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2010 WINTER GAMES yearBOOK



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Contents

Highlights

Message from the RDG	P.1
Weather Services	P.2
Sustainability	P.19
Emergencies/Safety	P.30
Hometowners	P.35
Communications	P.44

Message from Environment Canada's Regional Director General for the Pacific and Yukon Region	1	Emergencies/Safety	30
Weather Services	2	Emergencies Overview	30
Weather Overview	2	Exercise Silver: EC Training for 2010 Emergencies	30
Practice Makes Perfect: EC Training for the 2010 Winter Games	2	Are We There Yet? Getting to Work During the Games.....	31
Going for the Gold.....	3	Environment Canada and the 2010 Games: A Higher State of Readiness.....	32
From Winnipeg to Whistler	5	On Your Mark, Get Set, Go! EC's Environmental Emergency Section Prepares for the 2010 Winter Games	34
Doppler Weather Radar.....	5	Hometowners	35
Minister Prentice's Doppler Announcement.....	6	David Jones – Hometowner	35
Canada's Winter Games: 1988 and Now	7	Nicolas Major – Hometowner.....	35
Canada and Russia: Coming Together to Forecast Olympic Weather	8	Jill Maepea – Hometowner	36
SNOW V10: Nowcasting at the Games	9	Dave Carlsen – Hometowner	36
Harvey's Cloud.....	11	Pat Wong – Hometowner	37
Lifelong Learning.....	12	George Davies – Hometowner	38
Olympic Spirit Inspires Ball Hockey Thursdays in the Pacific and Yukon Region.....	13	Terry Layes – Hometowner	38
The Path of Least Resistance.....	14	Ted Gresiuk – Hometowner	39
Running with the Olympic Spirit.....	14	Matt Loney – Hometowner	40
Nowcasting: The Olympic Dream	16	Bill Scott – Hometowner	41
Getting into the Games!	17	Frank Mirecki – Hometowner.....	41
Sochi Follow-up.....	18	Andrew Teakles – Hometowner	42
Sustainability	19	Communications	44
What is Sustainability?.....	19	Final Piece of Weather Prediction Equipment in Place for 2010 Olympics.....	44
Environmental Assessments	19	Canada Launches Special Weather Website for the Olympics.....	44
Counting Down to the 2010 Winter Olympic Games.....	21	The High-Tech Weather Forecasting in the 2010 Winter Olympics	45
8th World Conference on Sport and the Environment.....	22	El Niño's Return Just Part of the Weather Wreaking Havoc on Games.....	45
2010 Sustainability and Greening Government	24	Whistler's Weather Generates Frustration at Winter Olympics	45
Celebrating Sustainability and the 2010 Olympic and Paralympic Winter Games: The VANOC Sustainability Fair	25	Olympic Knowledge	46
Greening the Office Environment: Introducing the 2010 Greening Government Toolkit.....	26	Ottawa to Offset Olympic Emissions	46
		Winter Games Yield Forecasting Insights.....	46
		The Gold Goes to Environment Canada Employees	48

* Note – The articles included in this book feature content unchanged from their original publication date.

Message from Environment Canada's Regional Director General



The Vancouver 2010 Olympic and Paralympic Winter Games brought the world to our doorstep. For two weeks in February and again in March, we all witnessed and were reminded of the power sport has to unite and inspire us.

I am proud of Environment Canada's contribution and support to the 2010 Winter Games. As an essential federal services provider, we were responsible for providing weather services for the Games; acting as federal lead on Games sustainability; providing advice to the environmental assessment process, and assisting in the security effort that kept the Games safe and secure. In each case, supported by colleagues in other regions and HQ, our Pacific and Yukon Region team delivered a personal best, gold medal-worthy performance.

The following pages highlight the people, investments and accomplishments of Environment Canada staff who worked on the 2010 Winter Games file over the past two years. Most of this material was produced for Environment Canada's 2010 intranet website, which helped keep our colleagues across the country up to date on Games activities.

The Olympics were a once-in-a-career opportunity. We took this opportunity and delivered beyond expectation, thanks to a once-in-a-lifetime team effort. As Regional Director General, and Environment Canada's lead on the 2010 Winter Games, I thank you for your hard work and dedication, and hope you enjoy this book now and in the future.

Sincerely,
Paul Kluckner



Weather Services



Weather Overview

Weather can have a huge impact on the execution of major sporting events such as the 2010 Winter Games. The slightest wind variation can give a single ski jumper an advantage over the competition. A heavy snow storm could make transportation to Olympic venues impossible.

The Vancouver Olympic Organizing Committee (VANOC) has contracted with Environment Canada to deliver all weather services for the 2010 Winter Games. Through the Meteorological Service of Canada (MSC), Environment Canada provided detailed weather predictions before and during the 2010 Winter Games.

These weather forecasts, warnings, and information were essential for the safety and security of athletes, officials, spectators and the visitors, and for proper planning and preparation of the 2010 Winter Games.

Practice Makes Perfect: EC Training for the 2010 Winter Games

It is 3:15 a.m. and the middle of winter in Whistler, BC. The outdoor site at Nesters is dark and cold, and for one meteorologist from the Meteorological Service of Canada (MSC), it's time to get to work.

This early morning weather balloon release is the first of four that occurred every six hours throughout the two week simulation period, held in February 2009, in preparation for the 2010 Winter Games.

Being at work so early is not part of many public servants' job descriptions, but for Jim Beal, one of MSC's current Technical Services Officers, it was just like old times.

"I used to work those shifts all the time in the 90's at Port Hardy," Jim recalls. Since joining Environment Canada almost twenty-five years ago, Jim has worked in various programs and locations, gaining experience in weather and upper aerological observing.

However, these most recent launches in Whistler are part of a once in a lifetime experience – preparations for Environment Canada's weather services role for the 2010 Winter Games.

The upper air balloons, released one-at-a-time, produce an atmospheric "snapshot." A radiosonde is attached to each balloon, which measures things like temperature, humidity and pressure as it travels up through the



Jim Beal releases weather balloon for Global T.V.



MSC's Jack Bowling attaches the radiosonde to the weather balloon at the Upper Air station in Whistler, B.C.

atmosphere. This provides valuable information to meteorologists on the ground when making forecasts for specific venues.

Along with the simulation weather balloon releases, MSC provided venue forecasts during World Cup events in Whistler this past winter. These competitions served as official Olympic test events for next year's Games.

"The test events are an irreplaceably good experience for the forecasters," says MSC's Chris Doyle. "They are working in real-life conditions and they face real challenges. During every test event we learn something new."

This winter, MSC learned that athletes, skiers and snowboarders in particular, are very interested in the forecasters' findings.

"For example, there is no requirement for the snowboard events to provide the snow surface temperature, but the athletes have asked us for that information," Chris explains. "It is important to their success so they can be strategic about how they wax their boards."

"That's one reason why it is worth being at the venues. We get to be acquainted with the athletes and coaches so they will be familiar faces and we will be better prepared to meet their expectations," says Chris. "It makes everything work so much better."

Despite the hard work, and sometimes grueling hours, members of MSC are embracing the opportunity. "We are getting a really good handle on what the requirements will be," says Jim. "I'm relieved in a way because we

see that everything is working and we know that we will be ready when the Games come."

If practice, hard work and dedication make perfect, then MSC will certainly excel during the 2010 Winter Games.



EC meteorologist works on a weather station with a view in Whistler, B.C.

Going for the Gold

Regardless of your favourite event or most inspirational athlete, as 2010 approaches, there is one team everyone at Environment Canada can cheer for: the Meteorological Service of Canada (MSC).

MSC is playing a crucial role as the official weather service providers for 2010 Winter Games. After years of preparation and planning, MSC's team of experts will provide the Vancouver Olympic Organizing Committee (VANOC) and other decision-makers with real-time weather information to help deliver the Games.

Going for Gold • From Winnipeg to Whistler to Forecast Olympic Weather • SNC
ic and Yukon Region • The Path of Lea
ustainability • What is Sustainability? • C
Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

What is a temperature inversion?

A temperature inversion occurs when it's warm at the top of the mountain and colder in the valley below. In January 2009, the temperature near the top of the Whistler ski resort reached a balmy 17 degrees Celsius, while the village remained at a chilly three degrees Celsius.

"We have made both a personal and professional commitment to delivering the best weather service that we can," says Al Wallace, Director of MSC from the Pacific and Yukon Region (PYR). The MSC team has prepared for this opportunity by dedicating their time, effort and enthusiasm to provide world class weather services.

With Chris Doyle, PYR's Manager of Meteorological Operations, Al presented information on 2010 weather services at the 89th annual American Meteorological Society (AMS) Conference in Phoenix, Arizona, last January.



Chris Doyle makes his way through the snow to get to a weather station.

"Our sessions at AMS were very well attended. We had a positive and supportive reaction from a broad spectrum of interested parties from science to service to education," notes Al.

At the event, Environment Canada scientists profiled some of the advances the Department has made in numerical computer models of the atmosphere. Forecasters will use these models to give sports officials and athletes greater detail about the specific climates found at each outdoor Olympic venue.

"Significant interest was also shown in the approach we've taken to prepare forecasters for this experience, such as classroom training, hands-on learning and real-time venue experience," adds Al.

By profiling their achievements so far, MSC can see how far they've come, and look forward to the year ahead. "We need to assess lessons learned from this year's experiences and adapt

Personal Profile: Al Wallace

Current role with EC: Director, Meteorological Services of Canada, Pacific and Yukon Region.

What he is doing for 2010: "My role is to provide leadership in delivery for essential weather services leading up to, and during the Games."

Memorable experience:

"Going to Torino and meeting with the Italian group that provided weather services for the 2006 Winter Games was a highlight for me. Then returning to Vancouver and seeing it all come together was especially rewarding."

If Al could compete in any winter Olympic sport it would be...:

"Cross country. It would be nice to be out in the air, acknowledging all the world class athletes as they sped by! Or the skeleton, but I'm not sure about having my face that close to the ice. It would be exhilarating, but terrifying!"



our approach as necessary for the Olympics," says Al. In the coming year, MSC will finalize weather equipment installations, collect data, and complete additional forecaster training.

Al began preparing for the Games shortly after Vancouver was awarded the bid in 2003. After years of dedication, he is more engaged than ever. "The opportunity to use our expertise to support the Games is motivation enough."

"We have used our experience, knowledge and foresight to plan the best services that are possible, and delivering on those plans and seeing them come to life, meeting our client needs and receiving their feedback keeps me going and wanting to deliver excellence."



Mark Barton and weather station



Ted Gresiuik (right) poses in front of a weather buoy deployed on the Arctic Ocean.

From Winnipeg to Whistler

There are many similarities between the Olympics and the Pan American Games: the four year timeline, the multi-country participation, and the exceptional athletics.

Environment Canada's Ted Gresiuik is another one of these similarities.

"I volunteered at the 1999 Pan American games in Winnipeg," recalls Ted, one of Environment Canada's Data Acquisitions Specialists. "I was responsible for ensuring that all the computer and communication equipment was functioning at the venues and at the media centre located in and around the Athletic Centre."

In February 2009, Ted made the commute from Winnipeg to Whistler to help Environment Canada prepare for the 2010 Winter Games. Ted helped test the upper air balloon launches that will be a daily part of the department's Games-related weather services.

"The type of work I'm doing in Whistler is significantly different from my work with the Pan American Games," says Ted. "My work for 2010 is centered on gathering meteorological data and maintaining weather equipment rather than working with information technology."

"What is similar is that I am part of a much larger team that is working together to ensure we are prepared to provide full support to the events."

Ted acknowledges working on such a large sporting event adds more pressure to his workday.

"Knowing that there are many people out there anticipating our product is definitely motivating" exclaims Ted. "There were some early organizational challenges because of the scope of a huge event like the Olympics; but that's to be expected. We worked through it and I would say it will be a smashing success!"

In February 2010, Ted will once again travel from Winnipeg to Whistler, this time to experience the full thrill of supporting the delivery of an Olympic Games.

"Being able to use my work talents to be part of something like this is a great opportunity in itself. I am very glad to be part of this and I look forward to what's coming ahead!"

Doppler Weather Radar



Doppler Radar.

Doppler weather radar is a powerful tool used by meteorologists to assess the location and intensity of cloud, precipitation type, and upper level wind flows. It can help them determine the motion and structure of weather systems.

Going for Gold • From Winnipeg to Whistler to Forecast Olympic Weather • SNC and Yukon Region • The Path of Leadership • Sustainability • What is Sustainability? • Climate Change • Greening Government • Celebrating Success • Introducing the 2010 Greening Government • Getting to Work During the Games • The Weather Section Prepares for the 2010 Winter Games • The Weather Website for the Olympics • The Whistler's Weather Generates Frustration • Ted Goes to Environment Canada Employee

For the 2010 Winter Games, Environment Canada has installed a Doppler weather radar system about 6 km west of Whistler, near the southern part of the Callaghan Valley. This location is important, as the radar will provide meteorologists with data for the areas north over the Whistler Olympic and Paralympic Park, east over Whistler and south over the Sea-to-Sky Highway towards Squamish.

