

A NEW DIRECTION

Annual Report 2010–2011
Canadian Foundation for Climate and Atmospheric Sciences





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MESSAGE FROM THE CHAIR AND EXECUTIVE DIRECTOR

2010–2011 was a transition year for weather and climate science in Canada: after a decade spent laying a foundation of policy-relevant research results, CFCAS readied itself for new challenges.

The year marked the 10th anniversary of CFCAS and a time to celebrate a remarkable period of Foundation-supported scientific achievement. In one decade, CFCAS helped foster an integrated community of almost 500 Canadian weather and climate scientists as well as more than 2,000 graduate students, post-doctoral fellows and research technicians.

Through research grants of more than \$118 million to 37 Canadian universities, combined with \$158 million in cash and in-kind support from partners, CFCAS has supported 24 research networks and more than 160 major scientific projects across the country.

The work of the Foundation made Canada an international climate science leader, trained a new generation of climate scientists, and changed the way Canadians view weather and climate issues that are vital to lives and livelihoods across this vast, northern nation.

2010–2011 also meant the approaching end of the Government of Canada mandate that launched the organization. Despite concerted efforts by CFCAS to secure renewed federal funding, the government clearly concluded that any future federal support to this critical area of science would be channelled through other mechanisms.

CFCAS—already much more than a funding agency—decided to focus its expertise on other tasks: it would continue to work with governments to bridge gaps in weather and climate knowledge; it would apply science to the development of policy options; it would forge new partnerships to translate CFCAS-funded research into relevant, accessible knowledge; and it would foster a better understanding of how Canada can adapt to new conditions in a rapidly changing future.

Meanwhile, 2010–2011 was a time to reflect on CFCAS's success. For instance, the CFCAS legacy was a theme at the annual Congress of the Canadian Meteorological and Oceanographic Society (CMOS) in June 2010. In November 2010, a special 10th anniversary event brought

North Canadian Coastline
off Baffin Island. |



the science and policy communities together at the National Arts Centre in Ottawa. The occasion was marked by the launch of *The Sky's the Limit*, a book documenting a decade of CFCAS-supported science in words and pictures.

Special funding was given to enable CFCAS-funded networks and projects to expand the influence of their work. CFCAS grants for 2010–2011 included nine grant supplements to help remaining networks archive and safeguard their results for access by the next generation of scientists.

CFCAS money also helped the International Secretariat for the Stratospheric Processes and their Role in Climate (SPARC) project move its headquarters from Toronto to Switzerland.

By October 2011, all but one of the CFCAS-funded research networks and projects will have shut down. The federal mandate and support for the CFCAS administration and staff will expire at the end of March 2012. In the meantime, the Foundation is busy.

Conscious of the continuing need for weather and climate information, CFCAS is exploring options for further funding and examining potential partnerships with like-minded organizations.

While the official end of its federal mandate means CFCAS has a different job ahead, it is no less committed to helping Canada's best scientific thinkers in their quest to generate and apply weather and climate knowledge to meet Canada's economic requirements and the needs of its citizens.

Signed,

Handwritten signature of Gordon McBean in black ink.

Gordon McBean, Chair,
Board of Trustees

Handwritten signature of Dawn Conway in black ink.

Dawn Conway,
Executive Director





CFCAS / THE SCIENCE OF CHANGE

No one knows change as well as Canadian climate researchers, but the weather and climate sciences community faced a significant challenge as the final year of CFCAS's federal mandate shifted the nation's scientific landscape.

During 2010–2011, CFCAS emphasized the achievements of Foundation-supported scientists even as it worked to secure renewed funding from the federal government.

At the request of the Minister of the Environment, Jim Prentice, CFCAS prepared and submitted a business case outlining the need for renewed support. The Foundation also presented a brief to the House of Commons Finance Committee during pre-budget consultations in October and met with the new Environment Minister, John Baird, in November.

It didn't work: like every federal budget since 2003, Budget 2011 offered no new money for CFCAS.

