

Purpose

This guide provides practical direction for identifying and managing hazards associated with working in water, including wading operations.

Working in water presents significant risks, including drowning, slips and falls, cold exposure, and environmental hazards. These risks must be identified and controlled through proper planning, hazard recognition, and appropriate control measures.

When This Guide Applies

This guide must be followed when work involves:

- Standing or working in water (wading)
- Field sampling, monitoring, or inspections in water
- Installation or maintenance of equipment in aquatic environments
- Work near rivers, streams, lakes, or flooded areas

Geographic Applicability and Limitations

This guide does not replace project-specific risk assessments, Safe Work Procedures, Animal Use Protocol requirements, or applicable regulatory requirements. Additional hazard assessments and control measures must be implemented where specific hazards exist.

This guide has been developed based on hazards, environmental conditions, and regulatory requirements applicable to Manitoba.

Work conducted outside Manitoba must include a documented review of location-specific hazards, environmental conditions, and applicable regulatory and public health requirements. Controls must be adjusted accordingly to ensure compliance and safe work practices.

Understanding the Hazard

Working in water exposes workers to multiple hazards, often simultaneously.

Primary risks include:

- Drowning or submersion
- Slips, trips, and falls on uneven or unstable surfaces
- Cold water exposure, including cold shock and hypothermia
- Strong currents or rapidly changing water levels
- Entrapment or entanglement in debris or equipment
- Fatigue and reduced mobility
- Environmental exposure (weather, visibility)

These hazards may increase rapidly due to changing environmental conditions.

Hazard Identification

Hazards must be identified prior to entering the water and continuously reassessed during work.

Consider:

- Water depth and flow rate
- Stability of the streambed or surface
- Presence of debris, vegetation, or entanglement hazards
- Weather conditions and visibility
- Water temperature
- Access and egress points
- Remoteness and emergency response capability

Hazard identification must be completed as part of the **Field Risk Assessment**.

Risk Assessment

A Field Risk Assessment must be conducted before work begins.

The assessment must consider:

- Likelihood of loss of footing or submersion
- Severity of hazards (e.g., drowning risk)
- Worker experience and competency
- Environmental variability (e.g., changing currents)
- Availability of rescue equipment and communication

Work must not proceed if risks cannot be adequately controlled.

Control Measures

Safe Work Practices

Workers must enter water slowly, maintain stable footing, and remain aware of changing conditions. Work must be conducted in teams where possible, and workers must not enter water where depth or current cannot be safely assessed.

Administrative Controls

Work must be planned in advance, including identification of hazards, communication methods, and rescue procedures. Entry and exit points must be clearly identified, and a rescue plan must be established before work begins.

Workers must not work alone where there is a risk of drowning unless appropriate controls are in place.

Personal Protective Equipment (PPE)

PPE must be selected based on the hazard assessment and may include:

- Personal flotation device (PFD) where drowning risk exists
- Waders or waterproof clothing
- Wading boots or non-slip footwear
- Thermal protection (as required)
- Gloves
- Weather-appropriate clothing

Equipment and Emergency Preparedness

Workers must ensure appropriate equipment is available and functional, including:

- Throw rope or rescue device
- Communication device (radio, phone, satellite device)
- Wading staff (for balance where required)
- First aid kit appropriate to the environment

Recognizing Illness or Injury

Workers must monitor for signs of:

- Cold exposure or hypothermia
- Fatigue or reduced stability
- Slips, trips, or near misses
- Difficulty maintaining footing or balance

Early recognition is critical to preventing escalation.

Exposure Response

Loss of Footing or Submersion

Workers must attempt to regain stable footing and exit the water immediately where safe to do so.

Cold Exposure

Workers must exit the water, remove wet clothing, and begin warming procedures.

Emergency Conditions

- Work must stop immediately if:
 - Water levels rise or current increases
 - Weather conditions deteriorate
 - Visibility is reduced
 - Communication is lost
 - Workers become unstable, fatigued, or cold

Workers must exit the water and reassess conditions before continuing.

Call 911 where immediate emergency assistance is required.

Incident Reporting

All incidents, near misses, and hazardous conditions must be reported in accordance with University procedures.

Incidents must be reported by:

- Submitting the online Incident Reporting Form (EHSO website), or
- Contacting the Environmental Health and Safety Office (EHSO) at 204-474-6633

References

- Manitoba Workplace Safety and Health Act and Regulation
- University of Manitoba Working in and Around Water Program
- University of Manitoba Hazard Recognition Program
- Canadian Centre for Occupational Health and Safety (CCOHS)