

# DRAFT PADDLE CANADA NATIONAL SEA KAYAK PROGRAM

This draft manual has been released for membership review.

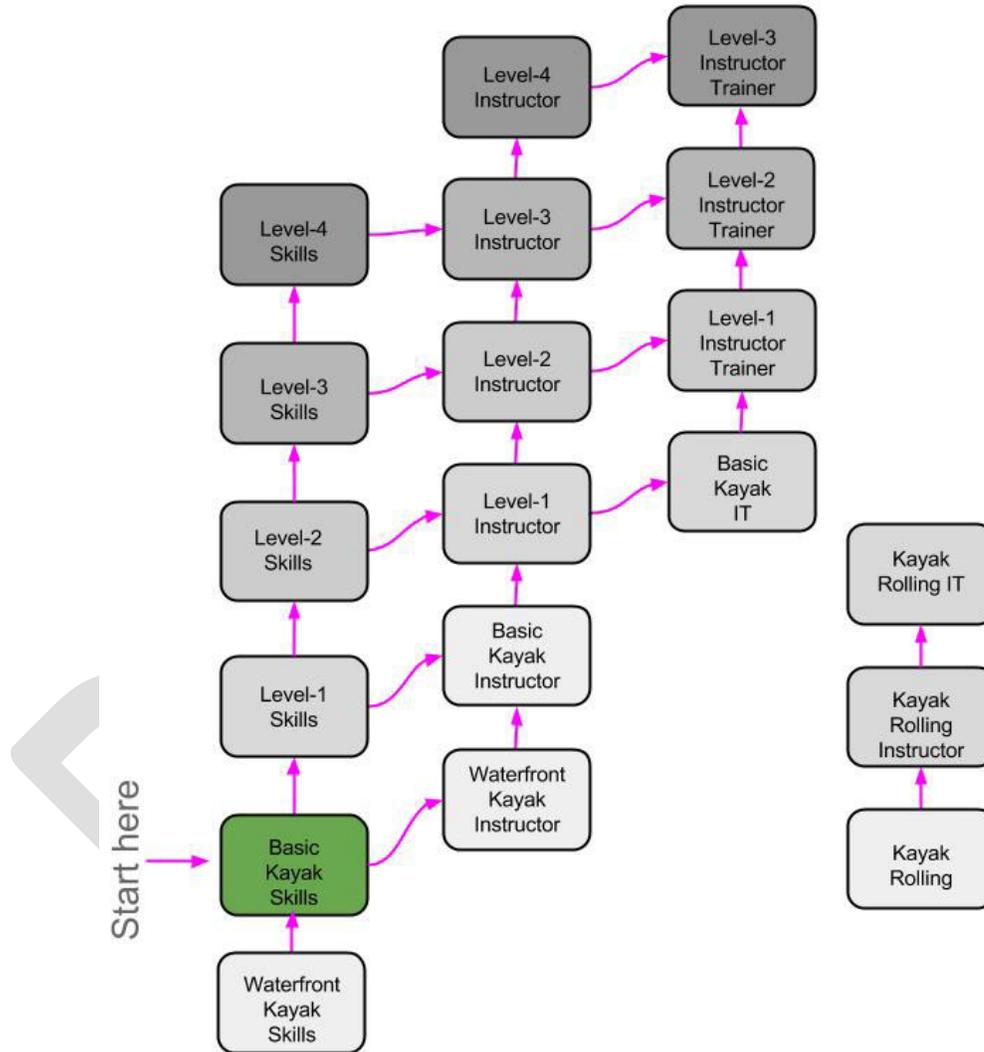
Help us improve the program by sharing your thoughts by March 31,  
2017 by going here: <https://paddlecanada.typeform.com/to/okzMEk>



PADDLE  
CANADA  
PAGAIE  
CANADA

# Sea Kayak Program Mission

To promote and teach the necessary knowledge, skills, and safe use of paddling sea kayaks on all Canadian waterways. Through our support for a safe, enjoyable, and accessible paddling community, we develop a love and respect for the environment and nature as well as an understanding of sea kayaking's place in our Canadian heritage.



## General Instruction Style Expectations

We expect students to progress with increasing competence as they move through the program and instructors are expected to adjust their teaching to suit these evolving competencies. Our goal is for the paddler to become more independent and able to support others while responding safely to a changing and complex paddling environment. This can be summarized as a progressive and safe response to: *Me - We - Sea* where the paddler first concentrates on their own skills (*Me*). As these develop, they are then able to capably assist and support their fellow paddlers (*We*). With further training and experience, this extends to making decisions with a full consideration of the paddling environment (*Sea*).

Since paddling takes place in the physical world, Paddle Canada places emphasis on the physical environment in our progression. As such, our environmental guidelines emphasize weather, terrain, sea state as well as group factors in managing risk and making sound decisions. Accordingly our water classification system takes into account the physical, social and psychological environment.

# Waterfront Kayak

The Waterfront Kayak Program is designed to provide knowledge and skills necessary for “beachfront” paddling activities. The items chosen for inclusion in this program are of importance to individuals being introduced to kayaking in a summer-camp environment. The program is designed to teach skill development, safety, and an understanding of limitations primarily through the use of games and activities.

## Course Description

This course introduces the beginner to kayaking in calm waters in a designated waterfront area. The skills and knowledge gained at this level form the foundation necessary for confident and safe travel within small and calm environments. Programming is delivered primarily through paddling games and group activities.

## General Learning Outcome

Students who complete the Waterfront Kayak program are considered to be beginners, capable of performing the basic strokes to manoeuvre a kayak for short distances.

## Prerequisites

None

## Course Length

5 hours, minimum. This program can be taught as one, 5-hour session or as several mini sessions, depending on the needs of the organization or group.

## Class Ratio

1 instructor:6 participants

## Minimum Staff & Certification

One Basic Kayak Instructor.

## Environmental Conditions and Sea State

Conditions should not exceed water class-0. Please see [Appendix A](#) for a specific description of all water classifications.

Class-0 environment: Non-challenging protected waters with limited wind effect, little or no current, easy landings, and ready access to land-based assistance. Wind and sea state is calm to rippled (< 8 knots).

The course must take place in a suitable lake or pond and in a designated area free of powerboat traffic and no more than 100 meters from shore.

## Teaching Notes

Summer-camps or organizations wishing to run kayak programs where the participants are taken on a paddle outside the designated waterfront paddling area as outlined below (e.g., for a multi-hour excursion), then the trip leaders must gain Basic Kayak Instructor certification rather than Waterfront Kayak Instructor certification.

The use of spray skirts is optional for this program.

The student will be introduced to the skills and theory by way of demos, games, lecture, etc. The instructor can adjust the requirements based on the age level.

Resources from the Paddle Canada PaddleSmart program can be incorporated if the instructor is also trained to deliver the PaddleSmart program.

## Assessment

Activities focus on safe, fun, and comfortable paddling in a designated and calm environment close to the shoreline. While there is a great deal to learn at this level, activity should concentrate on progress through teamwork in paddling games, activities, and the awareness for future learning. Participants should leave the course empowered and motivated to continue their learning and aware of their individual limitations.

## Learning Outcomes

### Re-entry Skills

Re-entry skills concentrate on the safety of the individual paddler while paddling near shore with easy, uninterrupted landing opportunities.

### Wet exit

- The student will:
  - Release the spray skirt and exit the kayak in a controlled and confident manner.
- General description:
  - Developed through a series of challenges that increase confidence and skill, the student will be able to capsize the kayak while underway and braced inside the cockpit.
- Teaching notes:
  - Emphasis is on increasing time underwater before exiting to a suggested 5 seconds and hanging on to the paddle and boat upon surfacing.
  - Spray skirt to not need to be used to complete this skill.

### Retrieving a swamped kayak

- The students will swim out 25 m to a swamped kayak and swim it back to shore.

### Paddle in place

- The student will demonstrate how to keep their kayak in one place and keep it pointing into the wind.

### Assisted re-entry

- The student will attempt an assisted re-entry.
- Teaching notes:
  - This is an activity that can be done if the instructor has time.
  - Additional rescue and safety demonstrations can be drawn from skills the instructor has acquired from the Waterfront Kayak Instructor course.

## paddling Skills

Instructors have the flexibility to adjust the course to meet the needs of their students. Additional paddling skills and strokes can be drawn from skills the instructor has acquired from the Waterfront Kayak instructor course.

### Lifting and carrying the kayak

- While in pairs, students will demonstrate the safe and proper way to lift and carry a kayak.

### Launching/landing a kayak

- The student will demonstrate safe entering and exiting a kayak from both a beach and alongside the shoreline or low dock.

### Forward and reverse strokes

- The student will:
  - Paddle forward 75 metres in a relatively straight line.
  - Paddle in reverse for 20 metres in a relatively straight line.
- Teaching notes:
  - Students should be reminded to look backwards where they are going when paddling in reverse.

### Stopping

- The student will:
  - Stop the kayak without changing the kayak's heading while paddling at a moderate speed.
- General description:
  - Use small reverse strokes (when travelling forward) on alternating sides.

### Forward and reverse sweep strokes

- The student will:
  - Use forward and reverse sweeps to turn the kayak in each direction.
- General Description:
  - The paddle blade should be fully submerged just below the surface, and placed near the boat at the toes.
  - Maintaining both arms in an extended position with minimal elbow flex, face the direction the bow is moving and sweep the blade away from the boat in an arc.
  - Blade exit is dependent upon how much turn is required along with keeping a moderate cadence. Students should be encouraged to remove the blade from the water at or just past the hip.

### Draw stroke

- The student will:
  - Use a draw stroke to move the kayak sideways 2 metres.
- Teaching note:
  - While students should be encouraged to demonstrate the stroke with a vertical paddle shaft and effective torso rotation, at this level emphasis should be placed on boat movement rather than strict paddler form.

## Knowledge

### Kayak Outfitting, Gear and Clothing

- Students should be familiar with:
  - Parts of the kayak and basic outfitting for personal fit, control and safety.
  - Proper care of the paddle, lifejacket and kayak.
  - Clothing appropriate for paddling in different water temperatures and weather conditions.
  - The proper use of basic paddling and safety equipment required for kayaking.
  - Different warm-up procedures that can prevent common injuries.

### Journeying and Seamanship

Developing good judgment is fundamental and should be encouraged at all levels.

- The student will:
  - Understand the necessary judgement and decision-making process prior to going out kayaking.
- Teaching notes:
  - ⌚ Typically this can be accomplished in 10–15 minutes.
  - Discussion topics can include:
    - How to assess the local environmental conditions.
    - The importance of developing a paddling plan and telling somebody responsible before you go.
    - Where to get a local weather forecast.
    - Other locations suitable for calm-water paddling.
  - Concerns of judgment at this level provide more questions than answers and because of the students' lack of paddling experience. Because of that they must be advised to err on the side of considerable caution.
  - Discussions related to journeying and seamanship need to focus on general patterns and accepted rules, and they should emphasize the need for continued training and additional experience.

# Basic Kayak Skills

Introduction to foundational sea and flat water kayaking skills.

## Course Description

This is the starting point of the Paddle Canada Sea Kayak skills progression. With a focus on foundation skills and knowledge, Basic Kayak Skills inspires students to go out on short paddling excursions in calm and sheltered waters.

## General Learning Outcome

Upon completion of the course, students will be able to confidently paddle in [class-0](#) or calm, sheltered waters in the company of peers with similar abilities.

## Prerequisites

None

## Course length

8 hours of instruction (1 day), minimum 6 hours instruction on the water.

## Class Ratio

1 instructor:6 participants

## Minimum Staff & Certification

One Basic Kayak Instructor

## Environmental Conditions and Sea State

Conditions should not exceed water class-0. Please see [Appendix A](#) for a specific description of all water classifications.

Class-0 environment: Non-challenging protected waters with limited wind effect, little or no current, easy landings, and ready access to land-based assistance. Wind and sea state is calm to rippled (< 8 knots).

## Teaching Notes

While there is a great deal to learn at this level, the activities should concentrate on personal progression and an awareness of the need for future learning. Students should leave the course encouraged to continue their learning and be aware of their individual limitations.

Suggested teaching times listed are intended to be used as a resource for new instructors and to help experienced instructors understand how much emphasis should be placed on each topic. Instructors can use their discretion to shorten or lengthen suggested times as they see fit.

## Assessment

Assessment will be through practical exercises with a focus on developing the participant's awareness of their personal roadmap to future learning.

## Learning Outcomes

### Re-entry Skills

 Typically the Re-entry Skills portion of Basic Kayak can be taught in about 1.5-2 hours.

#### Wet Exit

- The student will:
  - Release the spray skirt and exit the kayak in a controlled and confident manner.
- General description:
  - Developed through a series of challenges that increase confidence and skill, the student will be able to capsize the kayak while underway and braced inside the cockpit.
- Teaching notes:
  - Emphasis is on increasing time underwater before exiting to a suggested 5 seconds and hanging on to the paddle and boat upon surfacing.

### Assisted re-entries

- The student will:
  - Wet exit and re-enter the kayak in deep water with assistance from another paddler.
  - Demonstrate the rescue as both a swimmer and the assistant.
- Teaching notes:
  - Aids such as a stirrup may be used.
  - The spray skirt must be in place for the capsize.
  - The re-entry is complete when the excess water is removed from the cockpit, the swimmer is back in the boat, the spray skirt is reattached and the paddler has regained sufficient stability to continue paddling effectively.

