Kids Don't Float
Cold Water Survival

Grade: 3rd through 5th
Time Required: 45 minutes

Program Overview:
This curriculum is based on the primary risk factors in recreational boating in Alaska, laying a foundation of boating safety. The concepts are aligned with Alaska's education and early development standards, and designed for the physical and psychological developmental levels commonly reached at this age. Cold Water Survival teaches the physiological effects of cold water immersion, how to select and the properly fit a life jacket, safe boating behaviors, and laws pertaining to life jacket use. Skill-based activities attach experiences to the safety concepts from this lesson. Our program's goal is to familiarize students with how to keep themselves safer when in and around Alaskan waters.

Instructor Note: The Office of Boating Safety tracks the number of participants in the *Kids Don't Float* program. Please contact the office after teaching this lesson. Thank you!
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Certain sections of the lesson appear in blue. These portions are directly related to concepts practiced in the pool session portion of this curriculum.

Goals:
- Participants understand the effects of cold water immersion, the life jacket law in Alaska, and the importance of wearing a life jacket.
- Participants try on at least one life jacket during the lesson.

Essential Questions:
- Why is it important to wear a life jacket?
- What is boating safety?

Objectives:
Participants will be able to:
- Name the first three stages of cold water immersion.
- Describe one survival technique for each stage of cold water immersion.
- State that everyone under the age of 13 is required by law to wear a life jacket in an open boat and on the deck of a boat.
- Describe damage on a life jacket that would make it unserviceable.
- Demonstrate how to check the fit of a life jacket.
- Locate the U.S. Coast Guard approval number on the label of a life jacket.

Alaska State Standards:
Physical Education Grades 3-5:
E.1 Demonstrate awareness and participate safely when involved in activity.
E.2 Recognize the importance of individual responsibility in a group effort.
E.7 Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

Skills for a healthy life:

A.2. Understand how the human body is affected by behaviors related to eating habits, physical fitness, personal hygiene, harmful substances, safety, and environmental conditions.
A.3. Understand and identify the causes, preventions, and treatments for diseases, disorders, injuries, and addictions.
A.6. Use knowledge and skills related to physical fitness, consumer health, independent living, and career choices to contribute to well-being.
B.1 Demonstrate an ability to make responsible decisions by discriminating among risks and by identifying consequences.

Vocabulary:

Cold Water Immersion: When the body is immersed in water colder than 70°F.

Body Core Temperature: The temperature deep inside the body, as opposed to that of the skin.

Cold Shock Response: Effects within the first three minutes, which may include gasping, hyperventilation, vertigo, and changes in blood pressure, heart rate and rhythm.

Cold Incapacitation: Effects within the first 30 minutes, when arms and legs begin to lose sensation and function (may become numb and muscles become weaker).

Immersion Hypothermia: Effects begin after 30 minutes or more, when core body temperature begins to drop.

Serviceable Condition: A life jacket that is free of rips and holes, the flotation material is not damaged, and all straps, buckles and zippers work.

Vasoconstriction: The narrowing of blood vessels.

Materials:
As a resource, review the Prezi located online at:
https://prezi.com/bo_8wuxvh1sb/kids-dont-float-cold-water-survival/
The teaching kit may be checked out from Resources (ASD) or requested from The Alaska Office of Boating Safety.

- *KDF* kits with bracelets, stickers, tattoos, whistles, pencils, and Pledge to Live Cards.
- *Kids Don't Float* Lesson One Quiz. Online at: www.AlaskaBoatingSafety.org
- *Kids Don't Float* Instructor Evaluation. Online at: www.AlaskaBoatingSafety.org

Introduction--Questions to ask the class: (Five minutes)

How do participants play on or around the water?

- Fishing, swimming, boating, paddling, tubing, etc. Outdoor activities are a great way to stay active and participate regularly in physical activity.
- Participants can achieve and maintain a health enhancing level of physical fitness by boating, swimming, paddling and tubing on Alaska's waters.

Is water in Alaska warm or cold?

- Water in Alaska is cold all year, and cold water can be dangerous, **especially** if not wearing a life jacket.

What are some things that can be done to stay safe on and around the water?

- Wearing a life jacket at all times is the best way to remain safe around the water. Twenty-six people to date, have survived falling into cold water thanks to a *Kids Don't Float* loaner board life jacket.

