

METEOROLOGY CAREERS AT THE METEOROLOGICAL SERVICE OF CANADA

Who we are, what we do and how you can apply



Environment and Climate Change Canada's 50th anniversary
50^e anniversaire d'Environnement et Changement climatique Canada

Meteorological Service of Canada's 150th anniversary
150^e anniversaire du Service météorologique du Canada



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

Canada

MSC: WHO WE ARE

- Division of the federal department Environment and Climate Change Canada
- **Official source** of weather warnings in Canada
- Principal scientific authority for standards, information and advice on the past, present and future state of the atmosphere (weather and climate), hydrosphere (lakes and rivers) and cryosphere (snow and ice)



Why work for the Meteorological Service of Canada?

- Varied career opportunities: Public, aviation, ice and military operational forecasting. Research, development, service delivery, training, air quality, climatology, atmospheric modelling, etc
- Salary
- Good benefits
- Job security
- Many advancement opportunities!



6 MAIN CAREER PATHS



- Operational meteorologists
- Services
- Development (R&D)
- Training
- Performance measurement
- Management

OPERATIONAL METEOROLOGISTS

THERE ARE FOUR FORECAST PROGRAMS IN CANADA

Storm Prediction Centres (SPCs):

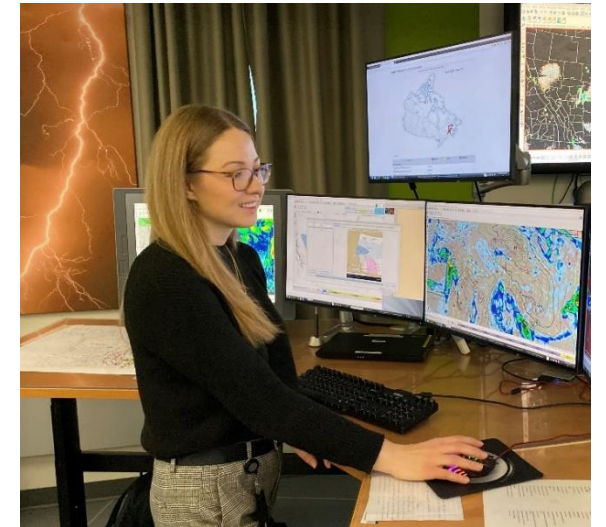
- Gander, NL
- Dartmouth, NS
- Montreal, QC
- Toronto, ON
- Winnipeg, MB
- Edmonton, AB
- Vancouver, BC

Aviation Centres (CMACs)

- Montreal, QC
- Edmonton, AB

Ice Services

- Ottawa, ON



Aviation And Defence Weather Services

- Halifax, NS
- Gagetown, NB
- Esquimalt, BC



OPERATIONAL METEOROLOGISTS

STORM PREDICTION CENTRES



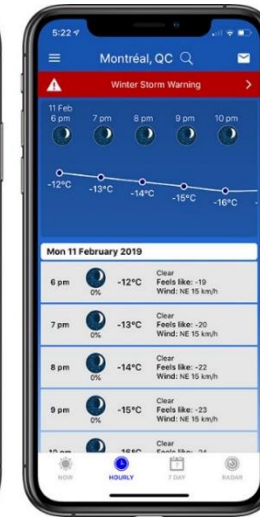
Offices: Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Dartmouth, Gander



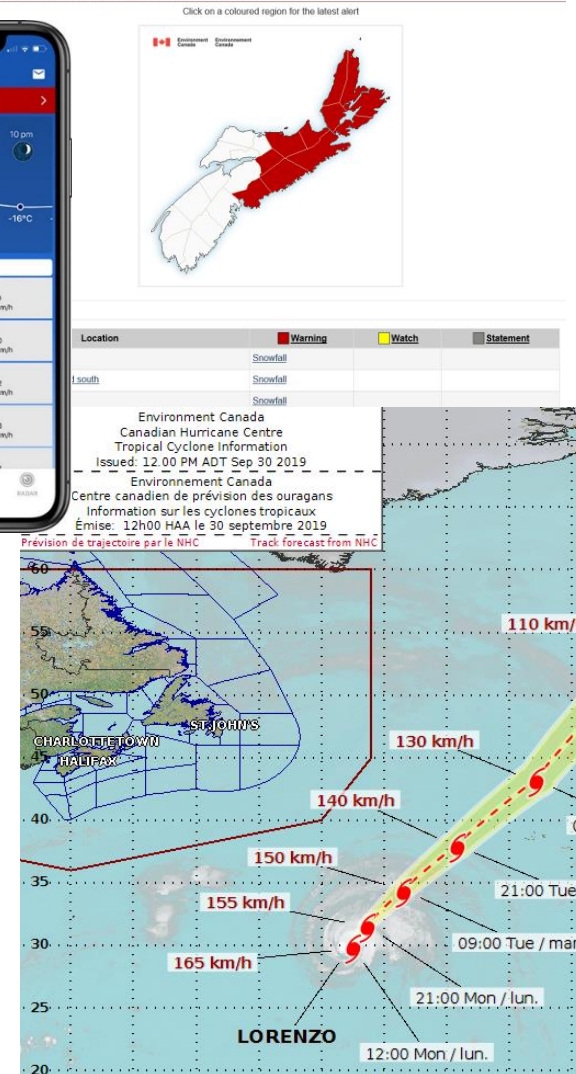
OPERATIONAL METEOROLOGISTS

ROLES OF THE SPC

- High impact weather and public, marine and air quality forecasts
- All alerts (special weather statements/ advisories/ watches/ warnings)
- Communication with media / Emergency services / the public
- Everyday weather:
 - Occurrence, type & quantity of precipitation
 - Visibility (fog, blowing snow)
 - Cloud cover
 - Temperature
 - Wind speed/direction