In the spirit of sustainability, the radar's tower was recycled from a discontinued Toronto radar site. The radar is located on land licensed from the Resort Municipality of Whistler. After the Games, the system will likely be moved to a new location, and the site will be planted with new trees and remediated.

Minister Prentice's Doppler Announcement



Minister Prentice announces the Doppler Radar.

On Saturday, March 28, 2009, the Honourable Jim Prentice, Minister of the Environment, visited Vancouver to announce Environment Canada's readiness for the 2010 Winter Games. He marked the occasion by unveiling a new Doppler radar in Whistler, BC.

"We know Games officials rely on weather information to make crucial operational decisions," said Minister Prentice during the announcement. "This information helps to

ensure the safety of spectators, the fairness of the competitions, and the efficient delivery of an event."

The final piece of weather monitoring equipment to be installed by Environment Canada for the 2010 Winter Games, the Doppler radar will gather information on the intensity of precipitation and the direction and speed of local winds.

Ironically, the Minister's event was originally set for Whistler. The event was switched due to reports by MSC, who, using their new 2010 weather monitoring technology, predicted late in the week weather at the actual Doppler site would be poor.

A room full of guests and media still witnessed the Doppler in action though, as real-time radar imagery was shown on a big screen behind the Minister while he spoke.

With the Olympics less than a year away, the announcement marked an exciting milestone for an MSC team that has worked on the 2010 weather monitoring network since 2004.

Also on hand for the announcement were Dick Vollet, Vice President, Mountain Operations, Vancouver Organizing Committee (VANOC) and James Hallisey, Manager, Environmental Projects, Regional Municipality of Whistler. The Minister thanked both guests for their partnership roles.

After his speech, Minister Prentice made a trip to the Storm Prediction Center on the 18th Floor

Personal Profile: Jim Abraham



Jim Abraham's Olympic Weather Support team photo from Calgary, 1988.

Current role with EC:

"I manage the Weather Observation Program, which includes the nowcasting instrumentation."

Highlights from his career:

"I've been working here for over 30 years and when people ask me to do a little personal bio there are two milestones I mention: Flying into hurricanes and studying them and working with the Calgary Olympics."

to meet MSC forecasters and to experience the live world of weather forecasting.

Forecasters interpret the up-to-date data feeds that are pictured on monitors throughout the room to make their forecasts. They explained the coloured data patterns being transmitted by the Doppler radar as the projection shows the motion and intensity of precipitation.

The Minister then went to the Enforcement Offices where he met with John Wong, Regional Director from the Wildlife Enforcement Division, and Wildlife Officer Brenda Buchart.

There he was shown interesting items such as live scorpions, a polar bear rug, stuffed ducks and loons and other goods confiscated by EC Enforcement Officers.

The Minister then met with the Fraser Basin Council and capped off his day by attending a local Earth Hour event.

Kudos to all who helped with the preparations for this successful Ministerial visit!

Canada's Winter Games: 1988 and Now

In mid-February, the weather rivaled Miami temperatures, and the city was swollen with thousands of people from around the world.

It was 1988, and Calgary was hosting the first Winter Olympic Games in Canada.

"The weather was a big story in Calgary," recalled Jim Abraham, Manager of the Weather



Jim Abraham proudly sports his 1988 Olympic coat and tie.

Observation program. "It was the year of Eddie the Eagle Edwards and the Jamaican bobsled team. Canada didn't win any gold medals, so weather dominated the stories."

Before the Games, Jim and his fellow forecasters attended training sessions in Edmonton. "Our longer range forecasts weren't that good at the time; we really weren't looking beyond four or five days," says Jim. "On our way to Calgary, I was looking out the window, thinking about how the cold weather would impact the events."

Jim laughed, "In one day, the temperature went from about -25 to plus five, so cold weather certainly wasn't the problem!"

With high temperatures and strong chinook winds, weather was a significant challenge for Games organizers.

"The planning of the events and cancellation of the events was based so much on the weather forecasts. Sand was blowing on the bobsled and luge tracks, and during a ski jumping event, one athlete was blown into the judges' stand because of the wind," Jim recalls.

"Everyone was waiting for the weather pattern to change so that they could get the skiing and bobsled events going."

When a ski jumper moves down the long ramp, also referenced as the in-run, how fast do they launch into the air?

Ski jumpers launch into the air up to 95 kilometres per hour!

His hopes for 2010: "I hope that the forecasters involved in this experience remain as passionate about the science and services of meteorology as I did because it reaffirmed for me it was the right career choice. It was a really special moment for me, and I expect it will be a special moment for the forecasters involved in Whistler."

If he could compete in any event, what would it be?: "I would love to have a forecasting Winter Games! We could have a forecasters compete! As far as winter sports go, I love curling. When I was in Calgary, curling was a demonstration sport, but now it's an official sport so it would be my first choice. I'm not great, but I would love to curl in the Winter Games!"

going for Gold • From Winnipeg to Whistler
er to Forecast Olympic Weather • SNC
ic and Yukon Region • The Path of Lead
ustainability • What is Sustainability? • C
Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

Because of the extreme weather, Jim and his fellow colleagues were getting extra attention.

"I remember TV crews from around the world coming in for interviews and asking us when the weather was going to shift," said Jim. "It was pretty exciting, but at the same time it was pretty stressful."

Looking forward, Jim is ready to cheer on EC's forecasters during Games time from his home in Dartmouth, NS.

Canada and Russia: Coming Together to Forecast Olympic Weather

For a hockey-playing nation like ours, steeped in a tradition of Russia vs. Canada on-ice melodrama, it may initially seem strange to think of collaborating with colleagues from the Russian Federation.

Yet that's exactly what happened May 11-15, 2009, when the Meteorological Service of Canada (MSC) welcomed a Russian delegation from the 2014 Sochi Winter Games to Vancouver, to share insight into providing weather services for an Olympics.

"MSC made several presentations, talked about the various problems they faced in preparing for the

2010 Winter Games, and showed how they have tried to solve these issues," recalled Dr. Valeriji N. Dyadchenko, the Deputy Head of Federal Service for Hydrometeorology and Environmental Monitoring in Russia.

"It was interesting to see the instruments specifically designed to measure different



Members of the Russian Meteorological Service team along with MSC's Frank Mirecki, Al Wallace, Chris Doyle and Bill Scott at the Doppler Radar site in 2009.

"I'll be at home watching it on TV, but I will put on my weather cap and watch how the weather is impacting the Games," Jim smiles. "I'll be really interested in how the nowcasting component works out, and I will be hoping and pushing for us to use those lessons learned to improve our weather services in the future."

After working in the 1988 Games, Jim has felt the lasting impact of his involvement in the Olympic experience.

"After I got back from the Olympics, I was excited to get involved in improving weather services for Canadians, and I hope the same enthusiasm happens here after 2010," Jim states. "I hope we use that passion and excitement to initiate some really neat stuff here in meteorological services."



From right to left, translator, Dr. Valeriji N. Dyadchenko,



Paul Joe (far right) and Al Wallace (far left) present information about EC's weather services role for the 2010 Olympic and Paralympic Winter Games.

weather elements during the Olympics and to learn about their modern techniques for weather prediction," added Dr. Dyadchenko, through an interpreter.

Dr. Dyadchenko noted that collaboration between Olympic hosts is an established Games tradition. "It is a very interesting and very beneficial to meet the organizers of the other Games and to learn about their experiences. MSC went to previous host cities, including Salt Lake City and Torino, to learn of their experiences also," reflected Dr. Dyadchenko.

"Because of this collaboration, and the advances in technology, meteorological services for 2010 will be of higher quality than it has been in past Games."

While Sochi and Vancouver climates are slightly different, gaining insight into MSC's work will help the Russian government plan for the



Environment Canada's Stefanie Wudel and MSC's Al Wallace.

weather challenges they may encounter. "In Sochi, it is a bit warmer than Vancouver and Whistler because it is on the warm Black Sea coast," pointed out Dr. Dyadchenko. "But there are some aspects, for example the amount of snow in the winter, that are very similar."

After their four-day trip, the Russian meteorological service team was ready to take back lessons learned and begin preparing for 2014.

"Weather is beyond the control of the forecasters and sometimes winter events can interfere severely with the efforts of the organizers," said Dr. Dyadchenko. "But we have learned that meteorological services can have a positive impact on the events by fulfilling their duties."

"This trip will make it easier for us to solve the problems we will have to face in our country during the Games in 2014."

The members of the Russian delegation won't be gone for long though. Next winter, they will return to Vancouver during the Games to take part in the live Olympic and Paralympic experience.

And while they look forward to that trip, it is clear MSC has already left a lasting impression on its Russian colleagues.

"We got acquainted with many people from MSC and our impression of all of them is distinctly positive. We consider the Meteorological Service of Canada (MSC) one of the best in the world because the team has so many highly qualified specialists," complimented Dr. Dyadchenko.

"We are fans of our MSC colleagues, and we will be cheering them on in the Olympics!"

SNOW V10: Nowcasting at the Games

For meteorologists, predicting alpine weather is a lot like scaling Mount Everest – challenging to say the least. The conditions can be unpredictable, extreme, and not well understood. It can seem like an insurmountable task, but George Isaac, Senior Scientist with Environment Canada's Cloud Physics and

Going for Gold • From Winnipeg to Whistler to Forecast Olympic Weather • SNC
ic and Yukon Region • The Path of Lea
ustainability • What is Sustainability? • C
Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee



George Isaac, Senior Scientist with Environment Canada's Cloud Physics and Severe Weather Research section, stands in front of a weather station at the base of Whistler Mountain in Whistler, British Columbia.

Severe Weather Research section, and a team of experts are exploring new territory in the field of forecasting alpine winter weather.

The World Meteorological Organization launched the "Science of Nowcasting Weather for Vancouver 2010" (SNOW V10) under the World Weather Research Program (WWRP), its first project to study nowcasting at a Winter Games. Experts from around the world, including George and a team of Environment Canada employees, are collaborating to lead the way in nowcasting winter weather research.

"Nowcasting" is weather forecasting over a short-range area, usually over a six-hour time-frame. This type of forecasting was successfully used at both the summer Olympic Games in Sydney in 2000 and Beijing in 2008, but has never been attempted in winter alpine conditions. George and his team are learning that nowcasting for winter weather is a whole different ball game.

"It is a very interesting area to work in because not many people have worked in the winter season in complex terrain," states George.

"The Whistler area is very interesting because it is often raining at the mountain base and snowing at the top. We have stations up and down the mountain so we can go see exactly what is going on in a cloud, and where the zero degree line is," explains George.

"It's like an outdoor laboratory! It's quite neat and exciting," he adds.

Nowcasts will help onsite venue forecasters and officials ensure that outdoor events for the 2010 Winter Games are delivered fairly and safely.

To this end, the SNOW V10 team has installed multiple instruments to ensure forecasters receive frequent, high-resolution weather data. Thanks to advances in the nowcasting technology, many of the main weather sites will provide data every minute.

Personal Profile: **George Isaac**

Place he calls home: Horseshoe Valley, Ontario.

His job with Environment Canada: "I've been studying clouds throughout my career – more than 35 years. This is the first time I've ever worked in the mountains. I'm usually studying clouds from the inside of a plane! In Whistler, we have sites up and down the mountain so we have a complete profile. It's a neat way to study the clouds."

The most exciting part of his work with SNOW V10: "We're just beginning to learn! Every day we are gathering new weather information and learning fascinating things. For example, Harvey's Cloud is something we would not have known about if we weren't working on the ground. Now we are discovering really interesting things about the cloud! Learning new things is my favourite part of the job."

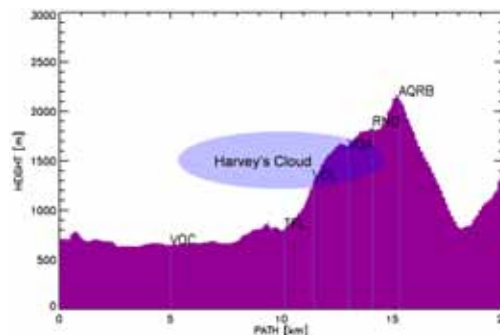
George chaired a three-day workshop on SNOW V10 in Whistler, BC, March 23-26, 2009. The workshop gave organizers the opportunity to present their work, review their progress, and plan for the project's future. On behalf of Environment Canada, George welcomed guests from a wide variety of countries including the US, China, and Switzerland, and from Canadian institutions such as the University of British Columbia, and McGill University. Environment Canada groups from Montreal, Toronto and Vancouver also participated.

During the conference, attendees were able to get a first-hand look at some of the challenges of forecasting weather in the mountains. "One of the exciting things we did was tour the sites. But rather than driving out, some people decided to ski to the sites," George recalls. "They were really excited because they were able to get a real appreciation of the weather on the mountain."

As with the Winter Games themselves, the SNOW V10 project is attracting international attention and participation. "The Chinese contingent said they would collaborate, and from the United States, the NOAA (National Oceanic and Atmospheric Administration) said they would work with us as well – so that was really exciting!" Other countries such as Germany and Austria are also involved.

"There is definitely more interest, and as more groups get involved, it adds more credibility to the project," says George. "I knew it could be a lot of work, but I also knew it would be challenging and interesting. I am happy to be involved!"

