

Bushwalking NSW

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BUSHWALKING NSW INC. LILOING GUIDELINES

Broadly speaking, Liloing is a way of traversing a waterway that involves floating on an inflatable air mattress.

Acknowledgement of Country

I respectfully acknowledge the traditional custodians of the lands on which I live and work. I recognise their continuing connection to lands, waters and communities and I pay my respect to Aboriginal and Torres Strait Islander cultures; and to Elders both past, present and emerging.

Feedback

Feedback and suggestions for improvement of this document are welcome to admin@bushwalkingsw.org.au.

Disclaimer

Outdoor adventure activities, including liloing, can be dangerous and undertaking these activities beyond your capabilities or without you having adequate experience, skill, regard to safety, and suitable equipment can result in serious injury or death.

This Manual aims to provide you with information which can assist you – as a recreational bushwalker undertaking the activity of liloing – to undertake your activity safely and with enhanced enjoyment.

Information in the Manual is provided on the basis that, as a person accessing the Manual, you undertake responsibility for assessing the relevance of information provided in the Manual to your circumstances and needs. You use the Manual at your own discretion and risk. You are and remain responsible for the decisions you make, and you will be solely responsible for any damage or loss whatsoever that results from such use.

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Contents

Acknowledgement of Country	1
Feedback.....	1
Disclaimer	2
Contents.....	3
Scope	4
Background and Introduction	6
Planning considerations.....	7
Participants and Group management	7
Equipment and logistics.....	9
Food and water	11
Navigation.....	12
Emergencies.....	12
Hazards	12
Further reading	15

Scope

This Liloing Manual is intended to be a companion document to the Bushwalking Manual, published by Bushwalking Victoria. It is not intended to replace any information contained in that manual, but rather to provide supplementary additional information relevant to the activity of liloing and the unique considerations that come with engaging in that activity. This document provides guidelines and information for safe, enjoyable community-based volunteer bushwalking trips involving Liloing in Australia.

Exclusions

- Track notes or maps of specific trips.
- Requirements for commercial operators and school or youth groups or any other groups with special needs.
- Competency-based training and associated standards.
- Specific programs and syllabus for liloing or leadership training.
- Detailed instructions on use of specific equipment
- Detailed instructions of tools or techniques, including first aid.
- Provision of legal advice.
- Advice on Bushwalking Club policies or procedures.

Specific Activity Exclusions

- Abseiling, climbing and/or bouldering
 - Note: spotting and bouldering are often a part of liloing trips in some areas, and while they are not included in this document, they should definitely be considered, alongside the unique considerations of bouldering where the fall may be into water.¹
- Camping
- Canyoning
 - Specifically vertical canyoning², although there is great overlap between liloing and horizontal canyoning.
- Caving
- Paddle Craft and the use of paddles
 - Pack rafts are only included where they are considered a suitable lilo type watercraft, and they are used without a paddle.
- Sail craft and the use of sails
- Any motor propelled craft
- Swimming without a paddle-craft and swimming generally
 - Swimming as an activity on its own is not considered in this document, however general comments throughout the document may be relevant to the activity of swimming while on liloing trips (including for example considerations around moving water, and/or the use of life jackets).
- Bushwalking

¹ See the Australian Adventure Activity Standard – *Canyoning Good Practice Guide* section 7.6.4 *Bouldering and* 7.6.5 *Deep Water Belays* for an excellent but brief discussion on this topic.

² Vertical canyoning involves the descent, traversing and/or ascent of vertical (or near vertical) natural surfaces where fall safety cannot be achieved using spotting due to the fall height. Technical roping techniques such as abseiling, rock climbing and lowering (e.g. V-Lowers) are used to provide fall safety for vertical elements encountered.