While the CFCAS commitment to Canadian weather and climate science remains stalwart, the year brought most of the Foundation's signature work to an end. Nine supplementary grants were awarded to aid networks as they archived their data, warehoused equipment and prepared to close their doors.

CFCAS funds also assisted the Stratospheric Processes and their Role in Climate (SPARC) project—a major element of the World Climate Research Programme—as it prepared to move its international headquarters from Toronto to Switzerland.

Of 198 CFCAS-supported initiatives, 175 had wrapped up their work by April 1, 2011. Others followed, and by October 2011, only one of the initiatives remained active. The government mandate for operating the CFCAS secretariat in Ottawa will finish at the end of March 2012.

The year of change focused CFCAS's attention on setting the stage for transition. An emphasis on outreach, accountability and knowledge transfer ensured Foundation-backed research would continue to reach those who need it most. Other efforts included highlighting the achievements of the CFCAS scientific community and publicizing the benefits of its research projects and partnerships.

DROUGHTS

Canada's most expensive natural disaster in history—the prairie drought of 1999–2004—motivated the five-year **DROUGHT RESEARCH INITIATIVE**. The research network provided a detailed assessment of the triggers and evolution of the drought—information to help farmers avoid a future billion-dollar agricultural catastrophe.



Retrospectives during the year highlighted the achievements of CFCAS, including a special session at the annual congress of the Canadian Meteorological and Oceanographic Society (CMOS) and a CFCAS 10th anniversary celebration at the National Arts Centre in Ottawa. A national symposium, jointly organized by CFCAS and Environment Canada, focused attention on “Water Security: The Critical Role of Science.”

As it delivered its final funding commitments, CFCAS also readied itself for a new role—searching for new sources of funding, sharpening a vision for its future work, and continuing to champion the importance of weather and climate research in Canada with a particular focus on adapting to future conditions.



A DECADE BY NUMBERS

\$110 million | Total funds provided to CFCAS by the federal government.

\$277 million | Total CFCAS investment in weather and climate research across Canada—including cash or in-kind support leveraged by the Foundation.

\$0 | Funds provided to CFCAS by the federal government since 2003.

24 | Number of multi-year, pan-Canadian research networks supported by CFCAS. These networks have applied the skills of world-renowned researchers from different sectors to complex weather and climate questions.

160 | Number of major CFCAS-funded projects that have explored everything from the stability of permafrost to air pollution carried over on wind currents from Asia.

14 | Number of CFCAS outreach grants enabling CFCAS-supported scientific projects and networks to apply new weather and climate knowledge to policy needs and public understanding.

462 | Number of researchers involved in CFCAS-supported research networks and projects across the country since 2000.

2000 | Approximate number of graduate students, research associates, post-doctoral fellows, technicians or other research personnel who have trained and worked on CFCAS-funded research.

37 | Number of Canadian universities whose scientists have participated in CFCAS-funded research. Associated researchers also hailed from four foreign universities and nine federal departments.

30% | Approximate percentage of researchers involved in CFCAS-supported networks and projects who worked for the federal government—including 63 scientists from Environment Canada, 34 from Fisheries and Oceans Canada, and 30 from Natural Resources Canada. Collaboration between university and government scientists is a hallmark of the CFCAS approach and ensures that federal needs and priorities are addressed.



WHO WE ARE / SERVING CANADIANS

CFCAS is governed by a Board of Trustees consisting of experts in climate, atmospheric and marine sciences from university, government and private sectors. The Board sets policy, approves grants and oversees all administrative and financial matters for CFCAS. Board trustees are appointed by the Council of the Canadian Meteorological and Oceanographic Society (CMOS), acting as CFCAS members. The Board Chair is also the Chief Executive Officer of CFCAS.

The last Government of Canada representative on the CFCAS board stepped down in January 2011. The government has not nominated a replacement for any of its three representatives. Incoming CMOS president David Fissel became an ex-officio member of the Board in July 2010.

