows that have been run, it appears that portaging around difficult rapids or logs (when necessary) is straightforward.

### **3. PANEL MEMBER SELECTION**

The panel member selection was designed to identify a group of about 15 members per panel in order to provide the best opportunity to reach the target of 6 to 8 field assessment participants per panel (boater and angler). This larger pool of panel members is necessary as it is anticipated that not all members will be available to participate given the short mobilization time necessary to assess the period when relatively rare higher flows are available. Representatives of Louis Berger Group, Inc. (Berger) and Confluence Research and Consulting (CRC) will participate in, facilitate, and lead the boater and angler panels during the field assessment. A support team from Berger and the Forest Service will provide shuttles and logistical assistance.

Potential panelists were asked to provide information about their experience and qualifications related to whitewater boating and angling and knowledge of the Chattooga River corridor. See Attachment B for the expert panel nomination form. Selection of the panelists was based on the review of the following qualifications: years of experience, skill level, previous experience participating in flow studies, level of availability, and knowledge of the area and/or river. Safety was a key consideration. Members of the boater panel have Class V whitewater boating experience. Members of the angler panel have experience in a full range of angling techniques (fly fishing, spin fishing, etc.). Most members of the panels have utilized the Chattooga River for a variety of recreational activities.

The panel members were selected and grouped into two “tiers.” The first tier will be the panel members initially contacted to participate in the field assessment. In the event that the target number of 6 to 8 members is not reached, members of the second tier will be contacted to participate in the field assessment in order that the target number can be achieved.

#### 4. FIELD ASSESSMENT MOBILIZATION

The field assessment focuses on medium to high flows that might be boatable. Initial information about flow preferences suggest that lower flows are generally excellent for fishing but may not be boatable, so interaction impacts between boaters, anglers and other groups is likely to be most critical at higher flow levels. The field assessment is designed to assess how these two groups evaluate the higher flows, which in turn will help estimate potential levels of use and impacts.

Medium to high flows that are boatable on the Upper Chattooga appear to be rare, so the effort faces a major challenge in mobilizing participants when they occur. Mobilization of the panel field assessment will be triggered by a forecast of precipitation and target flows. The upper Chattooga is a “flashy” river, with little groundwater input from the watershed to stabilize base flows at higher levels, so peak flows associated with storm events generally rise and drop rapidly. The target flow for the initial field assessment will be 800 cfs at the Highway 76 gage, which is about 20 miles downstream of Highway 28 (the end of the Upper Chattooga). This flow was chosen based on information provided by people familiar with the upper Chattooga. The Forest Service hydrologist estimates that 800 cfs at Highway 76 roughly equates with about 100 cfs at Grimshawes Bridge at the top of the upper Chattooga.

The upper Chattooga is free flowing, with average winter flows of approximately 400 cfs. Storm events are needed to reach flows of 800 cfs and above. With a storm event, the river system rises and falls very rapidly, often over a 24 hour period. These daily cycles are often repeated over the course of a week as surges from the same storm pass through the watershed. Therefore, flows and storm events will be monitored, and when it appears that flows may be sufficient for the assessment, panel members must be ready to rapidly mobilize to conduct the field assessment.

The challenge of conducting the field assessment at boatable flows cannot be overstated. Because the Chattooga River is so “flashy” and some panelists will be arriving from considerable distances, it is critical that all panelists are able to free themselves for the study almost immediately. We plan to use the following mobilization protocol, but “nature” may not cooperate by providing enough warning to mobilize sufficient participants on the panel in time. If this protocol is unsuccessful through the fall and early winter, alternative procedures will be considered in an effort to complete the assessment.

##### **Specific Mobilization Triggers**

Berger and CRC will monitor the base flows and approaching storm events. When winter base flows are approximately 500 cfs and a storm system is approaching, we will:

- 1) Place both panels (both first and second tiers via email) on **alert** that an assessment might occur in as few as 4 days (flows permitting or likely) and longer distance participants should prepare to travel. First tier members would at this time need to commit to attending the field assessment, or if a conflict does not allow for a member to participate, the member should alert Berger and CRC at this time.
- 2) Announce **mobilization** approximately 2 days before the field assessment if continued weather monitoring indicates that target flows are likely to be available

- (and longer distance participants should begin their travel as necessary). The entire panel will be alerted (via email), and the participating members identified. If any last minute changes occur that a panel member can not participate in the field assessment, Berger and CRC should be contacted immediately. ;
- 3) Announce a final “**go / no go**” **decision** the evening before (about 12 hours before) the scheduled field assessment.
  - 4) Berger and CRC will conduct a coordination meeting the night before the field assessment (when the **go / no go** decision will be made).

If the assessment is cancelled, the assessment will be considered on subsequent days using the same trigger protocol.

In the event that additional field assessments are needed (i.e., if flows much higher than the initial flow are targeted and subsequent days do not provide them), a second assessment period may be necessary. The procedures for mobilization of the second field assessment (if determined to be necessary), would follow the same process described above.

## **5. FIELD ASSESSMENT SCHEDULE**

Panel members should be prepared to spend at least 2 days during the initial field assessment (initial 800 cfs flow and potential subsequent flow) and be on call for up to 7 days subsequent to the initial field assessment in order to maximize opportunities to assess target flows. Based on the field assessment results, subsequent field assessment at a second flow level may be recommended by the Forest Service. For example, it may be determined that the boater panel needs to conduct a subsequent field assessment at a higher or lower flow, and the angler panel may need to conduct a subsequent field assessment at a higher or lower flow. The panel members should be prepared to conduct a second assessment on only the Upper Chattooga, if flows are conducive, following the initial flow assessment (following day) at the targeted second flow.