- Bushwalking to the liloing location is covered by the Bushwalking Manual online.
- Surf related activities (e.g. surfing, boogie boarding, body surfing etc.) and Stand up paddle boarding (SUPs and Sopping) and the use of surf or SUP equipment.
- Whitewater activities or swift water rescue
 - This document does not contain advice on swift water techniques (eg 'white-water float position' or swimming 'offensively/defensively')

This document also specifically excludes any discussion of the use of ropes (including rope swings) and rope based rescues, including the use of throw ropes. These are specialist rescue techniques that require specific training.

Liloing Venues

The activity of liloing is generally conducted on inland water³. Inland water is also known as smooth waters, protected waters or inland waterways. Inland waters/waterways include rivers (inside the seaward entrance), creeks, canals, lakes, canyons, reservoirs and any similar waters either naturally formed or man-made and which are either publicly or privately owned.

Inland water can be flat-water or white-water. Flat-water is any body of water or waterway that is not white-water. The same waterway can have sections of flat-water and white-water. White-water is a section of a waterway where the water current (or tidal) movement is sufficient to create hydrological features such as rapids, eddies, waves, whirlpools etc. The use of improvised watercraft (and all liloing) should only be conducted on waterways where the waterway is flat-water or up to Grade 1 white-water. Liloing is not recommended on Grade 2 white-water and above.

Liloing can occur in a diverse range of environments including perennial, intermittent and ephemeral waterways. It may be in wide open river valleys or between the sheer walls of narrow canyons.

Specific Venue Exclusions

- White water Grade Two⁴ and above.
- Open waters (i.e. open sea)
- Coastal waters (i.e. waters off the coast out to number of nautical miles seaward) including tidal areas, beach and surf, exposed and shallow reefs and sandbars, estuaries and mud flats.
- Most enclosed waters⁵ (e.g. coastal bays, harbours, declared coastal lakes, inlets, river seaward entrances etc.).

³ This definition of inland water has been adapted from the Australian Adventure Activity Standard *Good Practice Guides*. Inland waters do not include any navigable rivers, creeks or streams within declared port waters. Inland waters generally exclude waterways at the point at which the water current becomes affected by tides to the extent it changes the activity hazards and risks. It is noted that some liloing activities do occur in tidal areas, but a discussion of the risks associated with tidal waterways is beyond the scope of this document and additional advice should be sought.

⁴ White-water is a section of a waterway where the water current or tidal movement is sufficient to create hydrological feature(s) such as, but not limited to rapids, eddies, waves, whirlpools etc. Find out more about white water grading here: https://en.wikipedia.org/wiki/International_scale_of_river_difficulty

⁵ See the Australian Adventure Activity Standard - *Enclosed and Coastal Waters Paddlecraft Good Practice Guide* section 1.3.1 *Enclosed waters* for a definition. Enclosed waters are defined by the relevant marine safety agency for the jurisdiction of the activity. It is noted that some liloing activities do occur in tidal areas, but a discussion of the risks associated with tidal waterways is beyond the scope of this document and additional advice should be sought.

- Locations where
 - participants are unable to paddle out of the location
 - participants are able to be blown (by the wind) or washed out of the location or into hazardous locations
 - participants could not generally reach a bank swimming from the middle of the body of water without assistance
 - for the majority of the location, there is no easy exit from the water on to the bank⁶ (e.g. steep sided, overgrown with blackberry, etc).
 - there are outlet hazards from the body of water (e.g. pumped hydro water release or intake, spillway, etc.)
 - water levels fluctuate rapidly
 - there is interaction between other water users in powered, sailing or other hazardous watercraft.

Background and Introduction

Liloing goes by many names

Broadly speaking liloing is a mode of travel that involves using a floating object (a “lilo”) to make one’s way down a waterway. It bridges a unique space between hiking (bushwalking), packrafting, swimming, boating, river sledging, canyoning and more.

It is an enjoyable way to experience bush environments while having little impact on the environment, and seeing the landscape from a different angle. Lilos make waterway sections of bushwalks much easier to complete due to not having to fight vegetation on river banks, or expend energy swimming, and can often be very efficient due to water flow assisting in movement.