Harvey's Cloud



A computer generated image of Harvey's Cloud on Whistler Mountain, provided by George Isaac.

As you can imagine, visibility is crucial for skiers as they speed down the snow covered hills of Whistler Mountain. For skiers who will compete on the world stage during the 2010 Winter Games, reduced visibility increases the risk of encountering unforeseen obstacles, and can result in broken bones along with shattered medal hopes.

However, there is one looming presence on the ski hill that jeopardizes all of this: Harvey's Cloud.

The cloud is fondly named after Harvey Felloews, an employee of the Whistler Blackcomb ski resort.

"Harvey has spent quite a few years on the hill, and observed that this cloud was there quite often," says George Isaac, Senior Scientist with Environment Canada's Cloud Physics and Severe Weather Research section.

As a result of Harvey's observations, this cloud is getting special attention from EC's SNOW V10 researchers.

How many Storm Prediction Centres are located regionally in Canada?

There are five Storm Prediction Centres: Atlantic, Ontario, Quebec, Pacific and Yukon, and Prairie and Northern region.



View from Whistler Mountain, January 2010.

Going for Gold • From Winnipeg to Whistler to Forecast Olympic Weather • SNOW V10: A Path of Leadership in the Pacific and Yukon Region • The Path of Leadership in Sustainability • What is Sustainability? • Celebrating Sustainability • Greening Government • Celebrating Sustainability • Introducing the 2010 Greening Government • Getting to Work During the Games • The Environment Section Prepares for the 2010 Winter Games • The Weather Website for the Olympics • The Whistler's Weather Generates Frustration • Whistler Goes to Environment Canada Employee

How many torchbearers will carry the torch across Canada?

There will be 12,000 torchbearers.

...aining for 2010 Winter Games • Going to the Top: Canada and Russia: Coming Together to Win • Hockey: Ball Hockey Thursdays in the Pacific and the Atlantic • The Games! • Sochi Follow-up • Sustainability and the Environment • 2010 Sustainability and Greening the Office Environment: Introduction • Emergency Preparedness • Are We There Yet? Global Warming • EC's Environmental Emergency Services • Canada Launches Special Weather Forecasting • Whistler Wreaking Havoc on Games • Whistler Weather Forecasting Insights • The Gold Medal

"We've been studying Harvey's Cloud because it's right in the middle of the men's downhill ski course. It reduces visibility, and if the visibility gets too low, it poses a problem for the skiers," says George.

Visibility on the mountain is often reduced because of snowfall, or because of the small water droplets that form clouds. Knowing this, the SNOW V10 team is preparing accordingly.

"We are developing techniques to forecast for both these conditions," George points out. "We are also taking continuous measurements over long periods of time from within, on top, and underneath the cloud. It's a unique situation for us."

New technologies within the SNOW V10 network have been installed to ensure meteorologists can get the data they need to forecast for Olympic and Paralympic Games events.

"We have a microwave radiometer at the base of the mountain that provides profiles of humidity, cloud liquid water content, and temperature. We also have vertically pointing radar at the base which gives the precipitation rate aloft and the fall-speed of the particles," says George.

With the help of this high resolution data, the EC's world class forecasters will make sure that regardless of how cloudy it gets, the weather forecasts will be clear.



Frank Mirecki stands proudly in front of the Doppler Radar in Whistler, B.C.

Personal Profile: Frank Mirecki

Role in 2010 Games: I was the project manager for the construction and delivery of the Doppler radar in support of the 2010 Vancouver-Whistler Olympic Games. During the 2010 Games, I will be part of the management team tasked with ensuring the operation and maintenance of all of the meteorological networks that support the delivery of real time weather and forecasts.

What is an exciting aspect of your job? With my job, there are plenty of opportunities for travel throughout Canada. I have visited places that as a private citizen I otherwise wouldn't have been able to see. This has been an unexpected reward!

What is it like to be involved in planning for 2010? The process is way bigger than for any other job! Even the smallest job is very complex due to the different clients and interests at stake. When we do things at Environment Canada, we are doing it for all Canadians and for the Olympic Committee, and we want to do our best!

If you could compete in any Olympic sport what would it be? If I could, I think it would be fantastic to participate in any downhill skiing event that doesn't involve moguls!

Lifelong Learning

Early this summer, Frank Mirecki, head of Aviation and Radar at the Meteorological Service of Canada (MSC) in the Pacific and Yukon region had the chance to work with a very special audience: his son's grade two class.

"The class did a mini-climatology study," explains Frank. "We measured the temperature, relative humidity, wind speed and direction of the classroom, outside in the sun, in the shade, on the grass, in the parking lot, and compared the results."

"It's great to see how keen the students are to learn about weather!"

While Frank taught children about the weather, he himself has been learning what it takes to deliver weather forecasts for the 2010 Winter Olympic Games.

Frank recalls, "my work on the Games goes back to 1999, when we found out Vancouver

had been awarded the right to bid. A group of us got together and started to think, 'what can we do?'"

After the Games were awarded to Vancouver, Frank and his teammates moved full-speed ahead to plan for the delivery of 2010 weather services. Starting from scratch, the team built the 2010 weather network, which includes 30 new automated weather reporting stations, and one piece of equipment that Frank is especially proud of: the Doppler radar.

"Forecasting for the Games without a Doppler radar would be like trying to get to the moon without a rocket," says Frank. "[And] by recycling the radar itself from our King City, Ontario location, we have demonstrated our green business sense."

Olympic Spirit Inspires Ball Hockey Thursdays in the Pacific and Yukon Region



Guy Vallieres, Brad Snyder, Adam LaRusic, Ken Kwok and Allan Coldwells playing ball hockey by Vancouver's waterfront.

There is no question Environment Canada's contributions to the 2010 Winter Games involve long hours and hard work. Sometimes easy to forget that the Olympics are meant to be a celebration of sport.

EC Staff working at the downtown Vancouver office have found a very Canadian way to remind themselves of that fact.

"With the Games approaching and so many of us having worked on projects related to the Games, what better way to celebrate the



David Jones, Matt MacDonald and Stu Hamilton play ball hockey!

Olympic spirit than with a good game of ball hockey," remarks David Jones, meteorologist.

To get out of their chairs and outside with their sticks, EC staff searched for places to play throughout the summer. A lack of open spaces motivated Stuart Hamilton, Head of Water Survey Operations for MSC, to email the Vancouver Convention and Exhibition Centre (VCEC), future home to accredited media during the 2010 Winter Games. EC staff were welcomed to use their outdoor plaza area, in exchange for a charity donation made on behalf of the facility.

Soon thereafter, sandwich boards were up announcing "Ball Hockey at Noon," and other organizations, including 2010 Legacies Now, the Department of Fisheries and Oceans Canada, and Indian and Northern Affairs Canada, joined in the Thursday fun.

"People showed up like in a beer commercial," says Stuart, with spectators picking up sticks to join in.

The ball hockey games are expected to last until October, when rights to the VCEC transfer to VANOC.

EC staff were invited by the University of British Columbia Robson Square satellite campus to use their plaza space, until ice is installed later this year. Stuart says he is excited about the new venue. "We can extend our season, we have use of the sound system, and we can start attracting people from other downtown businesses."

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Personal Profile: Trevor Smith



How are you involved with the Olympic Games? I am the lead forecaster for the 2010 Olympic Forecast Team. I set up training practicums to ensure a team of 30 meteorologists from across Canada and three

from the US are prepared to give venue-specific weather forecasts.

If you have to choose between ski jumping or skeleton, which one would you choose and why?

Skeleton – only birds are meant to fly, if I had to choose!

What's the coolest part of your job? The best part of my job is being given the opportunity to lead the best meteorologists in Canada.

Is there a Winter Sport that you are looking forward to watch? Men's hockey and downhill skiing!

The Path of Least Resistance

When a margin of one second is the difference between Olympic ski medalists, outdoor weather conditions really matter. That is why, for the past three years, a team of 30 meteorologists, led by Trevor Smith, have been studying venue-specific weather patterns at five 2010 Winter Games outdoor venue locations.

As the official weather forecaster for the 2010 Winter Games, Environment Canada will have meteorologists on-site during the Games monitoring all sorts of weather phenomena like wind, temperature, visibility, snowfall, and rainfall to name a few.

For events like the ski jump, wind conditions are important to monitor and forecast with high accuracy to ensure fairness and safety

for the athletes. Visibility is also important for competitions like downhill skiing.

In preparation for the 2010 Winter Games, the team of Olympic meteorologists and scientists working on the Science of Nowcasting for Vancouver 2010 (SNOW-V10) project met in November 2009. During the practicum, meteorologists used a weather event simulator for training and familiarized themselves with new weather monitoring equipment installed last winter at outdoor venues.

Trevor says, "Forecaster training is accelerated when the simulator runs historical weather data. For example, we can re-run data from January 9, 2009 and forecasters can go through the challenge of predicting weather for their event according to that data. Learning gets accelerated because training participants don't have to wait till the next day to see how they did, they can just fast forward the data available."

As the Games fast-approach, Trevor is confident Environment Canada's forecasting team is ready. "The VANOC sport managers have told the international teams that they don't need to bring their own weather experts to Vancouver because Environment Canada's meteorologists are bang on," adds Trevor. "The feedback we have received is that, we are doing a top notch job to get ready for the Games.

Running with the Olympic Spirit

The torch relay for the Vancouver 2010 Winter Games is the longest domestic relay in Olympic history. Environment Canada meteorologists are helping to pass the Olympic torch across the world's second largest land mass, it's no easy task!

As soon as the flame arrived in Victoria, BC on October 30th, the Vancouver Organizing



Committee for the 2010 Olympic and Paralympic Winter Games (VANOC) began receiving weather forecast information from Environment Canada's regional Storm Prediction Centre. From coast to coast to coast, for the duration of the relay, Environment Canada meteorologists monitor wind speeds, temperature, and weather patterns, and provide that information to VANOC's Olympic Torch Relay team on the road.



Paul Joe (far right) and MSC's Matt Loney stand with members of the Russian Weather Services Team during the 2010 Olympic Games.

Air temperature is of particular interest to relay organizers, as the fuel used in the torch gels at very cold temperatures. Travelling during a Canadian arctic winter can mean facing treacherous conditions such as extremely cold temperatures and very nasty wind chills. Data collected from the Storm Prediction Centres also help VANOC determine if they need alternate routes or transportation.

Ross Klock, a Meteorological Service of Canada outreach officer and trained forecaster, has lead EC's efforts in providing VANOC with weather information. "In a sense, Environment Canada is doing its own relay, but it's a relay of information that follows the torch," says Ross.

Although the Games are taking place in Vancouver, the torch relay gives meteorologists across the country the chance to be involved in the Olympic experience. "It's exciting to see us uniting all the regional storm centres across Canada for this," adds Ross. "I have not heard of any other single event that has brought

Personal Profile: Ross Klock

What is your role with the Olympic Torch Relay? I am coordinating weather forecasts with the Storm Prediction Centres across Canada, VANOC headquarters in Vancouver, and the torch relay team on the road. I am helping them in getting the weather information they need to safely and successfully complete the relay.



How long have you worked with the department? I have been with Environment Canada for almost 30 years! During that time I have taken on many roles and currently do outreach work on various initiatives with the department based out of Kelowna. Past work has included aviation hazard handbooks for NAV Canada and 10 years of work on public and aviation forecasts.

If you could run as a torchbearer in Canada, where would you want to run? If I were a torchbearer, I would want to run through the Rockies because it's one of my favourite places. One of the highlights of my time there was to help lead groups of students at Lake O'Hara, which for many of them was their first camping adventure.

What has been the most exciting thing for you so far? Seeing the project come together and getting positive feedback from the torch relay group that weather information is integral to their efforts and gives everyone involved a good supportive feeling about it. It works!

these centres together in this way to provide information to a group like VANOC's torch relay."

For the final leg of the Torch Relay across western Canada, weather support goes to EC's 2010 games forecasting team in based in Vancouver. "It's great to see that operations are running so smoothly."

How far will the torch travel in Canada?

The torch will travel over 45,000 kilometres across Canada.



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How many communities and places of interest were visited by the torch relay team?

The torch visited more than 1000 communities and places of interest.

Nowcasting: The Olympic Dream

For Environment Canada research scientist Paul Joe, the 2010 Winter Games is his third opportunity to be involved in the Olympic Games – but an exciting first, as the 2010 Games are in his home country.

Paul has been working on “nowcasting”, a key project of the World Meteorological Organization’s Weather Research Program. Nowcasting was used for the 2000 Summer



Matt MacDonald enjoying his time volunteering on Cypress Mountain.

Games in Sydney and the 2008 Games in Beijing.

“Nowcasting involves weather forecasting in winter, in mountains, in short time scales for a short-range area. It uses a time frame of less than six hours,” explains Paul. “With the 2010 Games here on our own turf, this has been a very special opportunity to improve our short-term forecasts in complex conditions,” observes Paul.

From August 31- September 4, 2009, Paul Joe and other Meteorological Service of Canada (MSC) employees shared their nowcasting research project, “SNOWV10” at the Symposium on Nowcasting and Very Short Range Forecasting in Whistler, British Columbia. The event gathered 141 experts from 23 countries in the spirit of teamwork, to continue to improve nowcasting and its applications.

