

FRESH WATER



WATER INSIGHT, SAFETY & EDUCATION





In Ireland, fresh water is found in rivers, lakes, canals, quarries ponds and pools. It has its own unique properties that can combine to create unique hazards. By understanding them and by being able to recognise potential dangers, you can protect yourself and others.

BANKS AND EDGES

Where land meets water, nature thrives. Reeds and bushes sprout from the banks and often hide deep pools behind them. As they grow they erode and weaken the soil. This means they can often crumble and give way. It's safest to always stay away from edges.

BUOYANCY AND DENSITY

In water, upward and downward forces work in opposition to each other. The upward force is the weight of the water. The downward force is the weight of an object in water. A cubic foot of salt water weighs (on average) 64.1 lbs, while a cubic foot of fresh water weighs only 62.4 lbs. The reason for the difference in weight is that salt water has salt dissolved in it. It has a greater density than fresh water and as a result is more buoyant. This makes it harder to float and swim in fresh water. This fact should always be considered when assessing your own ability.

FLOW

Moving water is extremely powerful. Just 6 inches of moving water can be strong enough to knock a person off their feet. 1 to 2 feet of moving water can move a car. Now imagine the force of the river Shannon and remember that force is magnified when water drops quickly over rapids or waterfalls. Unlike the waves in the ocean, river flow applies uniform pressure, the force never stops.

DEBRIS

Fallen branches and trees, trolleys, wheels, railings and bins are just some examples of items that can be swept downstream by a strong flow. Entanglement with one of these objects can be life threatening and cause serious injury. If a lifejacket snags in the branch of a tree, or a kayak capsizes and your legs slam against a submerged rock, the flow can trap you or amplify the impact.

CURRENTS

Shallow water tends to have a rippled surface, while deep water will usually have a smooth surface (still waters run deep). Currents are not always predictable, and are stronger after higher rainfall. The main current is usually in the centre of a straight section of river, or on the outside of a bend where the water runs fast and deep.

An effective trick is to throw a stick or leaf into different areas of the water and watch how it behaves. This will make it easy to spot areas of faster flow, but also to see where the eddies are.





FACT

Drowning is the 3rd leading cause of unintentional injury death worldwide, accounting for 7% of all injury-related deaths.

(W.H.O)

EDDIES

Eddies are areas where water flows back upstream against the current. You will often find an eddy downstream from a large rock. An eddy can be a good spot for entering and exiting the water safely, because you don't have to deal with a strong current while clambering in and out. However, eddies in white water are far from safe; often they'll send you at speed into a strong current.

UNDERTOWS

An undertow is the movement of water underneath the surface, often flowing in a different direction to the main flow. The most common reasons for undertow are temperature changes in the water between the river bed and surface. They can also be caused by underwater holes, caves, rapids and waterfalls. As the name suggests, getting caught in one can pull you under the water.

WHIRLPOOLS

This is a body of rotating water produced by opposing currents or a current running into an obstacle. The danger lies in getting stuck in one. The strong currents can trap you and can quickly zap your energy.

VISIBILITY

Suspended particles of sand, mud, clay, or other bottom sediments affect the visibility underwater in much the same way as fog effects visibility on land – distant shapes become colourless, ill-defined shadows. When a river is in flood and visibility is poor, the risk of unseen debris and hidden hazards is greater.



ICE COVER

In winter, you should never walk on frozen ponds, lakes or turloughs. In Ireland, the ice is never as thick as you might think and the cold water underneath can be much deeper than expected. There have also been many incidents of people who have gotten into difficulty rescuing pets. Never put yourself at risk.

TEMPERATURE

In winter, fresh water in rivers and lakes can be considerably colder than seawater.

For example, in February in Ireland the average temperature of the water in Dublin Bay is approximately 9 degrees, whereas our lakes and rivers can be as low as 5 degrees. Submersion at this temperature can cause cold water shock and hypothermia in minutes.

PROTECTION

It's vital to always wear a lifejacket for any activity on or near the water. Even strong swimmers can be overcome by any of the factors we've discussed. A lifejacket gives you the extra buoyancy you need to stay afloat. It can be the difference between drowning and rescue. None of us ever know when the unexpected will happen. So why risk it? Your lifejacket should be brightly-coloured, a snug fit and always securely fastened. When kayaking wearing a helmet is crucial. If you capsize, it will protect your head against submerged objects.