## Padding Skills

### Lifting and carrying a kayak

- The student will:
  - Demonstrate an ability to lift and carry a kayak in tandem with another person safely.
- Teaching notes:
  - Effective visual and verbal communication should be encouraged.
  - Emphasis should be placed on lifting with legs and not the back and being careful on uneven or slippery ground.

### Launching and landing

- The student will enter and exit a kayak safely from either a beach or dock of low or medium height.

### Forward stroke

- The student will:
  - Paddle forward on a short journey (200 metres or more) in a straight line under control without the use of a rudder or skeg.
- General description:
  - The blade should enter the water at or near the toes, be fully submerged and leave the water at or just past the hips.
  - It is important that torso rotation be introduced and encouraged at this level in order to develop proper technique early on. However, not all Basic participants will have the ability or the confidence to consistently use effective torso rotation.

## Stopping

- The student will:
  - Stop the kayak without changing the kayak's heading while paddling at a moderate speed.
- General description:
  - Use small reverse strokes (when travelling forward) on alternating sides.

## Reverse stroke

- The student will:
  - Paddle in reverse over a short distance (50 metres or more) in a straight line without the use of a rudder or skeg.
  - Look behind them periodically.
- General description:
  - The blade should enter the water just behind the hips and leave the water around the knees.
  - Ensure full paddle blade submersion for maximum efficiency using the back or non-power face of the blade throughout the stroke.

## Forward sweep stroke

- The student will:
  - Use forward sweeps to turn the kayak in each direction.
  - Attempt to use edging to assist with turning.
- General Description:
  - The paddle blade should be fully submerged just below the surface, and placed near the boat at the toes.
  - Maintaining both arms in an extended position with minimal elbow flex, face the direction the bow is moving and sweep the blade away from the boat in an arc.
  - Blade exit is dependent upon how much turn is required along with keeping a moderate cadence. Students should be encouraged to remove the blade from the water at or just past the hip.

### Reverse sweep stroke

- The student will:
  - Use reverse sweeps to turn the kayak in each direction.
  - Attempt to use edging to assist with turning.
  - Strive to look where they are going rather than watching their blade.
- General description:
  - The stroke should start with the paddle in the stern quarter out at a comfortable distance.
  - Using torso rotation, sweep the paddle blade forward towards the toes just below the surface of the water in a wide arc.

### Pivots

- The student will:
  - Use both forward and reverse sweep strokes to pivot the kayak in both directions.
  - Attempt to edge their kayak to assist with turning.

### Draw stroke

- The student will:
  - Use a draw stroke to move the kayak sideways 2 metres.
- Teaching note:
  - While students should be encouraged to demonstrate the stroke with a vertical paddle shaft and effective torso rotation, at this level emphasis should be placed on boat movement rather than strict paddler form.

### Low brace

- The student will:
  - Simulate a capsize and demonstrate proper low brace technique to recover.
- General description:
  - The back of the blade should be against the surface of the water with elbows directly above the wrists.
  - Pushing the paddle on the surface of the water arrests further tipping into the water while recovery of balance is due to righting the kayak with the lower body.

### Edging

- The student will:
  - Demonstrate the beginnings of good edge control to assist in turning.
  - Paddle forward for 5 metres with the kayak tilted on edge.

## Knowledge

### *Primary Learning Outcomes*

#### Kayak part names and outfitting

- The student will:
  - State the basic name and purpose of the different features of a kayak.
  - Outline the potential risks of paddling a kayak without deck lines, toggles/grab loops or bulkheads.
- Teaching note:
  - ⌚ Typically this can be accomplished in 10 minutes.

#### Paddling and safety equipment

- The student will list the minimum safety equipment for kayaking as required by Transport Canada as well as its proper use.
- ⌚ Typically this can be accomplished in 10 minutes.

#### Injury prevention

- The student will participate in various warm-up procedures that can help prevent common injuries.
- ⌚ Typically this can be accomplished in 10 minutes.

#### Sun sense

- The student will outline the positive effects of sun safety clothing, including hats, sunglasses, and sunscreen.
- ⌚ Typically this can be accomplished in 5 minutes.

#### Collision regulations

- The student will state the basic collision regulations as they pertain to interactions between sea kayakers and other maritime operators.
- Teaching notes:
  - This should be appropriate to the location of the course, with a more general view to the principles of the collision regulations.
  - ⌚ Typically this can be accomplished in 5-10 minutes.

## Navigation

- The student will:
  - Demonstrate the basic concepts of navigation in the context of a short paddle (2 to 3 hours) in protected waters, including:
    - Piloting as it relates to observing landmarks so they can keep track of their location.
    - Keeping track of time to identify how quickly the paddlers are progressing and when to turn back.
  - Conclude that navigation is an essential aspect of kayaking and a topic that is developed in later levels.
- Teaching note:
  - ⌚ Typically this can be accomplished in 10-15 minutes.

## Risk assessment and Mitigation

- The student will:
  - Describe common paddling hazards.
  - Explain how to avoid or reduce exposure to make safe decisions.
  - Use a simple risk assessment framework to identify the risks of paddling in sheltered waters.
  - Explain the basic concepts of hazards, risks, mitigation and benefits.
  - Identify basic paddling hazards.
- Teaching notes:
  - Ensure hazard evaluation includes:
    - Group – Size, Ability, Preparedness
    - Environment - Water/Air Temp, Wind & Waves, Launch/Land Options
    - Equipment – Seaworthy Boats, Safety Gear Including Coast Guard requirements, Clothing
  - ⌚ Typically this can be accomplished in 15-20 minutes.

## Impact of Kayakers on the Environment

- The student will give examples of how kayakers have a negative impact on the local natural environment.
- Teaching notes:
  - Please see [Appendix F](#) for resources.
  - ⌚ Typically this can be accomplished in 5 minutes.

# Kayak Rolling Clinic

## Course Description

To understand the basic mechanics involved in rolling a kayak, and to develop the ability to roll a kayak confidently in calm conditions.

## General Learning Outcome

Upon completion of the course, students will be able to confidently roll their kayak in [class-0](#) or calm, sheltered waters.

## Prerequisites

It is highly recommended that students have Basic Kayak skills certification or equivalent skill and knowledge.

Students must be able to perform a controlled and calm wet exit.

## Course length

2 hours minimum.

## Class Ratio

1 instructor:8 participants

## Minimum Staff & Certification

One Kayak Rolling Instructor

## Environmental Conditions and Sea State

Conditions should not exceed water class-0. Please see [Appendix A](#) for a specific description of all water classifications.

Class-0 environment: Non-challenging protected waters with limited wind effect, little or no current, easy landings, and ready access to land-based assistance. Wind and sea state is calm to rippled (< 8 knots).

## Assessment

While there is no formal certification with this level, assessment will still be made through practical exercises with a focus on developing the participant's awareness and rolling skills as well as a personal roadmap to future learning.

## Learning Outcomes

### paddling Skills

#### Warm-up exercises

- The student will participate in a series of warm-up and stretching exercises which focus on movements and muscle groups used in the roll (e.g., hamstrings, shoulders, arms and back).

#### Wet exit

- The student will:
  - Release the spray skirt and exit the kayak in a controlled and confident manner.
- General description:
  - Developed through a series of challenges that increase confidence and skill, the student will be able to capsize the kayak while underway and braced inside the cockpit.
- Teaching notes:
  - Emphasis is on increasing time underwater before exiting to a suggested 5 seconds and hanging on to the paddle and boat upon surfacing.

#### Safe body mechanics

- The student will give examples of techniques to reduce the risk of personal injury from rolling. This includes discussing proper body position (for both set-up and rolling) to help reduce body strain or injury.

#### Rolling progressions

- The student will demonstrate one or more rolling progressions such as sweep or forward-finishing roll, C to C, or the back deck roll, depending on their flexibility, body type and fitness level.

## Learning aids

- The student will observe the practical application of a variety of learning aids for further practice, such as:
  - an avataq or paddle float
  - a variety of Greenland and Euro paddles
  - goggles and/or nose plugs
  - video camera
  - bow rescue

## Knowledge

### Kayak fit and equipment

- The student will:
  - Demonstrate the proper adjustment of the foot pegs, back-band and/or thigh braces for a proper fit for rolling.
  - State the appropriate paddle length for rolling based on body dimensions.

### Heritage

- The student will discuss the heritage and history of rolling as well as the influence of Greenland and Aleutian kayak cultures.

# Level-1 Skills

Introduction to sea kayak skills.

## Course Description

Building on the information covered in Basic Skills, Level-1 is a two-day course that moves participants beyond flatwater kayaking and into the sport of sea kayaking. The course is conducted in slightly rougher water than Basic Kayak, aiming to develop the paddler's comfort in [class-1](#) waters. There is a strong focus on re-entry techniques as well as the skills required to safely plan and execute a day trip with friends (for example, navigation & route planning, weather interpretation, proper clothing/gear.)

## General Learning Outcome

Upon successful completion of the course, the student will be able to confidently paddle in [class-1](#) conditions in the company of one or more paddlers with similar skills or knowledge. The paddler should be self-reliant yet an asset to the group and an active participant, willing and able to assist others if they need assistance. A Level-1 paddler should be taking on more of a leadership role, especially with group go or no go type decisions.

## Prerequisites

- Certification:
  - Paddle Canada Basic Kayak skills certification or equivalent skill and knowledge at the discretion of the course director.
- Paddling experience:
  - Five kayaking excursions (2 or 3 hours) in [class-0](#) conditions.
  - Can execute a controlled wet exit in [class-0](#) conditions.

## Course length

16 hours of instruction (2 days), minimum 10 hours instruction on the water.

## Class Ratio

1 instructor:6 participants

1 instructor+1 assistant:8 participants

## Minimum Staff & Certification

Instructor: one Level-1 Instructor

Optional assistant(s): one Basic Kayak Instructor

## Environmental Conditions and Sea State

Conditions should not exceed water class-1. Please see [Appendix A](#) for a specific description of all water classifications.

Class-1 environment: Non-challenging waters with mild wind effect (0–11 knots), little or no current (0–0.5 knots), uninterrupted easy landing options, and ready access to land-based assistance. Sea state is calm to light chop.

## Teaching Notes

Suggested teaching times listed are intended to be used as a resource for new instructors as well as help experienced instructors understand how much emphasis should be on each topic. Instructors can use their discretion to shorten or lengthen suggested times as they see fit.

## Assessment

Assessment at Level-1 occurs throughout the program as the instructor observes the participants' performance of each skill and overall development as a paddler. A written test is not required.

## Learning Outcomes

### Re-entry Skills

🕒 Typically the Re-entry Skills portion of Level-1 can be taught in about 2.5-3 hours.

#### Unassisted Re-entry

- The student will:
  - Wet exit and re-enter a kayak in deep water.
- General Description:
  - The re-entry is complete when the excess water is removed from the cockpit, the swimmer is back in the boat, the spray skirt is reattached and the paddler has regained sufficient stability to continue paddling effectively.
- Teaching Notes:
  - The spray skirt must be in place during the capsize.

- Aids such as a paddle float may be used.
- While there is no specific maximum time a student can take, they should be encouraged to move quickly and confidently to complete the exercise without rushing.

### Assisted Re-entry

- The student will:
  - Wet exit then re-enter the kayak with assistance from another paddler while in deep water.
  - Demonstrate as both swimmer and assistant.
  - Have the opportunity to practice both the T-rescue and the raft, re-enter and pump techniques.
- General Description:
  - The re-entry is complete when the excess water is removed from the cockpit, the swimmer is back in the boat, the spray skirt is reattached and the paddler has regained sufficient stability to continue paddling effectively.
- Teaching Notes:
  - The spray skirt must be in place during the capsize.
  - Aids such as a stirrup may be used.
  - While there is no specific maximum time a student can take, they should be encouraged to move quickly and confidently to get back in their kayaks without rushing.

### Towing

- The student will demonstrate a simple contact tow without the use of a towline for approximately 50-100 feet.

## Paddling Skills

### Launching and Landing

- The student will:
  - Launch and land a kayak at each of a beach and/or a low dock.
  - Demonstrate the proper body mechanics to lift and carry a kayak with a partner to prevent injury.
- Teaching Notes:
  - To help prevent potential injury, students should be encouraged to always carry a kayak with two people and not to solo carry it.

### Forward stroke

- The student will:
  - Demonstrate efficient forward paddling, with good speed and control over 200 metres.
  - Paddle forward in a straight line without the aid of a rudder or skeg.
  - Show upright posture and effective torso rotation.
- General Description:
  - The blade should enter the water at or near the toes, be fully submerged and leave the water at or just past the hips.
  - The propulsion stage of the stroke is short and should end just past the hips.

### Stopping

- The student will travel at a moderate speed, then stop the kayak within 4 strokes (2 on each side) without changing heading.

### Reverse stroke

- The student will:
  - Demonstrate controlled reverse paddling with edging while looking back for a clear and safe route.
  - Demonstrate effective torso rotation.