2010-2011 BOARD OF TRUSTEES

Ian Church, YUKON

Ed Dean, SASKATCHEWAN ENVIRONMENT

Brian Gray, GOVERNMENT OF CANADA (UNTIL JANUARY 2011)

Maurice Levasseur, LAVAL UNIVERSITY

Marlon Lewis, DALHOUSIE UNIVERSITY/SATLANTIC INC.

Gordon McBean (Chair and CEO), UNIVERSITY OF WESTERN ONTARIO

John Mills, PELMOREX MEDIA INC./THE WEATHER NETWORK

Lawrence Mysak, MCGILL UNIVERSITY

Tom Pedersen, PACIFIC INSTITUTE FOR CLIMATE SOLUTIONS

Kimberly Strong, UNIVERSITY OF TORONTO

David Fissel, President of CMOS, EX-OFFICIO MEMBER OF CFCAS

Dawn Conway, CFCAS EXECUTIVE DIRECTOR, EX-OFFICIO

Toronto under smog advisory in June 2010. |

URBAN WEATHER

CFCAS has been helping Canadians breathe easier: The four-year, \$1.4 million *ENVIRONMENTAL PREDICTION IN CANADIAN CITIES* network studied how buildings and energy cycles in cities influence weather, climate and—importantly—the quality of air for urban Canadians.

BOARD COMMITTEES

FINANCE

Brian Gray (Chair, until January 2011),
Marlon Lewis, Maurice Levasseur

COMMUNICATIONS

Tom Pedersen (Chair), Kimberly Strong

PROGRAM EVALUATION

Gordon McBean (Chair), Ed Dean,
Lawrence Mysak

STRATEGIC PLANNING

Marlon Lewis (Chair), Gordon McBean,
Ed Dean, John Mills

STAFF

2010–2011 brought staff changes as well. Cynthia Germain joined CFCAS as OFFICE MANAGER in July 2010, and Colleen Turnbull became ACTING PROGRAM OFFICER in September 2010.

Tim Aston, SCIENCE OFFICER

Dawn Conway, EXECUTIVE DIRECTOR

Kelly Crowe, COMMUNICATIONS OFFICER
(on leave from January 2011)

Cynthia Germain, OFFICE MANAGER

Colleen Turnbull, ACTING PROGRAM OFFICER

Erica (Wilson) Butcher, PROGRAM OFFICER
(on leave from September 2010)

Denny Alexander has served as ACTING COMMUNICATIONS OFFICER from January 2011. Other staff functions are provided by consultants as needed.





2010-2011 / A YEAR OF TRANSITION

YEAR IN REVIEW

During 2010–2011, CFCAS worked to ensure that Canada’s base of ground-breaking research was applied to national needs and provided the framework for the next stage of weather and climate science in Canada.

A first step included efforts to secure new, stable funding by encouraging the federal government to renew its investment in weather and climate information. A formal CFCAS Business Case was presented to the Minister of the Environment outlining the national need for this funding. CFCAS also prepared a brief and appeared in pre-budget consultations before the House of Commons Finance Committee.

Despite these and other entreaties—including a meeting with the Minister in November 2010—CFCAS was unsuccessful; the federal government mandate for the Foundation would not be extended.

Meanwhile, CFCAS continued to highlight the impact of its past work and the importance of weather and climate data to Canada. 2010–2011 saw the release of the CFCAS book, *The Sky’s the Limit*, as well as several profiles of CFCAS-supported networks and the report on the joint CFCAS-Environment Canada workshop on Canadian Water Security.



CFCAS encouraged researchers and project leaders to emphasize the use of weather and climate science for policy development, public understanding and strategic decision-making. Grant supplements helped researchers shift from generating results to knowledge transfer activities and, for most, to closing their doors.

The CFCAS-supported Canadian Carbon Program, due to close in March 2010, was granted an additional year and a half of bridge funding by Natural

The Columbia Icefield in the Canadian Rockies (*right*); Auto-chambers measure ecosystem exchange of carbon dioxide and other gases, Canadian Carbon Program (*left*).