Public Weather Alerts for Nova Scotia



OPERATIONAL METEOROLOGISTS

Canadian Meteorological Aviation Centres (CMAC)

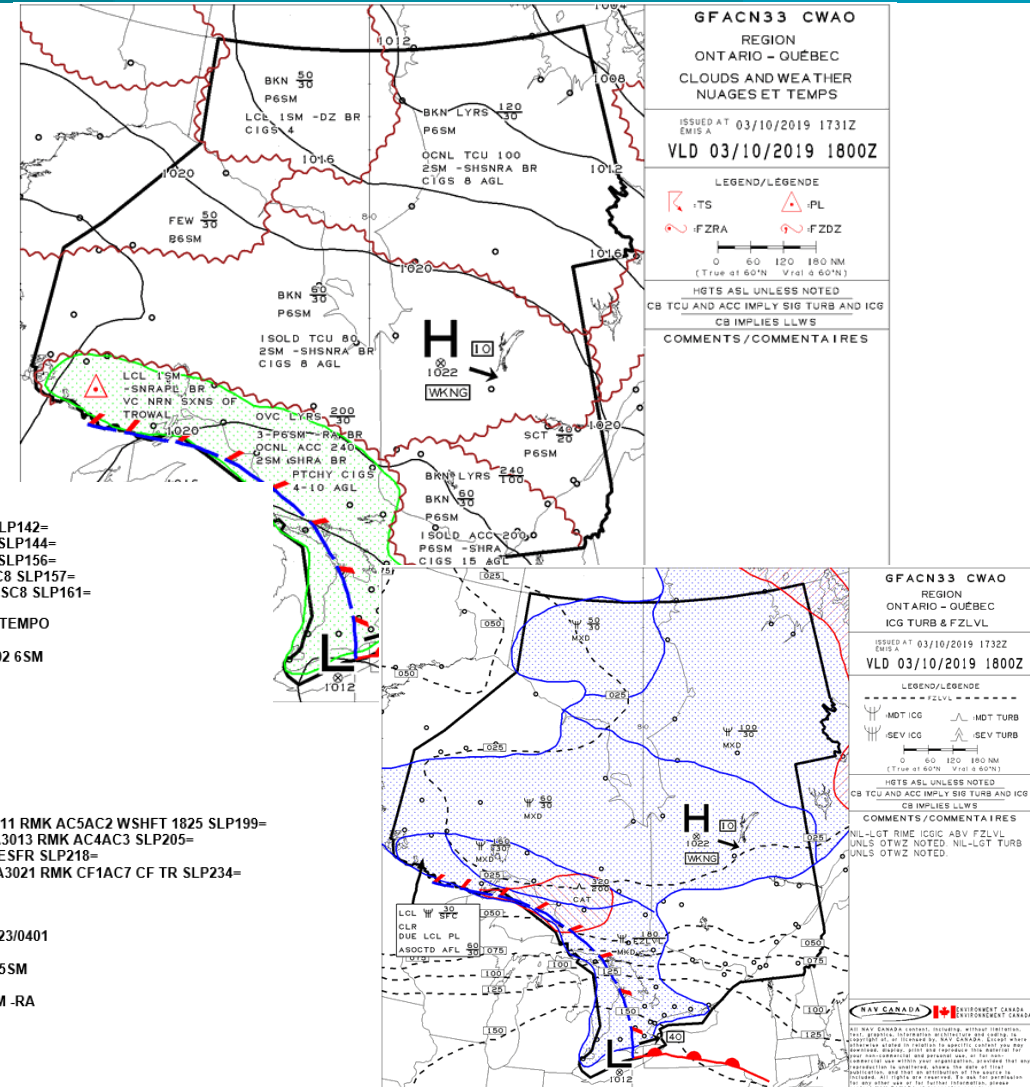
- CMAC-East in Montreal, QC
- CMAC-West in Edmonton, AB



OPERATIONAL METEOROLOGISTS

ROLES OF THE CMAC

- Forecast weather for the aviation industry:
- Take-off/landing conditions at ~200 airports across Canada
- Communication of weather risks to safety of the air navigation system
- Turbulence
- Convection
- In-Flight Icing
- Volcanic Ash
- Wind Shear/Gusts
- Low ceilings and visibilities



