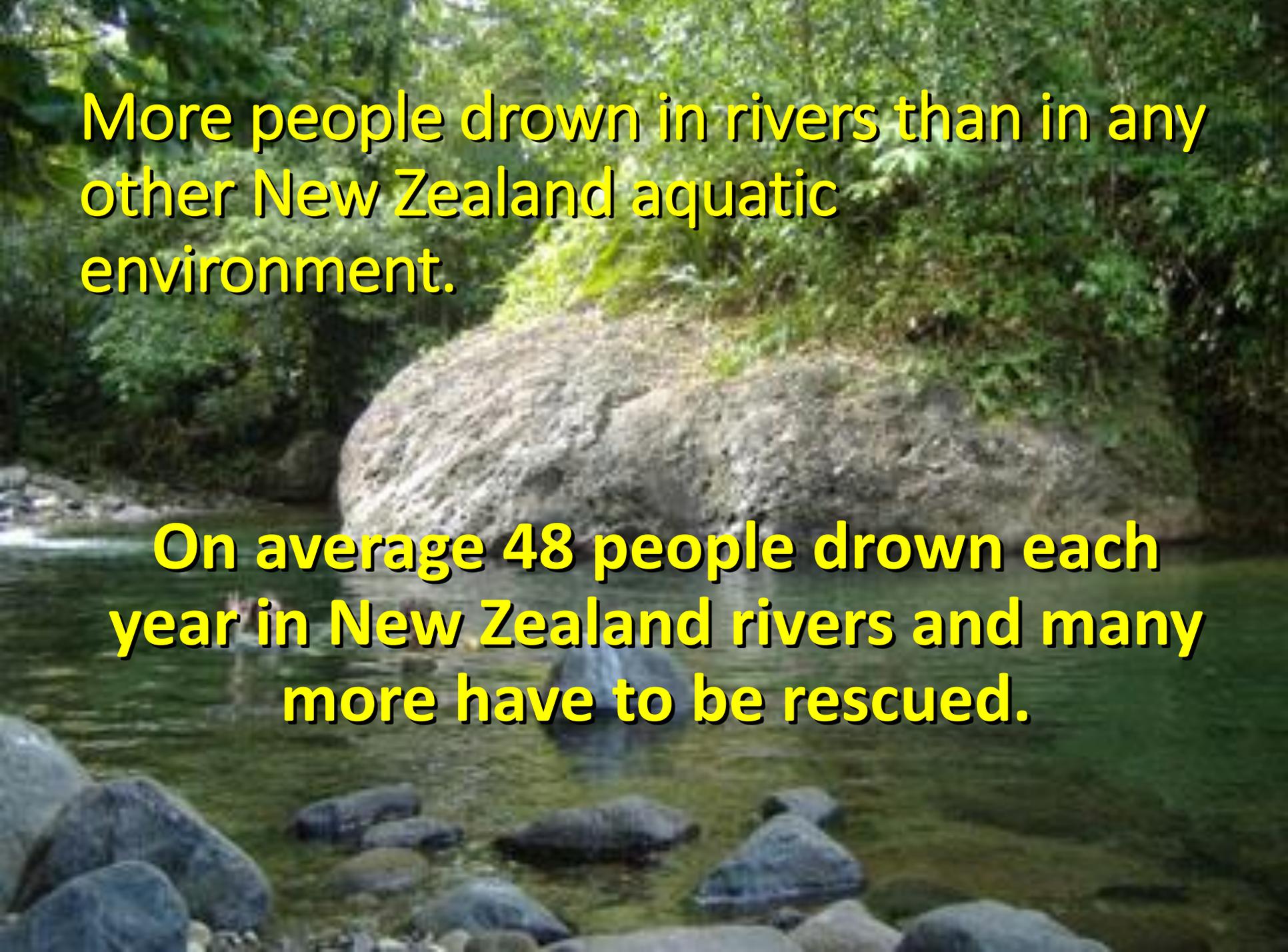


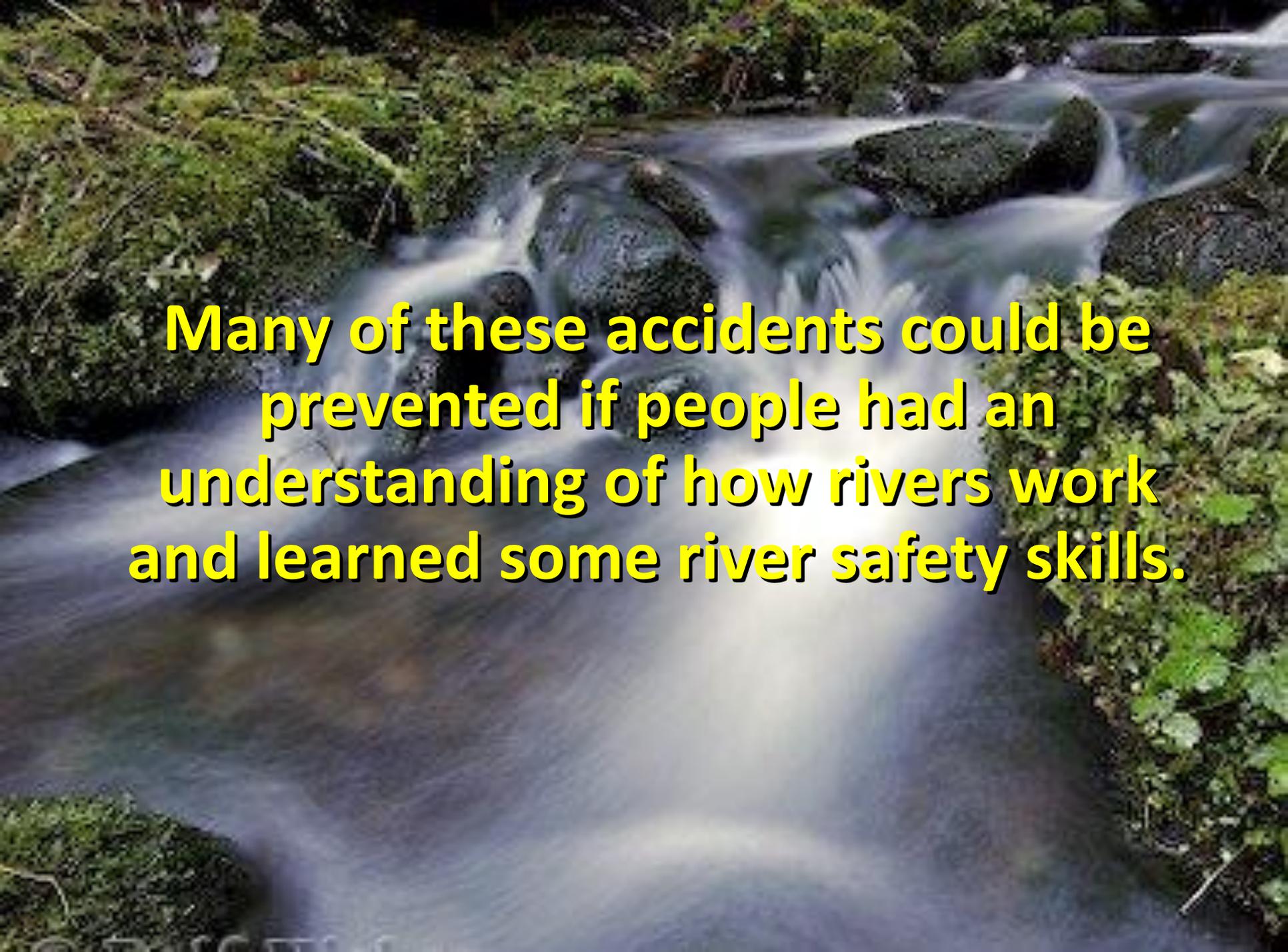
# River Crossing



A photograph of a river scene. In the middle ground, a large, light-colored rock sits in the water. In the foreground, several smaller, dark grey rocks are scattered in the shallow water. A person is visible in the water near the large rock. The background is filled with dense green foliage and trees. The text is overlaid on the image in a bold, yellow font with a black outline.

**More people drown in rivers than in any other New Zealand aquatic environment.**

**On average 48 people drown each year in New Zealand rivers and many more have to be rescued.**

A scenic view of a river flowing over rocks, surrounded by lush green vegetation. The water is clear and appears to be moving quickly, creating a sense of motion. The rocks are dark and wet, reflecting the light. The surrounding vegetation is dense and green, with some moss visible on the rocks.

**Many of these accidents could be prevented if people had an understanding of how rivers work and learned some river safety skills.**

If you are standing next to a knee deep river 10 metres wide flowing at walking pace about seven cubic metres of water will be flowing past you each second. A cubic metre of water weighs about a tonne so that means seven tonnes per second. This is the weight of about four elephants.



Many people who drown in rivers have no intention of being in the river at all.

Approximately 54% of people who drowned in rivers either fell in, were washed away or crashed into the river in their vehicles.



New Zealand has almost double the drowning rate per head of population of Australia and over four times the drowning rate per head of population of Great Britain.