### Sweep strokes

- The student will:
  - Start from a static position and use a series of forward and reverse sweeps to pivot the kayak 360 degrees in both directions.
  - Turn the kayak with a forward (or reverse) sweep stroke and edging while moving with speed.
  - Show efficient placement of the paddle and demonstrate unwinding of the trunk.
  - Students will attempt to push with their lower body towards the direction of travel.

### Draw stroke

- The student will:
  - Move the kayak sideways 3 metres using the draw stroke from a static start
  - Move the kayak sideways 3 metres using the sculling draw stroke from a static start.
  - Use either a side draw or sculling draw, move the kayak on a diagonal (forwards or reverse and sideways at the same time) from a static start.
  - Attempt draw strokes with a vertical paddle shaft and effective torso rotation.

### Low brace

- The student will:
  - Demonstrate correct technique to prevent a capsize with a low brace.
- Teaching Note:
  - Emphasis should be placed on proper body mechanics to prevent shoulder injury: elbow above wrist, back of blade on the water, hip flick/leg drive to regain balance.

### Stern rudder

- The student will:
  - Use the stern rudder stroke to turn the kayak in calm conditions.
  - Demonstrate effective torso rotation for solid paddle placement and appropriate edging for assistance in turning.
  - Will understand the best environmental conditions to apply this stroke (e.g. turning downwind, or to keep going straight on small following waves).
- Teaching Note:
  - Students should be encouraged to experiment with rotating the blade (power face catching water to non-power face catching water) as well as pushing and pulling the blade (pry and draw) to turn the kayak in different directions.

### Edge control

- The student will:
  - Demonstrate confident edge control (on both sides) that assists turning.
  - Hold the edge consistently throughout the turn.
  - Maintain course using edging to correct boat heading as needed.
  - Begin to subconsciously incorporate edging into their strokes and should be gaining confidence with this skill.

## Knowledge

The extent of knowledge required for safe paddling at this level is governed by Class-1 conditions. Activities and topics should be structured in the context of a day-trip with a group of peers of similar kayaking skill level. The content noted throughout this section is not exhaustive and is provided as a guide to the nature and extent of knowledge necessary for safe and enjoyable paddling in [class-1](#) conditions.

## Equipment and equipment care

- The student will:
  - State the key features, attributes and care of paddling equipment, including:
    - Sea kayak, paddle and spray skirt designs as well as bailing devices.
    - Lifejackets and paddling clothing.
    - Equipment required by Transport Canada.
    - Additional safety equipment necessary for sea kayaking (beyond Transport Canada regulations).
    - The purpose and application of both a rudder and a skeg.
  - Demonstrate how to outfit a sea kayak for proper fit and comfort including adjustment of foot pegs, backband, and thigh braces.
  - Demonstrate knowledge of different boat shapes and their effect on the kayak in the water.
  - Organize gear and packing for a day-long outing with a focus on choosing gear needed to participate safely and waterproofing techniques as necessary.
- Teaching note:
  - ⌚ Typically this can be accomplished in 30 minutes.

## Communication

- The student will:
  - Use of various types of signals within the paddling group (e.g. hand, paddle and sound).
  - Outline how one could summon help if needed using various signaling and communication methods including cell phones, VHF radio, and flares).
  - Understand the importance of knowing the best communication tools to use based on the paddling location and the situational needs.
  - Identify the strengths and weaknesses of a variety of communication tools.
- Teaching note:
  - ⌚ Typically this can be accomplished in 15-20 minutes.

## Route planning and basic navigation techniques

- The student will:
  - Describe and use the concepts of basic nautical navigation needed for a safe day trip including piloting, handrails, backstops, time, distance, speed and direction.
  - Use a chart or topographic map to plan an appropriate day trip as well as follow their route during the course of said day trip and be prepared to identify their position when asked.
- Teaching note:
  - ⌚ Typically this can be accomplished in about one hour with ongoing learning reinforcement throughout the day trip.

### Half-day Kayak Journey

- The student will:
  - Go on a minimum ½ day kayak journey.
  - Apply day tripping skills covered in Level-1 in the context of an actual short journey.
- Teaching note:
  - The total day trip distance will be dictated by the environmental conditions and student's needs.

### Weather

- The student will:
  - Demonstrate knowledge of basic weather concepts such as wind direction and speed and how they are related to navigation as well as possible effects on sea state throughout the day and along the route.
  - State the influence of weather on a kayaker on a day-long excursion.
  - Be familiar with the different sources of weather information available appropriate to where they will be paddling.
  - Be aware of the importance of getting a weather forecast in relation to risk management.
- Teaching note:
  - ⌚ Typically this can be accomplished in 20 minutes.

### Sea State

- The student will:
  - State how waves form in terms of fetch, wind strength and basic shoreline effects.
  - Be aware of local tools available for predicting water conditions that will be encountered on a day trip (tide tables, river or lake levels).
- Teaching note:
  - ⌚ Typically this can be accomplished in 10 minutes.

### Risk Assessment and Management

- The student will:
  - Apply a risk assessment framework for route planning and simple incident response.
  - Review the concepts of hazards, risk, exposure, vulnerability, mitigation & benefits.
  - Demonstrate ability to plan and manage risks in a day-long journey with peers in Class-1 conditions.
  - Conclude the importance of, and create, a float plan.

- Respond effectively to a simple on-water scenario as an active member of the responding group.
- Teaching note:
  - ⌚ While an introduction to risk assessment can typically be accomplished in 20-30 minutes, various elements should also be integrated into other sections of the course, which will extend the estimated time.
  - See [Appendix B](#) for examples of various risk assessment frameworks and other resources.

#### Cold issues and sun safety

- The student will:
  - Explain the cause of hypothermia.
  - Identify symptoms of hypothermia.
  - Outline basic treatment for hypothermia.
  - Give examples of proper thermal clothing choices for weather and water temperature.
  - Outline the positive effects of sun safety clothing, including hats, sunglasses, and sunscreen.
- Teaching notes:
  - More resources related to sun safety can be found at: [cancer.ca/en/prevention-and-screening/live-well/sun-and-uv/being-safe-in-the-sun/](http://cancer.ca/en/prevention-and-screening/live-well/sun-and-uv/being-safe-in-the-sun/)
  - ⌚ Typically this can be accomplished in 15 minutes.

#### Impact of kayakers on the environment

- The student will:
  - Give examples of the negative impacts kayakers have on the local environment and how best these can be mitigated.
  - State the core principles of Leave No Trace practices.
- Teaching notes:
  - Topics pertinent to the location of the course should be focused on, including the paddler's ability to easily disturb wildlife (especially any local species at risk) and damage done to habitat by traveling over and along shorelines.
  - See [Appendix F](#) for resources.
  - ⌚ Typically this can be accomplished in 15-20 minutes.

#### History and Heritage

- The student will participate in a discussion on a brief history of the kayak.
- Teaching notes:
  - See [Appendix C](#) for an extensive list of online resources to help with research.
  - ⌚ Typically this can be accomplished in 15-20 minutes.

## Kayaking Community and Resources

- The student will
  - Be made aware of local kayaking community (clubs, outfitters, provincial paddling associations, etc.) as well as get information on how to get connected.
  - Be made aware of other sources of information such as books, videos, websites for further research and learning.
- Teaching notes:
  - ⌚ Typically this can be accomplished in 10 minutes.

## Vehicle Boat Tie Down

- The student will:
  - Demonstrate safe methods for lifting and lowering a kayak off the roof of a vehicle.
  - Demonstrate various methods of tying a sea kayak on the roof of a vehicle for both racks and foam blocks.
- Teaching note:
  - ⌚ Typically this can be accomplished in 15 minutes.

## Level-2 Skills

An introduction to sea kayak leadership and journeying skills in [class-2](#) conditions.

### Course Description

Building on the skills developed in Level-1, Level-2 provides paddlers with the intermediate skills they need to go sea kayaking in class-2 conditions along semi-exposed shoreline with a possible overnight bivvy. Leadership, incident management, open-water rescue, self-care and navigation are core parts of the curriculum.

### General Learning Outcome

Upon completion of the course, the student will be able to confidently sea kayak in [class-2](#) conditions along moderately exposed shoreline in the company of one or more paddlers with similar skills and knowledge. The Level-2 paddler will be an excellent resource to the group, and be able to provide peer leadership and navigation skills for short trips.

### Prerequisites

- Certification:
  - Sea Kayak Level-1 Skills certification or equivalent skill and knowledge at the discretion of the course director
- Paddling experience:
  - At least 3, one-day-long kayaking trips in Level-1 conditions in different locations
- Other training:
  - Wilderness first aid (16 hours) with CPR strongly recommended

### Course length

32 hours of instruction (4 days), minimum 20 hours instruction on the water.

### Class Ratio

1 instructor:4 participants

1 instructor+1 assistant:6 participants

### Minimum Staff & Certification

Instructor: one Level-2 Instructor

Optional assistant(s): one Level-1 Instructor

## Environmental Conditions and Sea State

This course is run in class-2 conditions. Please see [Appendix A](#) for a specific description of all water classifications.

Class-2 environment: Moderately exposed coastline with frequent easy-landing opportunities and short crossings. Moderate potential wind effects (12–19 knots), surf of less than 1 meter and a combined sea state of less than 1 metre, gentle to moderate non-turbulent currents of less than 3 knots, and light surf beaches. Short delays in access to land-based assistance should be expected.

It is the instructor's responsibility to ensure that environmental and sea state conditions for Level-2 are met. Certification cannot be considered complete if skills were not demonstrated in class-2 conditions.

## Prior Learning Evaluation

In the case of an exceptional student with significant prior experience, knowledge and evident skill; a prior learning evaluation (PLE) of Level-2 Skills for certification may be conducted. The evaluation is to be a two day practical assessment of all aspects of the Level-2 program.

Final admittance to the PLE is at the discretion of the course director, who will ask for evidence to support claims of significant prior experience and knowledge, and evidence of skills.

Prior learning evaluations are on a pass / fail basis, with no option for a conditional pass. Students should enter the exam with confidence and if they are uncertain about their ability to meet or exceed the standards, Paddle Canada strongly encourages students to take the full training and assessment.

Students who do not pass their PLE the first time are expected to take the full training course.

## Teaching Notes

While there is no mandatory overnight camping component with this course, instructors can run a Level-2 in a wilderness setting with a camping component as long as the minimum requirements are still met.

Level-2 students should be prepared with the necessary gear to keep warm, dry and safe as part of an emergency overnight. While it isn't expected that they come with enough gear for a multi-day trip, they should have enough gear for shelter, emergency food/water, extra dry

clothing and other key essentials. For example, a poncho, a tea-light candle and a litre of water are not sufficient.

Unless specifically noted, all Level-2 skills should be assessed with semi-loaded boats.

Any suggested teaching times listed are intended to be used as a resource for new instructors only. Instructors can use their discretion to shorten or lengthen suggested times as they see fit.

## Assessment

Assessment in Level-2 is done continuously throughout the program as the instructor observes the participant's performance of each skill and overall development as a paddler.

## Learning Outcomes

### Re-entry Skills

#### Unassisted re-entry

- The student will:
  - Demonstrate techniques to re-enter the kayak unassisted. The paddler must show confidence and control throughout the exercises and be able to be underway again in a timely manner.
  - Demonstrate an unassisted re-entry using a sea kayak packed for an extended day trip, including emergency gear needed for an unplanned night out.
- Teaching notes:
  - Capsizes must be done with spray skirt in place and simulate an unexpected incident — either while paddling, or attempting to brace or scull for support.
  - The re-entry is complete when the student is back in the boat with the cockpit pumped, spray skirt attached, and is ready to continue paddling.
  - While there is no specific maximum time a student can take, students will demonstrate consistent and confident progression through the rescue without rushing.

#### Assisted re-entry

- The student will:
  - Demonstrate multiple techniques to re-enter the kayak while being assisted by a peer as well as assisting others. The student must show confidence and control throughout the exercises.
  - Demonstrate assisted re-entries in sea kayaks packed for an extended day trip, including emergency gear needed for an unplanned night out.

- Be made aware of the inherent risks in lifting/draining loaded boats and be introduced to other techniques to mitigate the risk of back or shoulder injury.
- Teaching note:
  - While there is no specific maximum time a student can take, students will demonstrate consistent and confident progression through the rescue without rushing.

#### All-in re-entry

- The student will:
  - Participate in an all-in re-entry whereby two (or more) paddlers capsize and assist each other in emptying and re-entering the kayaks.
  - Work together as a group to complete the activity in as short an amount of time as possible while still demonstrating good re-entry technique.
- Teaching note:
  - The exercise is complete when all the paddlers are back in their kayaks, water is pumped out, spray skirts are attached, and all paddlers are able to continue paddling.

#### Bow rescue

- The student will:
  - Right a kayak from a capsized position using another paddler's assistance, emphasizing the use of a hip flick.
  - Present a part or kayak or paddle shaft to assist a paddler in righting him or herself in a timely and effective manner.
- Teaching note:
  - While the bow rescue is can be an effective method of recovery, its primary inclusion in the overall progression is meant as a tool to further develop hip flick/leg drive and the foundation towards rolling a kayak.