OPERATIONAL METEOROLOGISTS

AVIATION AND DEFENCE WEATHER SERVICES

3 Offices: ▶ Esquimault, BC (MetOc) ▶ Halifax, NS (MetOc) ▶ Gagetown, NB (JMC)



MetOc = Meteorology and Oceanography Centre

JMC= Joint Meteorological Centre



OPERATIONAL METEOROLOGISTS

ROLE OF AVIATION AND DEFENCE WEATHER SERVICES

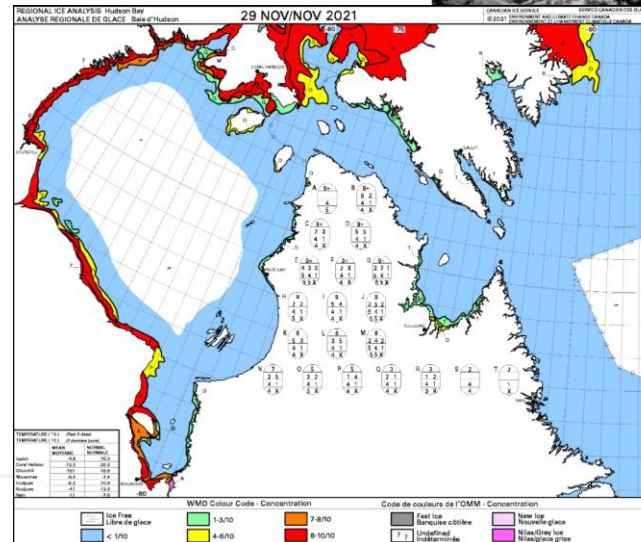
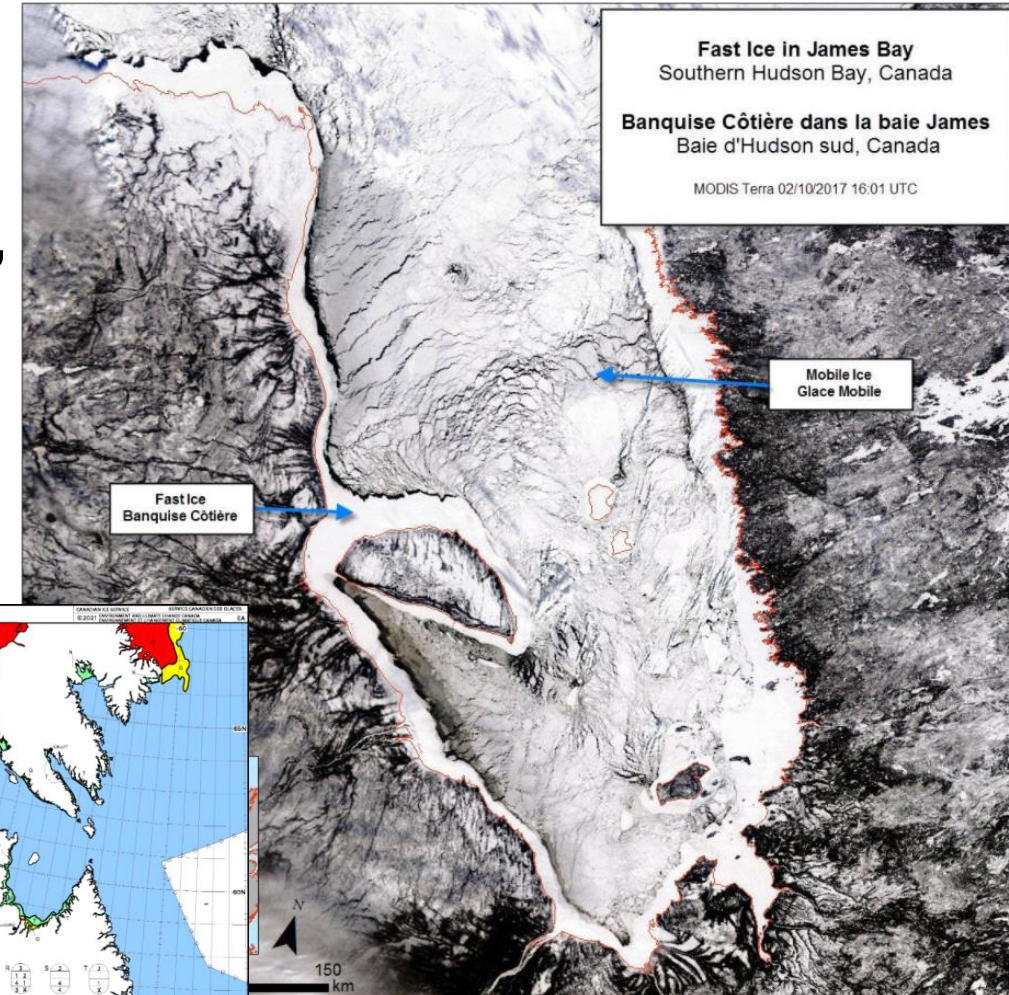
- Geographic forecast areas vary around the globe to support current DND activities
- Mixture of aviation, marine and public forecast types
- To work in this section, all employees must obtain “SECRET” security level clearance



OPERATIONAL METEOROLOGISTS

CANADIAN ICE SERVICE OTTAWA, ON

- Leading authority for ice and iceberg information in Canada's navigable waters (sea, lake, river and ocean)
- Provide information about dangerous ice conditions to clients, produce charts
- Provides essential ice knowledge to support sound environmental policies

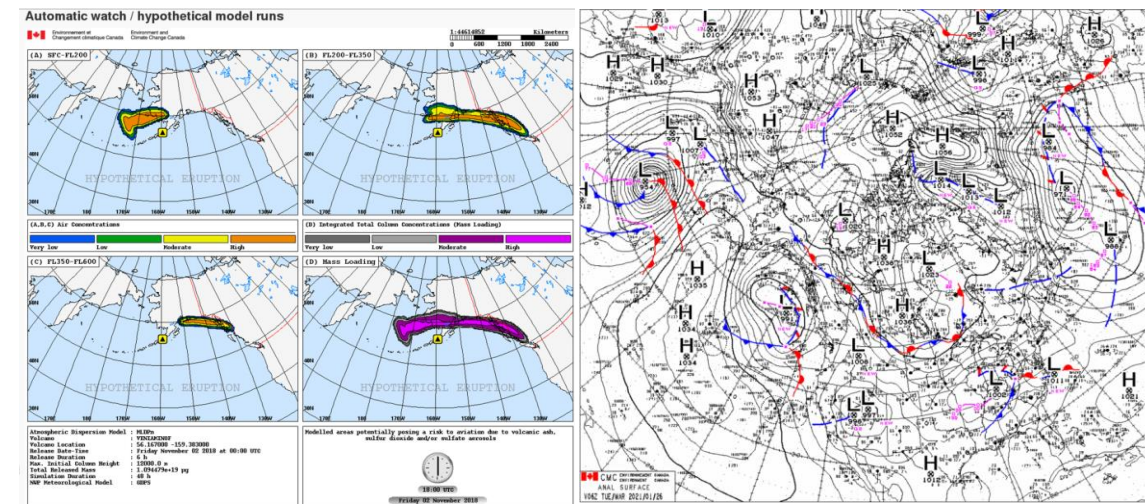


OPERATIONAL METEOROLOGISTS

Analysis & Prognosis (A&P)