# Here is how they are doing it:

Between 1996-2005

Road vehicle – 97

Accidental immersions – 104

Suicide – 38

Swimming – 36

Crossing rivers – 14

Rafting and tubing – 9

Kayaking or canoeing – 15

Net or shellfishing or angling – 18

Boating – 10

Diving / jumping – 12

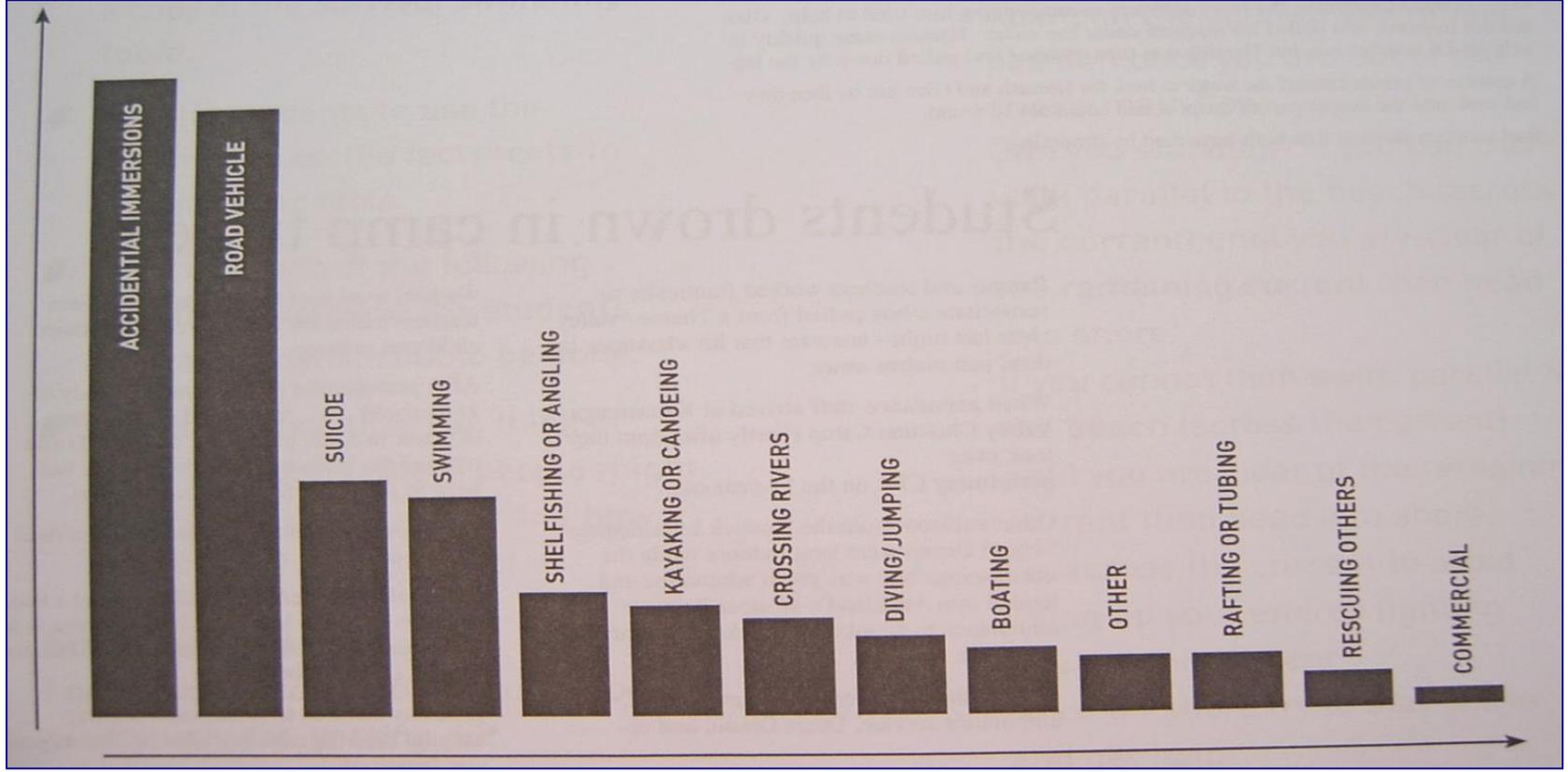
Commercial – 4

Rescuing others – 6

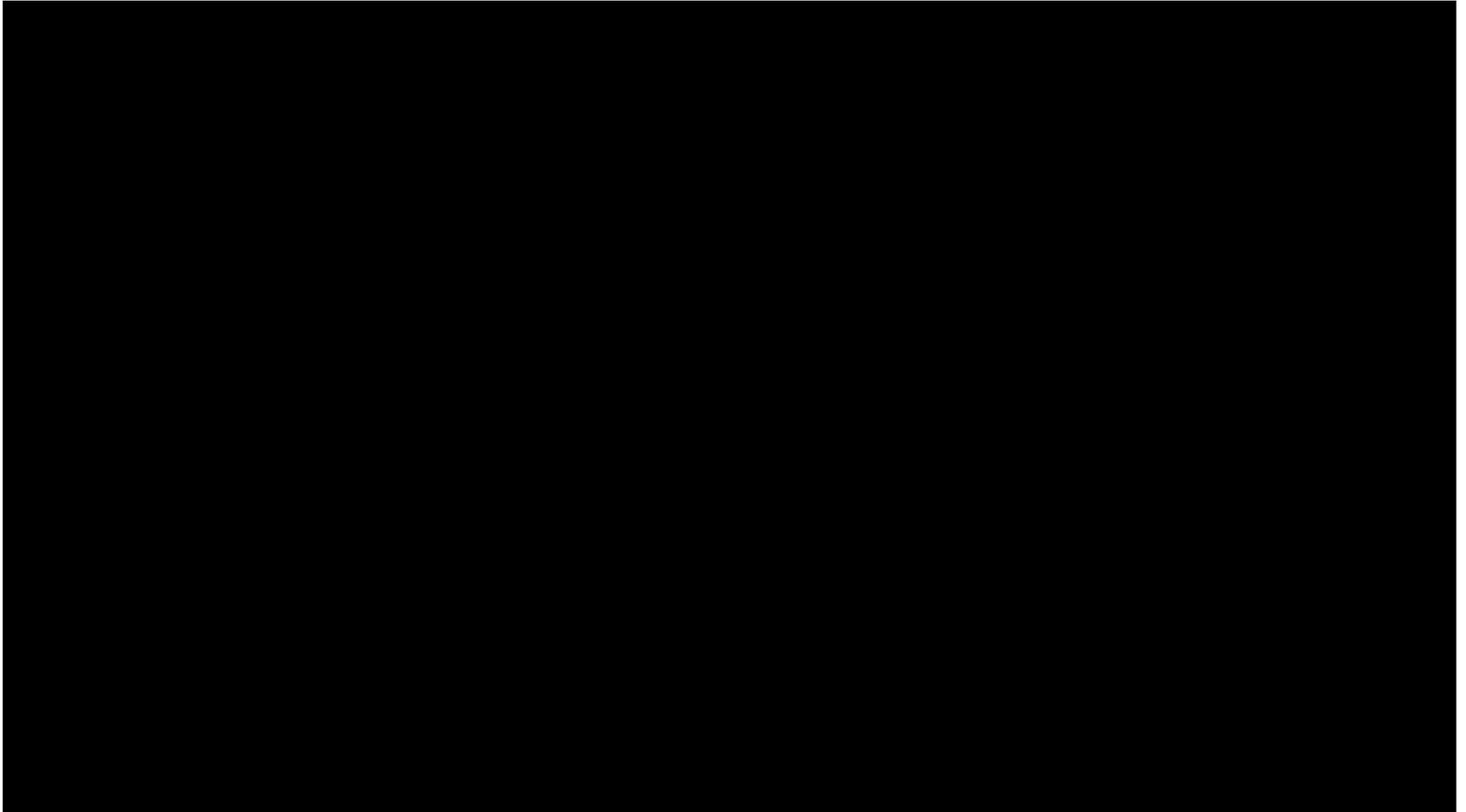
Other - 9



# Facts: 1996 - 2005



Rivers are powerful things!