Liloing has many guises and there is a diversity of liloing traditions across Australia. The activity may be used as introduction to canyoning, a method of crossing rivers, traversing bodies of water, or as an activity in its own right. A liloing activity may also include other activities like swimming, performing water jumps (jumping from rocks into deep pools of water), rope swings, deep water soloing⁷, or sliding down natural waterslides. The activity may last for a few minutes (eg to cross a small creek)⁸ or a few days (eg. a multi-day expedition along a river).

What is a lilo?

While the term “lilo” is used throughout this document, it is intended to cover a range of improvised watercraft. Generally, a lilo can be best thought of as a durable style of air bed which makes a great flotation device.

In common usage today, a lilo generally means something that's inflatable that you can lie on and float around on. They are typically intended for one person and are used without a paddle (that is you propel yourself with your arms and legs when required). For the purposes

⁶ It is noted that some slot canyons (eg those found in the Blue Mountains in NSW) may meet this definition. For these locations it is recommended that additional considerations are made for the activity canyoning which has its own unique and additional risks, even for horizontal (i.e. non-abseiling) canyons.

⁷ Deep water soloing is climbing or bouldering above water with no safety equipment like ropes or fall protection/impact matting. The depth of the water is used as a “soft catch” for any climber who falls.

⁸ While there is much overlap between liloing and pack floats, this document is not intended to replace the guidance on crossing rivers in the Bushwalking manual - <https://bushwalkingmanual.org.au/the-trip/challenging-conditions/crossing-rivers/>.

of the activity of liloing, they have sufficient buoyancy to keep one person and their equipment afloat. A good lilo will move well on flat water and can shoot (or run) small rapids and other small water features.

Planning considerations

Additional activity planning considerations for liloing may include but are not limited to:

- watercourse hazards and risks including the grade of the watercourse or rapids and associated difficulty
- likelihood and consequences of changing water levels including flooding
- clothing and equipment choices
- group size and participant skill levels
- additional requirements from land and/or waterway managers (eg different permits or group sizes required by National Parks, Crown lands, Councils, etc.)
- thresholds (or 'trigger points') for reassessment of plans (eg. establishing the maximum and/or minimum water levels for the activity and group)

Canceling Trips

It is recommended that groups establish thresholds ('trigger points' or "go/no go" parameters) ahead of any liloing trip (eg. "if the water level is above a certain measure then we will not enter the water" or if the rain forecast exceeds a certain amount).

These might include:

- actual conditions (eg water levels – high or low)
- forecasted conditions (e.g. rainfall)
- events occurring (e.g. dam release)
- an index or rating reaching (or forecasted to reach) a specified level (e.g. water quality).

Participants and Group management

Rescue Qualifications/Leadership

It is strongly recommended that at least one person on any liloing trip has an applicable and current water rescue qualification (eg Swift Water Awareness or Bronze Medallion) and is able to identify and manage hazardous water features.

Group Management

During member enrolment in the trip, understand the experience each member has with liloing, their swimming ability, and any other issues/risks they present. Provide information about appropriate equipment, gear, clothing, food, water, first aid, and emergencies.

Assess the group: <https://youtu.be/KKRV71tKLA8?si=erzAgpzqdGTWUCx->

Before activity commencement, provide a safety briefing which describes appropriate gear use, the route, introduces/reviews river hazards, group management, and how to manage incidents. Share some basic hand signals:

<https://youtu.be/wnD2DQrENiQ?si=jvKyFaS21yEzTH0h>

Keeping the group together is important in an aquatic environment where participants may require immediate assistance to prevent drowning. This is particularly important in sections of moving water: alongside the noise of the water and the difficulty of communication, the

likelihood of drowning increases. Assistance should be nearby to help negotiate obstacles and respond to incidents.

