

Managing the Risks of River Crossings

Club members are sometimes faced with the need to cross a deep or fast river. This can happen even on a walk graded 'easy' – if, for instance, a thunderstorm occurred while a party was walking the Main Range track in Kosciuszko National Park, they may return to the Snowy River to find its stepping stones under water – should they cross there, somewhere else or not at all?

These guidelines aim to provide some advice on identifying dangerous crossings, safer places to cross and how to cross.

In a nutshell – if in doubt don't cross. Better to be late, hungry or frustrated that you did not reach your goal, than drowned.

Assessing a river

Reconnaissance

- Be prepared to walk up and down stream to assess a river
- Try to view the river from different angles and from a high point
- Check the map for alternatives such as bridges, or a route further upstream where smaller streams have yet to meet to form the river

The danger signs

- Look for discoloured surging water or trees and debris being carried along; these indicate flood conditions
- Look for hazards downstream of your crossing point - if you are swept over a waterfall or against partly submerged logs, willows, fences or rocks, you may drown
- Listen, and feel for vibrations – are underwater boulders being rolled by the current?
- Are there standing waves?
- Is there unavoidable aerated water?

In any of these situations, don't cross.

Recognising safer crossing points

- Banks of small stones that cross a river at an angle are among the safest places to cross
- Prefer a crossing route that angles downstream; this means that each foot movement is not fighting the current
- Where there is a large pool upstream of a rapid, it is often better to cross just upstream of the rapid, because it is probably shallower there than in the middle of the pool, and the bottom is probably less uneven and the current slower than in the rapid
- Remember; swimming a deep pool with little current and not-too-cold water may be safer than wading across a rapid.

Are there safer crossing times?

- Rivers fed by glaciers or snow will be lower in the early morning
- Rivers that rise rapidly because of rain usually drop equally rapidly once the rain stops
- At river mouths, it is safer to cross on an incoming tide

Log crossings

Occasionally a log may offer a dry crossing. Check that the log is fairly level, strong, and not slippery. Consider whether branches on the log, or vines or other vegetation on it, may put people off balance. If the log looks safe but some members of your party are nervous of its height above the river, suggest they consider sitting-across i.e. with one leg either side of the log, rather than walking across.

Crossing the river

Preparing your gear

- When choosing a pack for a trip with many river crossings, remember that a nylon pack will absorb less water than a canvas pack
- Put vital things – camera, personal locator beacon etc – in small waterproof bags. Purpose-made dry bags are reliable; clip-seal bags are less reliable; supermarket bags are of little use.
- Line your pack with a waterproof liner with a seal that folds over and clips together. Two thick garbags will also work, but are more vulnerable to getting holes with repeated use. Garbags should be tied in a knot or twisted and held with a strong rubber band.
- Check the pack pockets
- Wear your pack with the waist belt done up (for balance) but with the shoulder straps a little looser than usual and with the chest strap undone. You should be able to get out of your pack with one movement if you are swept away and find your pack has snagged on something that is dragging you under.

Preparing your footwear

Unless you are sure that the bottom is all sand or soil, wear footwear. If, in cold weather, you are worried about walking the rest of the day with wet feet, consider removing your inner soles and socks for the river crossing but wear your shoes.

If in doubt, wear shoes and socks. They will help protect your feet and ankles against encounters with sharp objects that might otherwise make you lose balance. Gaiters give added protection but also added drag.

Preparing your clothes

- River crossing fashions vary! In warmer weather you may prefer to wear no clothing, so that your clothes stay dry. A warm hat will help conserve body heat and is usually high enough out of the water to stay dry.
- In colder conditions, wearing clothes while you cross will keep you warmer. Tight-fitting clothes, such as long-johns, give you some warmth and less resistance to the current than loose clothing such as long pants. Parkas and overpants provide a lot of resistance in a current and are not recommended.
- If you are walking on a route with many river crossings, e.g. in Tasmania or New Zealand, you will need to decide whether there is time for party members to undress and dress at each river crossing. The alternative is to cross in whatever you're wearing and walk quickly onwards to warm up.