#### Re-entry exercises or scenarios

- The student will:
  - Participate in a series of group or solo scenarios that increase in complexity and time. Scenarios will include difficulties such as seasickness, shoulder injuries, repetitive strain injuries, hypothermia, and leaky boats.
- Teaching notes:
  - Re-entry exercises must require the participant to demonstrate control, confidence and sufficient skill to complete exercises in a timely manner.
  - Exercises and scenarios can extend to returning an incapacitated paddler to shore, remediation of simulated hypothermia and calling for external assistance.
  - Exercises should include responses to problems that occur in camp or during launching or landing on shore.

## Introduction to rolling

- The students will:
  - Demonstrate a roll on one side in a calm and controlled environment.
  - Demonstrate safe body mechanics and articulate how to safely keep developing their roll.
- Teaching notes:
  - The student may set up before rolling.
  - Students who have yet to master their roll should be strongly encouraged to seek out further coaching before attempting Level-3 skills.
  - Aids such as goggles, nose plugs and snorkeling masks may be used.

## Towing

- The student will:
  - Demonstrate safe, efficient towing techniques in a variety of scenarios.
  - Demonstrate the use of a variety of tow systems such as long and short lines, pigtails and deck mounted equipment.
  - Give examples of the inherent dangers of towing and how best to mitigate them.
  - Outline the use of accessible safety knives as an entanglement rescue tool.
- Teaching notes:
  - All towlines must be equipped with a one-handed quick release system.
  - Towing should be incorporated into several scenarios such as sea sickness, equipment failure or holding position at sea.

## Padding Skills

### Launching and landing

- The student will:
  - Demonstrate a variety of boat launchings and landings including beach and dock.
  - If conditions allow, demonstrate a safe beach landing in gentle surf (knee high or less).
  - If conditions allow, demonstrate a safe beach launch in gentle surf (knee high or less).
  - Identify appropriate locations to launch and land which minimize exposure to surf and other water users.

## Forward stroke

- The student will:
  - Demonstrate an efficient forward stroke with attention to the catch, power and release phases. The principles of lower core engagement, smooth and proper application of cadence as well as use of leg muscles to drive hull will be part of the stroke development coaching.
  - Demonstrate efficient and sustained forward paddling during a journey of 5 nautical miles in 2 hours.

## Turning strokes

- The student will:
  - Turn the kayak in each direction while in motion (with little loss of forward momentum) from the stern, middle and bow of the kayak.
  - Demonstrate the turns in Level-2 conditions.
  - Teaching note:
    - Students should demonstrate good edge control, proper torso rotation, and blade control that assists turning.
- Sweep strokes
  - The student will:
    - Demonstrate effective leg drive for more power to assist with turning.
    - Look where they are going rather than watch the paddle blade.
    - Experiment with both off and on-side edging.
  - Teaching note:
    - For enhanced power and boat control in Level-2 conditions, the concept of using both bow and stern quarter sweeps should be encouraged.
- Low and high brace turns
  - The student will:
    - Demonstrate low and high brace turns should be executed under forward momentum and initiated with a sweep stroke on the outside of the turn.
    - State the potential risk of shoulder injury with these turns and how to mitigate it.
    - Ensure proper body position for shoulder protection.
  - General description:
    - While in a low or high brace position, place the blade on the surface of the water with a slight lift on the blade's leading edge, gently lean into the paddle and hold the kayak on edge, allowing the boat to turn without stalling out.
      - Proper and safe body position is critical with these turns.
      - The turn can be extended by rotating the blade toward the bow and completed with a forward stroke on the same side.

- Bow rudder
  - The student will:
    - Demonstrate the bow rudder under forward momentum and initiated with a sweep stroke on the outside of the turn.
    - Demonstrate the turn on both edges (inside versus outside of the turn).
  - General description:
    - The blade is placed in the water just ahead of the pivot point with the power face towards the boat and opened towards the bow. The top hand crosses the centreline of the kayak to support the paddle shaft.
    - Effective torso rotation toward the inside of the turn and lifting of the inside edge should be evident throughout the turn when executed on flat water. The turn can be extended using a bow draw and completed with a forward stroke on the same side.
    - Bow rudders should be practiced as a way to turn the kayak while moving forwards, as a stroke to help enter and exit current, and as an effective way to transition from paddling across the wind to paddling upwind.
  - Teaching note:
    - Students should be discouraged from resting the top hand on their shoulder. Keeping the hand lifted slightly provides for greater wrist comfort and paddle control.

#### Low brace

- The student will:
  - Demonstrate an effective low brace in class-2 conditions.
  - Demonstrate proper body positioning for shoulder protection to protect against shoulder injury.
- General description:
  - With the elbows up, forearms near vertical and wrists straight, the back of the paddle blade, or the non-power face, will make contact with the water.
  - The paddle blade is pushed down into the water for stability; however, the primary means of recovery is with the hip flick and proper torso and head motion.

## High brace

- The student will:
  - Demonstrate an effective high brace in class-2 conditions.
  - Demonstrate proper body positioning for shoulder protection to protect against shoulder injury.
- General description:
  - With the elbows low and near the body, forearms near vertical and wrists straight, the power face of the paddle will make contact with the water.
  - The paddle blade is pulled down into the water for stability; however, the primary means of recovery is with the hip flick and proper torso and head motion.

## Draws

- The student will incorporate confident edging into all draw strokes.
- Draw Stroke
  - The student will use a draw stroke to move the kayak directly sideways.
  - General description:
    - The torso will be well rotated towards the direction of travel and the paddle shaft vertical. The lower hand should be close to the surface of the water with the blade fully immersed in the water.
- Sculling Draw
  - The student will use a sculling draw to move the kayak directly sideways, as well as diagonally.
  - Body position should be similar to the draw.
- Hanging Draw
  - The student will use a hanging (or running) draw to move sideways while moving forward, in order to avoid an object just ahead.
  - General description:
    - The torso should be well rotated towards the direction of travel and the paddle shaft vertical.
    - The lower hand should be close to the surface of the water with the blade fully immersed in the water.

## Stern rudder

- The student will:
  - Demonstrate an effective stern rudder while paddling downwind on small waves.
  - Demonstrate effective torso rotation for solid paddle placement while also looking forward.
- General description:
  - Paddle straight downwind on small waves, with the paddle kept on the same side of the boat. Students should be able to correct direction using both blade rotation (power face catching the water to non-power face catching the water) and pry and draw positioning.
  - The shaft of the paddle should be out and over the water and parallel to the side of the kayak.
  - Appropriate edging should be engaged to assist in turning.

## Paddling in Rough Water

- The student will:
  - Demonstrate the basic foundation skills needed for paddling in rough water such as small surf and/or current.
  - Demonstrate an understanding of how a boat reacts to surf and current.
  - Demonstrate a ferry across gentle current or wind using appropriate landmarks to maintain course.
- Teaching notes:
  - Skills such as edging appropriately, bow and stern rudders for directional control, and bracing should be discussed in the context of moving water, and if possible, attempted in gentle current and breaking waves.
  - Any surf zone instruction should take place with knee-high waves or less.

## Knowledge

### Equipment

- The student will describe the key features and attributes of paddling equipment and clothing including:
  - Advantages and disadvantages of various sea kayak outfitting/design variations.
  - Sea kayak paddle and spray skirt features, designs and materials.
  - Advantages and disadvantages of foot, handheld, and electric pumps.
  - Life jacket supplementary features designed for sea kayaking.
  - Rescue and safety equipment features necessary for coastal kayak tripping.
  - Clothing design and fabric attributes for paddling in harsh conditions.
  - First-aid kit basics.
  - Repair-kit general preparation and use.

## Introduction to tides & currents

- The student will:
  - State the basic science behind what tide is and how it can generate current.
  - Demonstrate how to locate and interpret relevant tide heights and current speeds from reference ports and stations in tides and currents tables or websites (e.g. [tides.gc.ca](http://tides.gc.ca)).
  - Identify on a nautical chart where those values apply and make inferences on how they will manifest themselves given the local bathymetry in the surrounding areas.
  - Conclude what current speeds are manageable at a Level-2 skill level as well as how current interact with the sea state.
  - Give examples of potentially hazardous environments due to tide and/or current activity.
- Teaching notes:
  - If appropriate for the specific teaching environment, it may be advisable to formally address secondary ports and current stations.

## Wilderness navigation techniques and chart/map work

- General navigation teaching notes:
  - Wilderness navigation is a core element of Level-2 and thus the instructor should incorporate elements of it into various segments of the course.
  - All navigation content is to be taught in the context of a multi-day trip in Level-2 conditions regardless of whether the course will include camping.
- Navigation Techniques
  - The student will:
    - Use wilderness navigation techniques in the context of a multi-day trip in level-2 conditions such as: piloting, including the use of handrails and backstops, aiming off, lines of position, deduced reckoning, and declination/variation/deviation.
    - Determine and follow a range in either wind or current in Level-2 conditions.
    - Use ranges and other simple piloting methods to aid in navigation.
    - Demonstrate an understanding of the difference between heading, bearing and course.

- Nautical Charts and Topographic Maps
  - The student will:
    - Give examples of the benefits, drawbacks and applicable uses of both nautical charts and topographic maps.
    - Use charts and/or topographic maps to interpret aids to navigation and determine potential hazards as well as identify common symbols on a chart/map. Students should be able to co-locate those features in the real world.
    - Use charts and/or topographical maps to determine possible launching/landing sites, possible campsites or other practical features for sea kayakers.
    - Orient a chart/map to the environment.
    - Use charts and/or topographical maps to navigate a route.
    - Confidently take a bearing from a chart/map.
    - Confidently shoot and follow a bearing for at least 1 nautical mile.
  
- Other Navigation Tools or Activities
  - The student will:
    - Confidently use a compass for simple navigation.
    - Calculate the group's speed, time, and distance traveled.
    - Give examples of how to identify or describe their position to the outside world using latitude/longitude and a local description.
    - Record dead reckoning data and calculations.
    - Complete a route-planning exercise that includes the following activities:
      - Measure distance on a chart/map for a route that is at least 9 nautical miles in length. The proposed route should include a combination of shoreline paddling and short crossings.
      - Identify significant features along the route including; prominent navigational features appropriate for piloting, alternate landing and camping sites, likely sources of water, and hazards.
    - Describe the advantages and limitations of a GPS for navigation.

#### Weather interpretation and basic forecasting

- The student will:
  - Describe local and regional weather patterns.
  - Identify 4 different types of clouds and what types of weather they likely precede.
  - Identify low or high pressure systems, cold/warm fronts and their effects on local/regional weather.
  - Identify the signs of weather change.
  - Describe the effects of wind over water or land including channeling/funneling, corner effects, land and sea breezes, fog, anabatic and katabatic winds.

- Obtain and record a marine weather forecast via VHF, internet or weather radio.
- Describe and apply backcountry lightning risk management and avoidance.

#### Heat/cold issues

- The student will:
  - Identify and describe symptoms, causes, effects of hypothermia and hyperthermia.
  - State and demonstrate the basic treatment for hyperthermia with a focus on prevention and early intervention.
  - State and demonstrate the basic treatment for hypothermia with a focus on prevention and early intervention.

#### Emergency overnight

- The student will:
  - State the importance of being prepared for an emergency overnight as well as be familiar with the essential necessary gear.
  - Demonstrate how to set-up an emergency overnight shelter to keep warm and dry
  - Demonstrate how to make an emergency hot meal as well as ensure water is safe to drink.
  - Be prepared with the necessary gear in the kayak for a possible overnight emergency throughout the length of the course.

#### Leadership and decision making

- The student will:
  - Demonstrate effective leadership and decision-making in the context of leading peers.
  - Participate in scenarios and exercises that reflect differing styles of outdoor leadership.
  - Demonstrate group awareness by paying attention to the location and energy levels of other members of the group while on the water.
  - Demonstrate the ability to make good decisions for the group during simulated incidents.
  - Lead the group effectively and safely on the water during designated segments of a day trip or environment transitions (e.g. headlands, getting on/off the water).
- Teaching notes:
  - See [Appendix G](#) for more resources on outdoor leadership.

## Risk assessment and management, incident management and evacuation options

- The student will:
  - Complete a formal route plan for a multi-day journey that accounts for hazards and effectively manages risk.
  - Assess and mitigate risks as they apply to a multi-day journey with peers in Class-2 conditions.
  - Demonstrate a strong understanding of current risk assessment concepts and terminology.
  - Participate confidently in scenarios requiring a complex and efficient response.
  - Demonstrate effective group management formations for incident management while on the water.
  - Explain various pieces of technology available to summon help in the event of an emergency. This can include VHF radios, personal locator beacons, satellite messengers, flares.
  - State the procedures for evacuation as well as how to summon outside help (Canadian Coast Guard, police or local search and rescue).
- Teaching note:
  - Instructors should ensure a minimum of 2 opportunities for each student to be in a co-leadership position and identify and analyze risks in route planning, decision-making & incident response. This can be tied together with the leadership assessment component.
  - Ensure that students are debriefed of their planning and response decisions and actions for further learning.
  - See [Appendix B](#) for risk assessment resources for further learning.

## Knots

- The student will demonstrate the use of various knots to effectively tie down/secure a kayak and set up a tarp or emergency shelter; e.g., clove hitch, bowline, taut-line hitch, trucker's hitch.