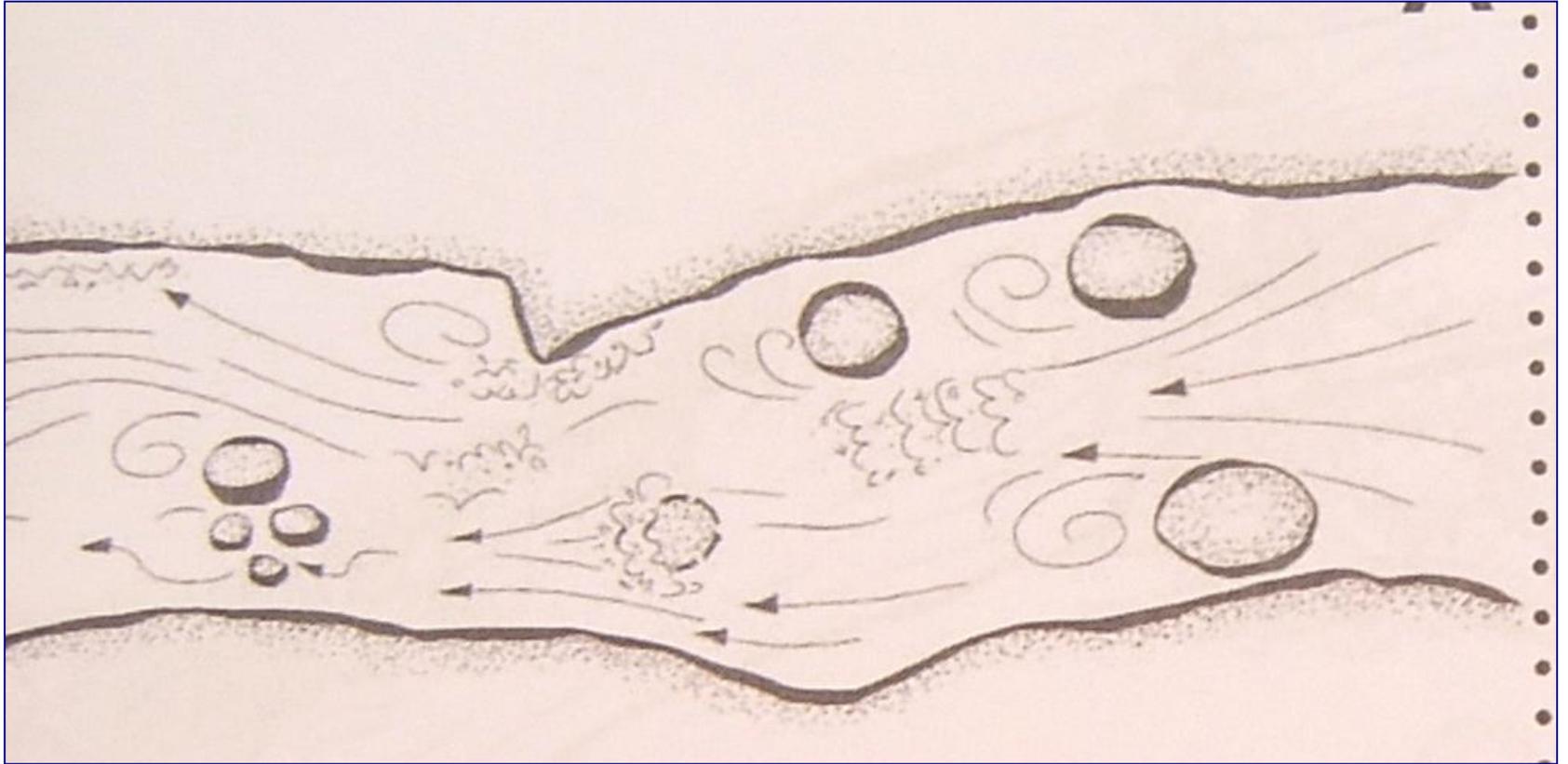


# What did that video not show about their descent?

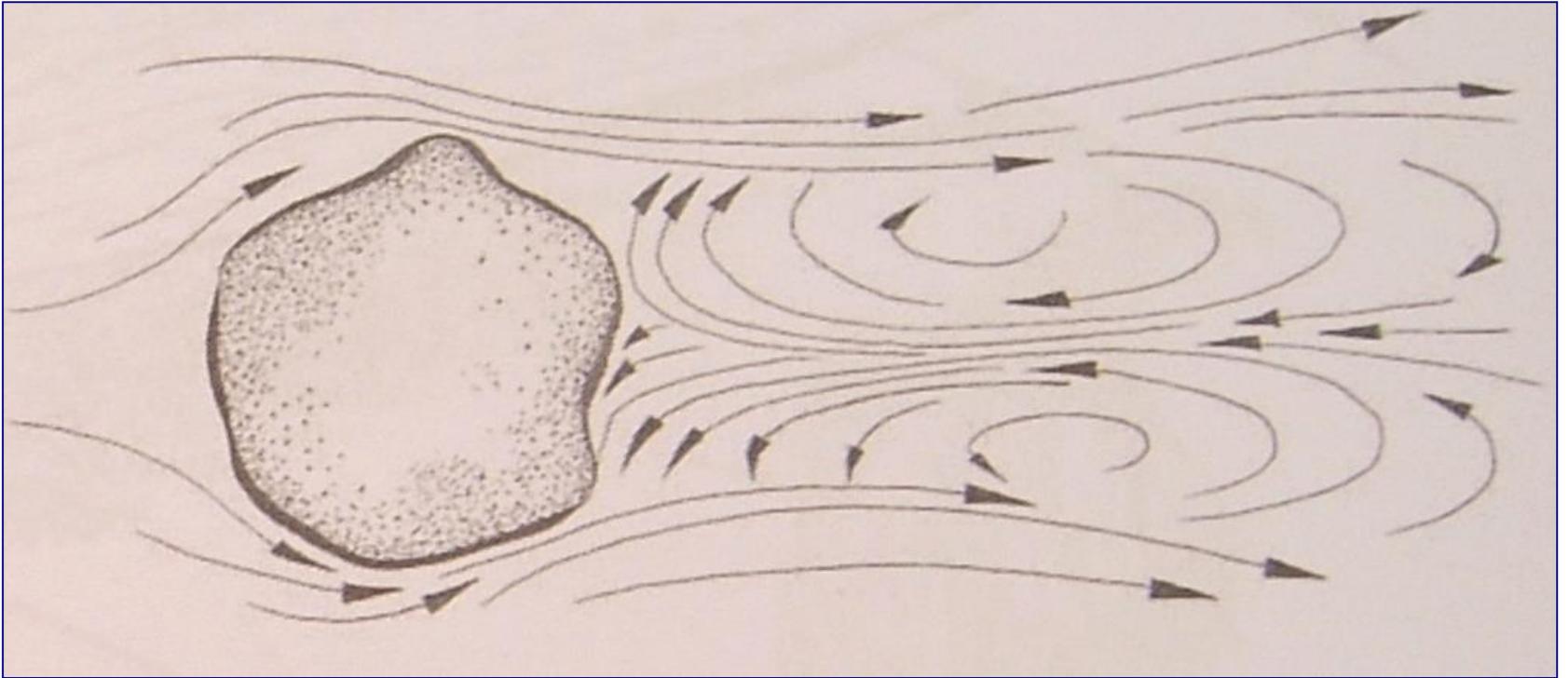
- Planning and analysis of the river



# Rapids



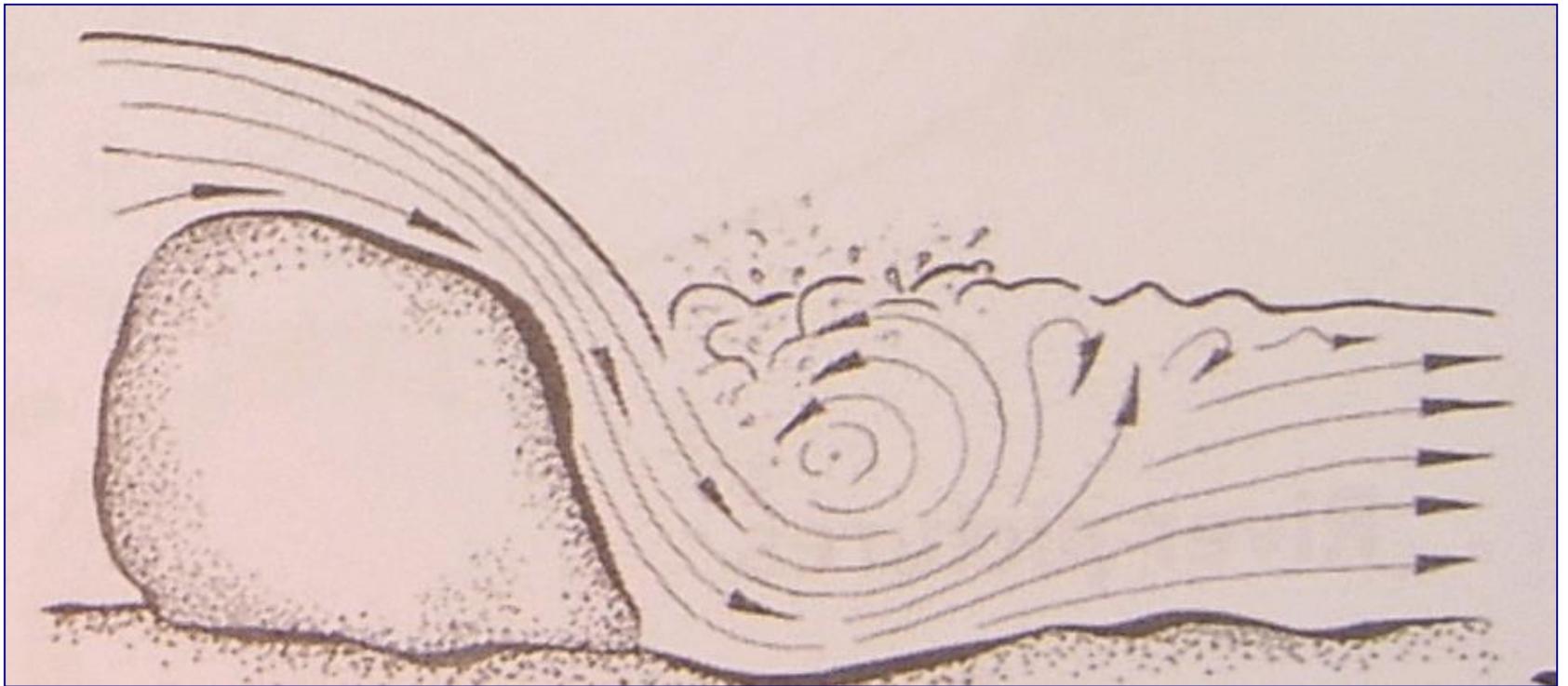
# *Eddies*



# Waves



# *Recirculating Waves*



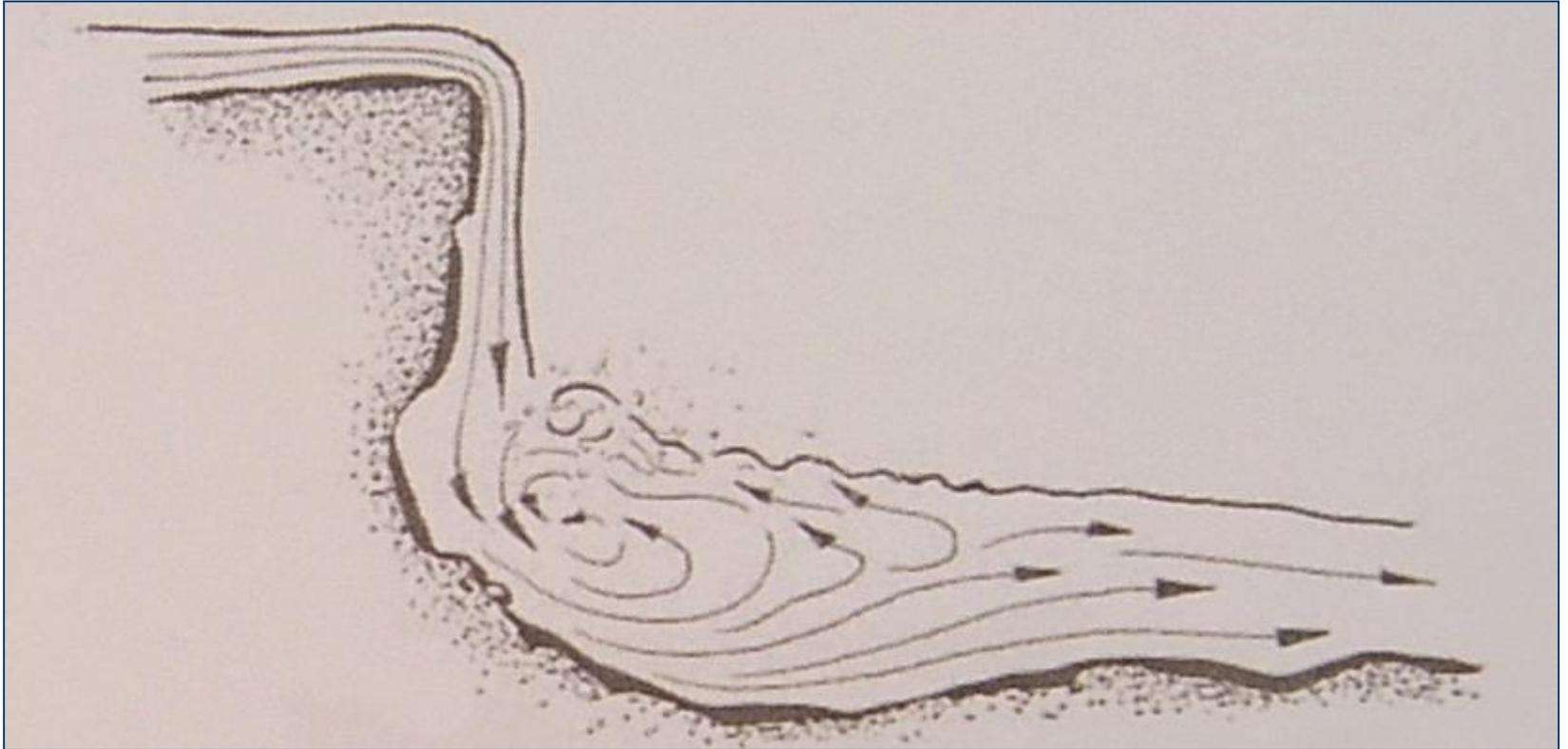
<https://youtu.be/qYKTMfe1Blc>

Survived

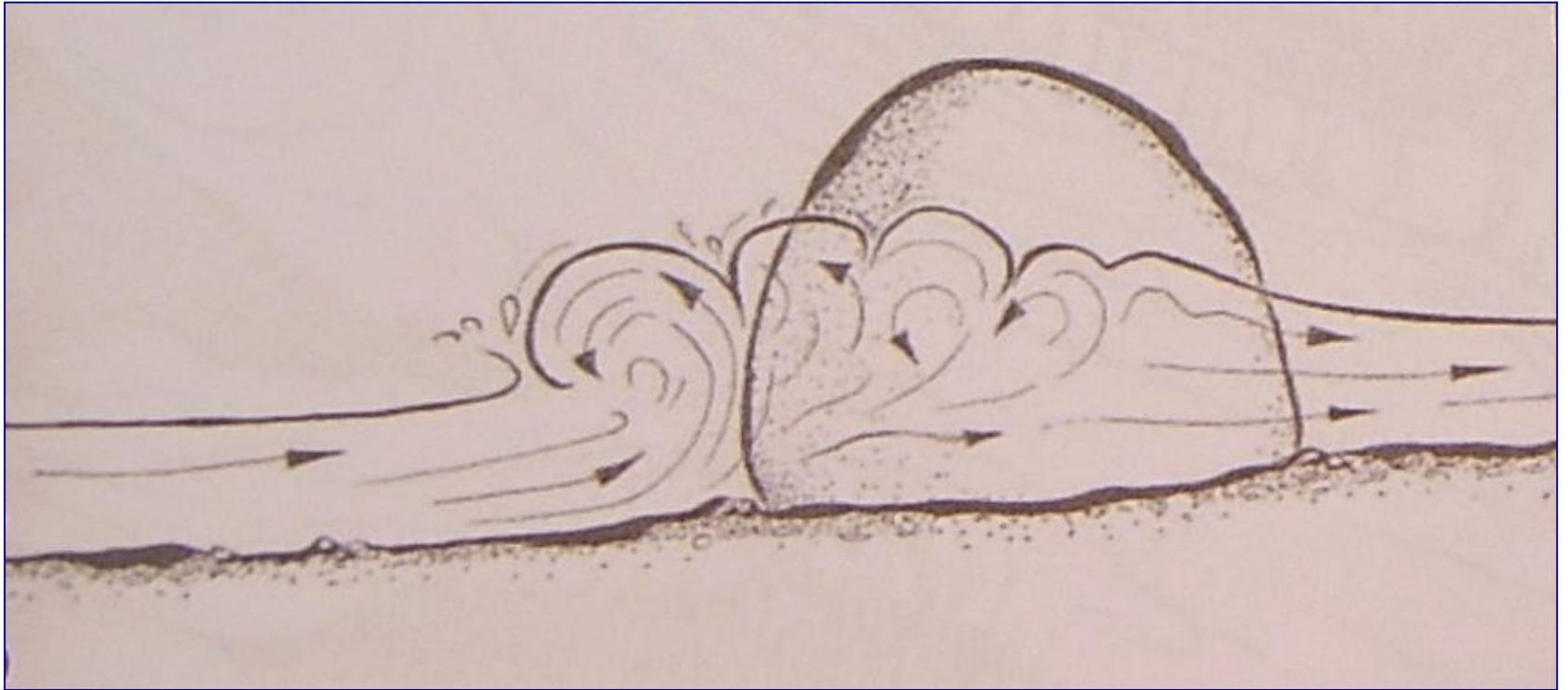
# *Unstable or Undercut Banks*



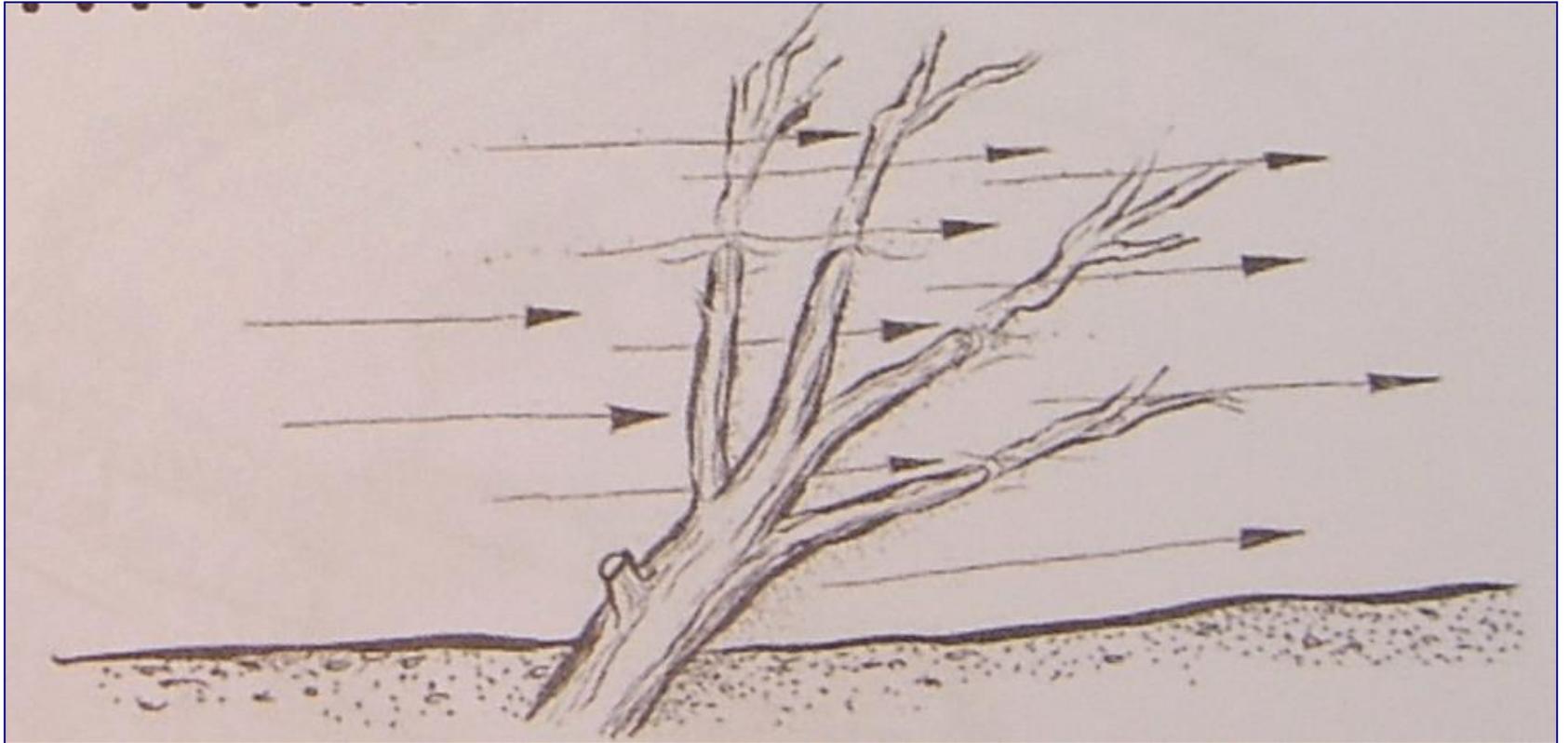
# *Waterfalls*



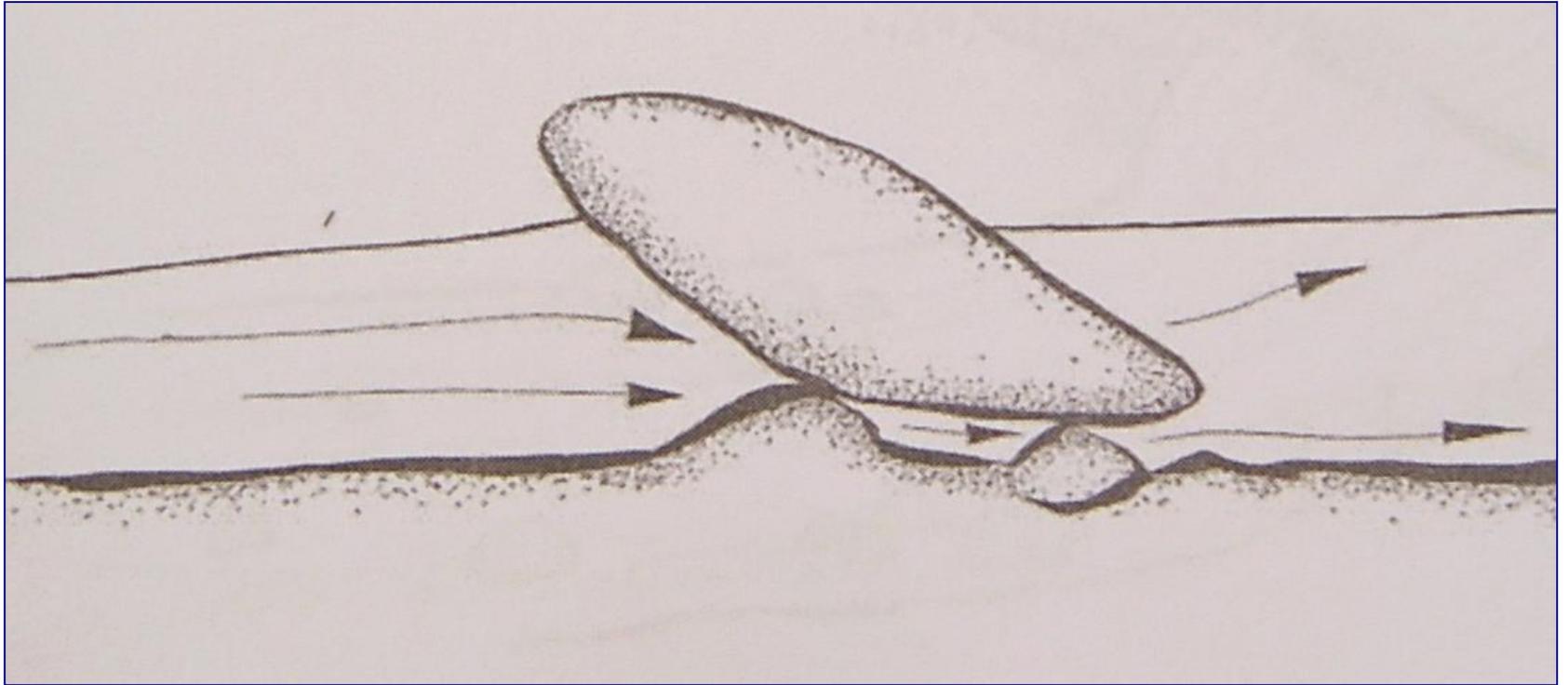
# *Buffer Wave*



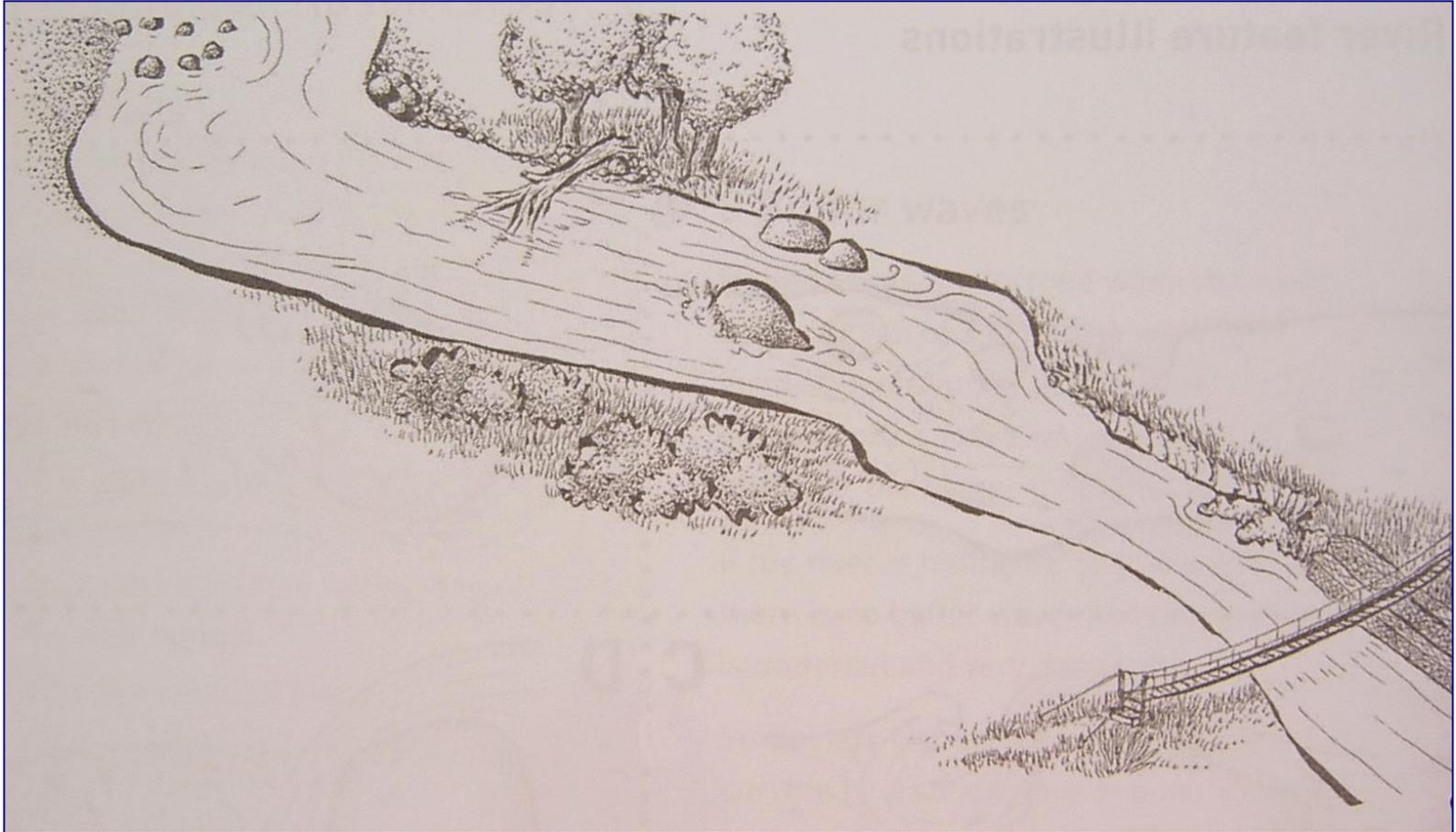
# *Strainers*



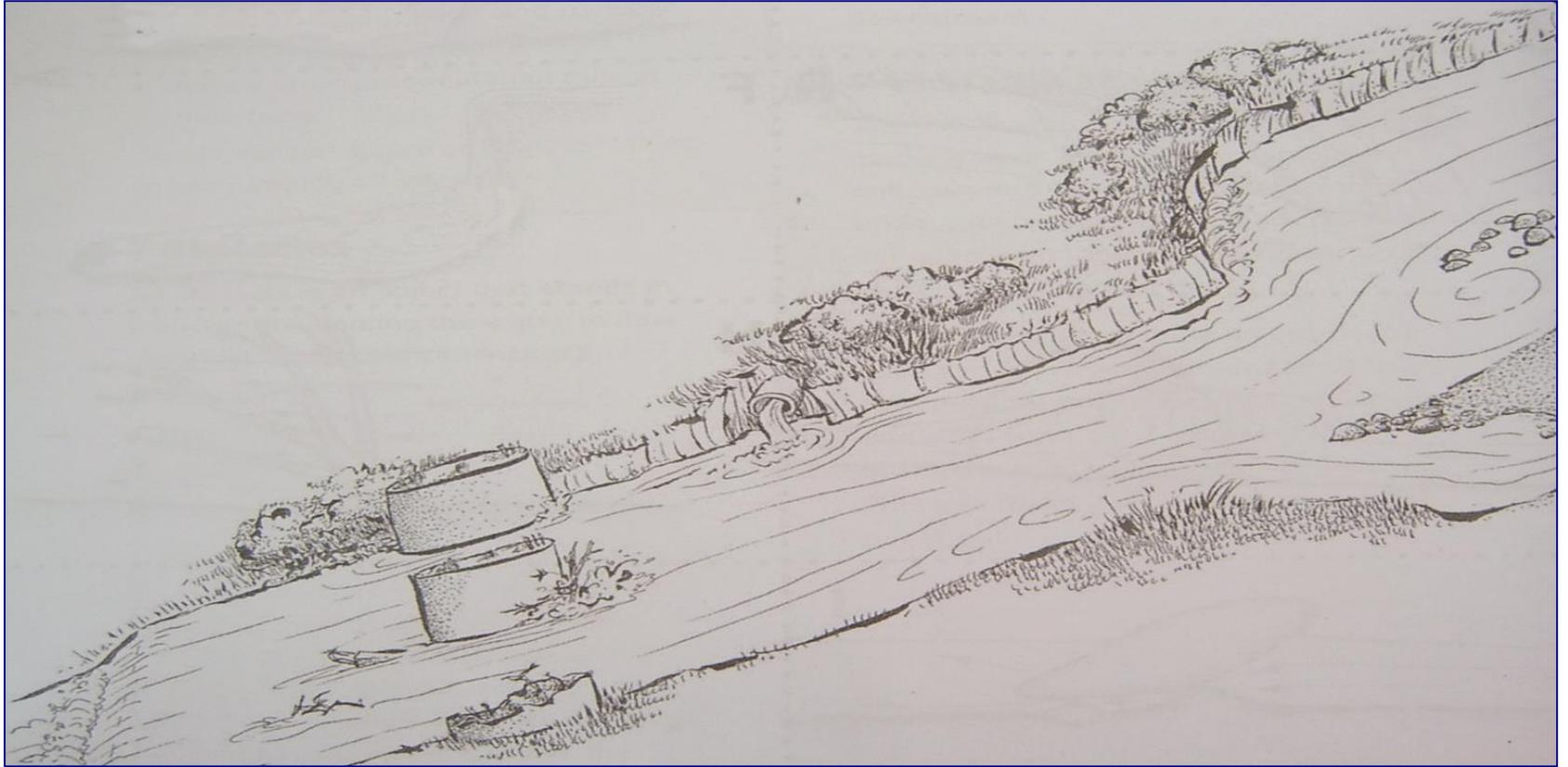
