ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL FOUR

INSTRUCTIONAL GUIDE

SECTION 6

EO C490.01 – DESCRIBE CLIMATIC AND SEASONAL CONCERNS

Total Time: 30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-804/PG-001, *Proficiency Level Four Qualification Standard and Plan*, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

PRE-LESSON ASSIGNMENT

Nil.

APPROACH

An interactive lecture was chosen for TP 1 to give an overview of climate concerns.

A group discussion was chosen for TP 2 as it allows the cadets to interact with their peers and share knowledge, experiences, opinions, and feelings about seasonal concerns associated with spring, summer, autumn, and winter weather. This helps develop rapport by allowing the instructor to evaluate the cadets' responses in a non-threatening way while helping them refine their ideas. A group discussion also helps the cadets improve their listening skills and develop as members of a team.

INTRODUCTION

REVIEW

Nil.

OBJECTIVES

By the end of this lesson the cadet shall have described climatic and seasonal factors that affect survival situations.

IMPORTANCE

It is important for cadets to describe seasonal concerns, so they can apply the knowledge in a survival situation.

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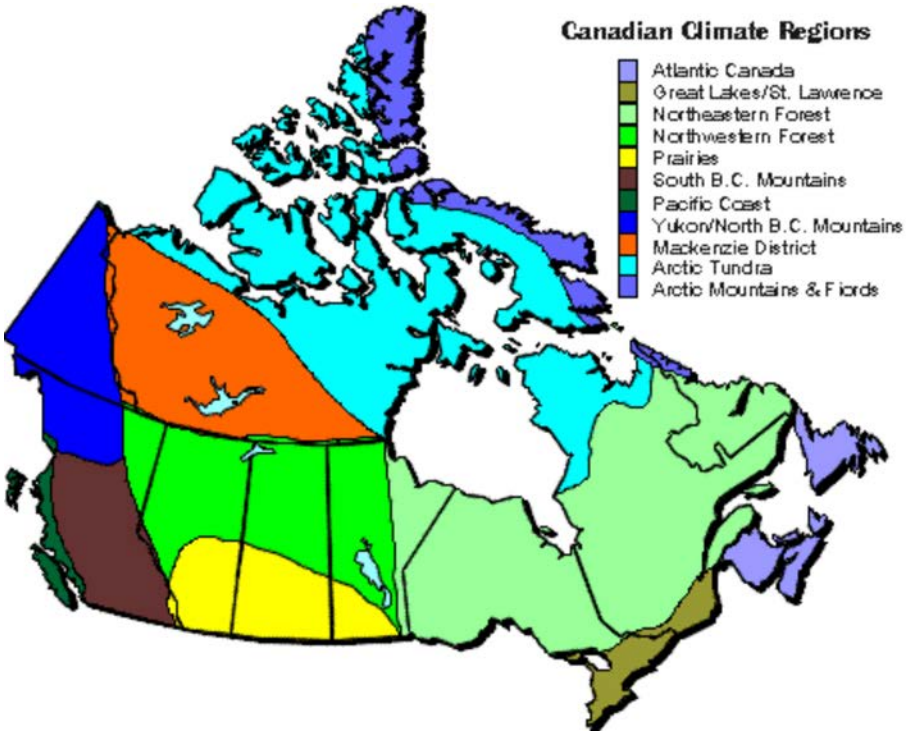
Teaching point 1 **Describe climate associated with regions and climate change.**

Time: 15 min Method: Interactive Lecture



Note. From Canadian Regional Climates, 2002, by Environment Canada. Retrieved April 17, 2009, from http://www.msc-smc.ec.gc.ca/ccrm/bulletin/figclimate_e.html

Figure 1 Climate Map

It is important to understand each regional climate zone. If an individual is lost or in a survival situation, it is good to know the climate of the region they are surviving in. Canada has 11 regional climates (as illustrated in Figure 1).

CANADIAN REGIONAL CLIMATE

The West Coast

British Columbia's coast has the most temperate climate in Canada. It rarely snows in the low-lying areas of the coastal range and the Rocky Mountains block the Pacific air from the Prairies. The valleys between the mountain ranges experience hot summers, almost completely precipitation free.

The Prairies

The Prairies extend east of the Rocky Mountains to the Great Lakes. The Prairies has predominant climate, with the cold winters and humid, hot summers.