- Wear a life jacket.
- STEP onto a boat, do not jump or leap.
- Keep three points of contact with the boat at all times when moving around.
- Balance the load in a boat by spreading out the weight.
- Keep weight low when moving and sitting in a boat.
- Walk carefully on all docks and decks; surfaces around water can be slippery.
- Always being with a designated and responsible adult.

Why should participants learn about boating safety?

- Five out of six recreational boating fatalities in Alaska are due to swamping, capsizing, or falling overboard. These accidents happen quickly and there is little or no time to put on a life jacket.

What could affect body reaction to the cold water?

- *Speed of immersion* (Did the person tiptoe in or fall off the dock?) How fast someone goes into the water can affect the way the person's body reacts to the cold.
- *Pre-existing medical conditions* (Does the person have medical conditions that impair normal functioning of body systems?)
- *Protective clothes* (Which is warmer--a swimsuit or regular clothing such as a jacket and pants?) Regular clothing will add some insulation.
- *Water conditions* (Is the water calm or choppy? Is it swift water or slow moving?)
- *Habituation (*Alaskans swim in cold water for fun, how would someone from a warm weather state such as Florida react to cold water?)

The First Three Stages of Cold Water Immersion (15 minutes)

I. **Cold Shock Response**- The first stage is the Cold Shock Response. When a person first falls into cold water, he or she may gasp and hyperventilate, experience heart rhythm and or blood pressure changes. Ask participants if anyone has accidently fallen into cold water. If yes, ask the student to describe what happened to his or her breathing.

a. Within the first three minutes, wait for the effects of the Cold Shock Response to subside.

Ask: How do you think a life jacket could help during this phase of cold water immersion?

If not wearing a life jacket, there is a higher risk of drowning.

II. **Cold Incapacitation**-The second stage of cold water immersion is Cold Incapacitation. Within the first ten minutes, the blood vessels in your body and when your arms and leg blood vessels constrict, (get smaller)it results in loss of sensation (numbing) and function (muscles do not function properly; for example, zipping a zipper is very difficult). Prioritize and perform the most important survival functions first.

a. Tighten the life jacket.
b. Try to signal for help. Wave both arms, use an emergency communication or distress signaling device such as a whistle, two-way radio, cell phone, or mirror.
c. Try to get out of the water. Grab onto something nearby and get out of the water as much as possible.
d. Assess the situation and make a plan. If in open water, decide whether or not to swim to shore.

When to swim	When not to swim
-If you are wearing a life jacket -If your boat is not floating -If you are physically able to and are not injured -If the accident was not witnessed by others -If you are in an area of low boat traffic -If you are unable to signal for help -You are confident in your ability to make it to shore and distance is within 800 yards, or two football fields	-If you are not wearing a life jacket -If your boat is still afloat and can be used to get out of the water -If you are with someone who is injured or not physically able to swim -If the accident was witnessed -If rescuers have been called and are on their way -If you do not believe you can make it to shore or distance is beyond 800 ft.

e. If participant is a rescuer, remember that victims may not be able to effectively use their fingers. Encourage victims to use larger muscle groups, such as hugging arms around a throwable personal flotation device.

<u>If not wearing a life jacket, there is a higher risk of drowning.</u>

III. **Immersion Hypothermia.** The third stage of cold water immersion is Immersion Hypothermia. Normal core body temperature is approximately 98.6 °F. Hypothermia is when a person's core body temperature drops below 95.0 °F. Emphasize that it is possible to survive hypothermia.

a. Stay positive!
b. Continue plan developed in stage two.
c. Be prepared to activate visual distress signals when potential rescuers are in range.
d. Reduce and minimize heat loss by keeping movements to a minimum or get out of the water as much as possible
e. In open water:
    1. If swimming, do so efficiently using a modified backstroke.
    2. This stroke helps reduce body heat loss and conserves energy.
    3. Keep upper arms and elbows close to the sides of chest, upper legs close together and knees slightly bent.
    4. Use floating objects to help pull body out of the water or assist with swimming.

ii. If not swimming or are unable to pull body out of the water, get into the Heat Escape Lessening Position (HELP) or huddle position.

*The HELP position may be useful, but is only possible if wearing a life jacket.