# *Obstacles*



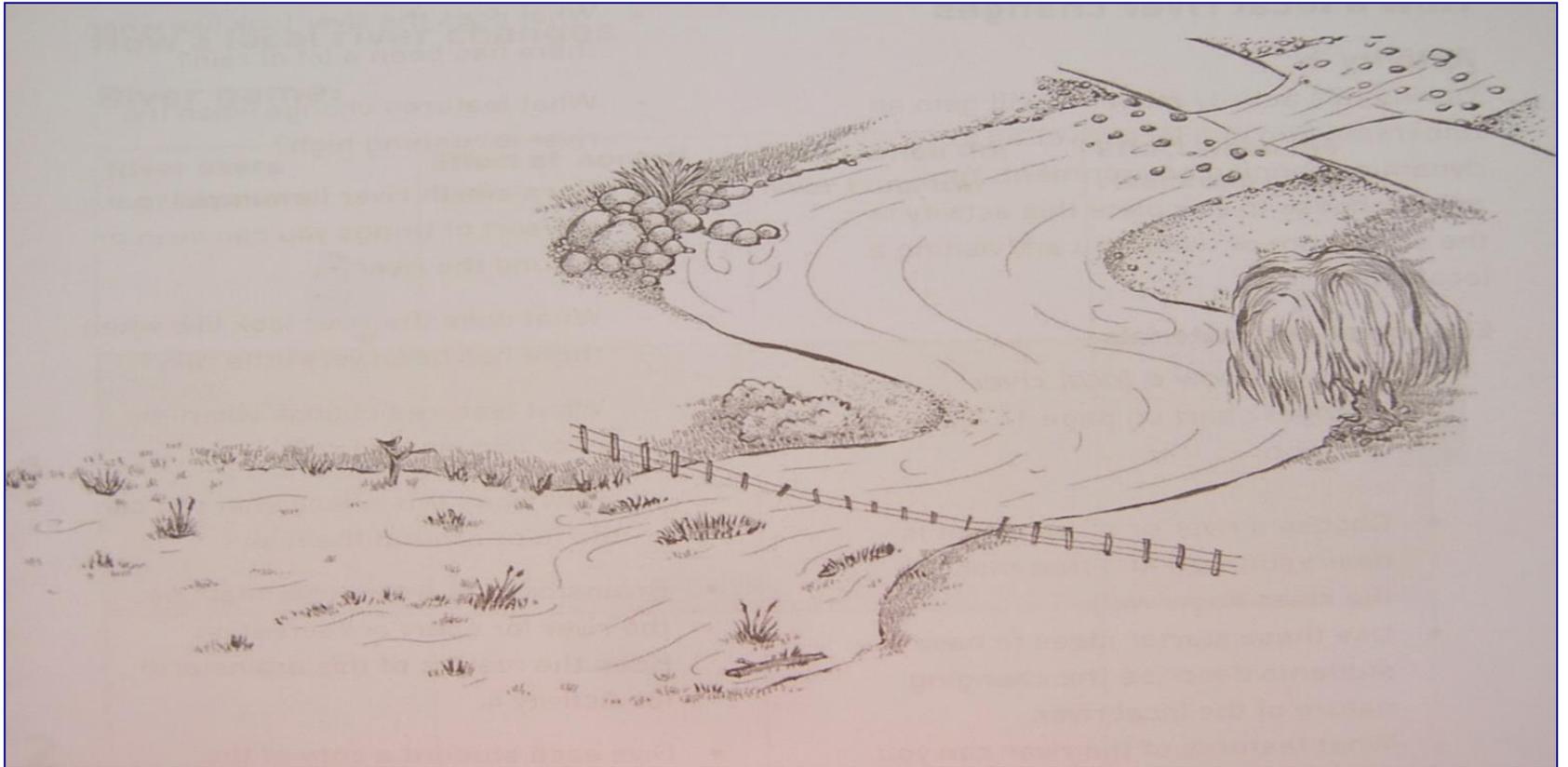
# *River Dynamics*



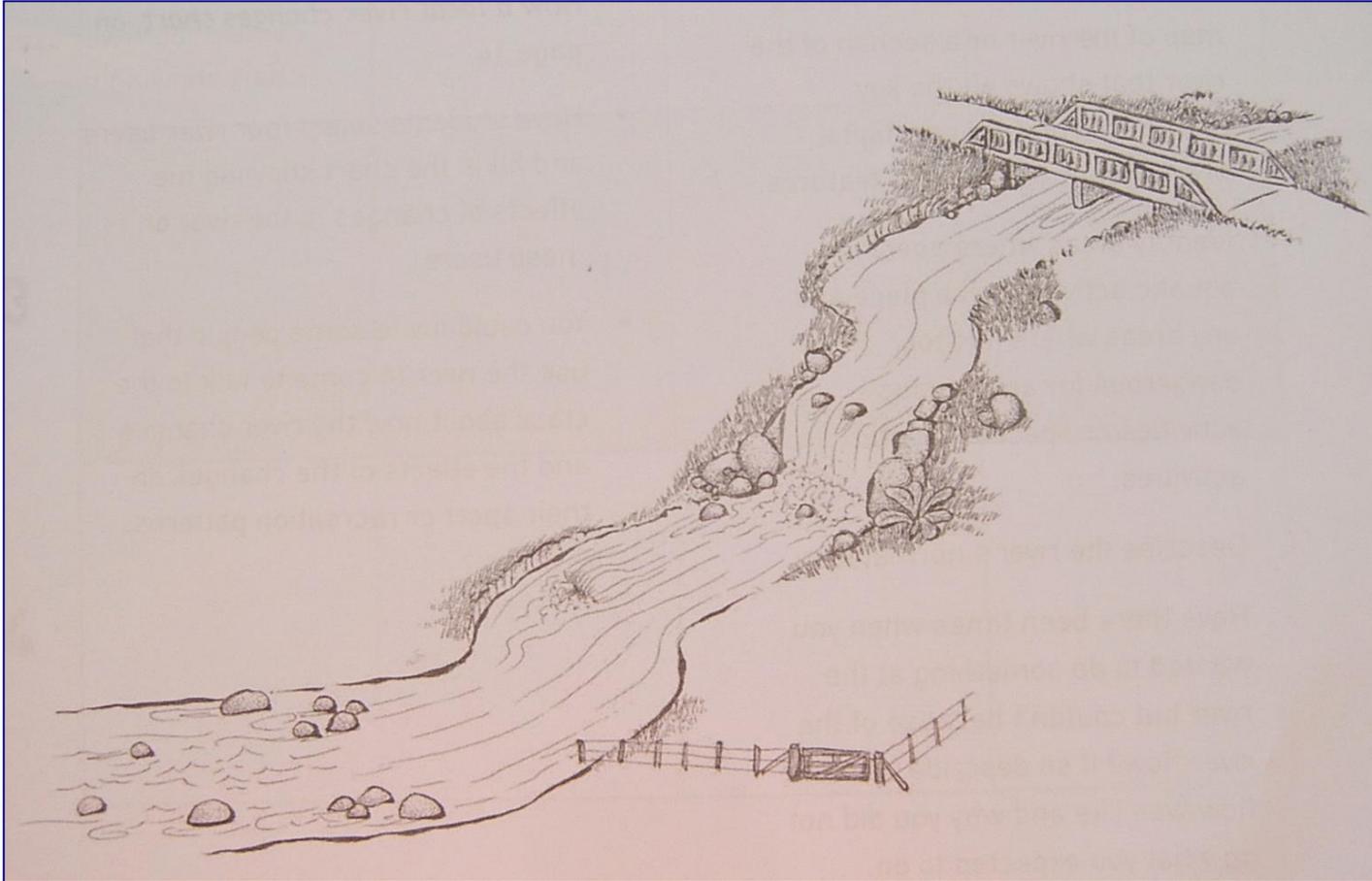
# *River Dynamics*



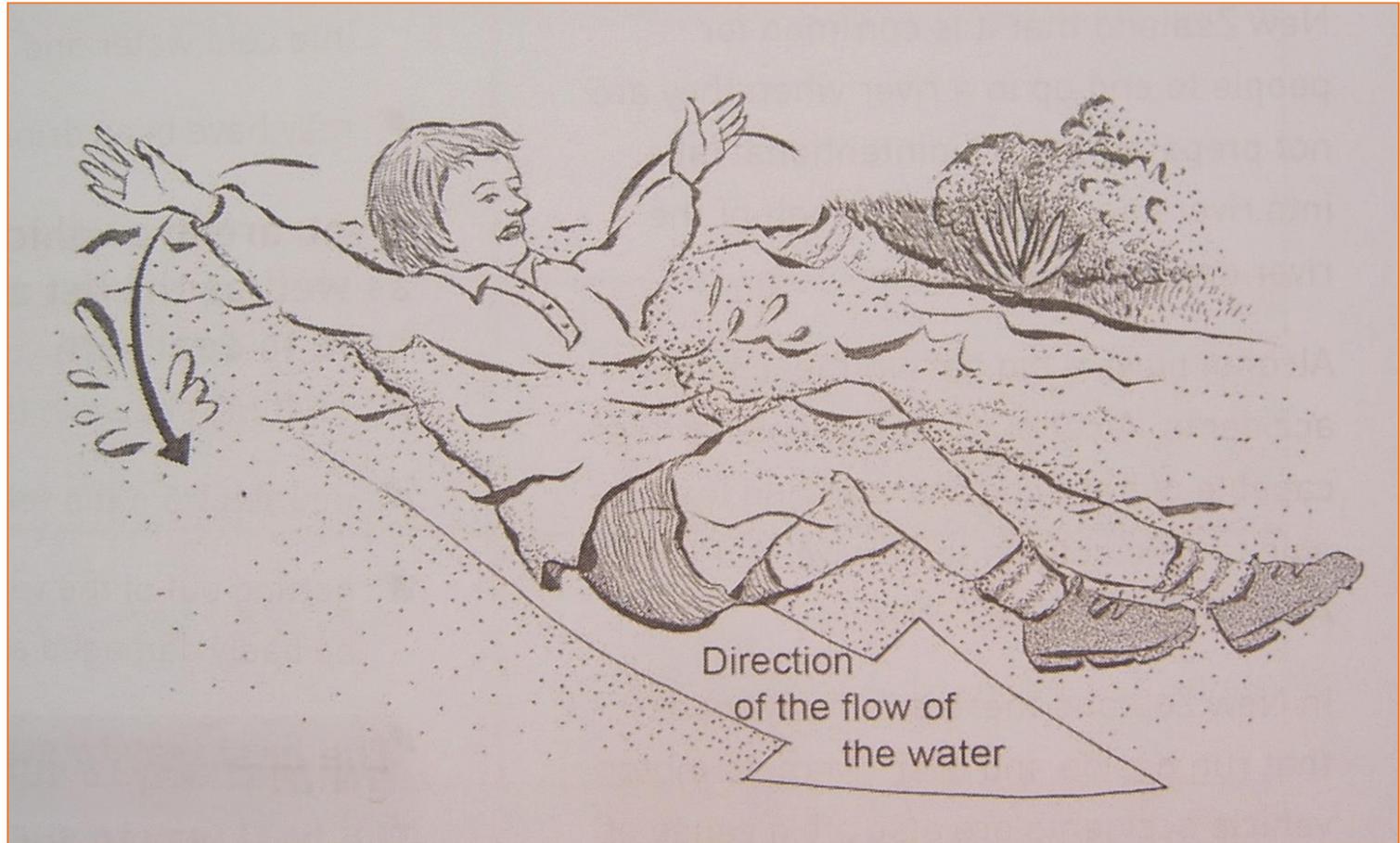
# *River Dynamics*



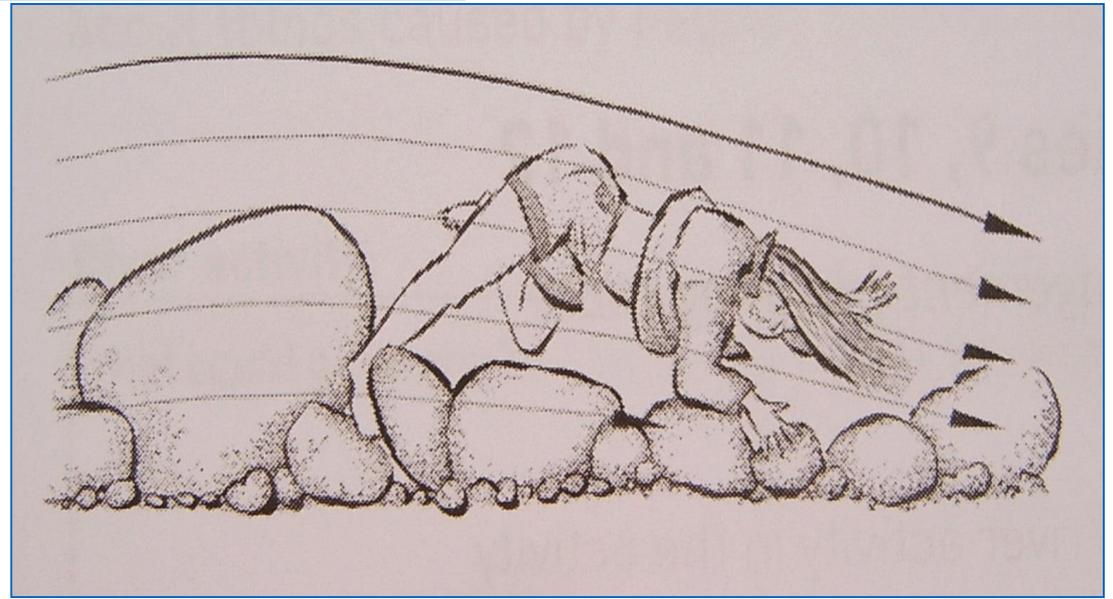
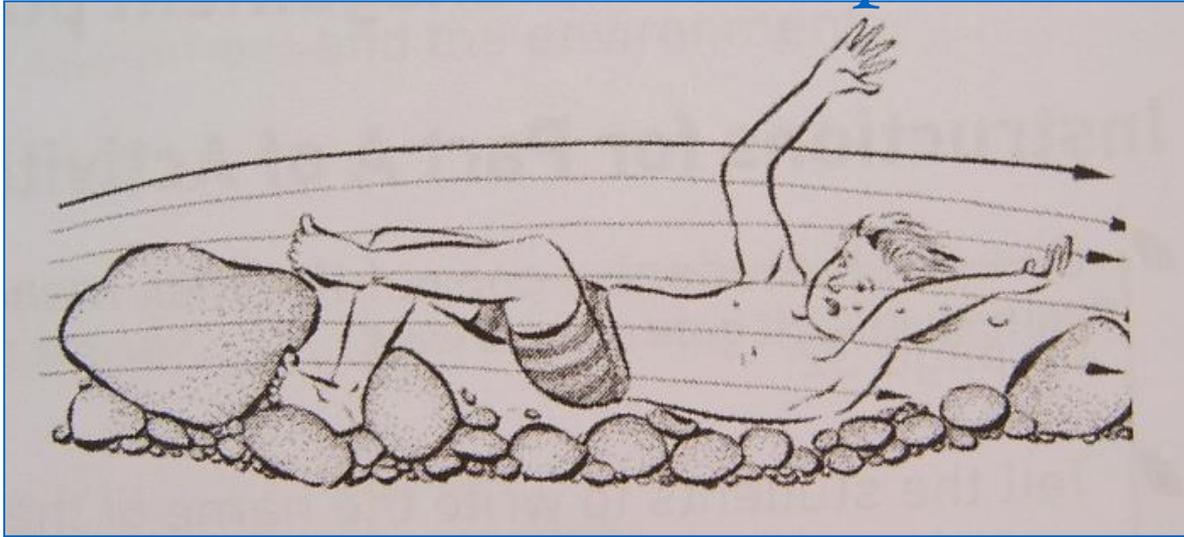
# *River Dynamics*



# *Survival Swimming Position*



# Foot Entrapment



# Basic Crossing – when working out where to cross you need to consider the following

- Depth
- Speed
- Colour
- Catchment area / weather
- Footing quality
- Run out
- Alternatives
- Should you cross at all??

# Depth

- Rivers that are discoloured are dangerous because you can't see how deep it is