It is also recommended to limit the number of people/lilos moving through obstacles (eg a rapid) at any one time to minimise risks of multiple people being caught in hazardous obstacles, and so that an effective emergency response can be implemented if needed.

Lead and sweep the group: <https://youtu.be/N4WgJOzTH9M?si=Y7AAkLOJhgsJdPzk>

Participant Considerations

Swimming ability is a key consideration for participants when liloing. Different people will have varying swimming ability or fitness and will be affected differently by water temperatures (leading to fatigue or hypothermia for example). A non-swimmer does not need to be excluded from liloing activities but may require assistance or additional equipment (eg a life jacket).

Children

Liloing can be a great activity for children to participate in. Additional considerations for children participating in liloing activities include:

- Children are generally more susceptible to thermal injuries (eg hypothermia or hyperthermia)
- Children are more prone to fatigue (aside from trip design considerations around the intended route, this can also lead to drowning).
- Children may require additional supervision and assistance (eg in assessing hazards, managing risks, completing physically arduous tasks or simply in carrying equipment)

Minimal Impact

Additional minimal impact considerations for liloing include:

- **Travel and camp on durable surfaces**
 - Bank erosion (at water entry and exit points, or along the edge of the waterway) is one of the most obvious impacts in frequently visited liloing locations. Where possible, try and enter or exit the water via hard surfaces (eg rock platforms) or sandy beaches.
- **Dispose of waste properly**
 - Disposing of human waste in liloing locations can be difficult. Consider the need to carry out human waste (eg in 'poo tubes' or 'wag bags')
- **Leave what you find**
 - Don't take invasive species home with you. After a liloing trip, equipment should be cleaned thoroughly to avoid the spread of weeds, soil borne pathogens and plant fungal diseases across waterways (eg phytosphthora or Didymo⁹).

⁹ "Didymosphenia geminata, commonly known as didymo or rock snot, is a species of diatom that produces nuisance growths in freshwater rivers and streams with consistently cold water temperatures and low nutrient levels.[1] It is native to the northern hemisphere, and considered an invasive species in Australia..."

https://en.wikipedia.org/wiki/Didymosphenia_geminata

Equipment and logistics

Lilos

While there is a broad range of improvised watercraft that have been used historically for liloing, this guidance document provides the following recommendations for what might be an appropriate choice of lilo:

- does not sink with the expected load on board.
- is durable enough for the expected terrain and usage.
- remains horizontal when swamped and remains suitable as buoyancy.
- is easy to carry to and from the water and while portaging to bypass obstacles.
- is capable of being grasped by one hand.
- any grab, outside lines, end loops or toggles are suitably attached and do not form entrapment hazards.
- does not impede exit in the event of capsize.
- the stability of the craft is suited to participant capabilities.
- the material or finish does not cause injury.

Lilos may include:

- Commercially available river sleds (or “sledges”)
- Inflatable mattresses (air mattresses)
- Inflatable pool sunbeds (and other similar inflatable pool accessories)
- Other improvised watercraft (used without a paddle)
- Some small and light pack rafts (used without a paddle)

Lilos exclude:

- Home-made rafts (eg barrels lashed together).
- Canoes, kayaks and other paddle craft.
- Surf craft (surf boards, body/boogie boards).
- Stand up paddle boards (SUPs).

Lilo repair kit:

Punctures and slow leaks are common. Take spare material, scissors, and appropriate glue or tape for repairs.

Clothing

The key consideration with clothing for liloing is that it offers appropriate thermal protection while immersed in water. Liloing clothing for warmer water or short distances may simply be bathers/swimmers, but in colder gorges or for extended periods immersed in water clothing may include many additional layers. Clothing needs will vary for different participants on the same trip based on a range of factors – there is no one solution for everyone.

In addition to the likely weather conditions and ambient air temperature, some considerations in determining the thermal protection to use include:

- expected time to complete the intended route
- length and frequency of compulsory swims
- water temperature
- opportunities for rewarming on the route
- the physical attributes of individuals.