The Great Lakes–St. Lawrence

More than half of the population of Canada lives here. The winters have a lot of snowfall and wind and the summers are humid and longer than anywhere else in Canada.

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Atlantic Canada

It has one of the most rugged and variable climates in Canada. In the winter, temperatures can vary as the arctic air is replaced by maritime air from passing storm systems. The snowfall is heavy and fog is often present in the spring and at the beginning of summer. The warmest time of the year is in July, as temperatures average 16–18 degrees Celsius.

The North

The North is mostly covered in snow during the year. The summer lasts for two months and the temperatures rise above freezing for only a few weeks of the year. The temperatures are so cold that the ground is frozen all year long.

CLIMATE CHANGE

Environmental Impact

Canada's climate has increased by 1.3 degrees Celsius since 1948, with the Arctic experiencing the greatest changes of all regions. The warming in the Arctic has led to a decrease in snow cover and sea ice, a degradation of permafrost, and a retreat of glaciers and ice caps. To the south of the Arctic, the winter snow is melting earlier and glaciers are disappearing.

The water levels of the Great Lakes are dropping and sea levels are rising. The temperature increase is causing a longer growing season for plant vegetation.

The climate change is causing increases in related hazards, such as heat waves, droughts, floods, forest fires, storm surges, and coastal erosion. These hazards are not only costly (damage to property and infrastructure) but can be life threatening if climate change increases significantly.

A warming climate in Canada impacts water quantity and quality across the country. Frequent downpours in the Great Lakes could lead to localized flooding and overwhelm current sewage treatment facilities with increases in sewage and stormwater runoff.

The Prairies may see a decline in water levels on ponds, lakes and dugouts, leading to changes in water chemistry, which means less water for crop irrigation.

Health Impact

The health and well-being of Canadians could be affected by the climate change. Some of the health impacts are related to:

- an increasing number of smog and extreme heat events,
- the spread of infectious diseases from insects migrating northward, and
- a decline in the quality and the quantity of drinking water in some areas because of drought.

The health impact varies from one location to another and changes over time, as temperatures and other climatic conditions continue to change.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS:

Q1. How many regional climate zones are there in Canada?

Q2. What are the health impacts related to the climate change in Canada?

Q3. How does a changing climate impact health?

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ANTICIPATED ANSWERS:

A1. There are 11 regional climate zones in Canada.

A2. The health impacts related to climate change in Canada are:

- an increasing number of smog and extreme heat events,
- the spread of infectious diseases from insect migrating northward, and
- a decline in the quality and the quantity of drinking water in some areas because of drought.

A3. The health impact changes from one location to another and over time, as temperatures and other climatic conditions continue to change.

Teaching point 2 **Conduct a group discussion on seasonal concerns in a survival situation.**

Time: 10 min Method: Group Discussion

BACKGROUND KNOWLEDGE



The point of the group discussion is to draw the following information from the group using the tips for answering / facilitating discussion and the suggested questions provided.

There are four seasons in Canada: spring, summer, autumn and winter.

The following are typical features of seasons in the southern part of Canada:

SPRING

The season starts in March and ends in May. During this period, the snow begins to melt. It is known to be the rainy season in most parts of Canada. The days become warmer, but the nights are still cool. Vegetation starts growing; however, trees remain bare until April or May.

SUMMER

The season starts in June and ends in August, though in some parts of Canada the season can last until mid-September. The temperatures in summer may reach 30 degrees Celsius or higher. The season is known to be typically hot and dry with occasional rainstorms / thunderstorms. Humidity is a factor around the Great Lakes region. This is the season of mosquitoes and blackflies.

AUTUMN

The season starts in September and ends in November with days becoming shorter. As the days become shorter, temperatures start to fall, and during the night, frost starts to appear. The vegetation starts to die off and leaves start to change colour. During this season, weather is unpredictable with rain and the first signs of snow usually appear in November.