- Clear rivers can also be deceiving, your judgement will improve with experience
- Use stones, throw them in and judge the depth by the sound they make
- Also a stick to poke your way forward and judge the depth

# Speed

- River speed is not the same all the way across, the water moves between obstacles faster and slows when the energy of the river is dispersed across a uniform bottom
- If there has been a flood, the river can scour in the middle and speed up there and be deeper

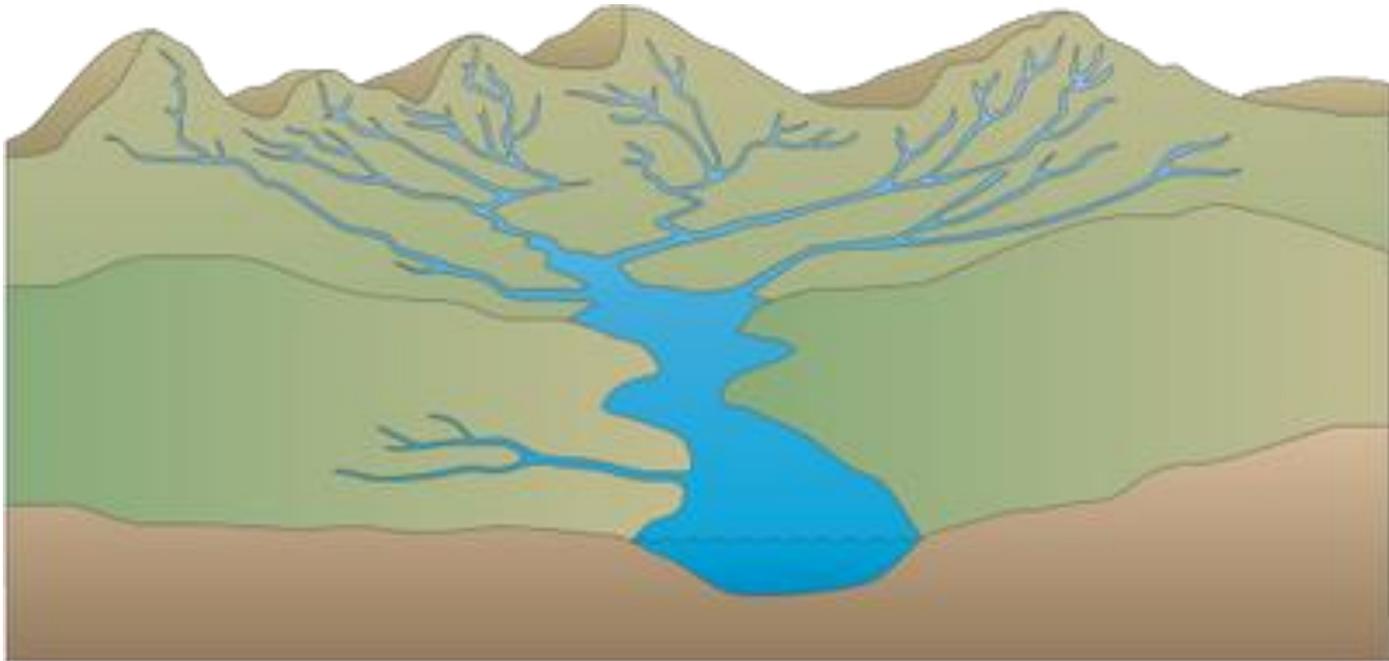
# Colour

- If it is muddy, be very careful and you cant see the bottom and if the river is rising it can pulse and rise very quickly



