

Foot Entrapment

Go Back to Hazard Summary

Warning Signs and Symptoms

- Water Current Present

- Water Shallow Enough to Touch Bottom or Strainers in Water

- Rocky Bottom

- Lack of Access Control to Water

Causes

- Foot Becomes Entrapped on Bottom or Fixed Object. Current Locks Entrapped Limb In Position And Pushes Body Under Water

Potential Effects

- Drowning

- Broken Foot

Mitigation

- Stay Out of Water if Able

- Training in Water Crossing Techniques

- Cutoff Water Flow if Possible

- Wait for Current to Reduce

- Training in Survival Swimming

- Downstream Safety

- Use of Proper Personal Protective Equipment (i.e. Life Jacket, Booties, Wet / Dry Suit)

- Scouting Out of Area for Safest Assess

- Use Local Knowledge of Area If Available

- Use Maps or Charts of Area

Tasks Needed

Holes

Go Back to Hazard Summary

Warning Signs and Symptoms

- Swiftwater Conditions

- Presence of Hole in Moving Water

- Highly Aerated Water

Causes

- Person Becomes Trapped in Recirculating Area of Water. Force of Current Pushes

- Person Underwater and / or Blunt Trauma Due to Rocks or Flotsam

Potential Effects

- Drowning

- Trauma

Mitigation

- Stay Out of Water if Able

- Training in Difference of Smiling and Frowning Holes

- Cutoff Water Flow if Possible

- Wait for Current to Reduce

- Training in Survival Swimming

- Identification of Hole and Briefing For Safety Hazard

- Person Directing Swimmers Away From Hole

- Cross Water / Access Downstream of Hole if Able

- Downstream Safety in Place Above Hole

- Use of Proper Personal Protective Equipment (i.e. Life Jacket, Booties, Wet / Dry Suit)

- Scouting Out of Area for Safest Assess

- Use Local Knowledge of Area If Available

- Use Maps or Charts of Area

Tasks Needed

Strainer

Go Back to Hazard Summary

Warning Signs and Symptoms

- Swiftwater Conditions
- Presence of Trees / Fixed Objects in Water
- Rippling of Water Past Submerged Object
- Flood Waters

Causes

- Person Becomes Entrapped in an Object. The Water Flows By the Object by the Person Gets Pinned in the Object by the Current

Potential Effects

- Drowning
- Trauma

Mitigation

- Stay Out of Water if Able
- Training in Recognition of Strainers in Water
- Cutoff Water Flow if Possible
- Wait for Current to Reduce
- Training in Survival Swimming
- Training in Strainer Crossing Technique
- Identification of Strainers and Briefing For Safety Hazard
- Person Directing Swimmers Away From Strainer
- Cross Water / Access Downstream of Strainer if Able
- Downstream Safety in Place Above Strainer
- Use of Proper Personal Protective Equipment (i.e. Life Jacket, Booties, Wet / Dry Suit)
- Scouting Out of Area for Safest Assess
- Use Local Knowledge of Area If Available
- Use Maps or Charts of Area

Tasks Needed

- Review of Strainer Crossing Technique

Debris

Go Back to Hazard Summary

Warning Signs and Symptoms

- Flood Waters

- Swift Moving Water

- Presence of Flotsam in Water

- Storm or Post Storm Conditions

Causes

- Person Struck by Floating Debris

Potential Effects

- Cuts

- Trauma

Mitigation

- Stay Out of Water if Able

- Cutoff Water Flow if Possible

- Wait for Current to Reduce

- Training in Survival Swimming

- Limit Time in Water As Much as Possible

- Identification of High Debris Areas and Briefing For Safety Hazard

- Upstream Spotter Warning of Flotsam

- Downstream Safety

- Personal Protective Equip (i.e. Life Jacket, Helmet, Booties, Wet / Dry Suit, Gloves)