Dorval, QC

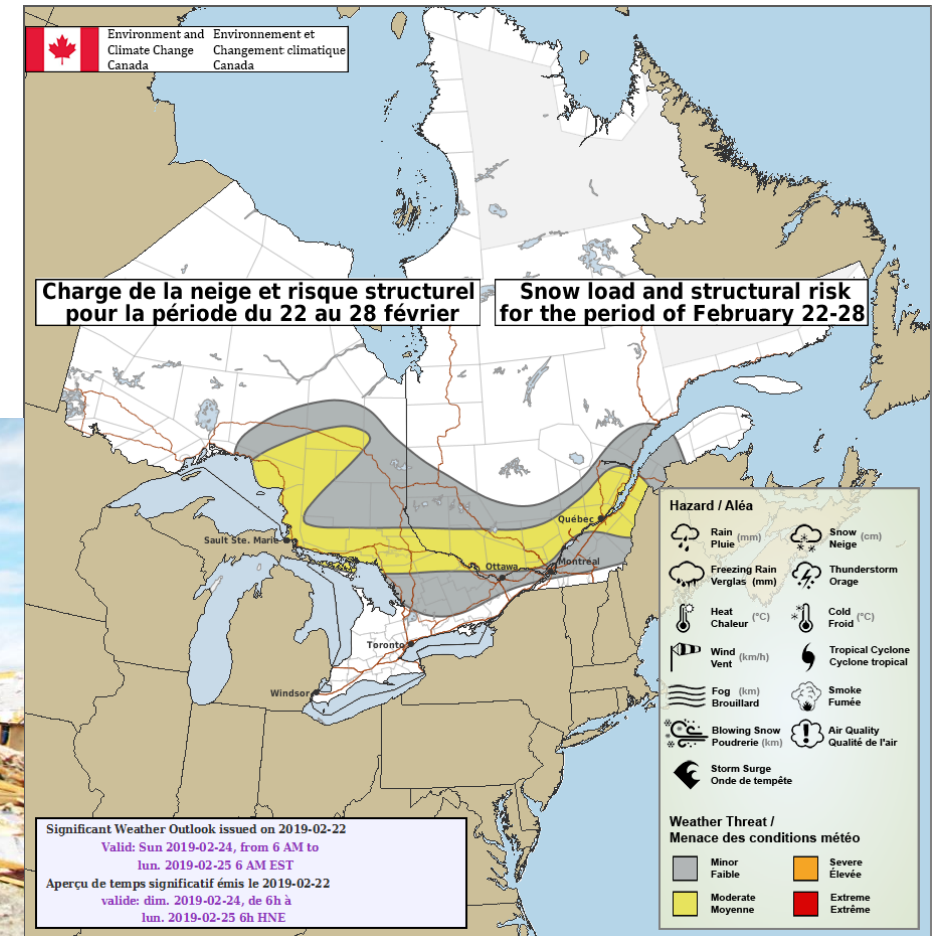
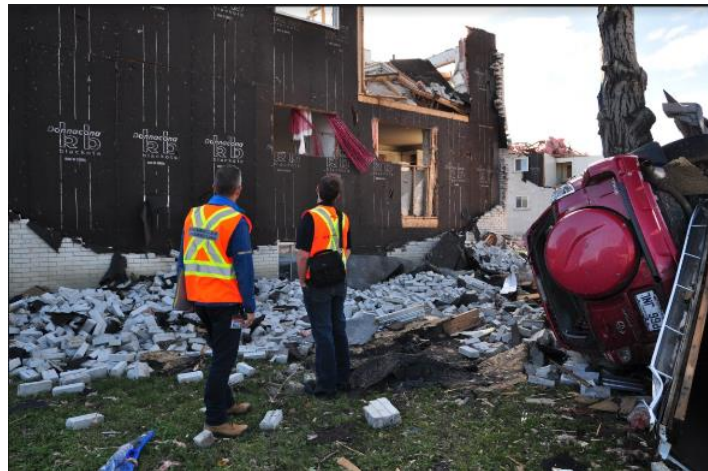
- Monitor performance of Numerical Weather Prediction Models
- Provide operational response for volcanic ash or environmental emergencies
- Perform evaluations and verification of domestic model output
- Validate outputs for soon to be implemented domestic models
- Produce national surface charts and weather outlooks, along with seasonal forecasts
- Briefings to the Government Operations Center (GOC)