# Catchment Area / Weather

- If the river has a big catchment and the weather is dodgy then the risks are higher



The steepness of the valleys and whether it is forested are also considerations

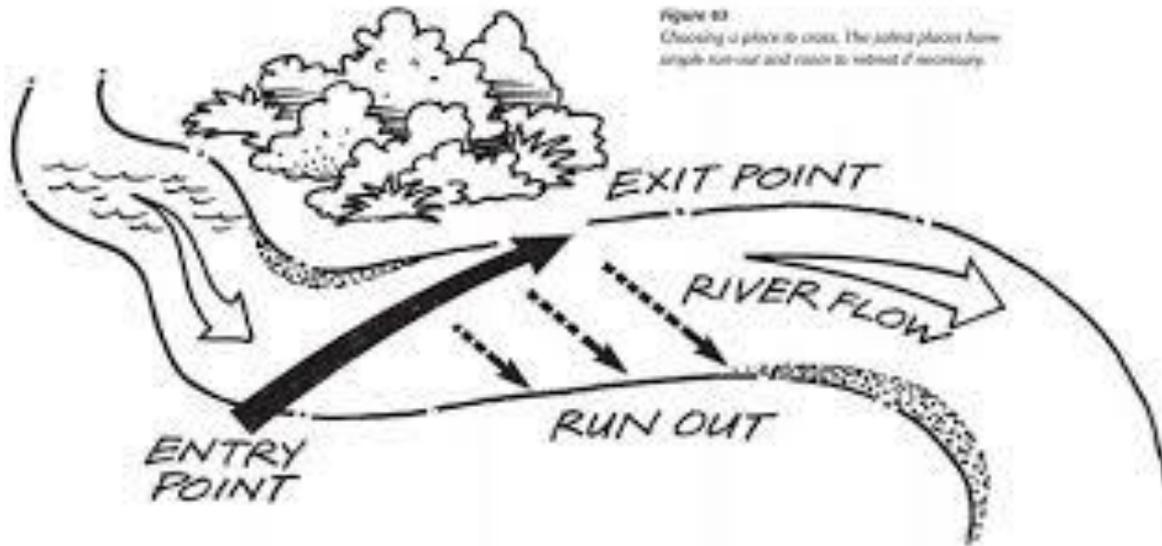
# Footing Quality

- The bottom of the river can be gravelly so easy to cross or large boulders with slime which makes them slippery
- Some rivers also have loose gravel beds which you can sink into



# Run out

- Is something goes wrong, where will you end up?
- If it is a deep pool with lots of currents then avoid it, or if there are trees and an undercut bank then definitely avoid it!



