

APRES River crossing training notes

Heuristic traps – thinking yourself into safer river crossing practices

(Borrowed heavily from Jo Straker, NZOIA Quarterly, Issue 39, December 2006)
Heuristics are rules of thumb that we use to take mental short cuts when decision making. They help us to make faster, more efficient decisions 95% of the time, and we are normally unaware that we have even used them. However they become dangerous mental traps when we use them unthinkingly to justify our decisions, often in light of obvious signs of danger. Subconscious and unfocused decision-making using heuristics is the culprit behind most human error.

Some classic examples of heuristic traps in river crossing

- Social proof trap: If other have crossed it, it's ok for us to cross too
- Familiarity trap: We've crossed this river twice already today without incident
- Commitment: We have to get across to the road, otherwise they might begin searching for us
- Scarcity: We have to beat the other trampers to the 6 bunk hut to ensure we get a bed

Tips for avoiding heuristic traps

Before the trip

- Discuss leadership roles and how you will make decisions with everyone before the trip
- Determine who is in charge
- Plan alternative routes that avoid or reduce river hazards
- Be prepared for the consequences of not getting across
- Visualise yourself saying '*No, we are not going to cross*'

At the river

- Seek objective clues or evidence as to why you *should* cross the river
- Seek objective clues or evidence that indicate that you *should not* cross the river
- Identify what has changed since the last crossing (if anything)
- Consciously identify and acknowledge any factors that might be pressuring you to cross

After the trip

- Reflect on how you made decisions
- Build up some heuristic rules of your own which help you to switch on that 'mindful awareness of detail'
- Never stop learning

Question 1: Do you need to cross?

This is the decision that is most likely to get you in trouble. At the end of the day you **never** have to cross a river. **Any reason you can think of for crossing the river is going to sound pretty lame when you repeat it in the coroners court.**

- Is there another way, for example a bridge 2km upstream or a high water track that avoids the river?
- Can you sit it out, for example waiting for a few hours for the river to drop or retreating to a nearby hut?
- Can you avoid the main river by going upstream and crossing several smaller tributaries?

Question 2: Where to cross?

The following rules of thumb are only guides. Don't cross if you have any doubt about the safety of a crossing, and always be prepared to retreat from a crossing attempt.

Choose a crossing ...

- Where there is an easy entry point on your bank and an easy exit point on the far bank
- Where the river is shallowest. Looks for wider parts of the river or where it splits into more than one channel.
- Where there is safe footing underwater. Avoid large boulders and logs and be wary of slippery algae.
- That has a safe run-out. Look downstream, could you safely swim for at least 200 metres?
- Identify good exit spots in case you take an unplanned swim

Don't cross a river where ...

- The river is in flood
- The river is moving debris such as logs or boulders
- The water is so deep or discoloured that you cannot see the bottom
- The water is flowing faster than you can walk, and is more than thigh deep on the shortest member of your group. Throw in a stick and walk alongside it as it floats downstream, you should be able to keep up with it. Throw a couple of large fist sized rocks in as “depth sounders”, if you can't hear them hit the bottom (a dull ‘thunk’ noise) then it is likely that the river is deeper than mid thigh on most people.
- There are hazards such as waterfalls, rapids, weirs, a larger river, a gorge (canyons) or strainers such as logs, large boulders, farm fences trees close downstream
- Anywhere where you feel uncomfortable about crossing

River behaviour.

- Rivers tend to meander and braid in flatter areas and wide valleys
- Rivers tend to deepen and accelerate in narrow valleys and gorges (canyons)

- Mountain rivers usually alternate between faster, steeper rapids, and slower, flatter pools
- Rivers are usually deepest and fastest on the outside of bends.

Rivers rise (and often fall) fastest:

- When the rainfall is sudden and heavy
- In steep mountainous places
- If there has already been rain recently (meaning that new rain runs straight into rivers rather than into the already saturated ground)
- If the rain is falling on snow, causing the snow to melt
- Rivers can flood very quickly, sometimes in a matter of minutes, often in just a few hours. While river levels initially drop quickly after a flood, it generally takes them two to three times as long to drop as they took to rise. So a river that reaches it's peak flow in 8 hours may take 16-24 hours to return to normal levels (see fig. 1 below).