1. Keep elbows by sides, squeeze legs together, and tuck knees up while still maintaining position in the water to help trap some heat. Encourage students to try this in the water to help discover optimal position.
2. With other people, huddle together. This will help people stay warmer, stay together, and make it easier for rescuers to spot.

ii. If in a river or other moving water: point feet downstream with knees bent slightly and feet up to avoid foot entrapment.

i. Maintain body at 45-degree angle to the current, with head pointing to the bank of choice.

ii. The force of the current on the upstream side will help "ferry" toward that bank.
iii. Use a modified backstroke and be prepared to fend off rocks and other objects.
iv. If necessary, be prepared to quickly flip onto stomach and into head-first position to scramble over "strainers" or other obstacles to keep from being pulled under or becoming pinned against them by the current.

Wearing a life jacket may increase survival time.

1-10-1 Principle (Remember this is a general guideline. Times vary for each individual.)

a. Within 1 minute, wait for hyperventilation to subside.
b. Within 10 minutes prioritize and perform meaningful activity.
c. 1 hour (or more) of useful consciousness. Stay Positive!

Wear a life jacket, and stay positive.

Optional Activity: Chill Out (See Appendix A)

Life jackets and the Law (10-15 minutes)

Ask participants if they know who has to wear a life jacket according to the law.

EVERYONE UNDER THE AGE OF 13 IS REQUIRED TO WEAR A U.S. COAST GUARD APPROVED LIFE JACKET WHEN IN AN OPEN BOAT OR ON THE DECK OF A BOAT.

However, everyone—even excellent swimmers and experienced boaters—should always wear a life jacket, especially in an open boat.

How to choose a life jacket

Point to the label on the life jacket to show where the label is located. This has information about the size, intended use, and if the life jacket is U.S. Coast Guard approved.

Demonstrate life jacket fit by putting a life jacket on and tightening the straps. Test fit by using both thumbs to pull up from under the shoulder straps. Shoulder straps should not rise above the ears. Emphasize that if a life jacket is loose or too big, it can slip over the person's head. Demonstrate the differences in size by comparing adult's life jackets to children's life jackets.

Another part of finding a life jacket is making sure that it is in serviceable condition. This means that there are no rips or holes; flotation material is not squished or showing; and that straps, buckles, and zippers all work. Compare a serviceable and non-serviceable life jacket (if available). The game "I Spy" is a good way to identify the differences between the two jackets. Participants should know that if they see a non-serviceable life jacket on a *Kids Don't Float* loaner board, they should tell an adult, who can dispose of it properly.

Off-Shore Life Jacket (Type I)

How to identify:

A. Locate the U.S. Coast Guard approval number.

B. Read the label for specific instructions and intended use. Off-shore life jackets are not appropriate for impact activities such as water skiing, personal watercrafts, and towing sports such as tubing.

C. Bright orange color, with highly visible reflective tape.

Function:

A. Turns most unconscious wearers face-up in water.

B. Recommended for use in rough, open or remote waters.

C. Normally has the most flotation material which means it floats the wearer highest in the water.

Near- Shore Life Jacket (Type II)

How to identify:

A. Locate the U.S. Coast Guard approval number.
B. Read the label for specific instructions and intended use. Not appropriate for impact activities (water skiing, tow sports i.e. tubing, or personal watercraft).
C. Bright orange or other bright colors.

Function:

A. Intended for calm, inland waters, areas where there is a good chance of quick rescue.
B. Turns some unconscious wearers face up in the water.

Buoyancy- Aids, Vests, Float Coats (Type III)

How to identify:

A. Locate the U.S. Coast Guard approval number.
B. Read the label for specific instructions and intended use. Some styles are not designed for impact activities or tow sports.

Function:

A. Not guaranteed to turn a wearer face-up in water.
B. Wide range of sizes and colors available.
C. Most are very comfortable.

Optional Activity: Life Jacket Fashion Show (See Appendix B)

*****_Additional class activities can be found in the appendix._

The best life jacket is the one you wear!

Assessment Plan:
Distribute *Kids Don't Float* Cold Water Survival Quiz (available on the Alaska Office of Boating Safety Website) http://dnr.alaska.gov/parks/boating/kdfeduresources.htm

Skill check:

- Participants can identify a serviceable life jacket when shown an example of a serviceable and a non-serviceable life jacket.
- Participants are able to check their own life jackets for proper fit.
- Participants can choose the appropriate type of life jacket for the desired activity.

Prompts to check for understanding:

- Describe the first three stages of cold water immersion.
- Who is required by law to wear a U.S. Coast Guard approved life jacket in an open boat or on the deck of a boat?
- Who should wear a life jacket?
- How does one know if a life jacket is U.S. Coast Guard approved?