GLACIERS

Western Canada’s almost 15,000 mountain glaciers provide fresh water, moisture for agricultural lands and hydropower to millions of homes. How, and how fast, will global warming affect this capacity? The **WESTERN CANADIAN CRYOSPHERIC NETWORK** has spent five years assessing mountain glaciers and generating the important information that governments and power authorities need.



Resources Canada to allow it to continue to gather and analyze information on factors affecting the generation and absorption of carbon in Canada's forests.

CFCAS also provided a \$10,000 supplement to the International Secretariat for the Stratospheric Processes and their Role in Climate (SPARC) project, to help with the costs of a science steering committee meeting abroad and to facilitate the transfer of the Secretariat headquarters to Switzerland.



BC Lodgepole pine, killed by mountain pine beetle (*right*); Researcher installs monitor to measure wind speed and direction over a mature forest, Canadian Carbon Program.

FORESTS

Canada has seven per cent of the world's forests. They can sequester a lot of greenhouse gas from air—but when affected by fire, insects or disease, they can dump a whole lot back. The multi-year **CANADIAN CARBON PROGRAM** has been gathering data to understand whether Canada's forests really are—or are not—a heavyweight in the fight against climate change.

GRANTS AWARDED: PREPARING FOR CHANGE

2010–2011 marked the termination of the work of most CFCAS-supported networks. These networks were obliged to bring current projects to a close and to search for new sources of support for their important long-term initiatives. In September 2010, CFCAS awarded \$878,390 in grant supplements to allow nine of these consortia to retain essential personnel while they archived data, warehoused and stored equipment, and allowed for the completion of final reports (including the conclusion of graduate student theses).

The Canadian Carbon Program (LAVAL UNIVERSITY) \$100,000

The Western Canadian Cryospheric Network (UNBC) \$100,000

The Canadian Regional Climate Modelling and Diagnostics Network (UQAM) \$99,610

The Polar Climate Stability Network (UNIVERSITY OF TORONTO) \$100,000

The Canadian Stratospheric Processes and their Role in Climate network (UNIVERSITY OF TORONTO) \$100,000

The Cloud-Aerosol Feedbacks and Climate Network (UBC) \$98,780

The Canadian Network for the Detection of Atmospheric Change (UNIVERSITY OF TORONTO) \$100,000

Improving Processes & Parameterization for Prediction in Cold Regions (hydrology) Network (UNIVERSITY OF SASKATCHEWAN) \$80,000

The Global Ocean-Atmosphere Prediction and Predictability network (DALHOUSIE UNIVERSITY) \$100,000

In addition, CFCAS disbursed \$324,666 to the Canadian Carbon Program on behalf of Natural Resources Canada. The grant constituted the federal department's second and final year of bridge funding to the network.





2010-2011 / RESEARCH HIGHLIGHTS

D IS FOR DANGER

More than two-thirds of Canadians receive too little vitamin D, a key vitamin for warding off a host of ailments, from osteoporosis to cancer, and for improving health. Now, this troubling problem is about to get worse. Climate models suggest that the amount of the sun's ultraviolet radiation (UV) available in northern latitudes will decrease by 10 per cent or more by the end of this century. UV is our main source of vitamin D. CFCAS-supported research led by the University of Toronto has been developing a framework to figure out how lower UV will affect human health in different regions of Canada.

SOMETHING'S FISHY

Climate-related changes to oceans are increasingly playing havoc with the models used by researchers to track and manage fish populations off Canada's coasts. Currents, temperature, acidity and even salinity are affected by climate and can have dramatic impacts on the ecology and biology of underwater creatures. For the past year, CFCAS-supported scientists at Dalhousie University have been developing a method for incorporating ocean forecasts into the fisheries assessment models used by Fisheries and Oceans Canada (DFO). The work is expected to equip federal officials with more powerful fish management tools.