## Collision regulations

- The student will outline the collision regulations as they apply to sea kayakers.
- Teaching note:
  - The material covered should be appropriate to the location of the course, with a more general view to the principles of collision avoidance.

## Level-3 Skills

Advanced rough water paddling skills, leadership, and group management for multi-day trips in class-3 water.

### Course Description

Upon completion of the course, the student will be able to confidently sea kayak in [class-3](#) conditions along exposed coastline with frequent landing opportunities. The student will be able to apply principles of effective leadership, risk assessment, decision-making, judgment, group management, and kayak handling while traveling on a multi-day expedition as part of a group of peers. This course is a minimum of 5 days long.

### General Learning Outcome

Level-3 Skills builds on the leadership, incident and risk management skills introduced in Level-2 and applies them to real life scenarios in class-3 conditions. At this level, students are also introduced to more advanced topics in the context of a multi-day journey, such as expedition behaviour, group dynamics, decision making, advanced navigation, and sea kayaking skills.

While campcraft skills are not part of the formal curriculum, there is an overnight component of at least 2 nights to ensure a realistic learning environment for the skills being taught.

### Prerequisites:

- Certification:
  - *Sea Kayak Level-2* with 15 days logged camping experience in class-2 conditions in either a freshwater or tidal environment or,
  - Documented equivalent skill and knowledge at the discretion of the course director.
- Paddling experience:
  - A log documenting extended trips of 2 or more days totalling 15 overnights. Ten of the paddling days should be in Level-2 conditions.
- Other training:
  - Wilderness first aid (16 hours) with CPR is strongly recommended
  - VHF radio operator's licence is strongly recommended

### Course Length

38 hours of instruction (5 days) with an excursion that includes 2 or more consecutive overnights. A minimum of 20 hours of instruction will be on the water.

## Class Ratio

1 instructor:4 participants

1 instructor+1 assistant:6 participants

## Minimum Staff & Certification

Instructor: one Level-3 Instructor

Optional assistant(s): one Level-2 Instructor

## Environmental Conditions and Sea State

Instructors should aim to conduct their program within class-3 conditions. Please see [Appendix A](#) for a specific description of all water classifications.

Class-3 environment: Exposed water, with more committed crossings and any combination of the following: moderate to strong currents with turbulence ( $\geq 3$  knots), moderate to strong wind effects (12–19 knots), ocean swells and a combined sea state near 1 meter with occasional rough sea state. Difficult but frequent landing opportunities, surf-beaches with surf up to 1 metre. Delays in access to land-based assistance are expected.

It is the instructor's responsibility to ensure that the minimum environmental and sea state conditions required for Level-3 are met. Certification cannot be considered complete if skills were not demonstrated in class-3 conditions.

## Prior Learning Evaluation

In the case of an exceptional student with significant prior experience, knowledge and evident skill, a prior learning evaluation (PLE) of Level-3 Skills for certification may be conducted. The evaluation is to be a two-day practical assessment of all aspects of the Level -3 program including an overnight camp.

Final admittance to the PLE is at the discretion of the course director, who will ask for evidence to support claims of significant prior experience and knowledge, and evidence of skills.

Prior learning evaluations are given on a pass / fail basis, with no option for a conditional pass. Students should enter the exam with confidence. If they are uncertain about their ability to meet or exceed the standards, Paddle Canada strongly encourages students to take the full training and assessment.

Students who do not pass their PLE the first time are expected to take the full training course.

## Teaching Notes

Instructors should expose Level-3 students to dynamic, moderately intense, and manageable physical, psychological, and social hazards. Students are expected to solve complicated, and potentially complex problems by integrating and adapting the skills and knowledge acquired through earlier training and applied experiences.

At this level, students should be able to identify and articulate some of their own goals, and independently seek opportunities to work toward these goals within the context of the program. Instructors are facilitating and coaching rather than teaching.

At this level, instructors must be willing let students define many of their own environmental, psychological, and social limits. They must also be willing to let students experience some of the low severity consequences of their choice. Students should be able to resolve some of these consequences, on their own and as a group, with some support and coaching from the instructor.

Please note that any suggested teaching times listed are intended to be used as a resource for new instructors only. Instructors can use their discretion to shorten or lengthen suggested times as they see fit.

## Assessment

Assessment in Level-3 is done continuously throughout the program as the instructor observes the participants' performance of each skill and overall development as a paddler. A written test is required at this level, however, it can be completed as a take-home or online exam.

## Learning Outcomes

### Re-entry Skills

#### Assisted re-entry

- The student will:
  - Demonstrate multiple techniques to re-enter the kayak in class-3 conditions while being assisted by a peer. Both the victim and assistant must show confidence and control throughout the exercises.
  - Be made aware of the inherent risks in lifting/draining loaded boats and be encouraged to use techniques that mitigate the risk of back or shoulder injury.

- Teaching notes:
  - Emphasis should be placed on the assistant to quickly assess the situation and determine the most effective re-entry needed.
  - Assisted re-entry is to be completed using a fully loaded kayak packed for a multi-day trip.
  - While there is no specific time deadline to complete the re-entry, students should be encouraged to move quickly and confidently to get back in their kayaks without rushing.

#### Unassisted re-entry

- The student will:
  - Demonstrate multiple techniques to re-enter the kayak unassisted.
  - Demonstrate unassisted re-entries in class-3 conditions using a fully loaded kayak for a multi-day trip.
  - Demonstrate a re-enter and roll (with a paddle float if necessary) in class-3 conditions.
  - Show confidence and control throughout the exercises.
- Teaching notes:
  - The re-entry is complete when the victim is back in the boat, the cockpit emptied, the spray skirt attached, and the paddler is competent to continue.
  - While there is no specific maximum time a student can take, they should be encouraged to move quickly and confidently to get back in their kayak without rushing.

#### All-in re-entry

- The student will:
  - Participate in an all-in re-entry in class-3 conditions whereby two (or more) paddlers capsize and assist each other in emptying and re-entering the kayaks.
- Teaching notes:
  - The exercise is complete when all paddlers are back in their kayaks, the water is pumped out, spray skirts are attached, and all paddlers are able to continue paddling.
  - Emphasis should be placed on group assessment, boat and gear management, and communication with each other throughout the exercise.

#### Rolling

- The student will:
  - Demonstrate a reliable roll on one side in class-3 conditions with a moderate degree of success (e.g. 2 of 3 attempts). This skill is a requirement for certification.
  - Attempt an offside roll.

## Re-entry exercises and scenarios

- The student will:
  - Participate in a set of progressively more challenging scenarios designed to include a wide range of typical, yet uncommon, problems such as injured or hypothermic paddler, seasickness, damaged kayak, or lost or broken equipment.
  - Debrief with the instructor their planning, response decisions and actions for further learning.
- Teaching notes:
  - Scenarios can be developed to include all members of the group.
  - Scenarios can be designed so that they include a requirement for towing and can extend beyond landing on shore. For example, after getting rescued from the water, a hypothermic paddler might need to get warmed up on shore in a shelter.
  - Leadership skill is a central element of this activity. Instructors are encouraged to refer to the level-3 leadership section for more specific information on what can be included.

## Towing

- The student will:
  - Choose and demonstrate the most appropriate towing technique and attach a tow to a kayak quickly and effectively.
  - Demonstrate deploying a towline as well as unhooking and stowing gear with an emphasis on safety, confidence and speed
  - Participate in simulated incident scenarios including (but not limited to):
    - Those that involve more than one kayak towing,
    - Towing a paddler and kayak away from exposed shore with current or breaking waves. The paddler may be in or out of their kayak,
    - In class-3 conditions, releasing the towline both while the line is under stress and after a towee has capsize,
    - Incorporating other re-entry skills and activities as part of a realistic simulated scenario.
  - Understand the use of accessible emergency knives as an entanglement rescue tool.

## Paddling Skills

### Launching and landing

- The student will demonstrate a variety of boat launchings/landings from docks, rocky shores, small surf or other complex situations such as evacuation of a victim onto a rescue vessel such as a sailboat or other vessel with significant freeboard.

## Forward stroke

- The student will:
  - Show efficient and sustained forward paddling during a journey of two or three days.
  - Demonstrate an understanding of effective forward paddling technique appropriate to the equipment in use and the paddling conditions.
  - Unconsciously incorporate the core principles of efficient forward stroke including proper paddle catch, a short stroke that goes to just past the hips, core muscle engagement and torso rotation, leg drive, de-emphasis of arm muscles, proper posture, etc.
  - Unconsciously blending strokes (e.g. low brace turned into forward stroke) where appropriate.

## Turning Strokes

- Low and high brace turns
  - The student will:
    - Demonstrate basic stroke and body mechanics as outlined in Level-2.
    - Demonstrate effective low and high brace turns in class-3 conditions.
- Bow rudder
  - The student will:
    - Demonstrate basic stroke and body mechanics as outlined in Level-2.
    - Demonstrate effective bow rudder in class-3 conditions.
- Cross bow draw
  - While under forward momentum, the student will demonstrate the cross bow draw as another stroke to help turn the kayak.
  - General description:
    - The cross bow draw should be executed under forward momentum and initiated with a sweep stroke on the outside of the turn. The blade performing the initiation sweep is then brought across the front deck and placed in the water with the power face facing the kayak.
    - The blade is placed in the water with just enough open paddle face to catch the water and turn the kayak.
    - Effective torso rotation toward the inside of the turn and lifting of the inside edge should be evident throughout the turn.
    - Cross bow draws should be practiced as a way to turn the kayak while moving forwards, as a stroke to help enter and exit currents, and as an effective way to transition from paddling across the wind to paddling upwind.
  - Teaching notes:
    - Students should be encouraged to shift their weight forward to help with turning.

### Low brace

- The student will:
  - Review the low brace technique and body mechanics as outlined in Level-2.
  - Be able to instinctively perform an effective low brace in class-3 conditions with proper and safe body position.
  - Demonstrate an effective low brace with an obvious lean outside of the kayak's centre of gravity and onto the paddle during the recovery phase of the stroke. An ineffective brace would result in capsize.
  - Understand the importance of proper positioning for shoulder protection and to reduce the risk of shoulder injury.

### High brace

- The student will:
  - Demonstrate high brace technique and body mechanics as outlined in Level-2.
  - Be able to instinctively perform an effective high brace in class-3 conditions with proper and safe body position.
  - Demonstrate an effective high brace with an obvious lean outside of the kayak's centre of gravity and onto the paddle during the recovery phase of the stroke. An ineffective brace would result in capsize.
  - Understand the importance of proper positioning for shoulder protection and to reduce the risk of shoulder injury..

### Draws

- The student will:
  - Demonstrate the various draws including static, sculling & hanging (running) draws with a focus on effectiveness and proper body technique as outlined in Level-2.
  - Demonstrate effective draws in class-3 conditions.

### Sculling for support

- The student will demonstrate an understanding of the mechanics of sculling for support while capsized including body positioning and blade movement.
- Teaching note:
  - Confidence with this skill is not expected until Level-4 but students should demonstrate some development of the skill and a willingness to attempt it in a calm and controlled environment.

### Stern rudder

- The student will:
  - Demonstrate stern rudder technique and body mechanics as outlined in Level-2.
  - Demonstrate a stern rudder in class-3 conditions on both sides with a focus on proper torso rotation and paddle position.

### Paddling in low visibility or at night

- The student will:
  - Take part in a simple low visibility or night navigation exercise with activities including following a bearing for at least 0.5 nautical miles, position triangulation and deduced reckoning.
  - Participate on an instructor facilitated short paddle in fog or at night if conditions warrant.
  - Be introduced to best practices for navigation, keeping the group together, risk management and seasickness avoidance.

### Surfing

- The student will:
  - Be introduced to the basic concepts of kayak surfing in the context of catching small waves and landing in a surf zone including straight and diagonal take-offs as well as bottom turns to facilitate exit off the wave.
  - Review surf zone elements and associated surf zone safety considerations.
  - Catch and stay on small waves to surf.
  - Turn at the bottom of the wave to exit off the backside of a wave.
  - Launch and land safely and confidently in a small surf zone.
  - Explain the inherent dangers of surfing as well as the importance of avoiding surfing with loaded kayaks.
- Teaching notes:
  - This activity should be taught in class-3 conditions or less with waist-high waves or less. This can be taught either at a small surf break or in deep water where appropriate.
  - Emphasis will be placed on selecting an appropriate play area for sea kayaks and surf etiquette.
  -  This content is considered to be no more than a half day block. Instructors wishing to spend more time should adjust overall course length accordingly.

### Paddling in current

- The student will:
  - Be introduced to the basic concepts and techniques of paddling in and crossing currents in the context of a trip.
  - Demonstrate ferrying across current, choosing a ferry angle and maintaining it during a crossing.
  - Demonstrate eddy turns, eddy in and out of current, crossing eddy lines, emphasizing which edges to use.
  - Demonstrate line of sight/ranges to stay on course and set a ferry angle.

- Teaching notes:
  - If sufficient current is unavailable this activity should be presented as a theory topic so students understand the key concepts.
  - 🕒 This content is considered to be a one to two hour block. Instructors wishing to spend more time should adjust overall course length accordingly.