Chill Out!

Purpose: To demonstrate the physical effects of cold water on the body, loss of fine motor skills, and numbness in fingers.

Materials:
- A bucket or a clean container
- 1 bag of ice or enough ice/snow to fill the container
- Hand towel or paper towels for drying hands
- Life jackets

Objectives:
Experience what cold water feels like in a safe, controlled environment.
Experience how cold water affects dexterity.

Alaska State Standards:

Physical Education Grades 3-5:

E.7. Describe appropriate reactions to threatening and/or emergency situations common to physical activity settings (e.g., bear or moose on playground).

E.9. Select appropriate safety equipment for specific physical activities (e.g., bike helmet, personal floating device).

WARNING: Some people have certain health risks related to this activity; ask participants if anyone has a health condition related to cold prior to beginning this activity. Please do not make this a mandatory activity. Monitor length of time in the water and excuse those who demonstrate discomfort.

Procedure:
1. Put ice or clean snow in the bucket or container and fill ¾ full with cold water.
2. Gather participants around the bucket and have them form two or three lines.
3. Have the participants take turns putting their hands in the ice water.
4. Then have them put on the life jacket and fasten the buckles as quickly as possible.

*Two to three participants can do this activity at a time.

Discussion points:

1. What is the first reaction when a person's arm enters the water?

Cold shock. The gasp may not be as pronounced because it is just part of the body instead of complete immersion.

2. How does the person's arm feel after a few seconds of being in the water?

Loss of feeling in fingers makes it hard to put on a life jacket in the water. This is one important reason why participants should wear a life jacket at all times.

3. Would it be difficult to buckle buckles, zip zippers, or pull straps on the life jacket when in cold water?

YES! During the second stage of cold water immersion, blood flow is restricted as blood vessels constrict causing loss of feeling and dexterity.

4. Was anyone wearing a sweatshirt or jacket when putting on the life jacket? Did that make it harder to get the life jacket snug?

It is common to wear warm clothes when boating in Alaska, so it is important to make sure that the life jacket fits over all of the layers that someone is wearing.

The best life jacket is the one you wear!

Life Jacket Fashion Show

Purpose:
This activity showcases different types of life jackets, how they are worn, special features of each life jacket, and the intended use. It prompts discussion that not all life jackets are created equal and understanding the different features can help make informed decisions about the best life jackets for specific activities.

Objectives:
Demonstrate how to properly fit a life jacket.
Choose the appropriate type of life jacket for the desired activity.

Materials:
At least one of each the following life jackets:
- Off-shore
- Near-shore
- Near-shore buoyancy aid (vest style)

Alaska State Standards:

Skills for a Healthy Life:

A.1. Understand that a person's well-being is the integration of health knowledge, attitudes, and behaviors.

B.5. Evaluate what is viewed, read, and heard for its effect on personal well-being.

Procedure:
1. Choose "life jacket models" to wear life jackets. If possible, have one to three students per life jacket type.
2. Tell the students what type of life jacket they have.
3. Ensure that life jackets are properly fit by pulling up on shoulder straps or neck collar to make sure that the life jacket does not come up over the ears.
4. Have two participants be the hosts/ hostesses who will read information about each life jacket from the script on the following page.
5. As one type at a time is called down the "runway," the hosts discuss uses and features of each life jacket.
6. Review with participants that information about size, intended use, and U.S. Coast Guard approval number is found on the manufacturer's label.

Discussion:
1. What is the best life jacket?
   The best life jacket is the one you wear.
2. Where can someone find out if a life jacket is U.S. Coast Guard approved?
   Read the life jacket label and locate the U.S. Coast Guard approval number.

Optional Narrative:
Host 1: Ladies and Gentleman, welcome to today's life jacket fashion show! I am (introduce yourself).

Host 2: And I am (introduce yourself). And we will be your hosts for this exciting event.

Host 1: Now let's welcome out our first group sporting our Off-Shore life jackets!

Host 2: These life jackets are really something! Look at the fabulous orange color accented by those dazzling reflectors. Those will definitely make a wearer more visible to a search and rescue team.

Host 1: This life jacket is also designed to roll most unconscious wearers face-up out of the water. This is just a spectacular feature. Now let's bring out our Near-shore life jacket. Easy-on with a single strap securing the lovely life jacket to your body. This design is to be enjoyed on those waters close to land and the likelihood of a quick rescue.