“Through participating in the Olympic Games, we’ve been able to promote research in meteorology and forecasting in an area that really needed some attention and to really push the research in a very productive and collaborative way,” Paul says. “It was a great symposium with top-notch people – all of which adds to our momentum. It is really satisfying to see everything come together!”

Personal Profile: Paul Joe



Paul’s favourite part of his job: I get to work with all sorts of people- from technicians to forecasters to other scientists. I learn a lot of different things from a lot of different people, and that’s what’s really fun about the job!

Paul’s role in 2010: I’m the science lead for the “SNOWV10” project.

This involves coordinating a science program that includes modeling, observations, and developing nowcast systems and forecast systems. I’m also the monitoring lead for the Doppler radar and any of the advanced sensor systems related to atmospheric science.

His memorable moment from a previous Olympic Games: At the Closing Ceremony of the 2008 Beijing Games, the weather was all over the place. It looked like it was going to hit the stadium. By all our rules it looked like it should have rained and thundered – but it didn’t! It was a bust. For some reason, it’s always easier to remember the ones you missed. On the day of the Closing Ceremonies, there were all the ingredients for a messy day, but we got lucky! When that happens, I say “wow!” You get very humbled doing forecasting at times. We still have a lot to learn.

If you could compete in any Olympic Sport what would it be? I’m a skier, so I would compete in a skiing event such as the downhill, giant slalom or slalom. I teach and coach skiing, and I find that the giant slalom is the hardest discipline to master. Doing downhill skiing, you need guts, but in slalom, you just point the skis straight and stay quick and agile! For giant slalom, you have to be fast, have great feel for the snow and have the right mix of power and finesse and not make mistakes...and it’s really difficult!

Getting into the Games!

Canadians around the country are getting into the spirit of the Games, but very few are experiencing the 2010 Winter Games like Environment Canada's Olympic Support Meteorologist Matt MacDonald.

After transferring from Montreal to Vancouver almost three years ago, Matt decided he would get involved in the 2010 Winter Games any way he could.

"I've been a fan of winter sports since I was a kid. I remember watching the Calgary Games when I was 9 years old and thinking, 'Wow, this is cool stuff,'" recalls Matt.

For 16 days during the Olympics, Matt has divided his time between producing daily webcasts, speaking to the media as a meteorologist, going to events in the Vancouver area, and volunteering at the site of the first (and second!) Canadian Gold Medal wins: Cypress Mountain.

"It was incredible! There were some long days where I was working outside for up to 12 hours but I wouldn't have missed it for the world," says Matt.

"As the volunteer Chief of Finish, I was responsible for communicating with the starter and jury to inform them of any protests from athletes, and made sure that the athletes stayed within the field of play during the competition. As a result, I was positioned at the bottom of the half pipe and made it on TV quite a bit. I witnessed Canada's Gold medal run in

the women's snowboard cross and I shook hands with Shaun White after his gold medal run. Those were big highlights!"

Along with his passion for snowboarding, Matt is enthusiastic about weather services, and his role as a weather expert for the public and media.

Working on one of the largest international sporting events, Matt is getting his fair share of the spotlight.

"My favourite part of the job is helping people and educating them. With my current assignment, I'm getting to interact with media, users and help them understand what's going on with the weather."

"CBC Radio Canada came to do a French interview; then they asked if I could do the same interview in English. I got home that night and there I was the lead story on The National! My parents were calling me from Montréal saying, 'we just saw you on TV!' It was pretty cool," explains Matt.

Besides CBC, Matt has done interviews with Radio France (27 million listeners) and other international outlets, including Swiss and Japanese TV, USA Today and a Mexican newspaper.

"It's such an awesome opportunity to have the Olympics in our back yard," adds Matt. "It's a once in a lifetime opportunity, and as a meteorologist it's amazing to be involved with this."



Matt MacDonald in the half-pipe on Cypress Mountain.

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Sochi Follow-up

The Russian Meteorological team from the Sochi 2014 Winter Games returned to Vancouver for one week during the Vancouver 2010 Winter Games to experience Olympic weather forecasting first-hand. Cloud Scientist Paul Joe escorted the forecasters during their visit and took time to answer our questions.

Did you attend any events?

We visited two venues where events were going on but they were so keen on talking to the forecasters, that by the time they were ready to take in the Olympics, the events were finished! They are a dedicated bunch!

What was the reaction from the Russian meteorologists seeing weather services in action?

Subjectively, I think they were very impressed by the preparations, the observation network, the knowledge of the forecasters, and the task that they had in front of them.

Were there any memorable moments?

I think it was very fun to see Inna and Valentina [members of the Russian weather services team] get on the “picture stand” at the ski jump.

At the cross-country and ski jump, our forecaster explained the intricacies of the complex upslope/downslope forecast problem at the ski jump. They were listening for an hour. Fluctuating winds on the ski jump can provide a challenge for forecasters.

For us, we visited Sochi house and were given a tour of the “3d model” of the Sochi Olympic environment and the similarity to Whistler. The tour guide in a very serious, but tongue-in-cheek said that “Sochi is known as the Florida of Russia but now it will have a new brand: the ‘ski resort of choice in Russia.’”

Do you see any visits to Sochi in your future?

Yes. I expect that we will be asked to provide our expert opinions, perhaps conduct training sessions for forecasters and contribute to the next Forecast Demonstration Project there. They jokingly asked whether our equipment and our forecasters were available for Sochi!

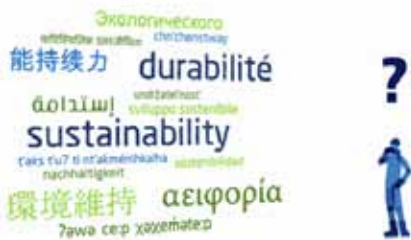


Sustainability

How long will the torch relay take to complete?

The torch relay is more than 100 days long.

What is Sustainability?



VANOC defines sustainability for the 2010 Winter Games as a means of “managing the social, economic and environmental impacts and opportunities of our Games to produce lasting benefits, locally and globally.”

How is Environment Canada involved in 2010 Games Sustainability?

As the federal lead on 2010 Winter Games sustainability, Environment Canada is working with VANOC and other Games partners to help reduce the environmental footprint of the Games; showcase “made in Canada” sustainable solutions and engage Canadians in the benefits of sustainable choices.

Much of this work involves collaboration with other federal departments, governments and local and international stakeholders. However, below you will find exclusive Environment Canada contributions our department can be proud of!



Environmental assessed blueprint.

Environmental Assessments

Environment Canada provided advice and expertise to the environmental assessments prior to the construction of 11 Olympic and Paralympic venues. EC’s work focused on the protection of air quality, water quality, migratory birds and species at risk.

Some of the outcomes of Environment Canada’s environmental assessment work include:

Sea to Sky Highway Improvement Project

- Migratory bird nests were protected during the breeding season through a system of survey work, avoidance and safeguarding efforts.
- Extensive mitigations were put in place to minimize air emissions from highway construction.
- Extensive air quality monitoring was put in place to verify the effectiveness of air quality mitigation measures.



Half pipe at Cypress.

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Top of the ski jump.

Cypress Mountain

- Environmental footprint was reduced to Strachan Mountain only (the original Venue proposal included construction on both Black Mountain and Strachan Mountain)
- Material was not trucked in or out in an effort to have minimum impact on the surrounding environments. All material cut out of the slopes was used in areas where fill was required

Whistler Olympic Park/Whistler Paralympic Park

- Ski jump was moved to ensure no ancient forest or area wetlands were affected
- Vegetation clearing and burning was reduced and materials were re-used on site or composted
- These efforts resulted the overall environmental footprint being reduced by 30% for the Nordic Skiing Venue

Whistler Sliding Centre and Whistler Creekside

- A section of stream was relocated to avoid acid generating rock exposure. This improved local western tailed frog habitat



Tailed frog.

Richmond Oval

- All hardwood trees cut during site preparation were re-used in the venue



Richmond Oval.

Vancouver Olympic Centre / Vancouver Paralympic Centre Business Case Study

Contributing to the environmental assessment of the Vancouver Olympic Centre / Vancouver Paralympic Centre wasn't the only thing Environment Canada did for this curling venue.

In collaboration with Industry Canada and VANOC, EC worked on a Leadership in Energy and Environmental Design (LEED) business case study. The study results led to improved energy performance and reduced water and resource consumption in this facility. The impact of this study was so integral to the sustainability of this venue that VANOC awarded the project a Sustainability Star.

But the story doesn't end here! Results from the study were used in local workshops by the Lighthouse Sustainable Building Centre [www.sustainablebuildingcentre.com]. These workshops taught the local construction industry how to incorporate sustainable building solutions into their work at the lowest cost for the maximum environmental impact, thus creating a lasting legacy that will continue to help conserve and protect the environment.

Carbon Footprint

VANOC hopes to make the 2010 Winter Games carbon neutral, by having a net zero carbon footprint. To achieve their objective, VANOC must estimate the greenhouse gas (GHG) footprint of the event. Environment Canada has helped VANOC pursue a carbon neutral 2010 Winter Games by providing our experts' advice on scope, carbon calculation methodology, offset quality standards and other technical needs.

2010 Greening Government Online Toolkit

Environment Canada is using the sustainability story of the 2010 Winter Games to encourage federal employees in the Pacific Region to reduce their own environmental footprint and contribute to the lasting legacy of the Games.

In partnership with other local federal departments, Environment Canada is promoting the 2010 Greening Government Toolkit. This online resource is a one-stop shop for tools, resources, best practises and stories about how to improve the environmental performance of your workplace.

Counting Down to the 2010 Winter Olympic Games



**Olympic Countdown clock.
Downtown Vancouver, B.C.**

On February 12, 2009, a countdown began across Canada. This particular countdown did not involve a ball dropping in Times Square, a space launch, or Top 40 Hits, but something much more exciting: the One Year Countdown to the 2010 Winter Games.

Paul Kluckner, Regional Director General for Environment Canada Pacific-Yukon Region, is responsible for overseeing the department's work for the Games. "I appreciate the chance to be involved. It is rewarding to help bring Environment Canada's expertise to support the Olympics," said Paul.

He took a moment from his busy schedule to talk about what's been accomplished during the past year, and what's still to be done.

"Meteorological Services of Canada's (MSC) work last winter at early test events earned kudos from the Vancouver Organizing Committee. Their work in completing the installation of sophisticated equipment lead to our specialized weather forecasting at

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the 2009 winter test events. These are real milestones,” noted Paul.

Along with these preparations, Environment Canada has worked tirelessly towards their sustainability goals to reduce the footprint and create a sustainably conscious 2010 Winter Games.

“I’m looking forward to the Games coming off flawlessly, and seeing the “green” aspects showcased,” said Paul.

The 2010 Winter Games are all about athletic excellence and national pride. However, in recent years, sustainability has become a priority for the International Olympic Committee.

“Each Games must demonstrate a measure of excellence and innovation in minimizing negative environmental, economic and social impacts,” explained Paul. “It means showcasing new ways to save energy and conserve the natural environment, and creating a legacy of sustainable venue and transportation infrastructure that helps the host communities achieve a healthier future.”

These goals have been incorporated into the 2010 Winter Games. The Government of Canada is a partner in the delivery of the Games, and Environment Canada has been helping to create Games sustainability.

“The achievement of Leadership in Energy and Environmental Design (LEED) Gold standing for the new Hillcrest curling venue was the result of a business plan led by us,” noted Paul proudly. He also mentioned that Environment Canada was heavily involved in environmental assessments for Olympic venues to ensure that environmental impacts were minimized or mitigated.

Beyond weather and sustainability preparations, Environment Canada’s emergency response personnel participated in training exercises in February to ensure that they’re ready for all possibilities during the Games.

With this work and the impressive accomplishments so far, it is exciting to think about February 2010.

“As a Canadian, I would like to see the Winter Games raise awareness and participation in sport. And I’d like to see it raise awareness of things that can be done to make our world more sustainable,” said Paul.

“I’m looking forward to watching the momentum build towards the Games through the year, and seeing Canada and our athletes shine on a world stage during the Olympic and Paralympic Games.”

Less than a year to go!

8th World Conference on Sport and the Environment



Kelli Dawson (left) stands at the Government of Canada booth at the WSEC.

From March 29-31, 2009, more than 400 delegates from around the world descended on the Vancouver Convention and Exhibition Centre to participate in the 8th World Conference on Sport and the Environment.

Hosted by the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games (VANOC), on behalf of the International Olympic Committee (IOC) and the United Nations Environment Program (UNEP), the biennial conference promoted the development of environmental initiatives relating to sport.

“This is the first time it was held in North America,” said John Beveridge, Acting Director, Environment Canada’s Sustainability Division. “It’s a significant event for Vancouver – and for Canada.”

Environment Canada, with support from Transport Canada, Canada Mortgage and

News Item: **Offsetting Greenhouse Gas Emissions**

February 16, 2010 – Today, Canada's Environment Minister, the Honourable Jim Prentice, announced the Government of Canada's commitment to offset federal greenhouse gas emissions for the 2010 Olympic and Paralympic Winter Games.

