RIVER CROSSING SAFETY ON GLACIAL STREAMS

Most glacial river crossings on the flanks of Mt. Hood Wilderness do not have bridges. Timberline and Pacific Crest Trail hikers should *be prepared* for dangerous river conditions. The following safety procedures are recommended *before* attempting any river crossing.

- ✓ **Avoid hiking alone when crossing glacial streams.**
- ✓ **Check the weather before your trip. Avoid these trails if storms are predicted.**
- ✓ **Plan crossings for early morning, when glacial rivers are lower.**
- ✓ **Be willing to turn back if conditions appear unsafe. Red flags include:**
    - **Fast water**
    - **Very cold temperatures**
    - **Downstream hazards like waterfalls**
    - **Difficulty determining depth**
    - **Water higher than your knees**
    - **The sound of boulders rolling along bottom.**
- ✓ **Scout up and down for the safest crossing, which may not be the trail crossing. Look for gradual banks, shallow water free of obstructions, and similar conditions downstream.**
- ✓ **Keep your pack on, but undo the hip and chest strap. Remove the pack if you lose footing.**
- ✓ **Wear boots, sneakers, or water sandals for foot protection and ankle support.**
- ✓ **Use a hiking stick as a 3rd leg, especially on the upstream side and to scout for drop offs.**
- ✓ **Cross together. Face upstream and get in a line perpendicular to the stream's flow. Grab the person's shirt in front of you and move sideways one foot at a time, feeling for a stable surface before transferring your weight. Two people can also face each other holding arms and move side ways.**

River crossing safety signs are being installed at trailheads around the mountain. The signs were donated by the family and friends of Sarah Bishop, a skilled hiker and lover of wilderness. Despite crossing many streams safely while hiking the Timberline Trail in August, 2004, she died tragically on the Sandy River during an unseasonable high water event.

Additional Information:

River crossings are extremely hazardous. If a crossing seems too risky…it probably is!

Most glacial stream crossings in the Mt. Hood Wilderness do not have bridges. **These crossings can be VERY dangerous without preparation, patience, and planning.** Hikers must be familiar with safe techniques for crossing rivers and streams. They can change quickly from trickling creeks to raging torrents, so be especially cautious.

The water volume, clarity and velocity may vary drastically according to season, time of day and upstream weather conditions. On warm days, melting snow and glacial ice can swell streams that were easily crossed in the morning to flood stage by mid-afternoon. In glaciated areas, hotter, sunny days cause higher volume in the streams due to the ice melt (geologists call this diurnal flux). Voluminous, warm rain is also a contributing factor. Safe footing is difficult to obtain: silty water obscures channel bottoms while clear water allows for slippery algal growth. Icy water numbs feet quickly and even shallow streams are surprisingly swift when flowing down steep inclines. This combination of factors makes stream crossings one of the most hazardous parts of any backcountry experience.

Keep these points in mind when crossing water channels:

Choose the safest time to cross:

- Cross early in the day whenever possible;
- Be aware of storms in the area, cross before storms whenever possible.
- If you cannot walk at the speed of a stick thrown into the river, or if the river is swift and above knee height, then it could be hazardous to cross.

Choose the safest place and method to cross:

- Avoid crossing alone if possible. Scout the river from above and below. Stay back from the banks while scouting as stream banks are usually unstable and your focus will be on the river rather than on your footing. Identify the shallowest and smoothest points of the river, avoiding submerged snags, boulders etc.
- The widest or most braided portion of the channel is usually the most shallow. Straight channels usually exhibit uniform flow while bends often reveal deep cut banks and swift water on the outside edge. If the river takes many turns the section between turns (middle part of the S) is often shallower.
- Do not attempt a crossing if large pieces of debris (logs, branches, etc.) are being carried downstream. Water has less momentum on level ground than when flowing down an incline.

Prepare to cross:

- NEVER cross in bare feet. Wear boots or bring extra shoes for crossings. Wet boots are preferable to damaged ankles or feet.
- Do not cross wearing long pants or pull pant legs up; these will increase resistance to the current.
- Release the waist and chest strap on your pack before crossing. This way you will be able to free yourself quickly if you lose your footing or find yourself in a position where your pack is snagged and holding you down. It's also well to remember that your pack has a certain amount of buoyancy and can serve as a flotation device if necessary.
- Ensure that important sleeping bag and extra clothing are stowed in waterproof areas of your pack. Plastic trash bags make good pack liners.

Cross Safely:

- If hiking solo, use a 5-6 ft. hiking staff or stick, held upstream, so the current forces it to the bottom to create a more stable, three point stance. Move only one contact point at a time.

Always keep two points of contact on the river bed at all times and cross diagonally downstream, resisting the current much like you would a strong wind.
- Try not to look down at the flowing water as this may upset your equilibrium, look ahead for the best possible route. Resist the temptation to grab at submerged or semi submerged rocks in transit, as this may upset your balance. Take shuffling footsteps, one foot at a time, feeling for the bottom.
- Two or more hikers should cross parallel to the current with the strongest and heaviest member upstream to lessen the force on the other hikers. Walk across by either grasping with arms linked, or face upstream and sidestep across.
- In deep water, the triangle method is safest. Facing each other, three people grip each others shoulders or packs and work their way across one person, one leg, at a time.
- If a member of the party should break away during the crossing, the remaining members should maintain formation and either back out, or complete the crossing before attempting a rescue if necessary.
- If you lose your footing and are carried away, release your pack but hold onto it. Float with your head upstream, this will allow you to fend off from any obstacles with your feet. Remember, flowing water is deceptively strong.

Remember! If a crossing seems too risky...*it probably is!*

ALWAYS BE WILLING TO TURN BACK OR WAIT FOR A MORE SUITABLE TIME IF A CROSSING APPEARS TOO DANGEROUS!