WIND-WHIPPED

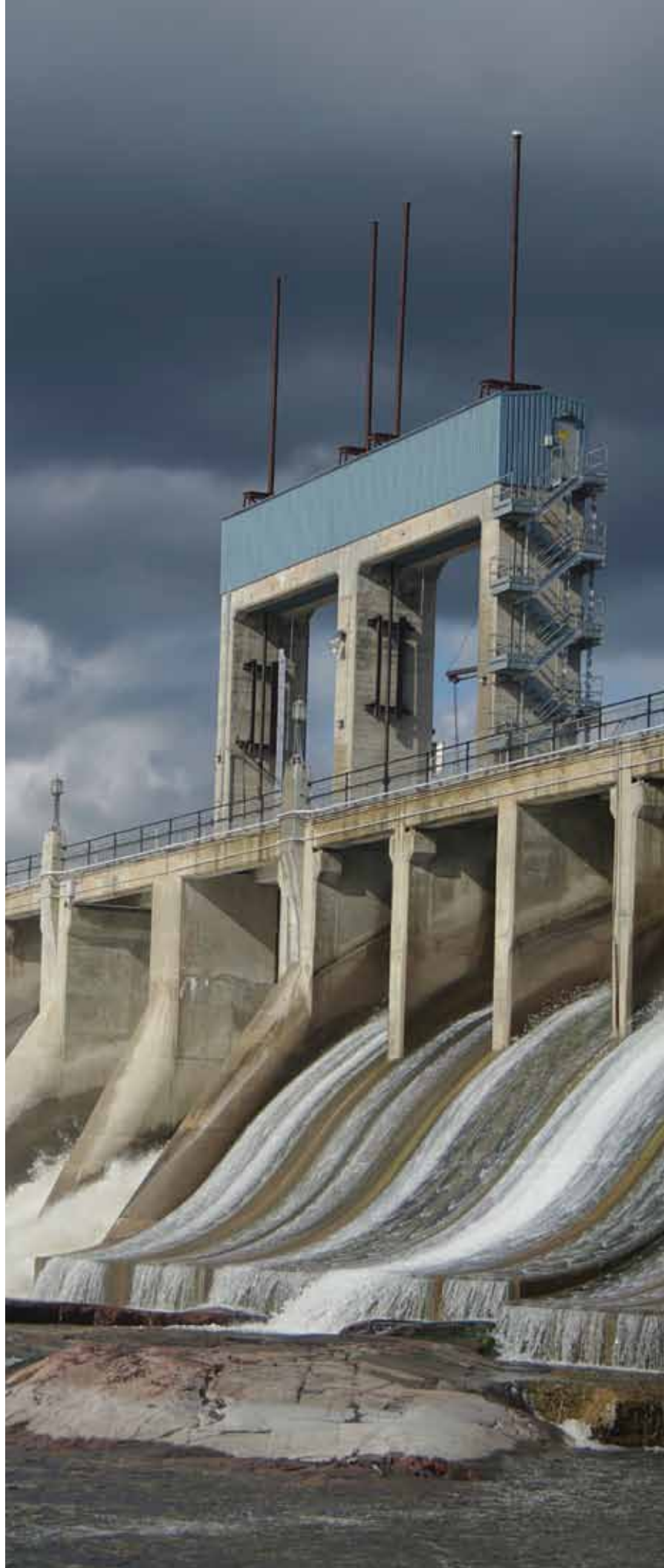
Winds along Canada's West Coast can really churn up the sea. The waves and storm surges that the winds create tear at the shore, causing serious erosion and threatening roads, buildings and other infrastructure. CFCAS-funded research at the University of Victoria is exploring the links between computer models of regional climate and observations of surface winds over British Columbia. The work is expected to improve predictions of coastal wind damage and help in deciding where and how to build along our wind-whipped shores.