"Canada is proud to be the first host country in history to help offset the greenhouse gas emissions of its Olympic Games," said Minister Prentice. "This commitment is one of many ways our Government is contributing to sustainable

Games and meeting our global climate change responsibilities."

The Government of Canada is committing up to \$150 000 in carbon reduction initiatives to offset the estimated 7,600 tonnes of emissions created by the activities of thousands of government employees involved in the 2010 Olympic and Paralympic Winter Games; activities including employee air travel, accommodations and the Torch Relay event.

Housing Corporation, and the 2010 Federal Secretariat, coordinated a Government of Canada exhibit booth at the conference.

"Our presentation showcased a few examples of sustainability initiatives that the Government of Canada has helped develop relating to the 2010 Games," said Kelli Dawson, Strategic Advisor with EC's Sustainability Division.

These projects ranged from the innovative use of mountain pine beetle-killed wood for the roof of the Richmond Oval speed skating venue, and the design of Canada's first Net Zero multi-unit residential building as part of the Vancouver Olympic Village, to the relocation of the ski jump in the Whistler Olympic Park (as a result of the environmental assessment process) to protect old growth forest and wetlands.

As a key partner in the delivery of the 2010 Winter Games, the federal government is working with VANOC and Games partners to build sustainability into all aspects of the Games.

"It was important to have a presence at the conference and show our support of the sustainability initiatives surrounding the Games," noted Kelli. "We had guests from the 2014 Games in Sochi, Russia, as well as Czech Technical University in Prague come by and ask interesting questions about Canada and some of our sustainable practices."

The conference explored the theme, *Innovation and Inspiration: Harnessing the Power of Sport for Change*, through a series of keynote speakers, discussion panels, and stories from participating countries.

"We heard about the real difference sport can make in peoples lives, both socially and environmentally," said John. "For example, several delegates from Latin America told us how the athletes themselves get directly involved in local environmental projects as well as building community sport facilities."

These inspirational stories served as a reminder that sports can make a positive contribution to the environment.



John Beveridge at the Richmond Oval.

"We saw how people around the world are using a major event like the Olympics to introduce innovation in sustainability, and to inspire others to take action," explained John. "Vancouver and the 2010 Winter Games were held up as a model. We were recognized for the progress we've made here, not just in reducing the actual environmental impact of the 2010 Games, but in using the Games to get people interested in sustainability issues and excited about solving them."

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Section Prepares for the 2010 Winter
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Using the connection between sport and environment to inspire change is what Environment Canada hopes to achieve through the 2010 Olympic and Paralympic Winter Games.

“After the two days, the link between sport and environment and the potential for innovation and inspiration were evident to everyone there,” reflected John. “It was really amazing. It got people excited about what can be done.”

2010 Sustainability and Greening Government

After the Olympic torch is lit and fireworks explode in celebration, the 2010 Olympic Winter Games will officially begin. With the spotlight on Canada, John Beveridge, Acting Director of Environment Canada’s Sustainability Division, is hoping the Games will shed light on the issue of sustainability.

“Sustainability has been such a core part of the 2010 story since the beginning,” notes John. “There has been so much environmental innovation incorporated into the Games: into all the venues and facilities, into the transportation and energy systems, even into the procurement process,” he continues. “This is a tremendous opportunity for Canada to showcase these innovations to the world, and helping to make that happen is a big part of my team’s job.”

As federal lead on 2010 sustainability, Environment Canada is working with the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games (VANOC) and other federal departments to minimize the environmental footprint of the Games. What is perhaps more important is Environment’s Canada’s leveraging of the Games to showcase Canada’s expertise and innovation in sustainability, and to stimulate broader public interest and engagement in sustainability issues and action.

“This really is a once-in-a-generation opportunity to accomplish some significant things in the field of environmental sustainability,” says John. “We all know the Olympic spotlight will be on Canada;

commitments have been made, and expectations are high. By tapping into those Olympic ideals of challenge, dedication, and excellence, and applying them to the issue of sustainability, we can achieve some goals that would otherwise be unattainable, and perhaps inspire some broader lasting change as well. That’s probably the most difficult and most exciting part of this job.”

One initiative to inspire change internally is the 2010 Greening Government Toolkit, an interdepartmental pilot project led by Environment Canada and Public Works and Government Services Canada in partnership with the Pacific Federal Council in the Pacific and Yukon Region. A one-stop shop online for local federal employees, the toolkit offers



Kelli and Jas at the Environment Canada booth for the VANOC Sustainability Fair.

helpful tips and information on greening government operations.

“The Greening Government Toolkit would not have happened without the stimulus of the Games,” says John.

“It is important for us to play a leadership role and walk the talk, otherwise we can’t expect other people to,” explains John. “By bringing together our best practices and resources, the Greening Government Toolkit will help us all get up to a level we can be proud of before the Games. And after the Games are over, the Toolkit may become part of a national greening government initiative.”

Celebrating Sustainability and the 2010 Olympic and Paralympic Winter Games: The VANOC Sustainability Fair

While many Canadians celebrated Clean Air Day, on June 3rd 2009, the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Games (VANOC) also celebrated another eco-friendly event: the VANOC Sustainability Fair.

As a major partner in helping VANOC achieve its sustainability objectives, Environment Canada had a strong presence among other 2010 Games partners and sponsors who gathered at VANOC headquarters to showcase the environmental work and contributions they have made towards Games sustainability.

Environment Canada is participating in a carbon offsetting program, supporting green business initiatives and has provided



Jas Aulakh, Senior Policy Analyst with Environment Canada.

environmental assessments for the venues to minimize the environmental impact of the Games.

“I think it was important for VANOC employees and volunteers, as well as the other partners and sponsors, to know that the Government of Canada is a key partner in the Games, and know what we are doing and how we can help others reach their sustainability objectives,” said Jas Aulakh, Senior Policy Analyst with Environment Canada.

A key part of the Games’ sustainability objectives is directly tied to Jas’ area of work: minimizing the carbon footprint before, during, and after the 2010 Winter Games. VANOC already has a carbon offsetting strategy in place, but partners including the Government of Canada are exploring specific things they could do to minimize their carbon footprint by making green choices when it comes to travel, meetings, and office practices.

“The Games could be a good test case for actions we can take to reduce our footprint,” said Jas. “Instead of having people fly across the country, you can have more video conferences. We can encourage people to try carpooling or to take public transport instead of driving. It’s really about being creative and smart about the choices you make. Hopefully this will expand to other areas and become a way of doing business.”

Overall, the event was a success, and gave the partners and sponsors a chance to showcase their sustainability work.

Personal Profile: Anoma Patirana



What is your title/division? Senior Policy Advisor with EC’s Sustainability Division

What is your role during the 2010 Winter Games? To provide policy advice on environmental issues/

projects related to EC’s role as the Federal lead for coordinating sustainability opportunities of the 2010 Winter Olympic and Paralympic Games

Are there any memorable stories you would like to share from your Olympic experience? The best Olympic experience for me was to witness the excitement and joy of Canadians celebrating the Men’s hockey team Gold medal win. To be able to join in celebration with thousands of other Canadians on the streets of downtown Vancouver was a once in a lifetime experience!

If you could compete in any Olympic Sport what would it be and why? I would have to say freestyle skiing. To be able to perform such amazing acrobatic twists while leaping high into the air would be exhilarating and terrifying all at the same time.

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ustainability • What is Sustainability? • C
Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
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Goes to Environment Canada Employee

"I thought it went really well! There was a lot of interest [in what the Government of Canada is doing] from VANOC employees and volunteers," said Jas. "There were many questions about green buildings, specifically the Leadership in Energy and Environmental Design (LEED) business case study for the Hillcrest curling venue, which is a good sign because the word of our involvement is getting out!"

Along with the partners and sponsors, some special guests also made an appearance at the event: the 2010 Olympic and Paralympic mascots, Sumi the Thunderbird, Miga the Sea Bear, and Quatchi the Sasquatch, characters that were inspired by mythical First Nations creatures.

"Lots of people were getting their picture taken with the Olympic and Paralympic mascots! There was a huge line up ... it reminded me of being in Disneyworld where countless adults were lined up to get photos taken with Mickey and the other characters!" recalled Jas.



Kelli Dawson (right) and Austen Mayor (left) gives a Lunch and Learn presentation about the Greening Government Toolkit.

Working on the 2010 Winter Games is a once-in-a-lifetime opportunity, and is something Jas hopes will have a lasting impact.

"If I had to pick the most interesting part of [working on the Games files], it's just getting a chance to be part of something that is much bigger than anything else I've worked on. Our piece may seem small, but the work that is being done for sustainability will all add up to something significant."

Personal Profile: **Kelli Dawson**



Role with Environment Canada: Strategic Advisor with EC's Sustainability Division.

Goals for the Greening Government Toolkit: "Raising awareness and hopefully giving people the ability to adopt new ideas. It would be great to have them use some of the

toolkit ideas in their own lives, and get more people involved in initiatives here."

If you could compete in any Olympic sport what would it be?: "Hockey. I've played through minor hockey and now with the recreational leagues, so like almost anyone who slapped on the blades, that would have been a dream. I suppose I could be a pusher on the bobsled and stay in the middle- but no skeleton or anything crazy."

Greening the Office Environment: Introducing the 2010 Greening Government Toolkit

Although there are no hammers, screwdrivers or wrenches, this toolkit comes fully loaded with all the essentials federal employees can use to green their office.

In a major step towards building a green workplace, Environment Canada and Public Works and Government Services Canada, with the support of the Pacific Federal Council and other federal organizations in the Pacific Region, have teamed up to develop the 2010 Greening Government Toolkit.

"This regional pilot project is a collection of guides, best practices, and resources that have been used by Green Teams and others in the region," said Kelli Dawson, Strategic Advisor with EC's Sustainability Division. "The idea is to create a one-stop shop where people can

easily access resources and share ideas to help green their operations.”

Using the Toolkit is one way EC and other federal departments are supporting the Vancouver Organizing Committee (VANOC) in its work to green the upcoming Vancouver 2010 Olympic and Paralympic Winter Games.

“VANOC, its partners, and sponsors have made many strong commitments for these Games in terms of sustainability,” noted Kelli. “As the federal lead on Games sustainability, one of our priorities is footprint reduction.”

“This resource will help the federal government reduce its own environmental footprint, creating a Games legacy we can be proud of.”

The Toolkit is accessible to all federal employees through the Pacific Federal Council website, but was launched in the Pacific and Yukon Region as a pilot. If the project is deemed successful, the Toolkit will be promoted in other regions as a Games-related best practice.

“It’s almost possible to have zero waste in the everyday office,” reflected Kelli. “[Through the Toolkit], we are making it easier for every employee to reduce their footprint.”

To learn more about what you can do to green the workplace, visit the 2010 Greening Government Toolkit site.

Personal Profile: **John Beveridge**



Role during 2010: A/Director, Sustainability Division

Do you play any winter sports? My daughter and I love to get to the mountain - she snowboards and I ski. I’m from the prairies and I used to cross country ski there.

I love being outside in the wintertime. Of course, in Vancouver you don’t have to limit yourself to “winter” sports like you do in the prairies. Here I also like cycling and kayaking – even windsurfing occasionally – in the wintertime!

If you could compete in any sport, what would it be? I can tell you it wouldn’t be the luge - that scares the hell out of me! A long time ago I played a little bit of hockey, but snow is softer than ice when you crash, so I prefer snow sports. I think for me it’s not about the competition – it’s the exhilaration that comes from mastering an outdoor sport even moderately well and just being out there in nature while you’re doing it.



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2010 Winter Games
Russia: Coming
by Thursdays in the
• Sochi Follow-up
2010 Sustainability
the Office Environ-
cies • Are We There
Environmental Emer-
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Emergencies/Safety



Emergencies Overview

A toxic chemical spill or harmful gases released into the atmosphere could jeopardize athletes and spectators at the 2010 Winter Games. That is why Environment Canada has provided scientific and technical expertise to the Vancouver 2010 Integrated Security Unit.

If there is an unplanned or deliberate release of hazardous materials, our experts will be on hand to provide a full range of scientific support from laboratory analysis and modeling capacity to technical advice on chemical fate and effects.

Exercise Silver: EC Training for 2010 Emergencies



Adam LaRusic.

For one week during February, Environment Canada's Emergency section was faced with a series of extraordinary events.

An ice storm ravaged the East Coast. A terrorist attack hit Montreal's transit system. Vancouver experienced severe winter weather. A large earthquake shook Tsawwassen. A failing sewage plant released millions of gallons of sewage into the Fraser River.

Obviously, these events didn't *really* happen. Yet for federal departments participating in Exercise Silver, they may as well have.

Exercise Silver was the second of three emergency preparedness tests orchestrated by Public Safety Canada in preparation for the upcoming 2010 Winter Games.

"The purpose of the exercise was to put Canada's government in the required state of readiness to have a safe and secure 2010 Olympics," says Adam LaRusic from Environment Canada's Emergencies Unit in Vancouver.

Adam has worked for Environment Canada for 19 years, and his work on the 2010 Winter Games are offering him exciting experiences and unique challenges. "This is special because the Olympics attract such an international spotlight and poses such a huge logistical challenge for the government – it's unprecedented for Vancouver."