## Knowledge

### Leadership and group decision making

- Communication skills
  - The student will:
    - Communicate with the group to effectively to formulate the plan.
    - Communicate with the group to effectively impart ongoing changes to the plan.
    - Ensure that any changes to the plan are properly established and well understood by the group.
- Group awareness
  - The student will:
    - Anticipate potential incidents and position him/herself effectively within the group to avoid or mitigate them.
- Leadership roles
  - The student will:
    - Lead the group effectively and safely during designated segments of a trip or environment transition (e.g. headlands, getting on/off the water) in the context of leading peers.
    - Participate in a series of progressively more challenging individual or group scenarios to apply leadership and decision making skills related to incident management. See [Appendix B](#) for incident management resources.
    - Support their peers in achieving overall group goals.
- Teaching notes:
  - Review the basic concepts of outdoor group leadership in the context of leading peers as was introduced in Level-2.
  - Leadership and decision-making activities are core elements of Level-3 and should be addressed throughout the course. The instructor should facilitate group and individual participation in a wide variety of risk-assessment, decision-making and other leadership roles.
  - Other skills that an effective leader should demonstrate include (but are not limited to):

- Clearly articulating to the group any changes to the planned route.
- Effectively monitoring other members of the group to provide assistance as necessary.
- Demonstrating various types of leadership styles based on the situation or group needs. Some leadership types could include autocratic, paternalistic, democratic or laissez-faire.
- Working well within the group and being an active and positive participant while not in charge.
- See [Appendix G](#) for more resources on outdoor leadership.

#### Risk assessment and management, incident management and evacuation options

- The student will:
  - Display a comprehensive understanding of current risk assessment theory and application in class-3 waters.
  - Demonstrate effective peer group leadership to assess and mitigate risks in a complex environment.
  - Demonstrate competence in using technology to signal and communicate for advanced outside support.
  - Complete a leadership challenge involving a complex scenario(s).
- Teaching notes:
  - See [Appendix B](#) for examples and online resources for further learning.
  - After any scenario, debrief students planning, response decisions and actions for further learning.

#### Expedition planning and logistics

- The student will:
  - Give examples of different resources and techniques for extended trip planning.
  - Plan all aspects of the logistics and preparation for the overnight component of the course, including (but not limited to) personal and group gear, food, route selection, risk management and evacuation plan, float plan, transportation, and park permits (if required).

#### Expedition behaviour and group dynamics

- The student will:
  - Give examples of different expedition behavior concepts and start to integrate key elements throughout the course.
- Teaching notes:
  - Expedition behavior topics can include techniques on developing group norms, individual and group goal development and strategies on dealing with group conflict.

- Conflict is a natural and expected outgrowth of living and travelling with others and understanding the origins, signs, and symptoms of conflict can help mitigate its severity and escalation.
- See [Appendix D](#) for more information and learning resources on expedition behaviour.

#### Communication & technology

- The student will state various methods of communication or emergency notification for outside the group that are effective in a wilderness setting. Various pieces of technology could include: VHF radios, satellite phones, personal locator beacons, satellite messengers, and flares .

#### Heat & cold issues

- The student will:
  - Identify and describe symptoms, causes, effects of hypothermia and hyperthermia.
  - State and demonstrate the basic treatment for hyperthermia with a focus on prevention and early intervention.
  - State and demonstrate the basic treatment for hypothermia with a focus on prevention and early intervention.
  - Demonstrate how to set-up an emergency overnight shelter to keep warm and dry.
  - Demonstrate how to make an emergency hot meal as well as ensure water is safe to drink.

#### Tides & currents

- The student will:
  - Describe the combined effects of the sun, the moon, the earth, and local geography on tides and currents. Identify the current phase of the moon and roughly calculate tides and currents and their trend (speed, period, range) over the next 3 days.
  - Calculate primary and secondary tide ports and current stations as well as slack water times.
  - Integrate tide and current information (where applicable) into route planning and on-water navigation.
  - Predict how the environment around them will look based on tide and current predictions. E.g. Visual representation of rule of 12ths & 50/90 rules.
- Teaching note:
  - Instructors should thoroughly review Level-2 syllabus on tides & currents theory with students before progressing into new material.

- If the Level-3 course is offered in a non-tidal environment (e.g. the Great Lakes) where an on-trip practical exercise is impossible, instructors should put together a tides and currents exercise assignment. This can be completed as part of a pre-course or homework assignment.

#### Repair kits

- The student will:
  - Give examples of what tools should be included in a general repair kit, and their general use.
  - Demonstrate general and emergency kayak repairs for both on land and water.

#### Weather interpretation & forecasting

- The student will:
  - Apply weather observations or forecasts and integrate them into both route planning and group decision making.
  - Identify and explain how both topography and bathymetry can affect weather. Provide local examples.
  - Obtain and record a marine weather forecast via VHF, internet or weather radio in a log several times a day throughout the course.
  - State standard backcountry lightning risk management and avoidance techniques.
- Teaching note:
  - Instructors should review level-2 weather theory and forecasting concepts before teaching any new material.
  - Students are expected to record a minimum of two full sets of weather forecast and observations as well as their interpretation in a log. See Trip Logs for further detail.

#### Wind, Wave and Current Theory

- The student will:
  - State wind effects against various shorelines or currents.
  - State how waves form
  - State what refraction and reflection is and how they can affect paddlers in class-3 conditions.
  - Give examples of how bathymetry near shoreline affects wave shape.
  - State how and where rip currents tend to form as well as techniques for escape.

## Wilderness Navigation Skills

- Nautical chart & topographic map skills
  - The student will:
    - Demonstrate the following nautical chart & topographic map skills:
      - Identify common symbols on a chart and be able to co-locate those features in the real world.
      - Distinguish between at least three heights of land (hills, islands, mountains, etc.) based on shape, cover, relative distance, and/or relative height and locate these heights of land in the real world.
  - Teaching note:
    - Students should demonstrate Level-2 navigation skills but in class-3 conditions and with a higher degree of proficiency and confidence.
- Route planning for extended trips:
  - The student will:
    - Plan a route and measure distance on a chart that is at least 20 nautical miles. The route should include a combination of shoreline paddling and crossings.
    - Take a minimum of three bearings from a chart or map.
    - Identify significant features along the route including prominent navigational features appropriate for piloting, alternate landing and camping sites, likely sources of water, and hazards.
- Practical navigation skills:
  - The student will calculate each: speed, time, and distance.
  - Establish current position with a chart or map using at least two credible (well-spaced, singular, and visible) natural line of positions (LOPs).
  - Triangulate current position with a chart or map and compass using at least three credible features (well-spaced, singular, distant).
  - State common sources of navigational error (including, but not limited to, estimation, observation, information) and likely remedies (including, but not limited to, hand railing, backstopping, aiming off).
  - Use a GPS to calculate current position and navigate to a nearby waypoint.
  - Establish and follow a range in either wind or currents in class-3 conditions.
- Trip logs
  - The student will maintain a daily written navigation log that includes predictions, calculations, and observations about:
    - Speed, time, distance,
    - Weather (forecasts, reports, observations),

- Tides and currents,
- Bearings,
- Significant observations (launching and landing, alternative sites, water sources, etc.)
- Reflections on predictions

DRAFT

## Level-4 Skills

Advanced paddling skills, problem solving, group dynamics, and leadership during a multi-day trip in a rough water environment.

### Course Description

Upon completion of the course, the student will be able to confidently sea kayak in [class-4](#) water conditions along remote and exposed open coast for an extended trip. The student will be an effective part of a group of peers, able to perform both leadership and supportive roles. This course is a minimum of 5 days long.

### General Learning Outcome

Students will be challenged to apply already learned leadership/decision making and paddling skills in the context of a multi-day trip in class-4 or greater conditions. With a strong focus on scenarios and problem solving, this course will develop students' skills appropriate to travelling in remote and/or technically challenging locations while fine tuning new skills such as surf and currents.

Like Level-3, this five-day course has no formal campcraft skills as part of the syllabus; however, due to the strong focus on advanced skills and leadership on an extended trip with peers, there is a requirement for a minimum of 3 consecutive overnights (which must include at least two different campsite locations).

### Prerequisites:

- Certification:
  - All participants must have Paddle Canada Level-3 certification.
- Paddling experience:
  - At least 10 day-trips kayaking in class-3 conditions.
  - A minimum of three extended trips totalling 10 or more overnights. The student must show evidence (e.g. weather/sea state logs, photography or video) that they spent a minimum of five days during any trip in class-3 conditions.
  - An ability to confidently roll (on one side) in class-3 conditions is essential.
- Other training:
  - Wilderness first aid certification (36 hours) with CPR is strongly recommended
  - Restricted Radio Operator's Licence (marine VHF) is strongly recommended

## Course Length

40 hours of instruction (5 days) with an excursion that includes 3 or more consecutive overnights (which must include at least two different campsite locations).

Minimum 30 hours instruction must be on the water.

## Class Ratio

2 instructors:4 participants

2 instructors+1 assistant:6 participants

## Minimum Staff & Certification

Instructors: one Level-4 Instructor and one Level-3 Instructor

Optional assistant(s): one Level-3 Instructor

## Environmental Conditions and Sea State

Instructors should aim to conduct their program within class-4 conditions. Please see [Appendix A](#) for a specific description of all water classifications.

Class-4 environment: Rugged and exposed coast with long and committed crossings and any combination of the following: strong turbulent currents ( $\geq 3$  knots), strong wind effects (near 20 knots), large swells with a combined sea state 1 metre or more with a moderate to rough sea state, exposed surf beaches ( $\geq 1$  metre), infrequent and sometimes difficult landings which present significant challenges for individual safety and group management. Significant delays in access to land-based assistance can be expected.

It is the instructor's responsibility to ensure that the minimum environmental and sea state conditions required for Level-4 are met. Certification cannot be considered complete if skills were not demonstrated in class-4 conditions.

## Prior Learning Evaluation

A prior learning evaluation is not available for this level as students must complete the full training and assessment for certification.

## Teaching Notes

Level-4 students should be challenging themselves to the dynamic, moderately intense, and usually manageable physical, psychological, and social hazards associated with paddling in class-4 conditions. Students are expected to solve complicated and complex problems by integrating and adapting the skills and knowledge acquired through earlier training and applied experiences by using innovative and practical solutions.

At Level-4, students should be able to identify and articulate their own goals, and independently seek opportunities to work toward these goals within the context of the program. Instructors are facilitating and coaching, rather than teaching.

At this level, instructors must be willing to let students define most of their own environmental, psychological, and social limits. They must also be willing to let students experience the low severity consequences of their choices. Exposure to potentially moderately severe consequences may be appropriate. Students should have the judgment to solve many of these consequences on their own, or as a group, without direct support from the instructor.

Please note that any suggested teaching times listed are intended to be used as a resource for new instructors only. Instructors can use their discretion to shorten or lengthen suggested times as they see fit.

## Learning Outcomes

### Re-entry and Incident Management

#### Emergency response/communication plan

- The student will:
  - Develop an emergency response plan suitable for an extended expedition.
- Teaching notes:
  - This activity can be presented either as part of an in-class group exercise or a take-home homework assignment after the course.
  - The assignment can also be based on a real or hypothetical scenario.

#### Risk analysis and mitigation strategies

- The student will:
  - Demonstrate that they have developed and practiced effective leadership skills and a risk-averse approach to paddling in advanced environments.
  - Exercise strong leadership on and off the water, including the ability to manage and resolve inter-group conflict.

- Lead the group in progressively more challenging scenarios, requiring comprehensive incident responses, up to the point of transfer of care.
- Consistently demonstrate safe leadership in an advanced, dynamic paddling environment.
- Demonstrate the attributes of effective expedition behaviour.
- Teaching notes:
  - Instructors should demonstrate, in all aspects of course delivery, a comprehensive approach to risk assessment.
  - Debrief with students their planning and response decisions and actions for further learning.
  - See [Appendix B](#) for examples and online resources for further learning.

#### Emergency on-water repairs

- The student will:
  - Participate in complex scenarios related to on-water repairs where the group is unable to land on shore to solve the problem. Topics can include (but not limited to):
    - Improvised hatch cover
    - Punctured or cracked deck/hull
    - Broken seat pan or backband

#### Incident management and decision-making scenarios

- The student will:
  - Demonstrate sound judgment by assessing the situation and developing a plan (before starting the rescue) that will help the victim in a timely and confident manner, yet will ensure that other group participants are also safe.
  - Demonstrate critical thinking and paddling skills to manage incidents.
- Teaching notes:
  - Scenarios should be realistically designed so that students are presented with situations where they are challenged by several issues at once, such that the victim's health, equipment or conditions deteriorate throughout the length of the scenario. For example, the consequences of a dislocated shoulder might be that a person becomes hypothermic (since they are not paddling) or even semi-conscious due to pain.
  - Example scenarios could include:
    - lost or broken paddling equipment and/or kayak
    - sea sickness, injury or hypothermia management
    - lost paddler
    - re-entry from surf zone
    - injury in a surf zone
    - extraction of paddler(s) off rocks

- towing an injured or seasick paddler for an extended length of distance (e.g. 3 nautical miles)
- Some scenarios should be developed that allow for all students in the class to participate.
- Debrief with students their planning and response decisions and actions for further learning.