# Alternatives

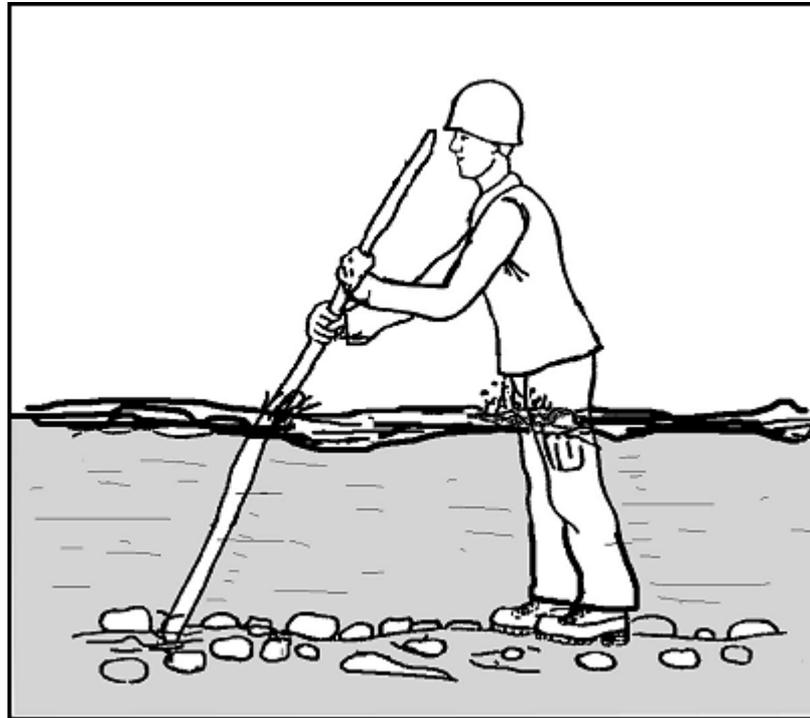
- Can we walk further up or downstream to a bridge or known safe crossing?



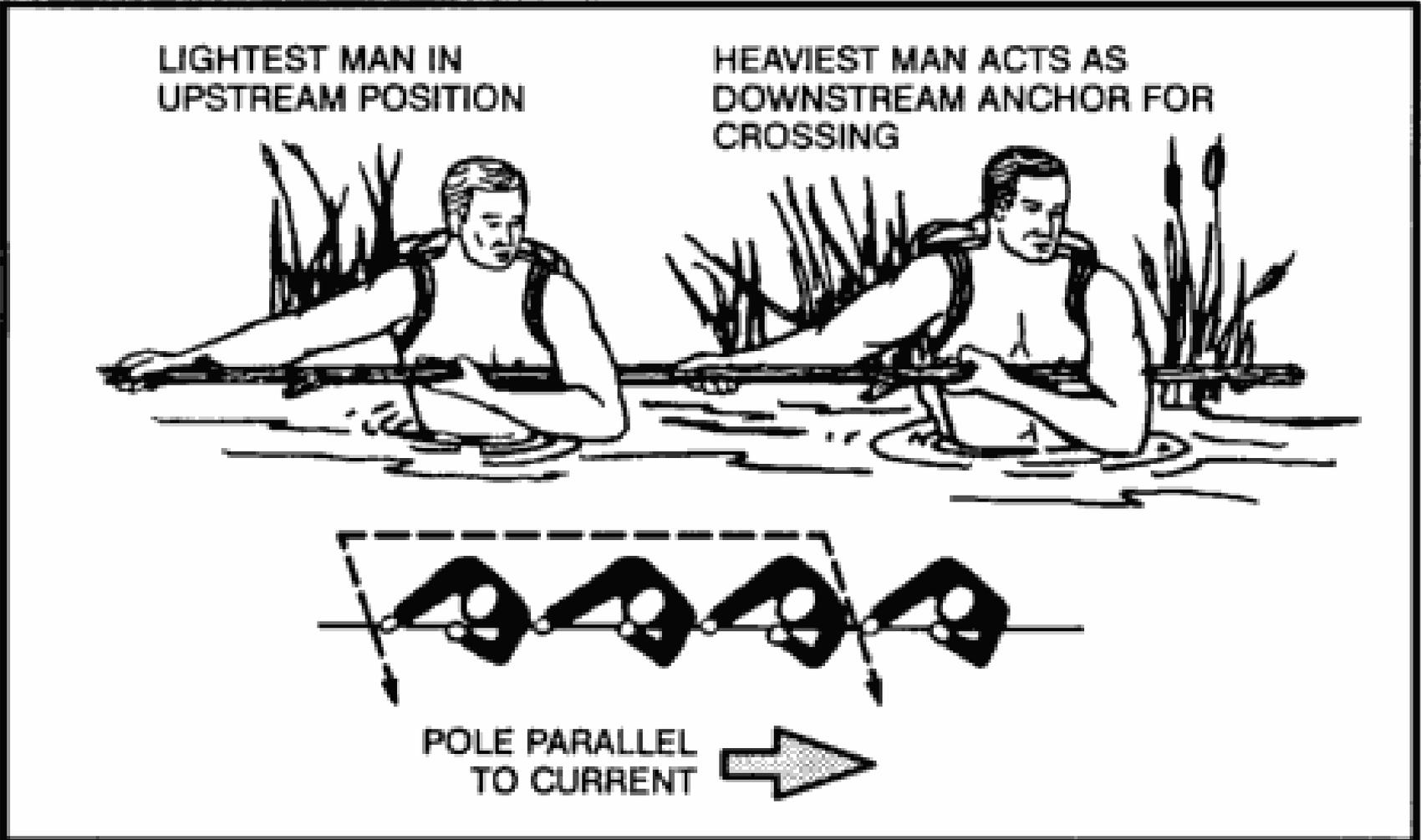
# Different methods for crossing

- Once you have sorted that you can cross, you will need to engage in safe crossing techniques

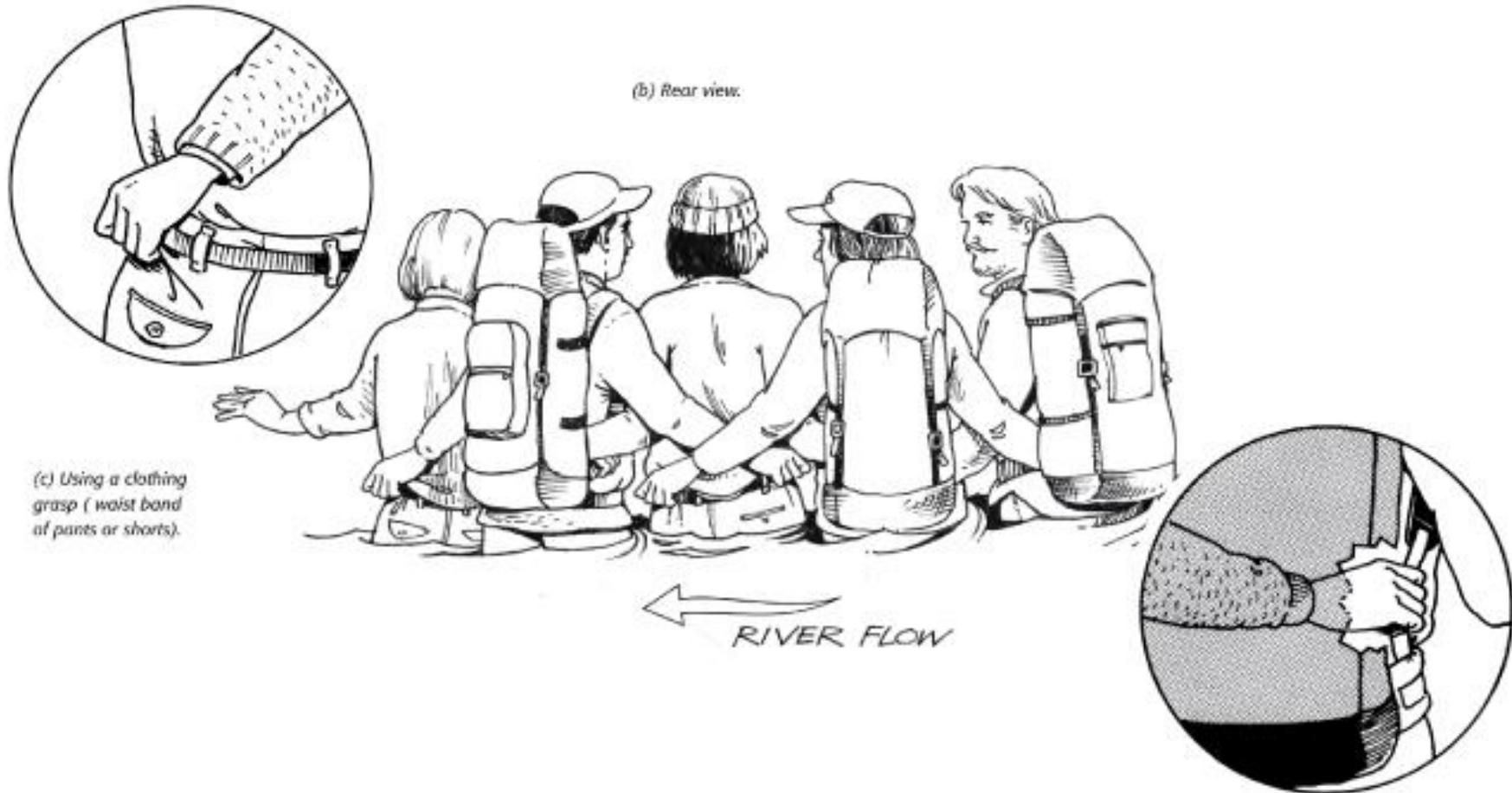
Using a stick



Group using a pole (it seem only men cross streams, sorry for the sexist language in image)



# Joining together for mutual support



And again...



Source: New Zealand Mountain Safety Council  
*Bushcraft, Mountain Safety Manual 12,*  
Revised Edition 1984.

As a group it is best to keep your pack on and use the straps to help bind you all together

- Hold tight onto your neighbours strap round their back
- Loosen your straps a bit to allow you to release if necessary
- Take off your sternum strap and waist belt so you can release easily if you fall

## 2 schools of thought if you cross with your pack and fall over (crossing solo)

- The **first is in favour of keeping your pack**, as the trapped airspace inside of the sealed bags will help to give you buoyancy. Sort of like a makeshift lifejacket. The negative associated with this strategy is that it only leaves you with one arm to swim, thus making it more difficult to reach shore.
- The **second school of thought maintains that you should release your pack**, thereby making it easier to actively swim to the shore at the first feasible opportunity. The disadvantage to this method is that depending on the character of the river and terrain, you may not be able to retrieve your pack, which subsequently could prove vital to your chances of survival.