Liloing clothing that offers thermal protection may include:

- Wetsuits (drysuits are not common in liloing due to the high likelihood of punctures in a bush environment)
- thermal underwear
- beanies/warm hats
- gloves
- neoprene socks ('booties')
- windproof jacket

Cotton is a poor choice of material for thermal protection. Wool and synthetics (eg polypropylene) are recommended.

In addition to thermal protection, clothing should offer appropriate sun protection, and ideally would be of a colour that makes it easily visible for other water users or rescue services.

It is strongly recommended that all participants have spare warm/dry clothing available for use in an emergency.

Prescription glasses (and sunglasses) should be secured with a suitable restraint.

Footwear

Footwear is strongly recommended for liloing except on very short swims with entry and exit points from the water that are clear of hazards.

Considerations for footwear for liloing include:

- grip for the type of terrain expected
- the weight of the footwear when wet
- the ease of swimming in the footwear
- the likelihood of the footwear staying on the foot (including in moving water)

Enclosed shoes are strongly recommended.

Packs and Waterproofing

The key consideration for packing equipment on a liloing trip is keeping critical equipment dry while being constantly immersed in water. Other additional considerations for liloing activities are the weight of the pack when wet, and the ability of the pack to drain when getting out of the water.

Options for waterproofing equipment inside back packs include:

- commercially available dry bags
- small barrels ('canyon keg' or Darren drum')
- 2 or 3 layers of robust garbage bags individually twisted and tied

Shelter

Even on day trips, carrying shelter for liloing is recommended. An excellent emergency shelter to consider for liloing trips is a 'bothy bag' (also known as a storm shelter).

Helmets

For liloing activities that are conducted on inland waterways, **on flat-water or up to Grade 1 white-water** (and specifically excluding vertical canyoning activities) helmets are generally not required.

Helmets are recommended for liloing when:

- The likelihood of an object falling from above is high (eg trips in narrow gorges, in high wind, after fires, or when some participants might be above other participants like on steep terrain or when scrambling)
- The likelihood of slips, trips, or falls is high (eg slippery rocks, scrambling)
- When in fast moving water

The type of helmet recommended varies depending on the hazard. Helmets are designed to reduce potential injury by dissipating energy from impact forces. Helmets from different activity disciplines (eg climbing vs cycling) are designed with specific impact forces in mind (eg objects falling from above vs blunt impact on any side). Climbing helmets are only appropriate on liloing trips where the identified hazard is falling objects. Cycling helmets are generally not appropriate for liloing activities.

For many liloing trips a hat (or helmet with sunshade) would be a much better choice than a helmet for managing the key risks for the activity (i.e. sun burn and heat injuries).

Lifejackets

Lifejackets (also known as a personal floatation device or PFD) are recommended for non-swimmers. Weak swimmers may consider wearing a lifejacket but may also find that the amount of buoyancy provided by the clothing worn (eg wetsuits instead of thermals) or the equipment used (eg drybags or lilos) provides sufficient buoyancy.

Considerations for the provision of lifejackets for all participants include:

- the amount of *reduced* buoyancy caused by clothing worn (eg heavy jumpers) or the equipment carried (eg other equipment in the pack)
- the water hazards likely to be encountered.
- the water temperature and time spent in the water
- the swimming ability of participants.
- the availability of other buoyancy aids
- fatigue during the activity.

If life jackets are worn, they must be the correct size and fitted correctly.

Inflatable lifejackets (i.e. automatic or manual inflating lifejackets) are not recommended for liloing.