SERVICES METEOROLOGISTS

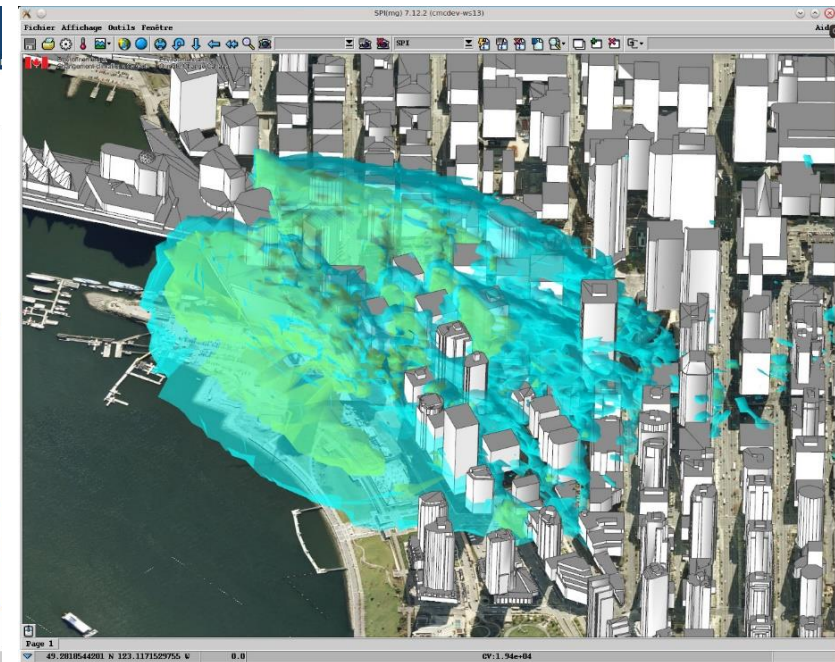
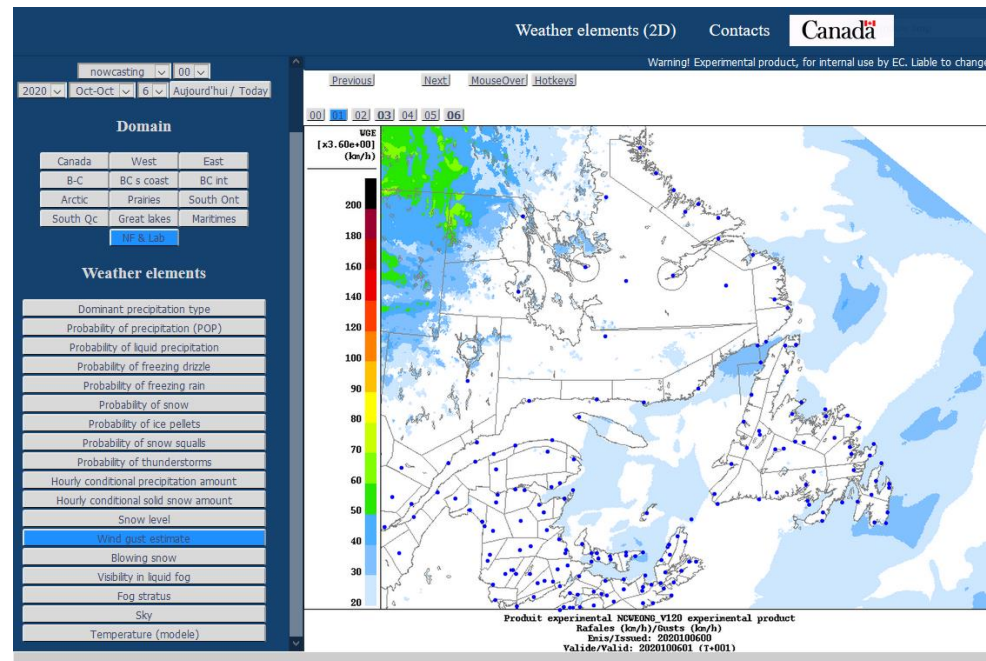
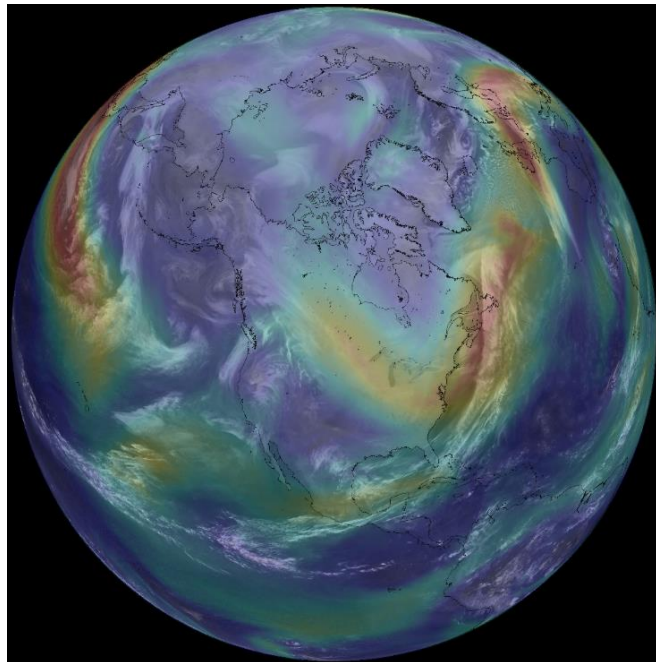
CLIENT SERVICE OPERATIONS

- Staffed by Warning Preparedness Meteorologists (WPMs) and Program Meteorologists across Canada
- Provide decision support services to major clients, including emergency management organisations, provincial and national government groups, and media
- Investigate damage sites following severe weather events
- Communicate risk



DEVELOPMENT METEOROLOGISTS (R&D)

- Work in developing/improving numerical weather prediction models, post-processing, algorithms, products and forecasting tools used by operational meteorologists
- Collaborate with operational meteorologists to validate all of the above



DEVELOPMENT METEOROLOGISTS (R&D)

CANADIAN METEOROLOGICAL CENTRE (CMC)

Research, Development, Informatics and Meteorological Operations under one roof



Meteorological Research Division (S&T)

- Data Assimilation
- Modeling
- Cloud Physics

National Prediction Operations

- Implementation and Operational Services
- Analysis & Prognosis
- Environmental Emergency Response
- Air Quality Issues Response
- Environmental Data Processing Applications

National Prediction Development:

- Data Assimilation and QA/QC
- Numerical Weather Prediction
- Environmental Numerical Prediction
- Weather Elements
- Meteorological Systems
- Scientific Applications



TRAINING METEOROLOGISTS

- Develop, deliver and organize training material for meteorologists and technicians
- Experts in both in-person and online distance learning
- Manage the Meteorologist Occupational Training Program (MOTP), including the initial MOIP training course
- Work across Canada, main offices Montréal and Edmonton



The screenshot shows the Meteorological Service of Canada Training Portal. At the top, there is a green banner with the text "Click here to take a tour of the Training Portal." Below this, there is a navigation bar with "Training categories" and "English (en)" dropdown menus, and a search bar with "Search courses..." and a "Go" button. The main content area features the "Training Portal" title with the TCCP logo. A welcome message states: "Welcome to the new version of the Training Portal! You will notice a few new features which will better define the available material on this site including learning objectives relevant to training. Please note, however, that work is still in progress and not all available material have been converted to new formats. Thank you for your patience." Below this, the "Latest courses" section highlights "Introduction to the Meteorological Service of Canada" with a description, publication date (February 25, 2020), completion time (1h), languages (English, French), and keywords (MSC, weather products, organizational structure, directorates).