The lead field assessment researchers (Berger and CRC) will also be conducting, if possible, a field assessment on the lower portion of the Chattooga (below the Route 28 Bridge) as part of this initial assessment. Panel members, if available, may also participate in the field assessment of this portion of the Chattooga River.

Field assessments will not be conducted during the holiday period, including during the week of Thanksgiving, the last two weeks of December and the first week of January. We anticipate that it would be difficult to get the number of individuals desired to conduct the field assessment during these periods.

If sufficient flows to trigger the field assessment are not available through the fall and early winter months (we never reach the “mobilization” level), we plan to schedule a field assessment during the last couple of weeks in January regardless of the flows. We are hopeful that sufficient baseline winter flows will be available to conduct boating assessments on the Rock Gorge and Nicholson Field reaches even if 800 cfs is not available, but recognize that the Chattooga Cliffs and the Ellicott Rock runs may need to be scouted and documented by foot.

## **6. COORDINATION MEETING**

Given the length of the upper Chattooga River and the logistics of staging the field assessment, we will hold a coordination meeting for all panel members the evening before the initial flow field assessment. Panel members are strongly urged to attend this meeting, but we may be able to arrange an early morning meeting on the day of the reconnaissance for a participant that would otherwise not be able to attend. The purpose of the meeting is to review the goals and purpose of the field assessment, the schedule and logistics, and the assessment protocols. All panel member participants will be required to sign a liability waiver in order to participate in the field assessment (see Attachment C).

## **7. SHUTTLE AND VEHICLE SUPPORT**

We will leave most of the vehicles in the parking area and consolidate boaters and gear into a smaller number of vehicles to minimize shuttles. The support team will assist with portages needed to get boaters to the river (this is only expected to be necessary for the Chattooga Cliffs put-in; other put-ins and take-outs are expected to be short existing angler trails from the bridges to the river). At the end of each day, the panel members will meet to discuss the run amongst themselves, and then in a joint meeting with the angler group.

Angler panelists will be instructed to assess as much of the target reach(es) as possible over the course of the day, and are expected to do this independently of each other. However, for safety reasons, anglers will be expected to travel at least in pairs. At the end of the day, they will also meet for a discussion period, first amongst themselves, and then in a joint meeting with the boater panel.

Boat and Angler Panel members are expected to provide all of their own equipment, including boating and fishing gear, and safety / rescue equipment. Water and snacks will be available for panelists during the assessment. Lunch will be available at a bridge location depending upon the timing of the field assessment evaluation. However, panelists should consider bringing additional snacks if they want to ensure they have enough and the kinds they prefer in case the schedule is not met.

## **8. SAFETY MEASURES**

For the Boater Panel, we will use standard protocol for boating steep creeks (AW, 2006) (see Attachment D). Given the size of the group, we will probably paddle in two smaller groups of 4 boaters and reconvene at all major drops. We will foot-scout all horizon lines and drops that cannot be safely boat-scouted. The purpose of the study does not include running every major rapid, particularly if scouting or establishing safety is likely to be complex or time-consuming, or boaters consider the rapid to have substantial safety concerns. Given the time constraints, the boater panel will conduct a quick initial assessment and documentation of the major drops. The group will then move on, either running the drop or portaging. For those major drops that are boatable and do not require extensive time to study, set up safety, and run, the group will set up shoreline safety, ideally on both sides of the river. Any participant may elect to portage any major drop, and all decisions to run or not run need to be made by individual boaters. The

boater panel members will be expected to be familiar with swiftwater rescue techniques and carry personal safety equipment, such a throw rope, whistle, prussic loops or similar, break-down paddle and a pulley (see Attachment D).

For the Angler Panel, we expect to pair individuals for safety reasons. Anglers will be expected to follow typical angling safety measures (TMF, 2006; see Attachment E), and follow the same “conservative” strategy outlined for boaters: anglers should not attempt to wade in deep or swift water if there are substantial safety concerns.

Local emergency rescue personnel will be notified of when the field assessment will be conducted (i.e., when the panelists will be on site). However, given the isolation of the river, difficult access, and the need for immediate response in the case of accident, it is likely that the participants would be the key emergency rescue personnel. The Berger lead will carry a radio or a satellite phone for emergency communication with other non-panel staff in the area (who are likely to be observing or conducting shuttles). If an accident occurs, or an evacuation is needed, the boater and angler panel leads will try to contact the support team. If outside assistance is needed, the support team will phone local emergency rescue personnel.

## **9. INDIVIDUAL AND GROUP ASSESSMENT**

Boater and Angler Panel participants will be asked to assess specific characteristics of the river, as well as evaluate the quality of their experience by answering individual questions. Following completion of individual assessment forms, panelists will participate in a group discussion based on general topic areas (see Attachment F).

Following the discussions within each panel, both panels will be invited to meet in a short joint discussion. This joint meeting will include a short summary of findings by each panel by the organizers of the assessment (CRC and Berger staff) and potential clarifications by panelists. It will also offer opportunities for panelists to ask clarifying questions of the findings or other panelists regarding those findings. In all discussions (within panel discussions or during the joint discussions), the focus will be on assessment findings rather than specific advocacy positions. It is important that the discussion is as objective and “professional” as possible.