WINTER

The season starts in December and ends in February, sometimes later in some regions of Canada. This season is known for snow and ice. Snow can start as early as October and continue to late March. The temperatures

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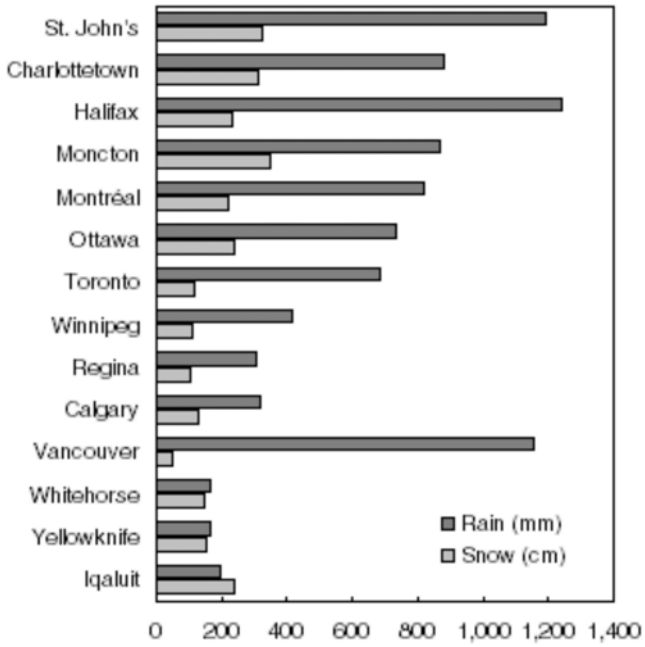
are below zero degrees Celsius from December to mid-March, especially at night. The wind is a factor as well and wind chill can make it feel even colder. The only parts of Canada where temperatures appear to be milder are on the East and West Coasts, where there is more precipitation.



Note. From Canadian Climate Normals, by Environment Canada (2004). Retrieved April 22, 2009, from http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html

Figure 2 Annual Average Precipitation (1971 to 2000)

GROUP DISCUSSION



TIPS FOR ANSWERING / FACILITATING DISCUSSION:

- Establish ground rules for discussion, eg, everyone should listen respectfully; don't interrupt; only one person speaks at a time; no one's ideas should be made fun of; you can disagree with ideas but not with the person; try to understand others as much as you hope they understand you; etc.
- Sit the group in a circle, making sure all cadets can be seen by everyone else.
- Ask questions that will provoke thought; in other words avoid questions with yes or no answers.
- Manage time by ensuring the cadets stay on topic.
- Listen and respond in a way that indicates you have heard and understood the cadet. This can be done by paraphrasing their ideas.
- Give the cadets time to respond to your questions.
- Ensure every cadet has an opportunity to participate. One option is to go around the group and have each cadet answer the question with a short answer. Cadets must also have the option to pass if they wish.
- Additional questions should be prepared ahead of time.

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SUGGESTED QUESTIONS:

Q1. How do the seasonal concerns in the spring affect an individual in a survival situation?

Q2. How do the seasonal concerns in the summer affect an individual in a survival situation?

Q3. How do the seasonal concerns in autumn affect an individual in a survival situation?

Q4. How do the seasonal concerns in the winter affect an individual in a survival situation?



Other questions and answers will develop throughout the group discussion. The group discussion should not be limited to only those suggested.



Reinforce those answers given and comments made during the group discussion, ensuring the teaching point has been covered.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the group discussion will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the group discussion will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK / READING / PRACTICE

Nil.

METHOD OF EVALUATION

Nil.

CLOSING STATEMENT

It is important to describe climatic and seasonal concerns so you can apply the knowledge when in a survival situation.

INSTRUCTOR NOTES / REMARKS

Cadets who are qualified Survival Instructor may assist with this instruction.

REFERENCES

C3-341 Environment Canada.(2009). *Environmental impacts*. Retrieved April 16, 2009, from http://www.ec.gc.ca/cc/default.asp?lang=En&n=4630D154-1

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C3-342 Environment Canada. (2009). *Health impacts*. Retrieved April 16, 2009, from http://www.ec.gc.ca/cc/default.asp?lang=En&n=0B072979-1

C3-343 O Canada. (2009). *Canadian regional climate*. Retrieved April 16, 2009, from http://www.ocanada.ca/climate/regional.php

C3-344 Government of Canada. (2008). *Four seasons*. Retrieved April 22, 2009, from http://www.goingtocanada.gc.ca/CIC/display-afficher.do?id=0000000000039&lang=eng

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