Over the four day exercise, Adam and EC's Emergencies Unit (Pacific and Yukon Region) responded to a number of challenges, including an oil spill in Burrard inlet, a sewage treatment plant failure, and a natural gas release.

"We dealt with low-probability, high consequence events," Adam says.

Although these events are rare, their impacts can be massive. Anticipating and planning responses are important, not only during the Olympic Games, but at all times.

"If we get hit with a large oil spill the people of Canada expect us to be able to respond, and it's hard because we haven't been hit by one

in many years,” notes Adam. “We need to be ready and know where we’re going to set up the bird cleaning operations and how we’re going to deal with oil on the water and prevent impacts to shorelines.”

To help ensure the proper course of action in an emergency, EC Emergency section collaborates with EC’s Meteorological Service of Canada (MSC), Public Safety Canada, the military and the RCMP.

Personal Profile: Adam LaRusic

Current role at EC: Senior Program Officer with Environment Canada’s Emergency section.

The best part of his job: “Cleaning up oil spills”

In the upcoming year: “I am looking forward to a safe and secure Olympics in February 2010.”

If you could compete in any Winter Olympic sport what would it be? “I’m a soccer player so that’s a tough one! There’s no winter analogue to soccer. One event that takes place during the winter festival in Quebec is roller derby on ice. The idea is to be the last person standing. If they bring that event into the Games, I would definitely be involved!”

“If we have an oil spill, we are going to call MSC first to ask, ‘What’s the wind speed and direction? What is the weather going to be like for the next few days?’” explains Adam. “This information is extremely important when deciding the next steps.”

Exercise Silver included an array of extreme scenarios and was a valuable learning experience. “These exercises are completely critical to the way we do business,” says Adam. “The entire world is going to be watching in 2010 so we have to make sure we’re on top of our game.”

With one more large-scale Olympic emergencies exercise planned this fall, Adam is confident that EC’s hard work will pay off during the Games and beyond.

“One of the legacy benefits will be the Government of Canada’s heightened state of preparedness,” he says. “It will last long past the Olympics.”

Are We There Yet? Getting to Work During the Games

When the world is invited into your city where do you put all the new people?

During Games time, an estimated 150,000 extra people will visit Vancouver’s downtown core. Downtown transportation issues will be a challenge with closed and restricted lanes, additional one-way streets, and massive no parking zones. The Vancouver Olympic Organizing Committee for the 2010 Olympic and Paralympic Winter Games (VANOC) predicts that a regular commute will take two to three times longer at certain times during the day!

To ease some of this transportation stress, VANOC approached downtown Vancouver’s largest employer, the federal public service, for help. VANOC asked if government employees could reduce vehicle commuting traffic by 30% during Games time. Through coordination with the Pacific Federal Council (PFC), the Government of Canada has in fact committed to cutting employee car trips to downtown Vancouver in half during the Games.

Keith Perry, Manager of Workplace Services for the Pacific and Yukon Region, represents Environment Canada on the Regional Interdepartmental Transportation Committee.

“The group is developing strategies,” explains Keith. “The first one assists departments in developing three departmental transportation strategies, the next one is an employee toolkit, and the last one will be creating a sustainable legacy.” All reports will be available on the PFC site.

If you work in downtown Vancouver and don’t want to be left stranded or stuck in gridlock, it’s best to take a look at what you can do to make your commute less stressful during the Games.

See the Regional Interdepartmental Transportation Committee reports on the PFC site:

http://pcsfo.gc.ca/app/doc_list.cfm?lang=e&Commit=CTF&CatID=474

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Personal Profile: Keith Perry



What is your role on the 2010 Transportation Committee? I represent Environment Canada on the Regional Interdepartmental Transportation Committee so that the department can have a say in the transportation options available to employees.

What do you do when you're not thinking about Games time operations? I think about accommodations, security, fleet, and facilities related to EC employees in the Pacific Yukon region.

How are you planning to move around during the Games? I will be taking Transit to avoid gridlock!

If you could be a spectator for any Olympic sport, which one would you like to see? I probably would want to watch skeleton because it's so scary.



Patrick Lambert.

The department's work for the 2010 Winter Games evolved from EC's leadership role with the Chemical, Biological, Radiological and Nuclear Research and Technology Initiative (CRTI). This initiative enhanced federal science overall and has built capacity between the science community and the RCMP. As first responder, the RCMP led the national Chemical, Biological, Radiological and Nuclear Emergency Response Team.

"For over 30 years, Environment Canada has conducted research on a broad range of topics related to emergency response and spills of hazardous materials. This experience has put us in a strong position to provide support to first-responders on security-related matters," says Patrick.

As part of security preparations for the 2010 Games, Environment Canada has also helped to plan the Games' security preparedness exercises. The exercises, known as "Bronze," "Silver," and "Gold" are designed to test all government joint deployment activities to enhance linkages between the science community and first responder police.

Environment Canada has participated in the first two exercises. Exercise Gold is taking place today and will be the final test of Canada's preparedness for a safe and secure 2010 Winter Games.

Environment Canada and the 2010 Games: A Higher State of Readiness

The 2010 Winter Games celebrate, sport, culture and Canada. The Government of Canada is providing security for the 2010 Winter Games given that the Games can be a target for those wishing to harm the event, or the host city and/or those involved in the Games. Environment Canada is part of the overall security effort.

"Environment Canada is one of several departments providing scientific support for overall security efforts," says Patrick Lambert, of Environment Canada's Emergency Science and Technology Section. "We are working to prevent any unplanned or deliberate release of hazardous materials during the Games. Our experts are providing chemical-related scientific information and analytical support to the RCMP."



Alisha Drinkwater stands by the DFO hovercraft at Boundary Bay, British Columbia.

Personal Profile: **Alisha Drinkwater**

What is your title/division? Alisha Drinkwater, Environmental Emergencies Officer, Emergencies Unit, EPOD

What is your role during the 2010 Winter Games?

I am a member of our Environmental Emergency Response team with Environment Canada. Our group is providing 24/7 coverage during the Olympic and Paralympic Games. I am part of a team that coordinates and provides scientific and technical chemical expertise to the Vancouver 2010 Integrated Security Unit through support to the RCMP (Royal Canadian Mounted Police) and the National Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) Response Team.

If there is an unplanned or deliberate release of hazardous materials during the Games, we will provide subject matter expertise, analytical support, laboratory analysis, modeling capacity, and specialized forecasting, and will coordinate support from other government departments with CBRNE expertise. This support could include technical advice on chemical fate and effects, detection and monitoring, analysis, dispersion and trajectory modeling, and clean up and recovery help.

Are there any memorable stories you would like to share from your Olympic experience?

One of my fondest moments was at the onset of the Games when the Torch Relay came through downtown. The level of participation from Environment Canada and all the business and merchants in the downtown core was phenomenal. We were standing directly across from the Fairmont Hotel where a number of their staff in their uniforms were cheering on the torch runner. The sight of chambermaids and bellhops of all ethnicities with flags waving and singing and dancing on Georgia Street was a moving sight to see. At that point, I could feel that the Vancouver Games was going to leave a positive legacy.

What event were you most excited for? I've personally found short track speed skating to be an appetizing event. It is fast paced and the results can change on a dime. I was able to attend the Men's 1000m final and Women's 1500m final. It was a thrilling event. Although no Canadians made the podium, sharing the experience of an athlete winning a Gold Olympic Medal was profound.

If you could compete in any Olympic Sport what would it be and why? I would be a luger, because going down head first [like they do in the skeleton] is just crazy.

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er to Forecast Olympic Weather • SNC
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Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

On Your Mark, Get Set, Go! EC's Environmental Emergency Section Prepares for the 2010 Winter Games

Olympic athletes train for years in anticipation of the moment when they have the chance to take the spotlight and prove their skills.

But imagine what it's like to compete when you don't know the time, place, or event you will be competing in.

This uncertainty is similar to what Fred Beech experiences everyday on the job. As Environment Canada's (EC) manager of the Environmental Emergency Section of the Environmental Protection Operations Division (EPOD) for the department's Pacific and Yukon Region, he could be called into action at any time, in any place, for any number of reasons.

"Ideally, I wish there were no spills and no emergencies taking place," says Fred. "But my favourite part of the job is when we get a challenge and my team comes together to fix it and do what is necessary to protect fish, wildlife, habitat, and people from the effects of the hazards."

Given the intensity of the job, Fred is thankful he has a great team to support him.

"We are very fortunate," says Fred. "We have a very talented work force at EC, which is well supported in this emergency program. We pursue training, education and participate in exercises to ensure that we are the best we can be if something serious should happen."

After working with EC for 32 years, Fred is at the top of his game and is prepared to welcome any opportunities and challenges that the 2010 Winter Olympic and Paralympic Games may bring.

"We're concerned that a major emergency during 2010 Games has the potential to be disruptive to the Games, and a distraction to others that have come to enjoy the Games," says Fred. "We intend to fulfill our normal role of dealing swiftly with any environmental

emergencies that would take place, but in light of the Games, we are increasing capacity so we are able to respond even better. We are ready and looking forward to success during the Games!"

Personal Profile: Fred Beech



Role with Environment Canada: "EC manager of Environmental emergency section, which is part of the Environmental Protection Operations Division (EPOD). I started with EC in 1977 as a student, and I've been working in emergencies since the early 80s."

What is the most rewarding part of your job?:

"It is rewarding when we are able to work as a team, and apply our skills to resolving any issues that may arise. We have a real community of people who are really engaged by this program, and have a common interest in making things better and protecting the environment."

If you could compete in any Olympic Sport what would it be?

"Well, I think the bobsled or the luge would be my sport. I don't know if I'd wipe out doing it, but it would be a lot of fun!"

Are you ready for the Olympic Games?

"I'm very excited! I get people from all over the country asking what we'll be doing and what events were going to. We're planning our work so that our staff can be engaged in the Olympic process, stay in touch, hold up their responsibilities during that period, and have fun while doing it."

Hometowners

David Jones – Hometowneer



David Jones skiing at Zermatt in Switzerland.

Growing up just minutes from the Grouse Mountain gondola, it's no surprise that local boy David Jones became an avid skier.

"I would hit the slopes 80 to 100 times a year," recalls David. His passion for skiing also spurred his enthusiasm for weather forecasting. "I was constantly calling the Environment Canada mountain forecast line to get details on temperature, snow amounts, and the freezing level."

David's interest in meteorology led him to a career with Environment Canada's Meteorological Service, where he has been working for 24 years.

As the warning preparedness meteorologist for coastal B.C., David is a liaison between the weather service, media and emergency management community. His own experience skiing taught him that being prepared for the weather is extremely important to outdoor winter sport athletes.

With the 2010 Winter Games around the corner, David is getting ready to deliver forecasts and other weather information to the athletes,

event organizers and spectators coming to his home region for the Games. Environment Canada is the official weather services provider to the Vancouver 2010 Olympic and Paralympic Winter Games. Crucial operational decisions during the Games will be made based on weather information provided by Environment Canada.

"The 2010 Winter Games in Vancouver and the services that Environment Canada are providing represent a convergence of meteorology, broadcasting, and sport - three of my passions on the biggest stage, in the best place on earth," David adds. "What could be better than that?"

Nicolas Major – Hometowneer



Pictured: Nicolas Major. "I was given a lesson in how to shoot at the biathlon range, after a national biathlon training exercise in Whistler Olympic Park."

As a lead meteorologist with the Canadian Meteorological Aviation Center in Montréal, Québec, Nicolas Major usually forecasts weather for aviation in Eastern Canada. But for two weeks in February 2010, he is on special assignment to the Vancouver 2010 Olympic and Paralympic Winter Games.

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er to Forecast Olympic Weather • SNC
ic and Yukon Region • The Path of Lea
ustainability • What is Sustainability? • C
Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

"I'm assigned to Whistler Olympic Park, specifically the Callaghan Valley, for the period covering the entire Olympics," notes Nicolas. "I will be forecasting weather specifically for the cross country skiing and biathlon venue."

As an Environment Canada employee, Nicolas is part of the team that will provide official weather services for the 2010 Winter Games. Through in-class, on-site training and test events, the forecasters have sharpened their expertise to provide detailed forecasts for the Games.

As a soccer coach in his hometown of Varennes, Nicolas also understands the importance of weather in the planning and preparation of sporting events.

"Knowing what to expect in the weather is important for any outdoor event, but during the Olympics the pressure is on!" says Nicolas.

Given his interest in sport and passion for forecasting, Nicolas is thrilled to be involved in 2010.

"I have always really enjoyed field meteorology, and being involved in the Games is a great experience. I was also really inspired by my cousin who was selected to compete in weight lifting for the 1984 Olympics Games in Los Angeles. Unfortunately, he never made it to the Games because he passed away in training. He will be on my mind in 2010, and I hope to make him proud!"

Jill Maepea – Hometowneer

Working in the field of meteorology was a childhood dream for Thunder Bay's Jill Maepea. Soon, Jill's hometown family will be able to watch her perform her passion on the world's stage at the Vancouver 2010 Olympic and Paralympic Winter Games.