## **10. VIDEO AND PHOTO DOCUMENTATION**

Berger and CRC staff will carry video cameras, still cameras, and GPS units to document the field assessment. The boater panel will document all of the major drops, portages, and access points. In addition, we hope to document the groups as they move down the river. The support team will also document the group as we arrive and depart from the bridge crossings.

Berger and CRC staff will also document angler panel activities to the extent that is possible. Anglers will be instructed to assess as much of a segment as they can manage in the course of each assessment day, but they will not be required to travel together like boaters, so there are greater challenges finding different anglers during the course of the assessment.

Accordingly, we encourage all panel members (anglers and boaters) to bring their own cameras to assist in the documentation of the field assessment event and ask that any such photos or video footage be provided to Berger (in digital format, if possible) after the field assessment is completed.

## **11. REFERENCES**

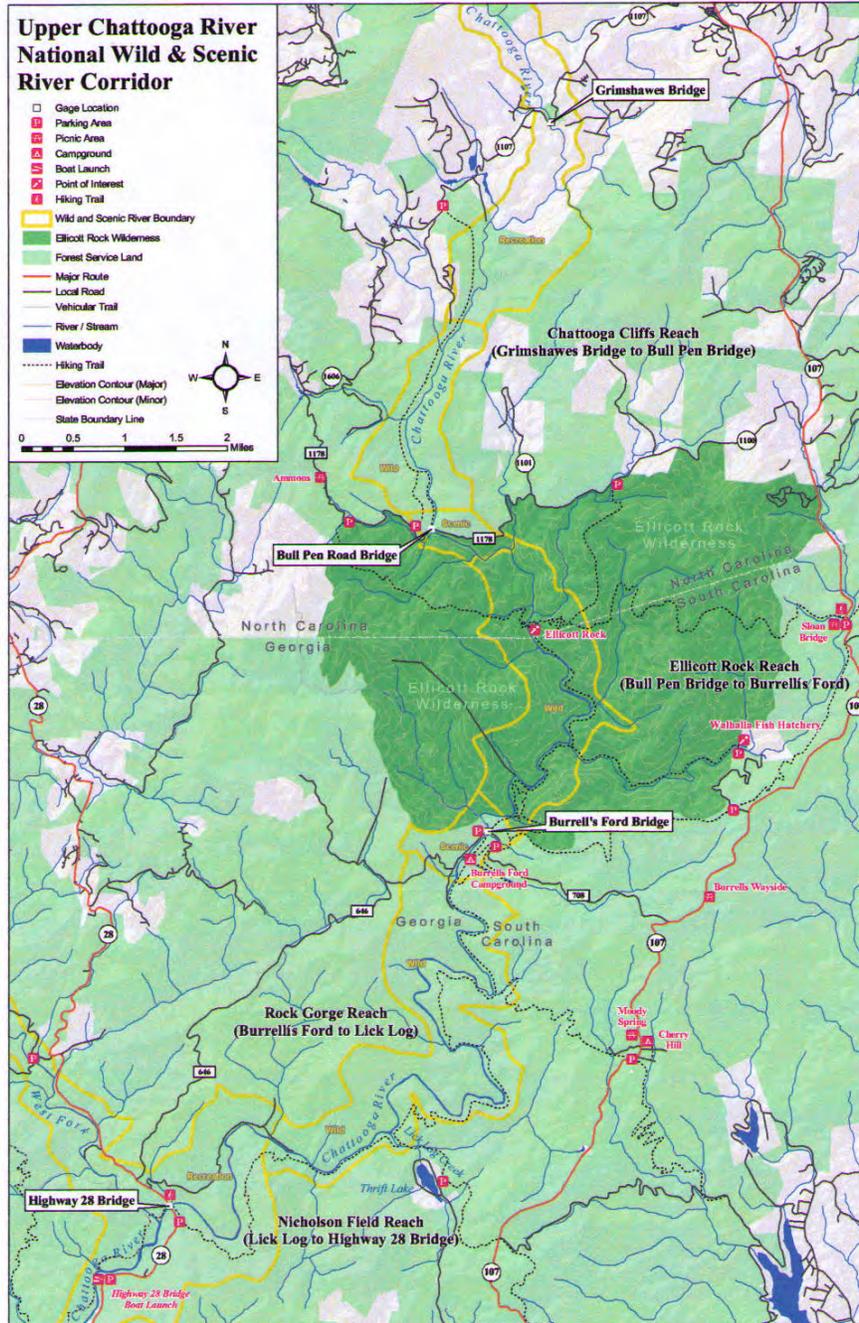
American Whitewater (AW). 2006. Safety Code of American Whitewater as described at the American Whitewater Safety Code Internet site:  
<http://www.americanwhitewater.org/content/Wiki/safety:start> .

Durniak, J.P. 1989. A fisheries survey of the upper Chattooga River. Georgia Department of Natural Resources Game and Fish Division, Atlanta, GA. 68 pp

Take Me Fishing (TMF). 2006. Fishing Safely as described at the Take Me Fishing.org Internet site: <http://www.takemefishing.org/default.aspx?id=254> .

United States Forest Service (USFS). 2004. Revised Land and Resource Management Plan, Sumter National Forest. Columbia, SC. January, 2004.