- 1 STAY AWAY FROM EDGES - THEY ARE OFTEN UNSTABLE.**
- 2 FRESH WATER IS LESS DENSE THAN SALT WATER, MAKING IT LESS BUOYANT AND HARDER TO FLOAT IN.**
- 3 DURING THE WINTER, FRESH WATER IS SIGNIFICANTLY COLDER THAN SALT WATER.**
- 4 ALWAYS WEAR A LIFEJACKET WHEN DOING ANY ACTIVITY ON OR NEAR WATER.**
- 5 THE FLOW IN FRESH WATER CAN BE BOTH POWERFUL AND UNRELENTING.**
- 6 POOR VISIBILITY CAN HIDE WHAT LIES BENEATH THE SURFACE.**
- 7 IN WINTER, FRESH WATER IS MUCH COLDER THAN THE SEA OR OCEAN, HYPOTHERMIA CAN OCCUR IN JUST MINUTES.**



KAYAKING

Paul and his friend Jack have just completed their level 2 kayak proficiency award with the Irish Canoe Union. Paul is mad keen to get out on the water and has just invested in all the best gear. His confidence is high and he's on a roll. Unfortunately, today Jack isn't free to go for a paddle with Paul, despite river conditions being perfect after heavy rainfall. Paul decides to go to the top of the river on the chance that there'll be some other paddlers there. Upon arrival Paul is greeted with an empty car park and a flooded river.

RISK ASSESSMENT:

- Does the river sound safe?
- What are the potential risks if Paul does hit the water?
- What happens if Paul gets into difficulty?
- Paul does have a lifejacket; does that guarantee his safety?
- What should Paul do?

ABILITY ANALYSIS:

- Does Paul's ability guarantee he will be able to kayak without incident?
- Should Paul paddle alone?
- What are the consequences of Paul paddling alone?



BOATING

Your phone rings, you've been invited by a friend to go on a boat trip. A relative drops you down to the lake where you see your friend and his father getting the boat ready. After an eventful ordeal launching the boat (almost losing the car on the ramp!), it's finally in the water. Your friend's Dad jumps into the boat and starts the engine. It splutters and smokes its way into life. With no mention of lifejackets or safety procedures, he shouts "In you get" over the rattling of the engine.

RISK ASSESSMENT:

- Are the crew experienced?
- Is the vessel safe and reliable?
- Are you wearing a lifejacket?
- Is the likelihood of an incident occurring low, medium or high?
- What should you do?

ABILITY ANALYSIS:

- Do the family seem experienced?
- Are you a good enough swimmer if something happens?
- What about if everyone is in trouble?



EDGES

Watch these films and then discuss the points.

RISK ASSESSMENT:

- What risks had the family not considered?
- What were the dangers for Max?
- Should the family have been near the edge?
- What is the key take-away point from this incident?

ABILITY ANALYSIS:

- Was Michael right to dive in?
- What other precautions should he have taken?

RISK ASSESSMENT:

- What potential risks are there along a riverbank?
- Discuss how did the family may have gotten into trouble?

ABILITY ANALYSIS:

- Had the family assessed their ability correctly?
- Did the warm weather mean safe water?

QUARRY

It's mid-September, bright and sunny. You and a friend have walked out to a nearby quarry, there's a couple other people there too. You can see that they have been drinking. Naturally, you want to go for a dip to cool off. You run the idea by your friend who replies "I can't swim, never learned. Is it deep?"

RISK ASSESSMENT:

- What hazards would you expect to find in a quarry?
- What's the worst possible case scenario?
- What do you decide to do?

ABILITY ANALYSIS:

- Would you be able to rescue your friend if they got into trouble?
- Could you rely on the others for help?
- Should you just go in alone?



FRESH WATER ACTIVITY

Write a paragraph about an activity you enjoy on the water. It could be swimming, kayaking, boating or fishing.



Now imagine you are going to a familiar spot. Highlight all the potential risks and then carefully and honestly assess your own ability to deal with them.