OTHER METEOROLOGIST ROLES

PERFORMANCE MEASUREMENT

- MSC is part of the GoC
 - Need to show how current activities produce results for Canadians
- Performance measurement provides evidence of:
 - Positive results of current activities
 - Success of our improvement projects
 - Skill of our prediction systems and forecasts
 - Opportunities for improvement
- Requires knowledge of meteorology/hydrology and strong data science skills

MANAGEMENT

- Managing different sections of meteorologists in:
 - Forecast offices
 - Services
 - R&D units
 - Training
 - Performance Measurement



BECOMING A METEOROLOGIST WITH THE MSC

Education Requirements - Degree

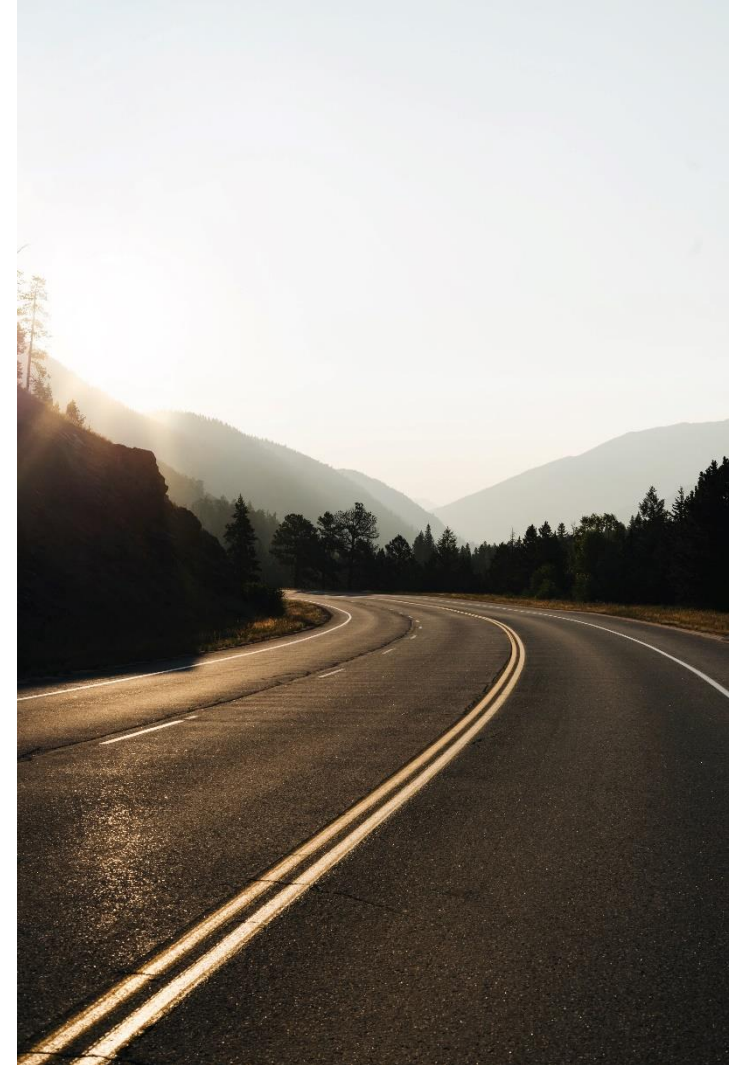
Graduation with a degree from a recognized post-secondary institution with acceptable specialization in meteorology;

OR

Graduation with a degree from a recognized post-secondary institution with acceptable specialization in Mathematics and a degree or certificate in meteorology;

OR

Graduation with a degree from a recognized post-secondary institution with acceptable specialization in sciences and a degree or certificate in meteorology.



BECOMING A METEOROLOGIST WITH THE MSC

Education Requirements - Courses

Notwithstanding the nature or field of the degree mentioned above, the applicant's university transcript must encompass, as a minimum prerequisite, the following courses :

- minimum of **30 credits in physics and mathematics** or the equivalent of 10 courses of about 45 lecture hours each*;
- **dynamic meteorology course ; ATSC 404**
- **thermodynamic meteorology course; ATSC 405**
- **synoptic meteorology course; ATSC 413**
- **three (3) other meteorology related courses.**



BECOMING A METEOROLOGIST WITH THE MSC

Conditions of Employment

- Shift work (day, evening, night, week-ends, holidays) on a 24/7 basis;
- Presence required at the working desk for the entire shift or operational training;
- Mobility to various offices across Canada is a requirement of the job in order to respond to the Meteorological Service of Canada operational needs. (5 year clause)
- Who can apply: *Persons residing in Canada and Canadian citizens residing abroad.