ATTACHMENT A – FIGURE OF THE UPPER CHATTOOGA RIVER





10. Do you have any previous experience boating/angling/recreating on the upper Chattooga River Corridor (above Highway 28 Bridge)? **Yes No**

If yes, please describe type of activities, location(s) and length of time:

11. Do you have any previous experience boating/angling/recreating on the lower Chattooga River Corridor (below Highway 28 Bridge)? **Yes No**

If yes, please describe type of activities, locations(s) and length of time:

12. Please indicate your availability to participate in the assessment (number of days notice you would need prior to arriving on site for the assessment):

13. Please indicate your affiliation with advocacy groups, if any:

14. Please provide three references (name, phone number and email address) that we may contact to verify your experience:

**ATTACHMENT C – WAIVER FORM**

**ASSUMPTION OF RISK, COMPREHENSIVE AND GENERAL RELEASE OF  
LIABILITY, AND HOLD HARMLESS INDEMNIFICATION AGREEMENT**

**Chattooga Wild and Scenic River Whitewater Boating and Angling Field  
Assessment**

1. I fully acknowledge, comprehend, understand and accept that the Chattooga Wild and Scenic River Whitewater Boating and Angling Field Assessment (“Assessment”), in which I have chosen to participate of my own free will, is a strenuous, rigorous and hazardous activity that will be physically and mentally stressful and may aggravate existing physical and mental conditions and cause new physical and mental injuries and conditions. I also fully acknowledge, comprehend, understand and accept that engaging in all types of boating and angling activities can be dangerous and that the dangers may include, but not be limited to and by way of example only, damage to or destruction of personal property, serious physical injury, or even death, arising from a variety of hazards, including, but not limited to and by way of example only, rocks, trees, waves, waterfalls, hydraulics, difficulty or improbability of rescue, and various other natural and man-made objects and conditions. I understand that the river segments on which the Assessment is taking place may not be suitable for whitewater boating or angling activities. I fully acknowledge, comprehend, understand and accept that, under these circumstances, the usual hazards associated with whitewater boating and angling may be more unknown, uncertain, severe and dangerous. I also understand that, during the course of the Assessment, there may be significant variations in river flow that may alter the character of the river and the dangers and hazards of participating in this Assessment.
  
2. I fully acknowledge, comprehend, understand and accept that I am participating in this Assessment:
  - a) that none of the other participants will be acting as a river guide, angling guide, or field guide for me;
  - b) I am not being compensated by the Forest Service, the Louis Berger Group, or Confluence Research and Consulting to engage in this activity;
  - c) I am personally responsible for determining whether I have the skill and expertise to safely encounter any particular river segment for purposes of participating in this Assessment;
  - d) I am solely responsible for selecting and properly utilizing suitable equipment for this Assessment; and
  - e) that no other person or entity associated with this Assessment has any obligation to attempt to rescue me and that any attempt at rescue may exacerbate my condition and cause injury or death.

3. **ON BEHALF OF MYSELF, MY HEIRS, REPRESENTATIVES, EXECUTORS, SUCCESSORS, ADMINISTRATORS AND ASSIGNS, I FULLY ACKNOWLEDGE, COMPREHEND, UNDERSTAND AND EXPRESSLY ASSUME ALL THE RISKS AND DANGERS INCIDENT TO THE WHITEWATER BOATING AND ANGLING FIELD ASSESSMENT AND HEREBY KNOWINGLY WAIVE, HOLD HARMLESS, AND RELEASE FROM ALL CLAIMS INCLUDING, BUT NOT LIMITED TO, ANY PROPERTY DAMAGE OR DESTRUCTION, ANY PERSONAL INJURY OR DEATH, WHETHER CAUSED BY NEGLIGENCE, BREACH OF CONTRACT OR OTHERWISE, WHICH I MAY EVER HAVE AGAINST (A) THE UNITED STATES OF AMERICA AND ANY OF ITS DEPARTMENTS, AFFILIATES, AGENCIES, OFFICERS, DIRECTORS, EMPLOYERS, EMPLOYEES, AGENTS, ASSIGNS, REPRESENTATIVES OR SUCCESSORS, (B) THE LOUIS BERGER GROUP AND ANY OF ITS DEPARTMENTS, AFFILIATES, AGENCIES, OFFICERS, DIRECTORS, EMPLOYERS, EMPLOYEES, AGENTS, ASSIGNS, REPRESENTATIVES OR SUCCESSORS, (C) CONFLUENCE RESEARCH AND CONSULTING AND ANY OF ITS DEPARTMENTS, AFFILIATES, AGENCIES, OFFICERS, DIRECTORS, EMPLOYERS, EMPLOYEES, AGENTS, ASSIGNS, REPRESENTATIVES OR SUCCESSORS, (D) ANY SUPPLIER OF MATERIALS AND EQUIPMENT EMPLOYED IN CONNECTION WITH THE WHITEWATER BOATING AND ANGLING FIELD ASSESSMENT, (E) ANY AFFILIATES, AGENCIES, EMPLOYERS, EMPLOYEES, OFFICERS, DIRECTORS, AGENTS, ASSIGNS, REPRESENTATIVES AND SUCCESSORS, OR ANY OTHER PERSON OR ENTITY THAT MAY BE INVOLVED IN FACILITATING ANY USE AND ENJOYMENT OF THE RIVER SEGMENTS INVOLVED IN THIS ASSESSMENT, AND (F) EACH AND EVERY OTHER PARTICIPANT IN THIS WHITEWATER BOATING AND ANGLING FIELD ASSESSMENT.**
  
4. I represent and warrant that:
  - a) I am 18 years of age or older;
  - b) I am submitting and executing this ASSUMPTION OF RISK, COMPREHENSIVE AND GENERAL RELEASE OF LIABILITY, AND HOLD HARMLESS INDEMNIFICATION AGREEMENT voluntarily and of my own free will;
  - c) I have no physical or emotional conditions or problems, nor any history thereof, which may in any way impair my ability to participate in the activities of this assessment.
  