"Having competed provincially and nationally in cross-country skiing with the Lappe Nordic Ski Club outside of Thunder Bay, I can really appreciate the connection between winter sports and weather! I am looking forward to experiencing the Games!" Jill says.

Jill works for Aviation and Defence Services, which is a partnership between the Department

of National Defence and Environment Canada. "During the Games, my job is to provide site-specific weather forecasts for the Whistler Olympic Park venue, where the ski jump, biathlon and cross-country skiing will take place," says Jill.

A graduate from Lakehead University with a Bachelors of Science in Physics and a post-graduate Diploma in Meteorology from Dalhousie University, Jill began working for Environment Canada (EC) as a summer student in Thunder Bay, she has further honed her forecasting skills by working in Montreal, Dartmouth, Halifax and Fredericton, where she currently resides. Her journey now takes her to Whistler, B.C. as part of EC's official weather services for the 2010 Winter Games.

Jill is adjusting to the challenges that come with learning a new climate and geography.

"There has been a lot of travel for training and workshops to mountainous regions of western North America. I have also had to learn to apply my meteorology knowledge to the ever-changing weather of British Columbia's south coast," says Jill.

After preparing and planning for the Games, Jill is ready to take on this once-in-a-lifetime experience.

Dave Carlsen – Hometowneer



Dave points to the remains of a home destroyed by tornado Elie in Manitoba.

Surrey's Dave Carlsen is coming home. Currently living in Winnipeg, Manitoba, Dave is returning to help Environment Canada (EC) as it provides weather services for the 2010 Olympic and Paralympic Winter Games.

During the Paralympic Games in March, Dave will work at Environment Canada's Pacific Storm Prediction Centre in Vancouver, B.C. providing crucial weather information to on-site, outdoor venue forecasters. This weather information is crucial to delivering outdoor sports competitions safely and fairly.

"Since becoming involved in the Games, we've had a lot of training on mountain meteorology," reflects Dave. Being from the Surrey area, Dave was acquainted with the challenges of forecasting for alpine regions.

"My usual area of expertise is prairie weather which includes severe thunderstorms, and blizzards on the plains, so the training has really opened my eyes to vastly different weather patterns."

Dave's interest in weather was sparked after witnessing his first tornado while on a trip to Saskatchewan in 1984. His passion led him to his current position as a meteorologist with Environment Canada, where he has worked since 1999.

Now working out of the Prairie and Arctic Storm Prediction Centre in Winnipeg, Dave is excited to spend some time in his home province working on the Games! "It is nice to be back," says Dave. "Although part of my job is to prepare for the worst, we are definitely expecting the best for the 2010 Winter Games!"

Pat Wong – Hometowneer

Although Pat Wong played the French horn with the Parkland Secondary School band in Sidney, B.C., her career led her to work that involved very different instruments: weather instruments, to be exact.

Her interest in weather was sparked at a young age. "My Dad, John Forge, a high school teacher, inspired a love of nature and especially weather and storms," recalls Pat. "My high school Geography 12 teacher, Thelma Brooks, encouraged my interests and ignited a passion that led me to a career in meteorology."



Pat Wong stands with an anemometer, which measures wind, and a snow depth sensor on Environment Canada's Richmond rooftop instrument test platform.

Pat, now Acting Manager, Atmospheric Monitoring Pacific and Yukon Region Meteorological Service of Canada has worked with Environment Canada for 25 years and is preparing for the opportunity of a lifetime: working on the 2010 Winter Olympic and Paralympic Games.

"Environment Canada is the official source of weather information for the 2010 Winter Games," says Pat. "My group ensures that all kinds of weather and climate data are flowing and available for the athletes, organizers, and spectators."

To take on the task of forecasting for the Vancouver and Whistler area, Pat and her team are gathering data from around the province.

"We have hundreds of weather and climate stations around BC and the Yukon as well as weather radars, upper air sites, marine buoys and even automated weather stations on ships. I manage the group and make sure that everything is in place to enable them to get the job done!"

With the Games right around the corner, Pat is confident that their hard work will pay off.

"We need to be ready for anything, and thanks to the hard work of our team, and the test events we had last winter- we are prepared!"

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ustainability • What is Sustainability? • C
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Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

George Davies – Hometown



George Davies standing atop the weather station at the top of the Whistler Sliding Centre, home to the bobsleigh, luge, and skeleton.

George Davies, an atmospheric monitoring technologist with Environment Canada (EC), has traveled around Canada for his job.

“Although I’ve stood on the four corners of the country for work, and lived across Canada, whenever people ask where I’m from, I proudly say Moose Jaw,” states George.

Since 2006, George has been working in B.C. to prepare for an international event – the Vancouver 2010 Olympic and Paralympic Winter Games.

George relocated from Toronto to the Vancouver area, and will be working in Whistler during the Games. “They needed someone who skied, and as a ski instructor and ski patroller, I was the perfect fit,” explains George.

Although he misses the clear cold winters and friendly people of Moose Jaw, he is getting comfortable in B.C.

“I might stay in Vancouver forever, since I can run, bike, swim, and ski outdoors 7 days a week, 12 months a year!” he states.

As one of the lead technologists for the Olympic Autostation Network with Environment Canada, the official weather services provider

of the 2010 Games, George ensures the technical aspects of the autostations are working soundly. Each autostation measures precipitation and other aspects of the weather. Many of these autostations are located remotely to get the most accurate measurements.

Venturing to these obscure locations is part of George’s job description.

“I travel to the Whistler Olympic Park and Whistler Downhill and Sliding Centre venues by downhill, cross-country, and alpine touring skis, to ensure data is correct and snow measurements are accurate,” says George. “It is exciting to be involved in the Winter Games, and to know that my data is necessary to make precise short term and long term venue forecasts.”

George’s passion for meteorology has been clear from a young age, and his experience during the Games has provided him with memories that will stay with him throughout his career.

“Watching clouds one day when I was nine years old, I wondered why they changed from one shape to another,” recalls George. “I’ve been fascinated with weather since. After 23 years, I still jump out of bed, eager to start a day at work watching the weather!”

Terry Layes – Hometown



Terry Layes inspects a precipitation gauge that is deployed as part of an automatic observing station in Saskatoon.

Born and raised in Sydney, N.S. and a graduate of Riverview Rural High School, Terry Layes is

heading to the Vancouver 2010 Olympic and Paralympic Winter Games!

As a technical services officer and meteorological inspector with Environment Canada in Saskatoon, Saskatchewan, Terry is preparing to travel to Whistler, B.C. for one week during both the Olympic and Paralympic Games.

During Games time, Terry will maintain a series of automatic weather observation platforms that have been installed in and around Whistler and Blackcomb Mountain. "These stations will provide current weather conditions for each outdoor Olympic venue to on-site personnel and weather forecasters," explains Terry.

"For the past three years, I have been deployed to the west coast for one to two weeks at a time," Terry adds. "During each visit, I learned about the mountain weather patterns and participated in weather forecasting test events."

Terry has worked in the meteorological field for 27 years, the last 12 as a technical services officer with Environment Canada's Meteorological Service of Canada. Weather can have a major impact on the fairness and safety of outdoor sports competitions. During the Games, Terry will be part of a team that provides weather data directly to Games' organizers, ensuring events run as smoothly as possible.

Terry has two brothers living in Sydney, and family members throughout Nova Scotia who will be cheering him on in his weather services role during the Games!

"I have always been interested in both weather and instrumentation. Working for Environment Canada has allowed me to pursue both interests. The chance to play a part in the 2010 Winter Games is an added bonus!"

Ted Gresiuk – Hometown



Ted Gresiuk (right) poses in front of a weather buoy deployed on the Arctic Ocean.

From his hometown of Steinbach, Manitoba, Ted Gresiuk will make his final business trip to Whistler, B.C. in February 2010 for the Vancouver Winter Olympic and Paralympic Games.

As a technical services officer, Ted will draw on 24 years of experience, including the 1999 Pan-Am Games in Winnipeg and World Cup events in Whistler, to help Environment Canada (EC) deliver weather services for the 2010 Winter Games.

During the Games, Ted will perform Aerological soundings at Whistler village. "Aerological soundings are measurements made of the atmosphere from the ground to 20 km in altitude that are used for analyzing the current state of the atmosphere and future forecasts," explains Ted.

Weather forecasts provide important information during the Games. Crucial operational decisions that impact the safety and fairness of the Games are made based on the weather information provided by Environment Canada.

Although the weather challenges Ted has encountered in the mountains of Whistler differ

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ic and Yukon Region • The Path of Lea
ustainability • What is Sustainability? • C
Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

from those of the prairies of Manitoba, he has trained long and hard to ensure he's successful in his Games' role.

With the Games quickly approaching, and his excitement is mounting, Ted's friends and family from Steinbach are preparing to cheer him on during this once-in-a-lifetime experience!

"Knowing that there are many people out there looking to use our services is definitely motivating, and being able to use my work talents to be part of something like this is a great opportunity! I am very glad to be part of this, and I look forward to what's coming ahead," says Ted.

Matt Loney – Hometown



February 2008, Matt Loney posing beside the newly constructed Olympic ski jump in the Callaghan Valley. The ski jump is one of the venues that Loney will help provide forecasts for during the Games.

There are certain things that make Matt Loney homesick for his hometown of Sault Ste Marie, Ontario. "I miss spending time with my family and the great Italian food that the Soo has always had, especially the pizza!" says Matt.

Although he's far from his hometown, residing in British Columbia since 2002, Matt is ready to embark on the experience of a lifetime:

participating in the Vancouver 2010 Olympic and Paralympic Winter Games. His sport of choice though was quite different than most.

"I was inspired to become a meteorologist by the very changeable weather that I grew up with in northern Ontario. When I was quite young, I liked to take my own weather statistics and clip articles from newspapers that had anything to do with weather," recalls Matt.

A supervising meteorologist and program manager with Environment Canada (EC), Matt has been working hard to prepare for his role as meteorologist for the upcoming Games. Environment Canada is the official weather services provider to the Vancouver 2010 Olympic and Paralympic Winter Games. Crucial operational decisions during the Games will be made based on weather information provided by EC.

As part of his Games training, Matt spent months gathering weather data in a lonely trailer within the quiet forests of the Callaghan Valley. Soon, this area will come alive with the sounds of sport as it serves as the cross-country skiing, biathlon and ski jumping venue for the 2010 Winter Games.

"We rode to our trailer on Ski-doo's because the road was not even finished. There was no electricity, and we had to use snow-shoes or skis to get around," says Matt.

"It was an incredibly unique experience as a forecaster to be sent into the valley and start to make sense of the local weather effects," he adds.

After years of gathering data and spending time on site, Matt ready for his Games-time role.

"B.C.'s complex terrain, it's proximity to the Pacific Ocean and the demands of forecasting for a specific Olympic venue make this one of the toughest forecasting jobs I will ever be involved with. The challenge is the best part of it and as a team, we feel prepared for it!"

Bill Scott – Hometown



Bill Scott adjusting the alignment of a high-resolution Olympic web-cam in the Meteorological Service of Canada's testing compound in Richmond, B.C.

From his hometown of Port Alberni, B.C., a young Bill Scott went to school to become a pilot. However, changes in his career path lead him to studying the sky rather than flying through it.

"I branched off into the meteorological side of the aviation field because I found it very interesting," recalls Bill.

After 28 years with Environment Canada (EC), Bill is preparing to take on his largest project yet as manager of the Vancouver 2010 Winter Games Atmospheric Monitoring Networks.

Over the past 20 years, Bill's focus and position have evolved into one of project management relating to installing new weather monitoring systems and networks. "Without a doubt, the most complex and time consuming requirement of my career has been to design, manage and implement the installation of the Olympic Automated System Network," says Bill.

The network includes automatic weather stations, remote video camera systems, a wind profiler, a Doppler weather radar, among other new or upgraded systems to ensure forecasters have the most accurate and up-to-date information available.

Working on the Olympic network since 2003, Bill and other Environment Canada technicians and forecasters have been working tirelessly to ensure they are prepared to provide official weather services for the 2010 Winter Games.

"Our primary focus is to supply what is needed for forecast operations during the Winter Games but also for the athletes and the sport itself," adds Bill.

Weather forecasts provide important information during the Games. Crucial operational decisions that impact the safety and fairness of each event are made based on the weather information provided by Environment Canada.

With 35 new or upgraded monitoring systems to gather weather data in the sea-to-sky area between Whistler and Vancouver, and a team of experts trained and ready, Bill is confident.

"It has been a lot of work, but we know it will all pay off at Games-time," he says.

Frank Mirecki – Hometown



Frank is in front of the Whistler Doppler radar for which he was the project manager.

There was a time when Frank Mirecki competed in track and field for Winnipeg's Miles MacDonnell High School. He never imagined that one day he would have a chance to contribute to the biggest sports competition in the world - the Vancouver 2010 Olympic and Paralympic Games.

A Winnipeg resident until 1990, Frank will complete his 30th year with Environment Canada having helped the Department provide weather services for the upcoming 2010 Winter Games.

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Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

"I was the project manager responsible for constructing a Doppler radar near the Whistler Olympic venues," explains Frank.

Thanks to the Doppler radar, weather radar data is available for Whistler and surrounding region for the first time ever. Olympic venue weather forecasters will use the Doppler radar to get a "CATSCAN" like view of weather in the region.