Emergency equipment

Additional emergency equipment considerations for liloing include:

- whistles (or waterproof UHF radios) for communications near noisy waterways
- heat sources (e.g. stove and related equipment)
- emergency shelter suitable for use in a wet environment (e.g. space blanket, synthetic sleeping bag, bivvy bags, bothy bag, insulated ground mat)
- goggles or diving mask

Food and water

Additional considerations for liloing activities include:

- Carrying a stove and fuel for making hot drinks and food to re-warm a cold or injured person. (You should not rely on being able to make a fire.)

- Carrying an insulated flask (eg a thermos) with hot drinks to re-warm a cold or injured person (and to keep morale high!). (A stove is preferable to an insulated flask.)
- Carrying increased amounts of food than normal due to the increased energy demands of the activity (eg from the cold water and the full body workout)
- Remembering to drink water. Dehydration is common when you're always swimming and forget to drink.

Navigation

The key additional considerations for the activity of liloing with regard to navigation are:

- Knowing exits and not missing them
- Understanding the difference in estimating distance and time when travelling on water
- The need to have waterproof navigational tools (e.g. waterproof maps)

Emergencies

The most likely injuries when liloing have to do with the temperature of the human body. It is absolutely worth revisiting these topics for liloing trips:

- Cold illnesses <https://bushwalkingmanual.org.au/emergencies/cold-illnesses/>
- Cold water immersion <https://bushwalkingmanual.org.au/emergencies/cold-water-immersion/>
- Maintaining core temperature <https://bushwalkingmanual.org.au/emergencies/maintaining-core-temperature/>

Heat illnesses are unlikely while liloing, but sun protection and hydration remains very important.

First aid

First aid for liloing is as for swimming and bushwalking. There are no particular additional considerations of injuries, however a review of first aid kit contents is recommended. Consideration should be given to the kinds of injuries that might be more likely on liloing trips. For example, an increased likelihood of joint injuries (eg twisted ankles in moving water, or shoulder injuries from over using shoulders while swimming) might mean carrying a portable splint and/or support bandages for knees and elbows.

Hazards

General Hazards

In addition to general bushwalking hazards, there are a range of additional hazards that may be present when liloing. Aside from the weather and waterway specific hazards (see section below) additional hazards may include but not be limited to the following:

- presence of people hazards (e.g. anglers, vessels, swimmers or other site users)
- presence of wildlife (eg increased likelihood of leeches, swimming snakes, or crocodiles in the northern parts of Australia)
- increased likelihood of ingesting contaminated water (due to being immersed in it!)
- hazards relating to prolonged immersion in water (eg trench foot, cold water immersion, or other cold injuries)
- slippery terrain (eg moss and algal covered rocks)

- the possibility of lilos being damaged (eg a hole that can't be repaired) or participants becoming separated from their lilo

Weather and environmental Hazards

Liloing is often conducted at the lowest point in the landscape and as a result it is difficult to monitor incoming weather. As a result, groups need to be much more diligent about forecasts and noting changes in the weather (wind changes, cloud speed and direction, etc).

Additional weather and environmental hazard considerations for liloing activities include:

- drought (insufficient water in the waterway, and/or exposed hazards)
- lightning (get off the water and seek shelter)
- extremes of temperature (particularly cold)
- wind (particularly in consideration of wind chill when wet, but also for impeding progress on open waterways)

Waterway Hazards

The most significant additional hazards for the activity of liloing relate to the waterway.

Water Quality

Areas where the water is polluted should be avoided. Polluted or contaminated water may include:

- chemicals
- sewage
- urban or industrial runoff (eg. from mines)
- animal waste or carcasses
- waterborne microorganisms (e.g. E.Coli, Gardia, blue-green algae, Cholera, Hepatitis, etc.).
- rubbish or floating debris.