5. I fully acknowledge, comprehend, understand and accept that neither the United States of America, the United States Department of Agriculture, the Forest Service, the Louis Berger Group, Confluence Research and Consulting, nor any of these entities' departments, affiliates, agencies, officers, directors, employers, employees, agents, assigns, representatives or successors are providing liability, health or other insurance in connections with this Assessment and I hereby agree to assume all financial responsibility for any medical, rescue or other expenses that may be incurred as a result of my participation. I agree to completely hold harmless, defend and indemnify the United States of America,

the United States Department of Agriculture, the Forest Service, the Louis Berger Group, and Confluence Research and Consulting and any of these entities' departments, affiliates, agencies, officers, directors, employers, employees, agents, assigns, representatives or successors against any loss or damage, including attorneys' fees, that may result from any claim or action I pursue that is waived or barred by this ASSUMPTION OF RISK, COMPREHENSIVE AND GENERAL RELEASE OF LIABILITY, AND HOLD HARMLESS INDEMNIFICATION AGREEMENT.

6. I assume full and complete responsibility for and agree to hold harmless, defend and indemnify the United States of America, the United States Department of Agriculture, the Forest Service, the Louis Berger Group, and Confluence Research and Consulting and any of these entities' departments, affiliates, agencies, officers, directors, employers, employees, agents, assigns, representatives or successors against any claim, action, loss or judgment that may result from any damage, injury or harm that may in any way be attributed to my participation in this Assessment.

**This ASSUMPTION OF RISK, COMPREHENSIVE AND GENERAL RELEASE OF LIABILITY, AND HOLD HARMLESS INDEMNIFICATION AGREEMENT shall be forever binding upon myself, my heirs, executors, successors, assigns, representatives and administrators.**

\_\_\_\_\_  
Print Name of Participant

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

Address and Telephone No. of Participant:

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## ATTACHMENT D - WHITEWATER BOATING SAFETY MEASURES

From: <http://www.americanwhitewater.org/content/Wiki/safety:start>

### Safety Code of American Whitewater

#### Introduction

This code has been prepared using the best available information and has been reviewed by a broad cross-section of whitewater experts. The code, however, is only a collection of guidelines; attempts to minimize risks should be flexible, not constrained by a rigid set of rules. Varying conditions and group goals may combine with unpredictable circumstances to require alternate procedures. This code is not intended to serve as a standard of care for commercial outfitters or guides.

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#### I. Personal Preparedness and Responsibility

1. **Be a competent swimmer**, with the ability to handle yourself underwater.
2. **Wear a life jacket**. a snugly-fitting vest-type life preserver offers back and shoulder protection as well as the flotation needed to swim safely in whitewater.
3. **Wear a solid, correctly-fitted helmet** when upsets are likely. This is essential in kayaks or covered canoes, and recommended for open canoeists using thigh straps and rafters running steep drops.
4. **Do not boat out of control**. Your skills should be sufficient to stop or reach shore before reaching danger. Do not enter a rapid unless you are reasonably sure that you can run it safely or swim it without injury.
5. **Whitewater rivers contain many hazards which are not always easily recognized. The following are the most frequent killers.**
  1. **High Water**. The river's speed and power increase tremendously as the flow increases, raising the difficulty of most rapids. Rescue becomes progressively harder as the water rises, adding to the danger. Floating debris and strainers make even an easy rapid quite hazardous. It is often misleading to judge the river level at the put in, Since a small rise in a wide, shallow place will be multiplied many times where the river narrows. Use reliable gauge information whenever possible, and be aware that sun on snowpack, hard rain, and upstream dam releases may greatly increase the flow.
  2. **Cold**. Cold drains your strength and robs you of the ability to make sound decisions on matters affecting your survival. Cold-water immersion, because of the initial shock and the rapid heat loss which follows, is especially dangerous. Dress appropriately for bad weather or sudden immersion in the water. When the water temperature is less than 50 degrees F., a wetsuit or drysuit is essential for protection if you swim. Next best is wool or pile clothing under a waterproof shell. In this case, you should also carry waterproof matches and a change of clothing in a waterproof bag. If, after prolonged exposure, a person experiences uncontrollable shaking, loss of coordination, or difficulty speaking, he or she is hypothermic, and needs your assistance.