- In Water Awareness of Surroundings - Whistle / Hand Signals From Shore

- Scouting Out of Area for Safest Access

Tasks Needed

Submerged Objects

Go Back to Hazard Summary

Warning Signs and Symptoms

- Swiftwater Conditions - Hydraulic of Water
- Presence of Trees / Fixed Objects in Water
- Rippling of Water Past Submerged Object
- Poor Navigation

Causes

- Person Flowing With Current Strikes Submerged Object

Potential Effects

- Cuts, Trauma

Mitigation

- Stay Out of Water if Able
- Operations in Slow Moving Water if Able
- Training in Recognition of Hydraulic Action in Water
- Cutoff Water Flow if Possible
- Wait for Current to Reduce
- Training in Survival Swimming
- Limit Time in Water As Much As Possible
- Zip Line Technique Used For Crossing
- Tethered Boat Used for Access
- Marking / Note Safety Hazards in Pre-Brief
- Cross Water / Access Downstream of Hazard Area if Able
- Downstream Safety in Place Above Hazard Area
- Use of Proper Personal Protective Equip (i.e. Life Jacket, Helmet, Booties, Wet / Dry Suit)
- Scouting Out of Area for Safest Assess
- Use Local Knowledge of Area If Available
- Use Maps or Charts of Area

Tasks Needed

Swept Off Feet

Go Back to Hazard Summary

Warning Signs and Symptoms

- Fast Moving Water
- Water Level Above Ankles
- Loose and / or Slippery Bottom
- Flotsam In Water
- Individuals Alone in Water
- Poor Access Control of People Near Water
- Smooth Soled Shoes
- Loose Gravel / Rocks on Bottom
- Night Operations
- Inclimate Weather

Causes

- Person Standing Or Walking in Moving Water Swept Off Feet Or Knocked Off By Flotsam
- Fast Moving Water Pushes / Floats Rescuer Away

Potential Effects

- Cuts, Trauma From Fall. May Lead To Foot Entrapment, Being Swept Into Holes, Strainers, Rocks, or Other Hazardous Area

Mitigation

- Stay Out of Water if Able
- Cutoff Water Flow if Possible - Controlled Release
- Wait for Current to Reduce
- Training in Survival Swimming
- Limit Time in Water As Much As Possible
- Training in Shallow Water Crossing Techniques
- Safety Briefing for All Personnel Around Water
- Limit Access to Water Area / Access Points
- Downstream Safety in Place Above Hazard Area
- Use of Proper Personal Protective Equipment (i.e. Life Jacket, Booties, Wet / Dry Suit)
- Scouting Out of Area for Safest Assess
- Use Local Knowledge of Area If Available
- Use Maps or Charts of Area
- Swim Across in Slow Current Area
- Use Boat for Crossing in Slow Current Area
- Use Secure Bridge if Available

Tasks Needed

Low Head Dam

Go Back to Hazard Summary

Warning Signs and Symptoms

- Fast Moving Water

- Low Head Dam

- Recirculating Water Area On Downstream of Dam

- Boil Line Downstream of Dam

- Manmade Lake, Reservoir, or Flood Control Area

Causes

- Person Swept Over or Pulled Into Area of Low Head Dam.

Potential Effects

- Recirculating Water Traps Person In Front of Boil Line. Aerated Water Will Not Support Floatation Above Water Line. Person Drowns or Suffers Trauma From Flotsam Also Trapped in Front of Boil Line

Mitigation

- Stay Out of Water if Able

- Cutoff Water Flow if Possible

- Wait for Current to Reduce

- Training in Survival Swimming

- Severely Limit Work Near Water Upstream of Low Head Dam

- Severely Limit Work Near Boil Line of Low Head Dam

- Water Rescue Policy - Reach or Throw Rescue Only With Low Head Dam

- Mark Safety Hazard, Brief Presence of Low Head Dams

- Downstream Safety in Place Above Hazard Area

- Use of Proper Personal Protective Equip (i.e. Helmet, Life Jacket, Booties, Wet / Dry Suit)

- Use Local Knowledge of Area If Available

- Use Maps or Charts of Area

- Training in What To Do If Caught in Low Head Dam (Classroom Only)

Tasks Needed