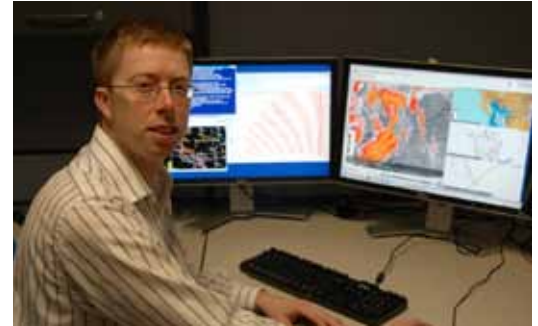
Weather forecasts provide important information during the Games. Crucial operational decisions that impact the safety and fairness of each event will be made based on weather information provided by Environment Canada.

"Forecasting for Winnipeg has different challenges related to geography, but there is a lot of upstream weather data from Western Canada," says Frank. "The Vancouver and Whistler area is challenging because there was very little upstream weather data here prior to the Doppler radar."

Frank's expertise ensured the Doppler radar was ready almost a year prior to the Games. It's a project he's quite proud of.

"The most exciting part was when the dome was placed on top of the radar antenna atop the 33-metre tower," adds Frank, who now lives in Langley, British Columbia. "I get great reward from the fact a project I managed will play an important part in the Games."

Andrew Teakles – Hometown



Andrew Teakles gathering weather data in his office in downtown Vancouver, B.C.

It's not only athletes from across Canada who will help make the Vancouver 2010 Winter Games Canada's best Olympics ever. Rexton's own Andrew Teakles is playing an important role.



Knowing what to expect from the weather is crucial for athletes competing in outdoor alpine sports during the 2010 Winter Games. This is especially true for ski-jumpers, who, with one unexpected wind, can end up landing in the stands.

Working with Environment Canada, Andrew will be one of roughly 30 meteorologists at the outdoor Olympic venues, providing timely and accurate weather forecasts.

“I will be on-site at the ski jump venue providing race officials and team captains with specialized local forecasts to help their events run smoothly and fairly. My challenge will be to accurately predict the turbulent winds along the ski jump and give a heads up regarding any precipitation heading their way,” explains Andrew.

Weather conditions from Rexton to Vancouver are extremely different, but Andrew has taken on all the challenges of B.C. weather.

When he began forecasting for the Callaghan Valley in 2008, he found that the wind moved in exactly the opposite way as was expected.

Since then, Andrew has already contributed his expertise by identifying a new local weather pattern and becoming an expert in the wind conditions at the ski jump site. The training and research has made this an experience he won't soon forget.

“Being involved in the Olympics has been a great learning opportunity for me. This has brought me a new perspective on mountain meteorology that will benefit me throughout my career.”

“Unlike some of my colleagues in the Meteorological Service of Canada, I didn't grow up dreaming to be a weatherman or keep a weather diary but I did have a big interest in science,” recalls Andrew. “After a few years of studying physics at the University of New Brunswick, I began to appreciate how much interesting science is involved in your day to day weather. Soon after, I transferred to McGill University to complete my degree in Atmospheric Science and never looked back!”

Now enjoying a once in-a-lifetime experience, Andrew's family will be cheering him on from Rexton during the 2010 Games!



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? Getting to Work During the Games •
Section Prepares for the 2010 Winter
Weather Website for the Olympics • The H
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Goes to Environment Canada Employee

Communications



Final Piece of Weather Prediction Equipment in Place for 2010 Olympics

Canadian Press
March 28, 2009

The Canadian Press was on hand for the Doppler radar announcement made by Minister Jim Prentice. "A Doppler radar was installed just outside of Whistler, B.C. This radar is the 'final piece' to be installed in support of Environment Canada's weather services role for the 2010 Winter Games," noted the Canadian Press. The article added that this piece "joins the vast 2010 weather network, and provides vital data on snowfall and storms." The same article described the department's weather observation network and highlighted that "meteorologists play a crucial role in translating the data so it is useful to spectators, organizers and athletes. The article added that the radar "also allows forecasters to effectively predict weather for the mountainous area than ever before."

"We don't show the [teams] the whole wealth of data we have because it's a huge amount," said Chris Doyle, chief meteorologist for the Olympics. "The forecaster's job is to condense all of that information and prepare a forecast for Games-time operations at the venue that make sense to the user."

"It would be like knowing what your weather is like at home and knowing how the weather is different one or two blocks away," said Environment Minister Jim Prentice.

"We'll get more precision and finer detail than we had before," added Al Wallace, regional director of Meteorological Services Canada.

Canada Launches Special Weather Website for the Olympics

Vancouver Sun
January 28, 2010

When Minister Jim Prentice announced the launch of www.weatheroffice.gc.ca/2010 after seven years of development, the Vancouver Sun participated in the news conference. The Vancouver Sun noted that the website provided "vast weather information, from the latest weather forecasts to historical data for the Olympic venues and surrounding areas."

The article added that Environment Canada's \$9 million weather services commitment "provides meteorologists with a first class weather watching-system to deliver forecasts that will ensure the Games are fair, safe, and secure, for organizers, athletes, and spectators." Also included in the article is discussion of the street-level forecasts for more detailed and regional specific forecasts.

"A windy ski jump or a foggy downhill can affect the safety of competitors and influence the outcome of a race. Even road conditions can play an important role in the smooth functioning of the Games," said Minister Prentice who added that the website and street-level forecasts are a first step "towards a future of more personalized forecasting."

"[Based on current predictions, we can expect] rain, and warmer-than-normal temperatures for Vancouver and North Shore mountains," noted David Jones.

The High-Tech Weather Forecasting in the 2010 Winter Olympics

Anne Casselman - Popular Mechanics
February 11, 2010

Popular Mechanics wrote that "knowing what to expect from the weather is an important part of any sporting event," and argued that the warm weather and complex terrain of the 2010 Winter Games introduced challenges to forecasters.

The article explored Nowcasting, which provides short-term weather forecasting, usually over a 0 to 6 hour period, for extremely specific areas. "This allows forecasters to see how weather is changing on an almost hourly basis, for on the spot locations, such as Olympic venues."

The article added that Nowcasting was used during the Beijing Olympics, and "helped organizers schedule events around thunderstorms that frequented the city in the summer months."

"We're trying to be very precise as to when and where something is going to happen," said Paul Joe, a scientist with the cloud physics and severe weather research group of Environment Canada.

"At the moment there's a lot of art to the way the forecasters do it [weather forecasting]" Environment Canada's George Isaac said. "We're trying to make it more of a science."

El Niño's Return Just Part of the Weather Wreaking Havoc on Games

David Epstein - Sport Illustrated
February 13, 2010

Sports Illustrated spoke to Environment Canada's David Jones for insight into the weather and weather forecasting in the context of the 2010 Winter Games.

The magazine wrote that effective forecasting made it easier to predict and pinpoint the weather, and look for windows for events to take place. While discussing EC's scientific research and team of 35 venue meteorologists, the story added that the 2010 Winter Games had "more state-of-the-art weather monitoring equipment than any before."

David Jones noted, "El Niño isn't going away, but that doesn't mean we can't get a cold spell. But it is less likely, and it doesn't look likely for the next two weeks. We're just not getting enough cold air from the northern Gulf of Alaska. El Niño loads the dice in favor of warmer weather systems."

Whistler's Weather Generates Frustration at Winter Olympics

Barry Svrluga - Washington Post
Monday, February 15, 2010

The Washington Post wrote that "rain, fog, and quickly changing conditions are the source of frustration for athletes, organizers, spectators, and forecasters alike" during the 2010 Winter Games. The newspaper noted that the "pressure is put on the forecasters to provide accurate and timely forecasts to ensure the safety and fairness of the Games." The article suggested that Environment Canada and its forecasters were creating "more certainty in the uncertain Whistler weather."

The article further added that weather stations throughout the Whistler area "provided meteorologists with the information they needed to provide five weather updates each day; more frequently than most other North American resorts."

"It's not that it's unpredictable," said Doug Lundquist, a meteorologist for Environment Canada, the official weather service provider of the Games. "It's that it's changeable. It can just change so quickly from snow to rain and back."

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Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

Olympic Knowledge

Canwest News Service
Monday, February 22, 2010

A Canwest News Service wire story profiled the \$9-million weather system that Environment Canada installed to prepare for their role of official weather service providers for the 2010 Games.

Al Wallace was quoted saying “there’s a tremendous knowledge legacy that’s going to come out of this and that will benefit all Canadians, because we’ll be better weather forecasters and have better modelling across the country.”

Ottawa to offset Olympic emissions

Steven Chase – Globe and Mail
February 16, 2010

The Globe and Mail reported on Minister Jim Prentice’s Government of Canada commitment to offset its Olympic-related carbon emissions. Comparing the decision to that of rock stars, the newspaper noted that “the announcement to offset Olympic emissions is significant, with the Government of Canada spending \$150,000 to reduce the estimated 7,600 tonnes of greenhouse gas produced by federal employees involved in the Games.”

The article profiled the other federal contributions to Games sustainability, “including the use of recycled wood to create the roof of the Richmond Oval, and the funding of the Canada line rapid transit system, which provides visitors and locals with a low-emission, easily accessible way to travel around the city.”

Winter Games Yield Forecasting Insights

Ian Austen – New York Times
March 11, 2010

The New York Times profiled the weather science behind Environment Canada’s weather services role for the 2010 Winter Games. The newspaper noted that “it was important for Environment Canada to properly equip the forecast team to provide the best weather service possible.” The article noted the detailed information on wind speed and direction, visibility at different points along the mountain, snow surface temperature, air temperature, and changes in humidity.

Following an interview on Nowcasting with scientist George Isaac, the newspaper noted the science “presented new challenges, and exciting opportunities.” The article concluded that the “lessons learned” from Vancouver 2010 “will surely be passed on to members of the Russian meteorological team from Sochi, who will provide weather services for the 2014 Winter Games.

“We learned from previous Olympics that it was critical to get the forecasters in there early to learn from the local weather patterns,” said meteorologist Trevor Smith.

Al Wallace noted that “a general public forecast might say: ‘Cloudy with a 40 percent chance of showers today.’ But that’s not good enough for guys trying to run a sports event.”



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Section Prepares for the 2010 Winter
Weather Website for the Olympics • The
Whistler's Weather Generates Frustration
Goes to Environment Canada Employee

The Gold Goes to Environment Canada Employees

Environment Canada (EC) employees put in a gold-medal performance to help ensure the success of the Games. It took a national effort to fulfill EC's various roles as official weather services provider, federal lead on sustainability, and supporter of Games security and emergency preparedness.

Our forecasts helped maintain fair competitions and kept athletes and spectators safe. It took the commitment of 30 Olympic venue forecasters, storm prediction centres across Canada, and the Canadian Meteorological Centre in Montreal. Thanks to the accuracy of our forecasting, for the first time ever, Games organizers were confident enough to re-schedule events based on long-term, not just short-term, forecasts.

When it came to sustainability, our scientists worked on environmental assessments to mitigate and reduce negative ecological impacts on the environment. Minister Prentice also announced that the Government of Canada would offset its Games-time carbon emissions – an Olympic precedent for a host country. Furthermore, environmental emergencies deployed industrial chemical experts to support the Integrated Security Unit.

Led by the PYR team and supported by colleagues such as media relations, MSC and Strategic Integration, communications contributed to EC's Games effort. A suite of videos were created, with those about Games sustainability appearing in the Canada Pavilion, and those about local weather questions



airing inside Games venues. Online content was developed for both ec.gc.ca and the Government of Canada's Olympic website, while feature articles about our scientists were pitched to local and international media. With thousands of media in Vancouver for the Games, more than 100 media requests were managed in the region during February, from such outlets such as Agence France-Press, the Wall Street Journal and Télévision Suisse Romande. Two ministerial events were organized, bringing even more profile to EC's Games contributions. Finally, a 2010 intranet site helped keep departmental staff up-to-date on EC's contributions to the Games.

There are many lasting legacies stemming from our involvement in the 2010 Winter

Games. Our forecasters learned more about complex weather patterns for southwestern British Columbia and were able to pilot state-of-the-art research. As the federal department leading on sustainability, we demonstrated that the Olympics can be accomplished in an environmentally responsible manner. And our emergency responders worked closer than ever with other federal departments and agencies, improving Canada's ability to respond to future emergencies.

The hard work during the Games truly paid off, and showed the world that EC employees are as good as gold!



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Greening Government • Celebrating S
Introducing the 2010 Greening Govern
? Getting to Work During the Games •
Section Prepares for the 2010 Winter
ather Website for the Olympics • The H
histler's Weather Generates Frustration
Goes to Environment Canada Employee

Training for 2010 Winter Games • Going to Vancouver
Canada and Russia: Coming Together to Celebrate
Ball Hockey Thursdays in the Pacific and
the Games! • Sochi Follow-up • Sustainability
Environment • 2010 Sustainability and Green
• Greening the Office Environment: Introduction
Emergencies • Are We There Yet? Going
Go! EC's Environmental Emergency Services
• Canada Launches Special Weather
er Wreaking Havoc on Games • Whistler
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