3. **Strainers.** Brush, fallen trees, bridge pilings, undercut rocks or anything else which allows river current to sweep through can pin boats and boaters against the obstacle. Water pressure on anything trapped this way can be overwhelming. rescue is often extremely difficult. Pinning may occur in fast current, with little or not whitewater to warn of the danger.
4. **Dams, weirs, ledges, reversals, holes, and hydraulics.** When water drops over an obstacle, it curls back on itself, forming a strong upstream current which may be capable of holding a boat or swimmer. Some holes make for excellent sport. Others are proven killers. Paddlers who cannot recognize the difference should avoid all but the smallest holes. Hydraulics around man-made dams must be treated with utmost respect regardless of their height or the level of the river. Despite their seemingly benign appearance, they can create an almost escape-proof trap. The swimmer's only exit from the "drowning machine" is to dive below the surface when the downstream current is flowing beneath the reversal.
6. **Broaching.** when a boat is pushed sideways against a rock by strong current, it may collapse and wrap. this is especially dangerous to kayak and decked canoe paddlers; these boats will collapse and the combination of indestructible hulls and tight outfitting may create a deadly trap. even without entrapment, releasing pinned boats can be extremely time-consuming and dangerous. to avoid pinning, throw your weight downstream towards the rock. this allows the current to slide harmlessly underneath the hull.
7. **Boating alone is discouraged.** The minimum party is three people or two craft.
8. **Have a frank knowledge of your boating ability,** and don't attempt rivers or rapids which lie beyond that ability.
9. *Be in Good physical and mental condition, consistent with the difficulties which may be expected.* Make adjustments for loss of skills due to age, health, fitness. Any health limitations must be explained to your fellow paddlers prior to starting the trip.
10. **Be practiced in self-rescue,** including escape from an overturned craft. The eskimo roll is strongly recommended for decked boaters who run rapids Class IV or greater, or who paddle in cold environmental conditions.
11. **Be trained in rescue skills, CPR, and first aid** with special emphasis on the recognizing and treating hypothermia. It may save your friend's life.
12. **Carry equipment needed for unexpected emergencies,** including foot wear which will protect your feet when walking out, a throw rope, knife, whistle, and waterproof matches. If you wear eyeglasses, tie them on and carry a spare pair on long trips. Bring cloth repair tape on short runs, and a full repair kit on isolated rivers. Do not wear bulky jackets, ponchos, heavy boots, or anything else which could reduce your ability to survive a swim.
13. Despite the mutually supportive group structure described in this code, **individual paddlers are ultimately responsible for their own safety, and must assume sole responsibility for the following decisions:**
  1. The decision to participate on any trip. This includes an evaluation of the expected difficulty of the rapids under the conditions existing at the time of the put-in.
  2. The selection of appropriate equipment, including a boat design suited to their skills and the appropriate rescue and survival gear.
  3. The decision to scout any rapid, and to run or portage according to their best judgment. Other members of the group may offer advice, but

paddlers should resist pressure from anyone to paddle beyond their skills. It is also their responsibility to decide whether to pass up any walk-out or take-out opportunity.

4. All trip participants should consistently evaluate their own and their group's safety, voicing their concerns when appropriate and following what they believe to be the best course of action. Paddlers are encouraged to speak with anyone whose actions on the water are dangerous, whether they are a part of your group or not.

## II. Boat and Equipment Preparedness

1. **Test new and different equipment** under familiar conditions before relying on it for difficult runs. This is especially true when adopting a new boat design or outfitting system. Low-volume craft may present additional hazards to inexperienced or poorly conditioned paddlers.
2. **Be sure your boat and gear are in good repair** before starting a trip. The more isolated and difficult the run, the more rigorous this inspection should be.
3. **Install flotation bags** in non-inflatable craft, securely fixed in each end, designed to displace as much water as possible. Inflatable boats should have multiple air chambers and be test-inflated before launching.
4. **Have strong, properly sized paddles or oars** for controlling your craft. Carry sufficient spares for the length and difficulty of the trip.
5. **Outfit your boat safely.** The ability to exit your boat quickly is an essential component of safety in rapids. It is your responsibility to see that there is absolutely nothing to cause entrapment when coming free of an upset craft. This includes:
  1. Spray covers which won't release reliably or which release prematurely.
  2. Boat outfitting too tight to allow a fast exit, especially in low volume kayaks or decked canoes. This includes low-hung thwarts in canoes lacking adequate clearance for your feet and kayak footbraces which fail or allow your feet to become wedged under them.
  3. Inadequately supported decks which collapse on a paddler's legs when a decked boat is pinned by water pressure. Inadequate clearance with the deck because of your size or build.
  4. Loose ropes which cause entanglement. Beware of any length of loose line attached to a whitewater boat. All items must be tied tightly and excess line eliminated; painters, throw lines, and safety rope systems must be completely and effectively stored. Do not knot the end of a rope, as it can get caught in cracks between rocks.
6. **Provide ropes** which permit you to hold on to your craft so that it may be rescued. The following methods are recommended:
  1. Kayaks and covered canoes should have grab loops of 1/4" + rope or equivalent webbing sized to admit a normal-sized hand. Stern painters are permissible if properly secured.
  2. Open canoes should have securely anchored bow and stern painters consisting of 8 - 10 feet of 1/4" + line. These must be secured in such a way that they are readily accessible, but cannot come loose accidentally. Grab loops are acceptable, but are more difficult to reach after an upset.

3. Rafts and dories may have taut perimeter lines threaded through the loops provided. Footholds should be designed so that a paddler's feet cannot be forced through them, causing entrapment. Flip lines should be carefully and reliably stowed.
7. **Know your craft's carrying capacity**, and how added loads affect boat handling in whitewater. Most rafts have a minimum crew size which can be added to on day trips or in easy rapids. Carrying more than two paddlers in an open canoe when running rapids is not recommended.
8. **Car-top racks** must be strong and attach positively to the vehicle. Lash your boat to each crossbar, then tie the ends of the boats directly to the bumpers for added security. This arrangement should survive all but the most violent vehicle accident.