*Preference will be given to veterans first and then to Canadian citizens and permanent residents



BECOMING A METEOROLOGIST WITH THE MSC

Diversity, Employment Equity and Assessment Accommodation

- ECCC seeks to ensure that recruitment strategies are fair and accessible to members of the 4 EE groups: women, Persons with Disabilities, Aboriginal/Indigenous People, and Visible Minorities
- Candidates belonging to any of the above groups may self-declare on their application
- Assessment accommodation measures are available to candidates who require and request

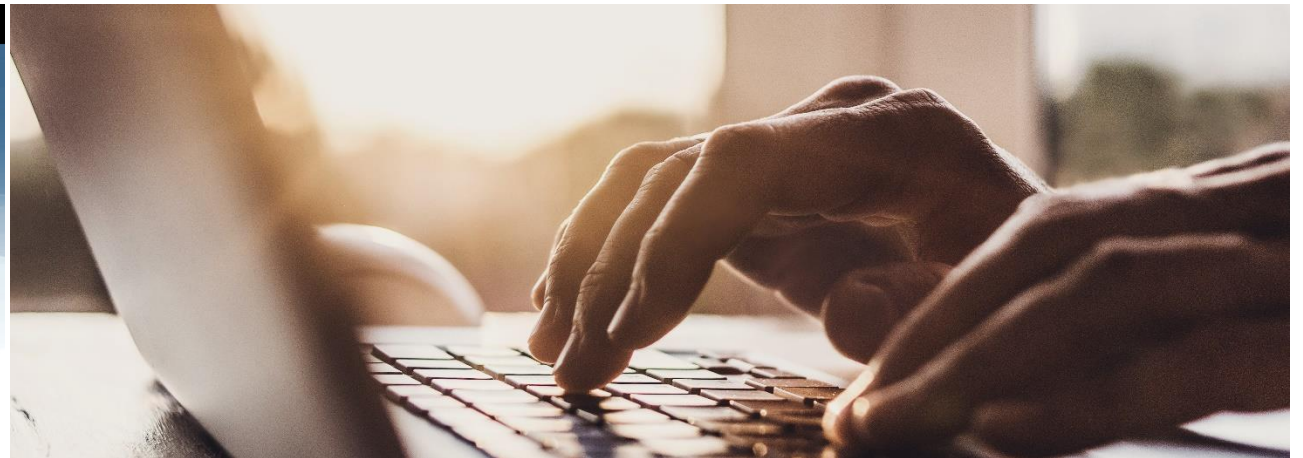


BECOMING A METEOROLOGIST WITH THE MSC

Initial Application January 24 – February 13

- The MT-01 job advertisement usually gets posted on the GC Jobs website in December or January each year
- In order to be notified when it is posted, create an account with GC Jobs, and set up e-mail alerts for MT jobs open to the public

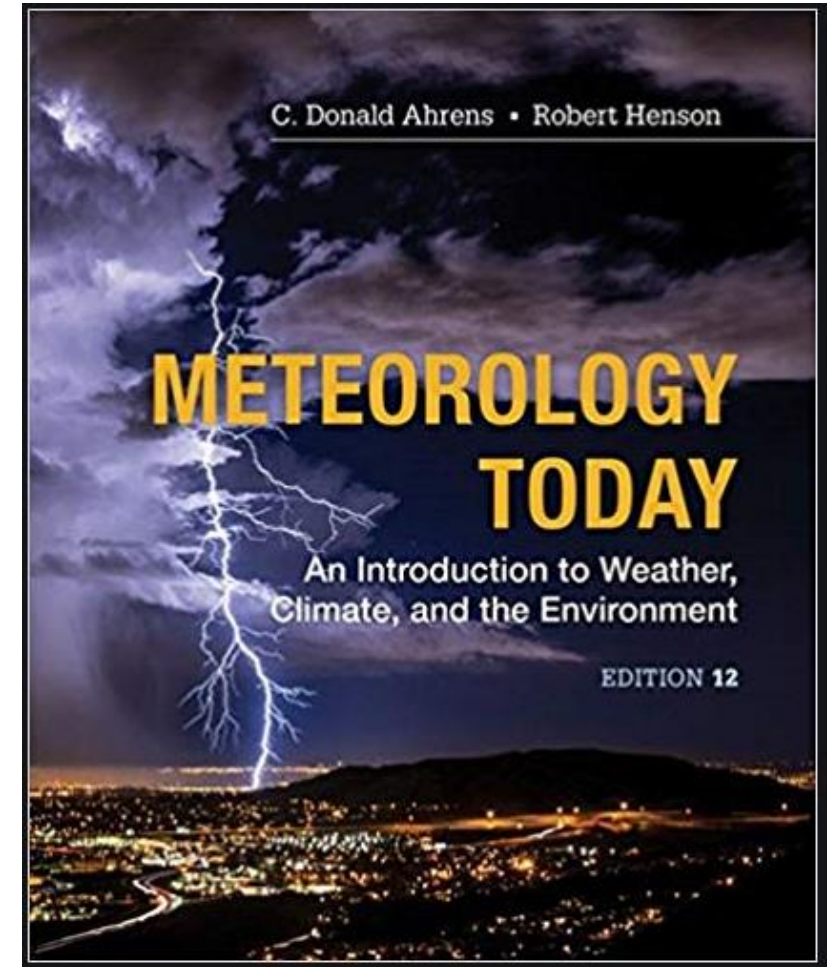
<https://emploisfp-psjobs.cfp-psc.gc.ca>