Solo crossings

If the crossing looks easier or if you are by yourself, you may choose to do a solo crossing.

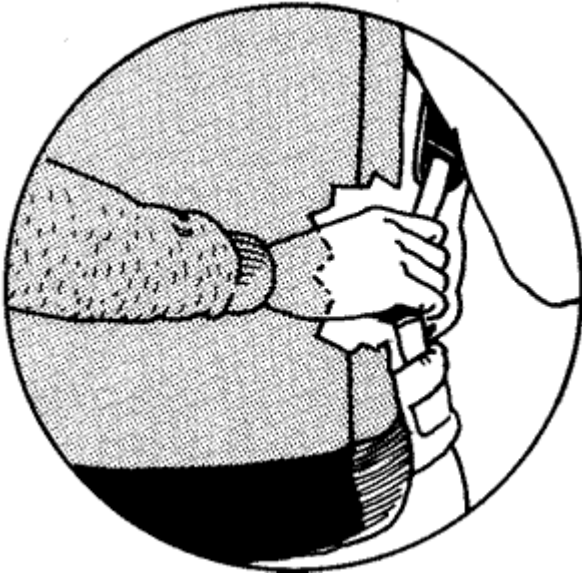
- Find a strong stick that comes to about your shoulder height.
- Hold the stick in both hands diagonally across your body, with its foot on the upstream side of your body. Press it into river bottom as you move (i.e. don't use it like a walking stick which you lift with each step), get your feet stable, move the stick till it's stable, then move your feet
- As you move, face the far bank or face upstream; do not face downstream as the current can buckle your knees
- Shuffle as much as possible, rather than taking steps where your foot loses contact with the bottom; shuffling helps balance and reduces the chance of foot entrapment
- Avoid letting the current push the stick between your legs

Team crossings

- A team should contain two to five people; the more people the more stability but the harder it is to co-ordinate the group and consequently progress is often slower; teams of three or four seem to work best
- Before you get into the water, get your team into line. Place the strongest/heaviest person upstream, next to them a strong person to support them, the next strongest at the downstream end, and any weaker/lighter people in the middle
- Hold the far pack strap of the people either side of you, down low near the point where it connects with their waist strap; stand hip to hip (this is no time to insist on personal space)
- Walk with your team lined up parallel to the current; shuffle as much as possible
- If the current is strong, one person should move, brace themselves, say 'I'm stable', then the next person should move and so on down the team. If the team is managing the current and the footing is even, it may be ok for the upstream person to move, say 'I'm stable', and then the rest of the team can move at the same time.



The method of linking for a river crossing recommended by the NZ Mountain Safety Council



Grasp pack strap on far side of next person

Swimming with a pack

- Take your pack off
- Optionally, enclose your pack in a garbag or put on a pack cover to help keep it dry, though this will make it harder for you to grip the pack
- Put the pack in the water, strap side upwards. The straps should be done up; this will make the pack easier to grab and helps keep the straps out of the water. Your pack will float.
- Swim with your head above water, so you can always see around you e.g. breast stroke or side stroke. Push the pack in front of you.
- After leaving the river, tip you pack upside down to drain it; consider wringing out wet clothes.

Some people find it more comfortable to swim with their pack on their back, swimming backwards i.e. facing back towards the bank that they left. Naturally, this makes it harder to see where you're going. Swimming face forwards with your pack on your back is not recommended: it tends to push your head under.

Further information

- [http://www.mountainsafety.org.nz/assets/images/About%20river%20safety\(1\).pdf](http://www.mountainsafety.org.nz/assets/images/About%20river%20safety(1).pdf) (New Zealand Mountain Safety Council)
- http://tramping.typepad.com/tramping_report/2005/07/river_crossing.html
- And a few helpful hints on swimming with a pack from therucksack.tripod.com/riverford.htm

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