### III. Group Preparedness and Responsibility

1. **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.
2. **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.
3. **Group equipment should be suited to the difficulty of the river.** The group should always have a throw-line available, and one line per boat is recommended on difficult runs. The list may include: carabiners, prussic loops, first aid kit, flashlight, folding saw, fire starter, guidebooks, maps, food, extra clothing, and any other rescue or survival items suggested by conditions. Each item is not required on every run, and this list is not meant to be a substitute for good judgment.
4. **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.
  1. **A point paddler** sets the pace. 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.
  2. **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.

3. **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.
5. **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.
6. **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.
7. **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.
8. It is advisable for instructors and commercial guides or their employers to acquire trip or personal liability insurance:
  1. An “instructional trip” is characterized by a clear teacher/pupil relationship, where the primary purpose of the trip is to teach boating skills, and which is conducted for a fee.
  2. A “commercially guided trip” is characterized by a licensed, professional guide conducting trips for a fee.

#### IV. Guidelines for River Rescue

1. **Recover from an upset with an eskimo roll** whenever possible. Evacuate your boat immediately if there is imminent danger of being trapped against rocks, brush, or any other kind of strainer.
2. **If you swim, hold on to your boat.** It has much flotation and is easy for rescuers to spot. Get to the upstream end so that you cannot be crushed between a rock and your boat by the force of the current. Persons with good balance may be able to climb on top of a swamped kayak or flipped raft and paddle to shore.
3. **Release your craft if this will improve your chances,** especially if the water is cold or dangerous rapids lie ahead. Actively attempt self-rescue whenever possible by swimming for safety. Be prepared to assist others who may come to your aid.

1. **When swimming in shallow or obstructed rapids**, lie on your back with feet held high and pointed downstream. Do not attempt to stand in fast moving water; if your foot wedges on the bottom, fast water will push you under and keep you there. 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.
2. **If the rapids are deep and powerful**, roll over onto your stomach and swim aggressively for shore. watch for eddies and slackwater and use them to get out of the current. Strong swimmers can effect a powerful upstream ferry and get to shore fast. If the shores are obstructed with strainers or under cut rocks, however, it is safer to “ride the rapid out” until a safer escape can be found.
4. **If others spill and swim, go after the boaters first.** Rescue boats and equipment only if this can be done safely. While participants are encouraged (but not obligated) 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.
5. **The use of rescue lines requires training;** uninformed use may cause injury. Never tie yourself into either end of a line without a reliable quick-release system. Have a knife handy to deal with unexpected entanglement. Learn to place set lines effectively, to throw accurately, to belay effectively, and to properly handle a rope thrown to you.
6. **When reviving a drowning victim**, be aware that cold water may greatly extend survival time underwater. Victims of hypothermia may have depressed vital signs so they look and feel dead. Don't give up; continue cpr for as long as possible without compromising safety.

### Universal River Signals

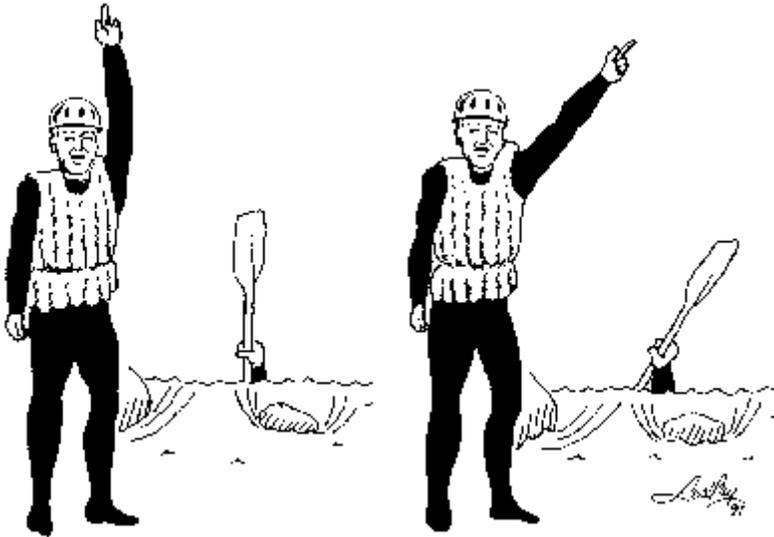
These signals may be substituted with an alternate set of signals agreed upon by the group.



**Stop:** Potential Hazard Ahead. Wait for “all clear” signal before proceeding, or scout ahead. Form a horizontal bar with your outstretched arms. Those seeing the signal should pass it back to others in the party. -



**Help/Emergency:** Assist the signaler as quickly as possible. Give three long blasts on a police whistle while waving a paddle, helmet or life vest over your head. If a whistle is not available, use the visual signal alone. A whistle is best carried on a lanyard attached to your life vest.



**All Clear:** Come ahead (in the absence of other directions proceed down the center). Form a vertical bar with your paddle or one arm held high above your head. Paddle blade should be turned flat for maximum visibility. To signal direction or a preferred course through a rapid around obstruction, lower the previously vertical “all clear” by 45 degrees toward the side of the river with the preferred route. Never point toward the obstacle you wish to avoid.



**I'm okay:** I'm okay and not hurt. While holding the elbow outward toward the side, repeatedly pat the top of your head.

## **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.

Examples of commonly run rapids that fit each of the classifications are presented in the **attached document, "[International Scale of River Difficulty - Standard Rated Rapids.](#)"** Rapids of a difficulty similar to a rapids on this list are rated the same. Rivers are also rated using this scale. A river rating should take into account many factors including the difficulty of individual rapids, remoteness, hazards, etc.