#### Peer debriefing strategies following an incident

- The student will:
  - State the importance and emotional benefits of debriefing the incident as well as the potential for emotional damage if done incorrectly.
  - Give examples of various potential strategies for debriefing and dealing with an incident after the fact.
- Teaching notes:
  - The intent of this topic is to give students a high-level awareness of the importance of talking about or working through a critical incident after the fact. It is not intended to become a crisis counselling session as you are not trained to be a professional crisis counsellor.
  - Please see [Appendix E](#) for suggested resources and further learning.

#### Towing

- The student will:
  - Demonstrate safe and effective use of various towing techniques and scenarios in class-4 conditions.
  - Release a towline under tension, including from a capsized position.
  - Can confidently and quickly deploy a short or long tow line. After towing is completed, they can safely manage the rope to minimise entanglement.
  - Be able to confidently apply non-rope towing techniques in class-3 conditions including (but not limited to):
    - Bulldozing
    - Shove paddle shove
  - Integrate towing into other incident management scenarios.

#### Rolling in class-4 conditions

- The student will:
  - Demonstrate a reliable and confident roll on both sides in Level-4 conditions with a high degree of success (e.g. 3 of 4 attempts). This is a requirement for certification. The student will not swim between consecutive attempts.
  - Demonstrate an understanding that rolling on different sides has different resistance in current and waves, and be able to identify the side with least resistance.

- Demonstrate a re-enter and roll.

### Re-entry

- The student will:
  - Perform several re-entries (assisted and unassisted) and adapt them to a range of sea conditions, including rescuing an incapacitated or passive victim.
  - Demonstrate the ability to bring an injured paddler away from rocks or dynamic water using a variety of methods and complete a re-entry in calmer waters or on shore.
- Teaching notes:
  - Emphasis should be placed on the assistant assessing the situation to develop the best re-entry plan and ensure that other participants in the group are also kept out of the situation.
  - While there is no specific time deadline to complete the re-entry, students should be encouraged to move quickly and confidently to get back in their boats without rushing or losing any equipment.

### Paddling Skills

- General teaching note:
  - The student will demonstrate the application of all paddling skills from Level-3 and use them effectively in dynamic class-4 conditions.

### Launching and landing along difficult shorelines

- The student will:
  - Demonstrate safe and effective launches and landings along difficult or inaccessible shorelines including beaches with breaking surf.
  - Demonstrate a safe and effective group launch from an exposed and rocky shoreline.
  - Demonstrate a safe and effective group launch along difficult or inaccessible shorelines.
- Teaching notes:
  - Students should be given the opportunity to first perform with unloaded kayaks.
  - Instructors must ensure that this is done in gentle paddling conditions with minimal wind or surf.
  - Extreme care must be taken to ensure that boats and gear aren't damaged during this activity.

### Paddling in swell or current

- The student will:
  - State the inherent risks of paddling in current and the potential consequences of crossing currents in a loaded kayak.
  - Demonstrate safe technique and boat control while paddling in swell or current in class-4 conditions.
  - Demonstrate sustained paddling over swell or current of approximately 3 knots.

### Paddling in sustained wind with loaded boats

- The student will demonstrate maneuvers to maintain control of a loaded sea kayak in strong winds including paddling upwind/downwind and confidently turning around to rejoin or help other group members.

### Travelling along inaccessible shorelines (rocky shorelines with breaking waves)

- The student will:
  - Be made aware of the inherent risks of paddling close to rocks.
  - Demonstrate safe technique and boat control while paddling in rock gardens and along rocky shorelines in class-4 conditions.

### Surfing

- The student will:
  - Gain confidence with the basic concepts of kayak surfing in the context of catching small waves or landing in a surf zone.
  - Review bottom turns.
  - Experiment with linking bottom and top turns if conditions permit.
  - Demonstrate comfort to enter and exit the surf zone with confidence.
  - Demonstrate dropping in and staying on a wave.
  - Demonstrate proper surfing etiquette and awareness of safety rules.
  - State the inherent dangers of surfing as well as the importance of avoiding surfing with loaded kayaks.
- Teaching notes:
  - This activity should be taught in a surf zone in class-4 or less conditions with waist to shoulder high waves. This can be taught either at a small surf break or in deep water where appropriate.
  - Instructors should review Level-2 and Level-3 surf content and safety considerations prior to any new activities.
  - 🕒 This section is slated roughly as a 2 to 3 hour teaching block. Instructors wishing to spend more time should adjust overall course length accordingly.

## Paddling in currents

- The student will:
  - Gain confidence with the basic concepts and techniques of paddling in currents.
  - Ferry across current, choosing a ferry angle and maintaining it during a crossing.
  - Use line of sight/ranges to stay on course and set a proper ferry angle.
  - Eddy in and out of currents
  - Cross eddy lines with confidence and demonstrate proper edge control.
  - Paddle upstream, taking advantage of back eddies and slower current.
  - Paddle downstream, pulling out into the current and maintaining control while staying in the downstream current.
  - Hold ground in current; using landmarks to understand where you are and where you are moving towards.
- Teaching notes:
  - Instructors should review Level-2 and Level-3 course content related to currents and safety considerations prior to any new activities.
  - 🕒 This section is slated roughly as a 2 to 3 hour teaching block. Instructors wishing to spend more time should adjust overall course length accordingly.

## General Knowledge

- General teaching notes:
  - The student will demonstrate confident application of all knowledge items outlined in Level-3.

## Leadership, group awareness, judgment & decision making

- The student will:
  - Demonstrate effective leadership by guiding classmates along a section of exposed ocean coast paying attention to their position for maximum effectiveness and the group's needs.
  - Take charge, maintain control and make sound decisions among a group of peers during incident management scenarios including ensuring that other members of the group stay out of harm's way.
  - Evaluate the risk level of a situation and position him or herself in the group to be effective during a possible incident.
  - Keep a group together to maintain communication.
  - Communicate effectively with members of the group any changes to itinerary or proposed route.
- Teaching note:
  - See [Appendix G](#) for more resources on outdoor leadership.

## Weather interpretation and forecasting

- The student will:
  - Understand and apply weather concepts to short-term forecasting & expedition risk management.
  - Maintain an expedition log during the course with multiple daily data points, reports, buoys and personal observations.
  - Develop a forecast for the next 6 to 36 hours by observing local weather and sea state conditions.

## Waves & currents

- The student will:
  - Identify and explain how bathymetry can affect sea state, wave shapes and current speed. Provide local examples.
  - State how to identify beach rip currents as well as techniques for escape.
  - Explain how waves form and provide examples of common patterns for beaches and headlands.
  - Identify potential route considerations due to local weather impacts.
  - Demonstrate the ability to estimate both current and wind speed from a combination of tables and observations when paddling in an environment with current.
  - Use the above estimates to plan and execute either a crossing or a transition around a headland that is at least 2 nautical miles.

## Tides & current calculation

- The student will:
  - Demonstrate the mathematical calculations and application of the rule of twelfths to a high level of precision.
  - Demonstrate the mathematical calculations and application of the 50/90 rule to a high level of precision.
  - Understand tidal and current considerations and calculations for expedition route planning.
  - Demonstrate calculations and practical application of vectors.
  - Apply knowledge of tide & current calculations from the seat of the kayak rather than the classroom or kitchen table.
- Teaching note:
  - Instructors should review tides & current theory from both level-2 & level-3 before progressing to new material.

# Appendix A: Water Class Definitions

## Class-0

**Environment:** Non-challenging protected waters with limited wind effect, little or no current, easy landings, and ready access to land-based assistance. Wind and sea state is calm to rippled (< 8 knots).

## Class-1

**Environment:** Non-challenging waters with mild wind effect (0–11 knots), little or no current (0–0.5 knots), uninterrupted easy landing options, and ready access to land-based assistance. Sea state is calm to light chop.

## Class-2

**Environment:** Moderately exposed coastline with frequent easy-landing opportunities and short crossings. Moderate potential wind effects (12–19 knots), surf of less than 1 meter and a combined sea state of less than 1 metre, gentle to moderate non-turbulent currents (< 3 knots), and light surf beaches. Short delays in access to land-based assistance should be expected.

## Class-3

**Environment:** Exposed water, with more committed crossings and any combination of the following: moderate to strong currents with turbulence ( $\geq 3$  knots), moderate to strong wind effects (12–19 knots), ocean swells and a combined sea state near 1 meter with occasional rough sea state. Difficult but frequent landing opportunities, surf-beaches with surf up to 1 metre. Delays in access to land-based assistance can be expected.

## Class-4

**Environment:** Rugged and exposed coast with long and committed crossings and any combination of the following: strong turbulent currents ( $\geq 3$  knots), strong wind effects (near 20 knots), large swells with a combined sea state 1 metre or more with a moderate to rough sea state, exposed surf beaches ( $\geq 1$  metre), infrequent and sometimes difficult landings which present significant challenges for individual safety and group management. Significant delays in access to land-based assistance can be expected.

# Appendix B: Risk Assessment and Management Frameworks

## Theory and Practice Overview of Risk Assessment & Mitigation

Paddle Canada instructors must be literate in risk management. Choosing to take a chance or risk is inherent in all paddle adventures. We assess what we're willing to risk in return for a derived benefit. It's fun to paddle!

The instructor's responsibility is to teach students effective ways to assess and manage risks and to weigh them against the benefit. Training and mentored experience can reduce exposure and vulnerability. With each level, the teaching becomes more comprehensive with hazards identified and managed in increasingly complex environments.

### Common Terms

Hazard	A level of threat to life, health, property, or environment. Hazards exist in the environment (ex. cold water, wind, waves, rocks)
Danger	The possibility of suffering harm or injury. Dangers are subjective or human variables (ex. lack of training or skill, poor judgment, fatigue)
Risk	Loss, injury, or other adverse or unwelcome circumstance. Risk is the actual harm or loss that could occur (ex. breaking a bone, hypothermia, damaging your kayak)
Frequency	How often something is likely to happen.
Severity	How life altering or catastrophic an incident would be.
Exposure	The length or duration of interaction with a hazard.
Mitigation	Changing plans to reduce exposure/severity of interaction with hazard.

### Risk Assessment Formula

Hazard x Exposure = Risk (e.g. If there are big waves, but you stay on shore than there's no risk.)

## A Toolkit for Risk Assessment & Mitigation

The following are tools or resources for your use for teaching about risk assessment from the initial planning process through to the activity and reflection afterwards. They all have their strengths and shortcomings, and so awareness of their advantages and limitations is critical and should be taught in a progressive way as you move students through the different skill and instruction levels.

### Global Check

Group	Your body & your buddy. Check for: energy/skill level, experience and emotional/physical preparedness.
Environment	Check the terrain (e.g. safe landing options), sea-state, wind, time constraints, and dangerous conditions.
Equipment	Check boat, paddling and safety gear, food/hydration, protective clothing.

### Time & Optimism Bias

These two hazards are the most likely ones to cause harm. The urge to “get there” can override clear judgment and is often clouded by an inflated ego. This occurs in conjunction with decisions based on “optimism bias”, or in other words, “it won’t happen to me!”

### Challenge by Choice or Safety Veto

Students must be taught how to assess not only their personal limits but also those of their peers. A perceived risk can turn into a real risk as stress levels increase. If an individual decision is made not to participate due to a safety concern, the group must support this. More importantly, this “safety veto” must be vigorously applied to the entire group, as responsibility for safety extends to everyone. Plans can be altered to accommodate the concern and still provide benefit to the rest of the group.

To ensure the safety veto will work, it’s critical that a new group of paddlers talk about it beforehand with all members agreeing to its principles.

### James Raffan’s Lemon Model

James Raffan’s Lemon Model is an effective tool and can be extended to a more sophisticated look at risk assessment. The theory is based on the idea that, in the outdoors, accidents are rarely caused by a single catastrophic event but rather a chain reaction of smaller incidents or ignored risks that add up and ultimately lead to a crisis or major incident.

Each time we choose to engage with risk in the outdoors, you can compare it to pulling the lever on a slot machine. The wheels turn and every unattended “risk” results in lemons appearing in the slot machine windows. The more lemons, the greater the probability of an accident occurring. The bigger the risks, the bigger the lemons that can be expected.

While the goal is to mitigate or eliminate lemons, there will always be some, so the key is recognizing when they are growing in both number and/or size. Many paddlers return home with no idea of how many were spinning away while they paddled, and how close they came to an accident.

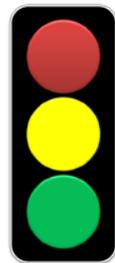
The lemon model is one most students can easily apply and recommended for Basic and Level-1, but can also be incorporated with other models for Levels 2, 3 & 4.

More info: *Wilderness Crisis Management* by James Raffan <http://jamesraffan.ca/wilderness-crisis-management/>

### Red/Yellow/Green

We often use the term “red flag” when referring to a specific hazard and that means STOP. In the context of assessing engagement with hazards, we consider:

- Red = No Go
- Yellow = Caution, we need more information
- Green = Go



### Consequence & Probability

Risk can be further assessed in terms of consequence and probability. High consequence/high probability risk is the strongest red flag or no go. Even with low probability, a strong caution is advised. A low consequence risk is acceptable, particularly with low probability of exposure.