Host 2: It sure is thinner than those off-shore life jackets we just saw. These look much more comfortable to be moving around in, and speaking of comfy, here come our Buoyancy Aid life jackets: the vests!

Host 1: These kids look ready for a full day of fishing at the lake. This life jacket is so comfortable but has the least amount of flotation. The design is for waters close to land and quick rescue.

Host 2: Remember that even with a life jacket, you should only go near the water with a responsible adult. Alaska's cold water can be dangerous. All children under the age of 13 are required by law to wear a life jacket in an open boat or on the deck of a boat, but shouldn't everyone?

Host 1: Yes, everyone should wear a life jacket, because the best kind of life jacket is….
All participants: THE ONE YOU WEAR!

Host 2: That concludes our fashion show folks. Please join us in giving our wonderful models a final round of applause.

*Make sure to mention the functions of each of the different kinds of life jackets and the importance of a snug and comfortable fit.

Minute To Win It
Life Jacket Challenge

Purpose: To demonstrate why it is important to properly wear a life jacket at all times in an open boat or on deck.

Alaska State Standards:

Physical Education Grades 3-5:
E.1 Demonstrate awareness and participate safely when involved in activity.

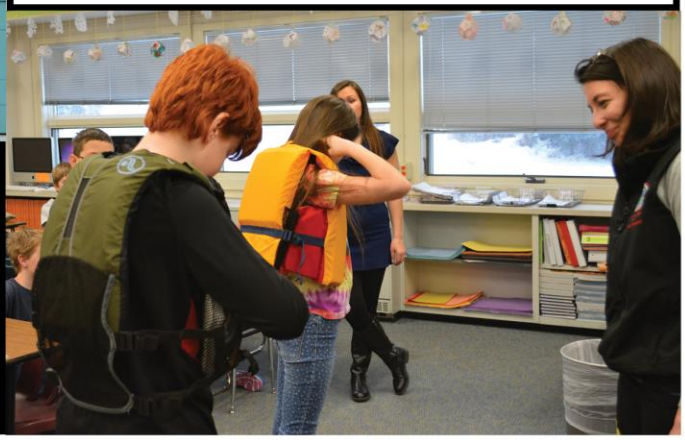
Skills for a healthy life:
A.2. Understand how the human body is affected by behaviors related to eating habits, physical fitness, personal hygiene, harmful substances, safety, and environmental conditions.
A.3. Understand and identify the causes, preventions, and treatments for diseases, disorders, injuries, and addictions.
B.1 Demonstrate an ability to make responsible decisions by discriminating among risks and by identifying consequences.

Materials:
- Three chairs
- Three life jackets
- A watch or clock with second hand

Procedure:

1. Set up three chairs similar to how they would appear on a boat. Place the life jackets under each chair.
2. Place a volunteer in each chair. When told that the "boat is sinking," each person will have one minute to correctly put on their life jacket.
3. At the end of one minute, determine how many of the three "victims" are wearing their life jackets correctly or at all. Be sure **not** to point fingers at those students who did not meet the challenge.

Discussion Points:
It is important to have a life jacket on **before** an emergency arises, since it is very difficult to locate and put one on in an emergency situation. Make sure the life jacket fits before an emergency arises. Put the life jacket on before getting into any boat. Be familiar with your life jacket.



Skiff, Skiff, Canoe

Purpose:
For participants to experience the difficulty of putting on a life jacket in a hurry and checking for fit.

Objective:
Participants will practice putting on a life jacket and checking for proper fit.

Materials:
- Life jackets in various sizes and styles

Alaska State Standards:
Skills for a Healthy Life:
A.1. Understand that a person's well-being is the integration of health knowledge, attitudes, and behaviors.

Procedure:
Have participants sit in a circle. The game is played like "Duck, Duck, Goose." One person is chosen to be the Harbormaster to walk around the outside of the circle and designate who is a "skiff" or "canoe." When "canoe" is called, the Harbormaster and the "canoe" stand up and grab a life jacket from the pile in the middle of the circle. After both participants have life jackets on, the canoe chases the Harbormaster around the circle. If the Harbormaster gets back to the empty seat before the canoe catches him/her, then the Harbormaster is safe and passes his/her role onto the canoe.

Discussion Point:
How difficult is it to put on a life jacket AND make sure it fits when in a hurry?