# What if your pack gets caught?

- You need to keep calm, release your arms and roll away from the pack to avoid more entanglement

# Waders

- <https://www.youtube.com/watch?v=dKwObngww3g>
- <https://www.youtube.com/watch?v=7gazAhSOPUA>

# Where would you cross?

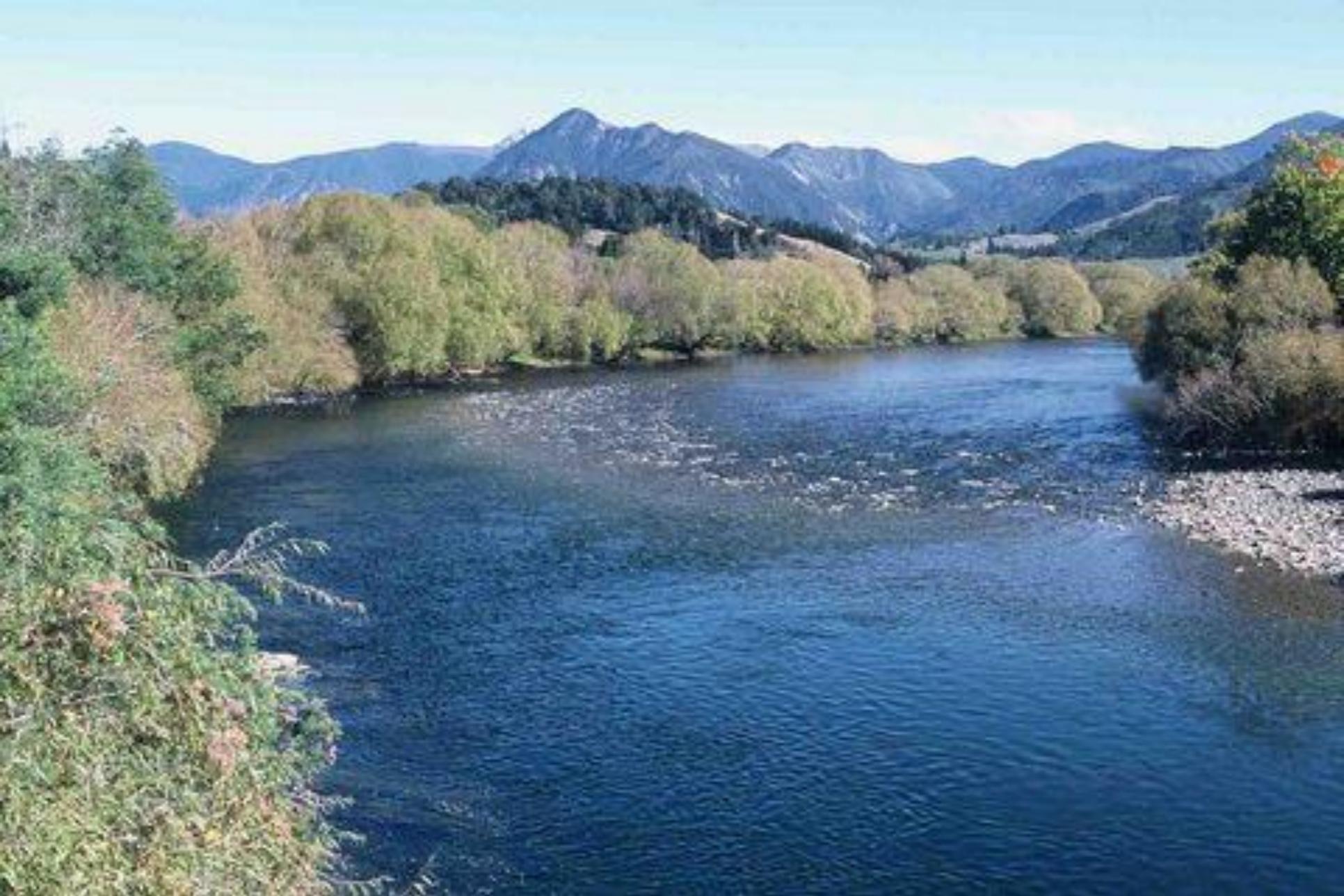
Lets go through the following images and make some judgements



Urdu River – Sahara

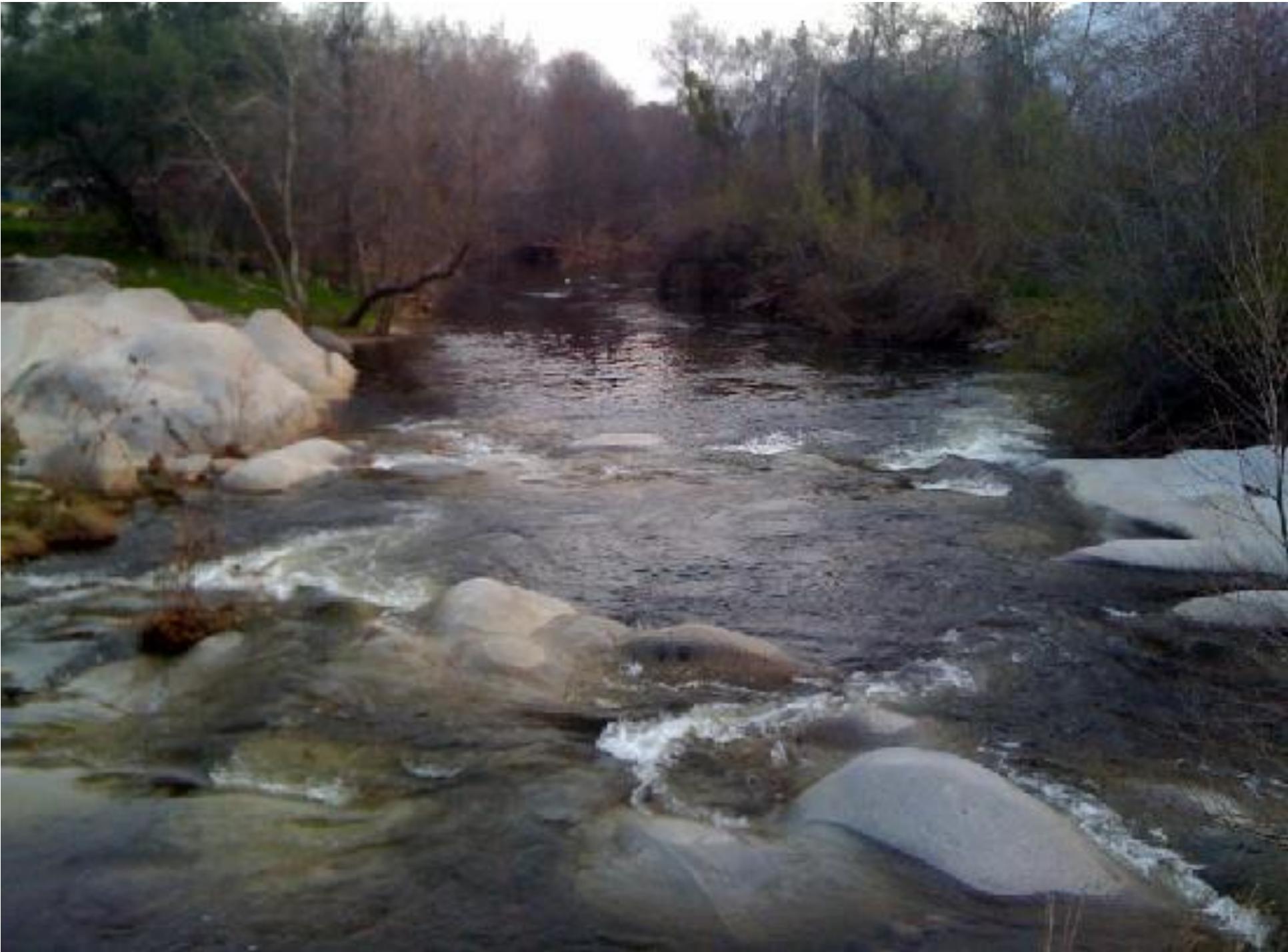


Owen River – South Island NZ

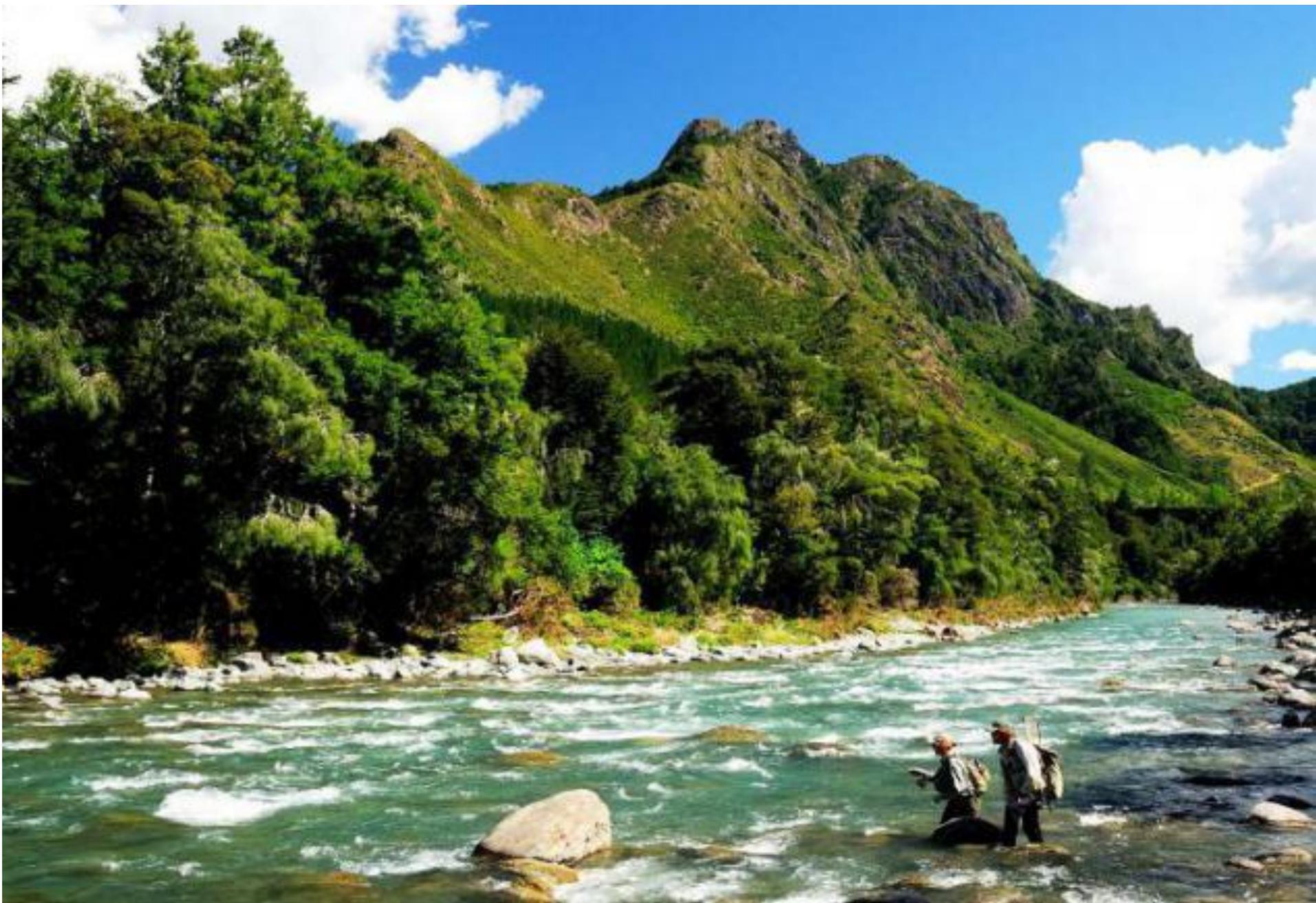


Motueka River

















Advice From A

# RIVER

Go With The Flow

Immerse Yourself In Nature

Slow Down And Meander

Go Around Obstacles

Be Thoughtful Of Those  
Downstream

Stay Current

The Beauty Is In The  
Journey!

- Ilan Slavin -