Example Risk		Probability				
		Very High	High	Medium	Low	Very Low
	<b>Very High</b>	Very High	Very High	Very High	High	High

<b>Consequence</b>	<b>High</b>	<b>Very High</b>	High	High	Medium	Medium
	<b>Medium</b>	High	High	Medium	Medium	Low
	<b>Low</b>	High	Medium	Medium	Low	Very Low
	<b>Very Low</b>	Medium	Low	Low	Very Low	Very Low

## Environment Transitions

Anytime there is a transition from one environment or trip phase to another, the chances of an accident dramatically increases. Leaders on the water need to be aware of the transition and be prepared for a possible incident.

Examples of environment transitions in the context of a day trip include, unloading kayaks off cars, moving kayaks from land to water, getting into a kayak, paddling around a headland, crossing the boundary into a surf zone, landing at a beach and finally, lifting boats from ground to top of cars.

## Dynamic Energy Check

All paddling groups will change in their feeling of well-being and energy levels over time so it is important to track this throughout the day. A simple method is to circle the group up and ask everyone to show their energy level by holding the number of fingers up (1 being low energy and 10 being the best day of their life).

A single check means very little, but with several checks throughout the day you can get a sense of the trends within the group. When a participant starts to decline over time it can signal an approaching problem to the rest of the group.

Decisions can flow from the check-in to prevent a potential accident or first-aid situation from occurring. Note, an energy check must include attention to possible hydration decreasing as this is a common precursor to accidents.

## CLAP

CLAP is a popular framework for peer leadership while on the water.

Communication	Keep your group close enough together that you can communicate effectively via voice, hand or paddle signals or electronic means (e.g. VHF radio).
Line of sight	Keep the group together and do not let students get out of sight (this is especially common when going around headlands or bends in a river).
Avoidance of hazards (if possible)	While not all hazards are avoidable, we can mitigate or choose the less risky option to avoid potential incidents. You should maintain situational awareness and pay attention to the world around you to identify hazards and make conscious choices to expose yourself or not to them.
Position of most effectiveness	This refers to the physical location on the water that the leader will take in relation to a danger or to the most useful location if an incident were to happen.

More information: <http://goo.gl/M5wy29>

## ALPACA

ALPACA is another on-water leadership framework that's built on the CLAP foundation.

Awareness	Paddlers must become aware of the environment surrounding them and constantly maintain that awareness. Use all your senses to engage and maintain awareness.
Line of Sight	You need to be able to see the group at all times in order to know what is happening. You also need to be seen by others.
Position of maximum effectiveness	Place yourself where you can be helpful during an emergency, which could happen at any time. This applies to both leaders and followers.
Avoid Hazards	Be aware of hazards and identify any to the group if they could

	be a problem.
Communicate	Establish a communication framework with your group prior to heading out on the water.
Assessment	Did the communication get the desired effect? Go back to Awareness and start again. Have we moved positions? Do we need to move to a better place? Are there new hazards?

## SAFE - Successful incident management

**Stop:** Take a breath

**Assess** the situation

Are there other risks to me, the rest of the group or to the victim?

**Formulate** a Plan

- Which re-entry method is most appropriate to this situation?
- What's the longer term plan to deal with problems to the victim, group or gear?

**Execute** and Evaluate the Plan

More information: *British Canoe Union Coaching Handbook* edited by Franco Ferrero and published by Pesda Press. Google Books sample: <http://goo.gl/melRrA>.

## Other Risk Assessment and Management Resources

*Risk Assessment & Safety Management (RASM): The Complete Risk Management Model for Outdoor Programs*

<https://www.outdoored.com/articles/risk-assessment-safety-management-rasm-complete-risk-management-model-outdoor-programs>

*Planning and Managing Risk*

<http://www.education.vic.gov.au/school/principals/health/Pages/outdoorrisk.aspx>

*Risk Management Tools & Techniques*

While not specifically written for the outdoor industry, this article has several excellent principles that can easily be applied.

<http://www.projectmanagementguru.com/risk.html>

Corbett, Rachel. *A Tale of Two Schools – Reflections on Risk Management*

<http://www.sportlaw.ca/2010/02/a-tale-of-two-schools-reflections-on-risk-management/>

Jackson, Jeff & Heshkabridge, Jon. *Managing Risk: Systems Planning for Outdoor Adventure Programs*

<http://www.riskmanagementconsulting.ca/managing-risk.html>

State of Victoria. (2011). *Risk perception and risk management.*

<http://outdoorleaderonline.org/content/olo/pagerend.php?chapID=6>

DRAFT

# Appendix C: Kayak History and Heritage Resources

## Websites

Frozen Landscapes, Dynamic Technologies

[http://www.qajaq.utoronto.ca/english\\_site/en\\_overview.html](http://www.qajaq.utoronto.ca/english_site/en_overview.html)

An archaeological project conducted between 2009-2013 that studied traditional kayaking in the Arctic.

Traditional Kayaks by Harvey Golden

<http://www.traditionalkayaks.com/>

An extensive resource specifically on arctic kayak design.

The Greenlandic Kayak

<http://www.greenland.com/en/about-greenland/culture-spirit/hunting-culture/the-greenlandic-kayak>

The Skin-on-Frame Kayak: History and Construction

<http://seawolfkayak.com/skin-on-frame-kayak>

History of Kayaking by Sam Crowley and Alex Ferguson

<http://www.adventurexperiences.com/media/137242/history%20of%20kayaks.pdf>

An extensive FAQ on kayak history.

A thousand miles in the Rob Roy canoe on rivers and lakes of Europe by John Macgregor

<https://archive.org/details/thousandmilesinr00macguoft>

Published in 1866, this book was extremely popular and captured the imaginations of the British public. It's credited for sparking the interest in modern kayaking and canoeing.

## Online Videos

Whitewater Kayak History

<https://www.youtube.com/watch?v=kEy0HoEZ9M4>

While focusing mainly on the history of kayaking from a whitewater perspective, this video provides excellent insight on the history of paddlesport culture and equipment from 1957-1963.

How to Go Surfing (Kayak Surf History)

[https://www.youtube.com/watch?v=AQPHPHh\\_di4](https://www.youtube.com/watch?v=AQPHPHh_di4)

A documentary on the development of the sport of kayak surfing on the North America's east coast from 1997-2010.

Kayak Rolling (historical footage)

<https://www.youtube.com/watch?v=exm5ZrPVGc0>

Members of British Arctic Air Route Expedition in 1930 are taught to roll kayaks in East Greenland by Inuit instructors.

Sea kayak rolling Alaska, 1928

<https://www.youtube.com/watch?v=hZVsST2aH7s>

Vintage footage of kayak rolling in Alaska in 1928. Note single-blade paddle used in the many rolling demonstrations.

Nanook of the North (1922)

<https://www.youtube.com/watch?v=uoUafjAH0cg>

Nanook of the North (also known as Nanook of the North: A Story Of Life and Love In the Actual Arctic) is a 1922 American silent documentary film by Robert J. Flaherty.

## Books

Golden, Harvey. Kayaks of Greenland: The History and Development of the Greenlandic Hunting Kayak, 1600-2000. White House Grocery Press, 2006

Brinck, Wolfgang. The Aleutian Kayak: Origins, Construction, and Use of the Traditional Seagoing Baidarka. International Marine/Ragged Mountain Press, 1995

Heath, John. Eastern Arctic Kayak-History, Design, Technique. University of Alaska Press, 2004  
Preview: <https://goo.gl/DQLrHq>

## Appendix D: Expedition Behaviour Resources

The [National Outdoor Leadership School](#) (NOLS) has identified ten principles of good behaviour traits for both leaders and participants while traveling in the wilderness.

They are as follows:

- Serve the mission and goals of the group.
- Be as concerned for others as you are for yourself.
- Treat everyone with dignity and respect.
- Support leadership and growth in everyone.
- Respect the cultures you contact.
- Be kind and open-hearted.
- Do your share and stay organized.
- Help others, but don't routinely do their work.
- Model integrity by being honest and accountable.
- Admit and correct your mistakes.

More info: [http://www.nols.edu/alumni/leader/06summer/expedition\\_behavior.shtml](http://www.nols.edu/alumni/leader/06summer/expedition_behavior.shtml)

Practically speaking, students can demonstrate good expedition behaviour by:

- Maintaining good relationships with all the participants on the trip
- Setting the appropriate tone both prior to and during the trip
- Demonstrating good communication skills
- Modelling appropriate expedition behaviour
- Being a good listener and communicating effectively
- Resolving conflicts early and in an effective manner

Further resources and learning:

- An Expedition Behaviour Primer  
(<http://www.troop116.org/philmont/ExpeditionBehavior.pdf>)
- The Seven Relationships of Expedition Behavior  
(<http://mwagstaff.asp.radford.edu/331class/Expedition%20Behavior%20Relationships.pdf>)
- Expedition Behavior - The Finer Points  
([http://www.brown.edu/Student\\_Services/BOLT/leaders/documents/Expedition\\_Behavior\\_Article.pdf](http://www.brown.edu/Student_Services/BOLT/leaders/documents/Expedition_Behavior_Article.pdf))

## Appendix E: Resources for Debriefing Following an Incident

The resources listed below are provided to give a very high level introduction to the importance of debriefing and talking or working through a traumatic incident. It is not intended to provide any type of certification or training. Unless you are properly certified, do not take on the role or call yourself a crisis counsellor.

### Web Resources for further learning:

- info-trauma.org
  - <http://www.info-trauma.org/en/home/>
- Introduction Guide to Critical Incident Stress Debriefing (PDF)
  - <http://www.info-trauma.org/flash/media-e/mitchellCriticalIncidentStressDebriefing.pdf>
- Critical Incident Stress Debriefing (PDF)
  - [http://www.placerchaplains.com/Documents/Chapter%204\\_Critical%20Incident%20Stress%20Debriefing.pdf](http://www.placerchaplains.com/Documents/Chapter%204_Critical%20Incident%20Stress%20Debriefing.pdf)
- Critical Incident Stress Debriefing From a Traumatic Event (Psychology Today)
  - <https://www.psychologytoday.com/blog/crimes-and-misdemeanors/201302/critical-incident-stress-debriefing-traumatic-event>
- Printable PTSD Guide for Trauma Victims (PDF)
  - [http://www.info-trauma.org/flash/media-e/victim\\_guide.pdf](http://www.info-trauma.org/flash/media-e/victim_guide.pdf)

### Canadian Crisis Counselling Services

Following is a list of links and resources dedicated to the understanding and prevention of suicide as well as crisis counselling.

Please note that Paddle Canada is not endorsing any of these services, but simply providing them as references. If you or one of your peers or students is experiencing a mental health crisis, please contact your local crisis centre or family doctor, go to the nearest hospital, or call 9-1-1.

#### Canadian Association for Suicide Prevention

- [suicideprevention.ca](http://suicideprevention.ca)
- 204-784-4073

#### Canadian Mental Health Association

- [cmha.ca](http://cmha.ca)
- 613-745-7750

Kids Help Phone

- [kidshelpphone.ca](http://kidshelpphone.ca)
- 800-668-6868

Anxiety Panic Support

- [anxietypanicsupport.com](http://anxietypanicsupport.com)

DRAFT

# Appendix F: Resources for Sustainable Kayaking

## Web resources for further learning:

Center for Outdoor Ethics, Leave No Trace 7 Principles

- <https://lnt.org/learn/7-principles>

Center for Outdoor Ethics, Leave No Trace 7 Principles for Sea Kayakers

- <https://lnt.org/blog/sea-kayaking>

- 

Sea Kayak Guides Alliance of BC's Low Impact Best Practices

- [www.skqabc.com/low-impact.php](http://www.skqabc.com/low-impact.php)

University of Calgary Outdoor Centre Top Ten Low Impact Paddling Tips

- [www.ucalgary.ca/outdoorcentre/sea-kayak/low-impact-tips](http://www.ucalgary.ca/outdoorcentre/sea-kayak/low-impact-tips)

Fisheries and Oceans Canada, resources on marine mammals and sea turtles including how to watch marine wildlife

- [www.dfo-mpo.gc.ca/fm-gp/mammals-mammiferes/index-eng.html](http://www.dfo-mpo.gc.ca/fm-gp/mammals-mammiferes/index-eng.html)

Canadian Wildlife Federation, Canadian plant and animal encyclopedia's

- [cwf-fcf.org/en/resources/encyclopedias/](http://cwf-fcf.org/en/resources/encyclopedias/)

## Appendix G: Outdoor Leadership

### Printed and web resources for further learning:

Graham, J. (1997). *Outdoor leadership: Technique, common sense, & self-confidence*. Seattle, WA: The Mountaineers.

<https://www.amazon.ca/Outdoor-Leadership-Technique-Common-Self-Confidence/dp/0898865026>

Kosseff, A. (2010). *AMC guide to outdoor leadership*. New York, NY: Appalachian Mountain Club Books.

<https://amcstore.outdoors.org/amc-guide-to-outdoor-leadership-2e>

<https://www.amazon.ca/Guide-Outdoor-Leadership-Alex-Kosseff/dp/1929173210>

Martin, B., Castle, C., Wagstaff, M., & Breunig, M. (2006). *Outdoor leadership: Theory and practice*. Champaign, IL: Human Kinetics.

<http://www.humankinetics.com/products/all-products/outdoor-leadership>

Google Books preview: <https://goo.gl/GJDzZQ>