The six difficulty classes:

### **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.

### **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+".

### **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.

**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.

**Class 5: 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. Because of the large range of difficulty that exists beyond Class IV, Class 5 is an open-ended, multiple-level scale designated by class 5.0, 5.1, 5.2, etc... each of these levels is an order of magnitude more difficult than the last. Example: increasing difficulty from Class 5.0 to Class 5.1 is a similar order of magnitude as increasing from Class IV to Class 5.0.

**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. After a Class VI rapids has been run many times, its rating may be changed to an appropriate Class 5.x rating.

## ATTACHMENT E – ANGLING SAFETY MEASURES

From: <http://www.takemefishing.org/default.aspx?id=254>

### ***Fishing Safely***

Fishing isn't a dangerous sport, but you should prepare to keep safe and comfortable in the outdoors. It is possible to get caught unexpectedly in bad weather, encounter insects, spend too much time in the sun, or get caught on a fish hook.

Wearing the proper clothing helps to protect you from injury. It also keeps you warm in cold weather and cool in hot weather. Rainwear and other gear keep you from getting wet and chilled.

Avoid problems by preparing for the unexpected.

### ***Safety Around Water***

Water accidents claim many lives each year. Obviously you will be around water if you are fishing and accidents can happen at any moment, sending you into the water. A bank can give way if you are careless onshore. You can slip on a rock, step into a deep hole while wading, or fall out of a boat.

Anglers should learn how to swim and use caution around water at all times. You should always use the "buddy system" and have a friend or an adult with you in case something goes wrong.

### ***Personal Flotation Devices (PFDs)***

Personal Flotation Devices (PFDs), often called "life vests," are not just for wearing in boats. Anytime you are on or around deep or fast moving water, it is always best to be wearing your PFD. U.S. Coast Guard and/or state laws require you to have an approved PFD when you are in a boat. The rules say a boat must have one PFD for each person on board. Certain types of boats must also have a cushion or ring that can be thrown to a person in the water.

### ***Wading***

There are several rules you should follow for safe wading.

1. Always wade with another person.
2. Always wear your PFD.
3. Find out how deep the water is.
4. Find out how strong the current is.
5. Find out what the bottom is like.
6. Use a stick or staff. Shuffle your feet along the bottom to avoid holes.

While wading you can protect your ankles by wearing high-top shoes or wading boots. Long, lightweight pants can protect you from jellyfish and sea nettles in saltwater and from snags and rocks in freshwater.

### ***Reach-Throw-Row-Go***

Reach-throw-row-go is a method of rescuing a person who falls overboard or an angler or swimmer in trouble.

The first safety step is to REACH out with an oar, tree limb, or other long object if the person is close to you. If you can't reach the person, then THROW them a life-saving device. This can be a boat cushion or ring that floats. If possible, it should be tied to the end of a line so you can pull the person to you. If a cushion or ring isn't handy, anything that floats can be thrown. Plastic coolers, ski belts, or even beach balls can be used in an emergency.

If there is nothing to throw, ROW a boat to the person in trouble. There should be someone else in the boat to help pull the person in trouble into the boat. The person should be pulled in over the stern, or back, of the boat. If the boat has a motor, it must be shut off before you get to the person in the water. Don't let the person try to climb in over the side of a small boat. This can tip the boat over. If the boat is small, have the victim hang on the gunwales, and tow him to shore.

Swim out to save the person in trouble ONLY as a last resort and ONLY if you are an experienced lifeguard or have had life-saving training. Going into the water after the person in trouble is very dangerous. People who are drowning often panic and injure or even drown someone trying to rescue them. Going quickly for help is often the best choice.

### ***Swimming***

If you fish, you should know how to swim for your own safety. Many young anglers like to go for a swim during a fishing trip just for fun or to cool off. Don't swim if there is any doubt about your ability. Never dive into the water of an unknown area and don't swim after a heavy meal or in cold water. Swim only when an experienced swimming partner is with you.

### ***Safety With Fishing Equipment***

Handle your fishing equipment responsibly. Hooks can be dangerous if you do not handle them properly. Look behind you before you cast to make sure your hook will not be caught on a power line, a tree, or a person. If you leave your tackle lying on the ground, another person can trip on it and fall, step on a hook, or break your tackle.

Take caution and use long-nose pliers to help remove hooks from a fish. If a hook is deep inside the fish, either cut off the line and leave the hook in the fish, or use a hook disgorger. Hooks left in fish will work themselves free or rust out.

When transporting your equipment, remove the hook or lure from your line and store it in your tackle box.

This information provided by the [Future Fisherman Foundation](http://www.takemefishing.org/default.aspx?).  
: <http://www.takemefishing.org/default.aspx?>

## **ATTACHMENT F – EXPERT PANEL DISCUSSION TOPIC AREAS**

### **BOATER PANEL DISCUSSION TOPIC AREAS**

1. Characterize type of boating opportunity
2. Trip duration (by segment if more than one)
3. Access, rapids,, and portages
4. Safety aspects
5. Flow levels and opportunities
6. Potential impacts from other user groups
7. Flow information needs
8. Describe similar opportunities on other rivers
9. Management concerns

### **ANGLER PANEL DISCUSSION TOPIC AREAS**

1. Characterize type of angling opportunities
2. Access and fishability
3. Turbidity and aesthetics
4. Fishing success
5. Flow levels and opportunities
6. Potential impacts from other user groups
7. Flow information needs
8. Describe similar opportunities on other rivers
9. Management concerns