Water Temperature

The temperature of the water when liloing is a significant hazard that should be managed through a variety of mechanisms:

- participant considerations (eg avoiding taking small children in cold water for prolonged periods)
- route design (eg ensuring that there are adequate opportunities for rewarming if required)
- equipment and clothing
- use of buoyancy (eg staying on your lilo as much as possible)
- food and water consumption (eg staying hydrated)
- group size (which impacts the speed of the group)
- avoiding compounding factors (eg wind chill)

Water Levels

Water levels change the dynamics of waterways and the hazards associated with the activity. Changing water levels may make a route impassable. Droughts and low water can expose new hazards. Elevated water levels can contain floating debris, increase pollution, or increase the challenge of the trip beyond individual capabilities.

In addition to the weather and forecast weather, water levels are impacted by:

- current seasonal factors (eg prolonged drought)
- characteristics of the catchment and waterway (eg geography and geology),
- water releases (or drawdowns) from dams or industry,

- the current conditions within the catchment (eg recent fires, soil saturation)

To assess the water level groups should consult the Bureau of Meteorology (or other relevant water level information and/or flood warning information), relevant local information sources (e.g. river gauges, dam operators, waterway guides, etc.) and/or complete an inspection of the site.

Water Grading and Features

Many outdoor clubs have a system of trip grading. It is strongly recommended that the international whitewater grading system¹⁰ is used for the 'on-water' part of the activity. The activity of liloing is only recommended where the waterway is flat-water or Grade 1 white-water.¹¹

Some considerations for assessing the waterway when planning or conducting a liloing activity:

- how clear the water is and if the base can be seen
- the depth, volume and velocity of the water
- where the water flows to (the flow may wash people into dangerous situations)
- the base of the waterway (e.g. pebbles, sand, small rocks or large rocks), it's stability, and the danger of foot entrapment
- riverbed (bathymetry) conditions or changes
- slippery surfaces
- sinking into mud or sand
- sequential obstacles (e.g. where one obstacle leads in to the next with no safe spot to stop)
- the ease of getting out of the water at any time (including in order to avoid obstacles) (e.g. steep slopes/cliffs, undercut banks, vegetation, etc.)
- man-made hazards along the waterway (eg fences, pipes, bridges, weirs, pontoons, etc)

Groups should be able to identify the following hazardous water features when undertaking liloing activities.

- aerated water
- drops
- entrapment points
- fast flowing water (and strong currents)
- hazardous floating objects and debris
- hazardous submerged objects
- undercut rocks
- re-circulations (and weirs)
- sieves (and funnels or whirlpools)
- strainers
- waterfalls

¹⁰ Find out more about white water grading here:

https://en.wikipedia.org/wiki/International_scale_of_river_difficulty

¹¹ Water features above Grade One may be present on a waterway, but a group should avoid them by portaging around those obstacles.

Hazards associated with Water Jumps and Slides

Jumping or sliding into water¹² can be an excellent optional activity as part of a liloing activity. Diving into water should be avoided. Some hazards and risks when jumping or sliding into water that should be considered include:

- any items worn that may be loose or become dislodged, lost or damaged (e.g. prescription glasses, contact lens, sunglasses, dentures, hearing aids, insulin pumps, cameras, etc.)
- unintended falls from height
- the depth of water and obstacles within the landing area
- equipment (including packs) causing injury, tangles or entrapment is minimised
- appropriate technique – especially for a safe landing.

Flooding

Flooding, flash flooding or fluctuating water levels are major hazards for liloing. Considerations relating to the impact of floods on the activity must include the time required to exit the waterway, the availability of high ground (or safe places), and changing water hazards. If a waterway is in flood or at risk of flooding, it should be avoided. Forecasting flooding on waterways can be complex and when in doubt the activity should be postponed. If caught in a flood evacuation should be sought as soon as possible.

Further reading

<https://www.wildernessadventures.net.au/canyoning/liloing>

<https://www.outdoortrail.com.au/colo-river-kayaking-and-liloing/>

<https://australianaas.org.au>

¹² For additional information see the Australian Adventure Activity Standard *Inland Water Paddle Craft Good Practice Guide* Appendix 7: *Jumping, sliding or swinging into water*.