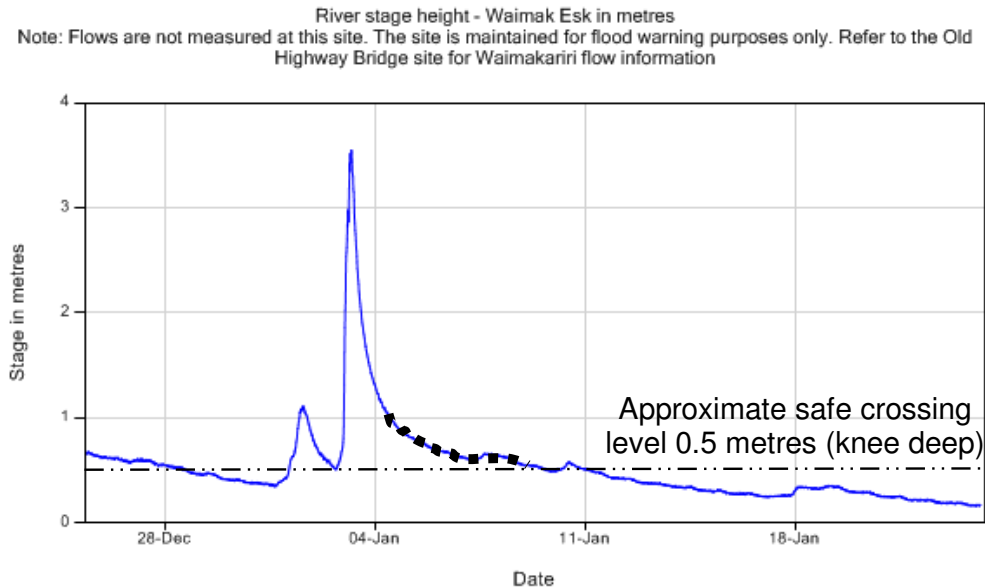


Fig.1: Typical nor-wester flood sequence in the Waimakariri (from ECAN website).

The heavily dashed curve shows the particularly dangerous time where the river has noticeably dropped and cleared, tempting trampers to cross. However it might still be 10-20cm higher than normal, which could be the difference between a safe and a marginal crossing. Take care!

Question 3: How to cross?

Where the main risk is slipping, tripping or falling:

Alone

Use a pole on your upstream side as a support and face across the current towards the other side. If the current is strong lean harder upstream on the pole. The ideal pole is stout and about your own height. If you have two trekking poles you can use both of them. Place one pole in front of you and the other upstream of you. Only move one pole or foot at a time. If you need to retreat turn downstream and carefully move back to the shore.

Chain

Hold hands or grab your neighbours pack strap at the shoulder, face up stream and cross in a line. This guards against falls in smaller rivers or streams where there is slippery or uneven bottom, or where there is one narrow focused channel

Where the main risk is being swept away:

In a group

Link yourselves together by reaching through the gap between the back and backpack of your neighbours. Then grab a firm hold of their backpack shoulder strap where it joins the bottom of their backpack on the side opposite you. Position your strongest members at each end of the group. If a person loses their footing it is essential that everyone retains their hold on each other. Keep the group parallel with the river flow at all times. If you need to retreat, walk carefully backwards until you are in a safe depth then turn around.

1. Reach between the back and pack of you neighbour and grab their pack strap on the opposite side...
2. Pull you neighbours in close for support!
3. Keep your line straight and parallel with the river flow
4. Take care and go slowly through deep or difficult water

Crossing tips

For safe and happy river crossings...

- Cross on a slight downstream angle. Do not try to fight the river
- Take short steps, keep your feet a shoulder width apart
- Take care, don't rush
- Take off heavy clothing such as jackets (if prudent given the weather) and water proof or baggy trousers. They will drag in the current and also make it hard to swim should you fall
- Water-proof your pack, line it with a plastic bag or some sort of dry liner, and twist and tuck the top of the bag to seal it
- Keep your boots ON! Wet feet won't kill you but loosing your footing and falling in could.
- Keep your boots ON! Just in case you didn't get the idea. ON ON ON!
- Check that everyone is comfortable and knows what to do if they fall in

- Ensure that you will be able to quickly undo your backpack. Undo your chest/sternum strap but keep your waist belt tight to help with stability and to prevent your pack riding up over your head if you fall in. Practice quickly unclipping your waist belt (one handed) several times before crossing, and ensure it is not obstructed by your clothing.

Question 4: What to do if someone falls in?

If you fall in

- React quickly and aggressively
- Roll onto your back and face downstream. Keep your feet together and near the surface to avoid entrapment, and to fend off rocks, and use your arms to do a modified “back stroke”
- Lean back to keep your pack under you for floatation. If your pack pushes you underwater, unclip your waist belt and remove the pack
- With your feet still facing downstream swim towards the closest shore using your arms
- Don't try to stand up until you have run aground in shallow, safe water. Take your upstream arm out of your pack straps and let the current swing the pack to your downstream side

If someone else falls in

- Call, reach, throw, go! See swift water rescue notes.

Note:

Ropes, while excellent for rescues, are frowned upon as an aid to river crossing. There have been several notable drownings where trampers were using a rope to assist their crossing. With a rope there is a significant risk of entanglement, potentially trapping the victim in the river.