It is always better to have the life jacket on to start with rather than having to put it on in an emergency, especially if the life jacket is stored. Remember, the law requires children under 13 to wear a U.S. Coast Guard approved life jacket when in an open boat or on the deck of a boat.

Kids Don't Float

Cold Water Survival

Quiz

Please circle the best answer:

1. What is an example of a safe behavior when boating?
    a. Reaching overboard for an object
    b. Riding on the bow of the boat
    c. Seating everyone on the same side
    d. Sitting and keeping the boat balanced

2. During the first stage of cold water immersion (Cold Shock Response), how does a life jacket help you survive?
    a. Helps maintain an airway
    b. Deploys a mayday call upon initial immersion
    c. Reduces tingling in your fingers and toes
    d. Slows the heat loss from your head

3. What is one thing you should do within the first ten minutes of cold water immersion?
    a. Assess the situation and make a plan
    b. File a float plan
    c. Kick off boots and shed bulky clothing
    d. Divide the group and swim in different directions

4. What is the term used to describe a drop in a person's body core temperature?
    a. Gasp reflex
    b. Cold incapacitation
    c. Frostbite
    d. Hypothermia

5. What is one thing that would make a life jacket non-serviceable?
    a. It's an ugly color
    b. It's too small
    c. It has a broken buckle
    d. It has a zipper

6. Alaska law requires that a person under what age must wear a U.S. Coast Guard approved life jacket when in an open boat or on the deck of a boat?
    a. 11
    b. 12
    c. 13
    d. 14

7. How do you know if a life jacket is U.S. Coast Guard approved?
    a. Is bright orange and has reflective tape
    b. Has a U.S. Coast Guard approval number on the label
    c. Fits properly in the water
    d. Floats a person on his/her back

8. How can you test to ensure a life jacket properly fits?
    a. Bend over and touch your toes
    b. Fill the pockets with survival gear
    c. All the adjustment straps are loose
    d. Is snug and comfortable

9. You are going waterskiing, which life jacket is the best choice?

a. b. c. d.

10. What is the best life jacket?
    a. One you wear
    b. Most expensive one
    c. Your favorite color
    d. Newest one

11. What was the most important thing you learned today?

12. Will you wear a life jacket in an open boat or on the deck of a boat?

KIDS DON'T FLOAT

Cold Water Survival

Course & Instructor Evaluation

Your Name:	**Date of class:**
School:	**Grade:**
# of Students:	**Instructor's Name:**

Did you find the presentation to be: **If 'no' to any, please describe why not**

Informative? →
Useful? →
Active? →
Fun? →

Did you find the length and content of the presentation to be age appropriate? If not, why?

What was the *most* useful piece of information provided?

Did the instructor cover all of the learning objectives?

__ Distinguish between risky and safe behavior while on or near the water
__ Describe three stages of cold water immersion
__ Explain 1-10-1 and how to survive a cold water immersion event
__ Describe how to choose a life jacket for its intended use
__ Locate manufacturers label on a life jacket; is life jacket U.S. Coast Guard approved?
__ Explain life jacket serviceability
__ Demonstrate how to wear a life jacket properly and how to check for proper fit
__ Identify legal age requirement for life jacket use

On a scale of 1 to 5 (1 = poor, 5 = excellent), please rate the instructor.

__ Was instructor on time and prepared?
__ Was instructor dressed professionally?
__ Was the material presented in an understandable manner?
__ Did the instructor demonstrate a thorough knowledge of the subject?
__ Was student participation encouraged?

What were the instructor's strong points?

Are there any topics that you would like to see that were NOT covered?

Any other comments or suggestions for the instructor or the program?

Please submit completed form to kelli.toth@alaska.gov or fax to 269-8907

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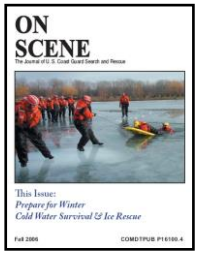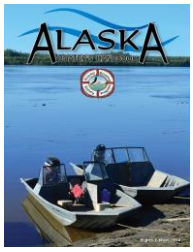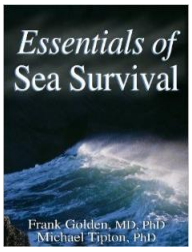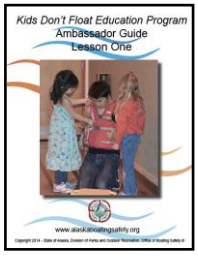
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