BECOMING A METEOROLOGIST WITH THE MSC

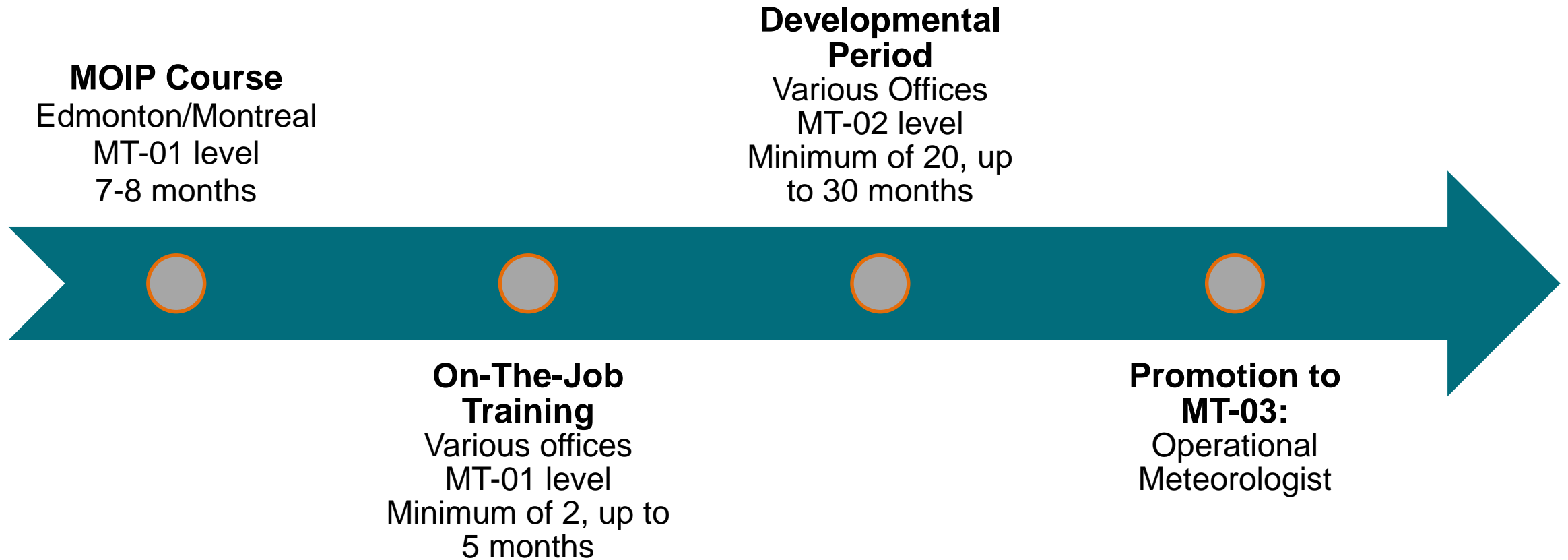
Assessments

- Knowledge of meteorological theory
 - Oral exam online
- Behavioural competencies
 - Interview (Communication, Working with others, Adaptability, Initiative, Thinking, Client focus)



BECOMING A METEOROLOGIST WITH THE MSC

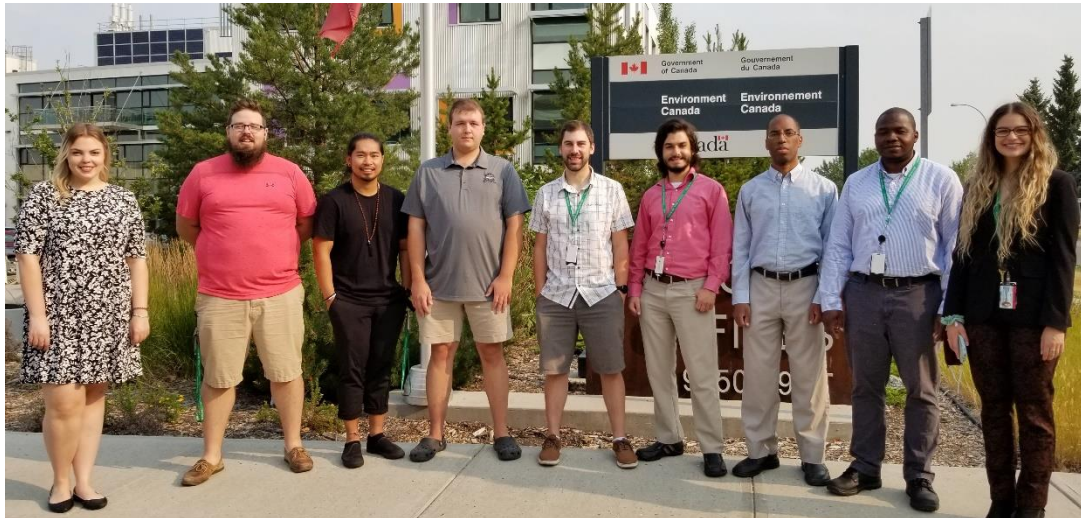
Meteorologist Occupational Development Program



BECOMING A METEOROLOGIST WITH THE MSC

MOIP Course

- Paid 7 to 8 month training program (MT-01 level)
 - During the course, you are asked to fill out a survey stating where in Canada you would like to be posted; postings based on organizational needs
 - You will be in a mobility pool for 5 years (or until you win a promotion)
- * 29 interns per course maximum based on classroom sizes. Hiring numbers are subject to approval based on organizational needs.



QUESTIONS?

Mariette Kulin
MT Recruitment Lead
Meteorological Service of Canada
mariette.kulin@ec.gc.ca

Environment and Climate Change Canada / Environnement et Changement climatique Canada

WANT TO USE YOUR TALENTS TO MAKE A DIFFERENCE?

HOW ABOUT A METEOROLOGICAL CAREER AT ENVIRONMENT AND CLIMATE CHANGE CANADA

SERVING CANADIANS

Environment and Climate Change Canada's Meteorological Service has been serving Canadians since 1871. The mandate of the Meteorological Service of Canada is to enable Canadians, governments, communities, authorities and weather sensitive sectors to increase their resilience to the risks of extreme weather, marine, air quality and hydrological changes in an increasingly variable climate.

As the country's official source for weather information and severe weather warnings, meteorologists play a diverse and vital role in contributing to the safety, security and economic prosperity of Canadians.

ROLES OF THE METEOROLOGIST

There are approximately 500 meteorologists employed at Environment and Climate Change Canada's Meteorological Service. They are responsible for producing forecasts, issuing weather warnings, developing tools and communicating important and timely weather information to the public. Meteorologists are employed across the country at seven Storm Prediction Centres, two Meteorological Aviation Centres, three Defence Meteorological Centres, the Canadian Ice Centre, and the Canadian Centre for Meteorological and Environmental Prediction (CCMEP). In addition, meteorologists are employed in services and research and development roles in atmospheric science and related disciplines.

Canada