BADLY BUGGED

Mountain pine beetles have been chewing through western Canadian forests at an alarming rate. The dead trees they leave behind no longer suck carbon dioxide out of the air, and release climate-changing greenhouse gases as they rot. By 2020, gases resulting from the beetle outbreak are expected to equal five years of emissions from Canada's entire transportation sector. CFCAS-funded work by the Canadian Carbon Program (CCP) is helping scientists get to the bottom of this problem. The network received a year-long extension to March 2011 to help it find transition funding to continue monitoring how Canada's forests breathe, and to learn more about the climate impact of the munching beetles.

POWER MELTDOWN

Melting glaciers atop British Columbia's mountains generate water to power dams that provide for the province's electricity needs. But a warmer climate may flick the switch on these sources of hydroelectricity: some scientists predict B.C. glaciers could disappear altogether within the next century. The Western Canadian Cryospheric Network (WC2N) received an important grant supplement in 2010–2011 to help it continue to throw much-needed light on the future of Canada's western glaciers. Understanding the rates of change for the glaciers helps researchers predict not only water flows for power dams but also fresh water supplies for people, salmon, industries and farms in both B.C. and Alberta.



A LEGACY OF EXPERTISE

Building a successful weather and climate science program for the future is work for many hands. Anticipating this challenge, CFCAS funding during the past decade ensured support for the training of the next generation of researchers in this important field.

About \$58 million of CFCAS research funding—more than half of all federal support for the Foundation—has helped educate and train more than 2,000 undergraduate and graduate students, post-doctoral fellows, research associates and technicians across the country. Many of these have already joined the research ranks of the federal government (Environment Canada, Fisheries and Oceans Canada, Natural Resources Canada, etc.) or have taken positions in industries or universities.

These Highly Qualified People, or HQP, are now at work improving the way Canadians understand, prepare for and anticipate change, and apply knowledge of weather and climate now and into the future.



Photo: Pierre Fogal

Defrosting instruments at the Polar Environment Atmospheric Research Laboratory (*top*); Preparing to launch an ozondesonde (*below*); Vancouver seawall battered by storm waves (*right*).



Photo: Graeme Nott

COMMUNITY BUILDING FOR THE FUTURE

A decade of bringing together researchers from a variety of weather and climate-relevant fields has helped make CFCAS a hub for atmospheric, meteorological and oceanographic sciences across the country. This role was a big part of the Foundation's activities in 2010–2011.

In July 2010, for example, CFCAS staff ran a training session for new network managers. CFCAS team members also attended several science workshops and the board meetings of the Foundation-supported networks through the year:

The Drought Research Initiative (DRI) workshop on climate extremes, WINNIPEG, FEBRUARY 7–9, 2011

The Canadian SPARC Network (C-SPARC) meeting, TORONTO, DECEMBER 6–7, 2010

The Canadian Network for the Detection of Atmospheric Change, HALIFAX, NOVEMBER 1–3, 2010

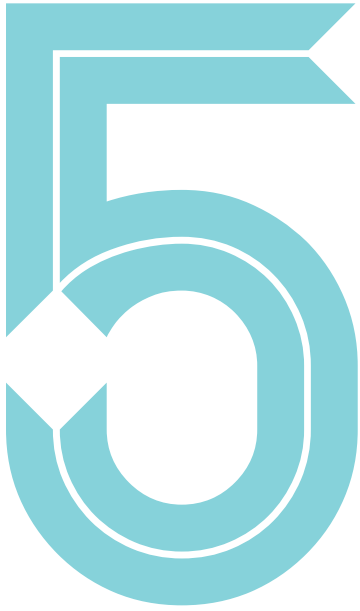
Storm Studies in the Arctic, WINNIPEG, JUNE 14–15, 2010

The DRI workshop, OTTAWA, MAY 31, 2010

Global Ocean-Atmosphere Prediction and Predictability, OTTAWA, MAY 31, 2010

Improved Process and Parameterization for Prediction in Cold Regions (IP3), OTTAWA, MAY 31, 2010





COMMUNICATIONS / A LEGACY BROUGHT TO LIFE

Building on the CFCAS legacy requires getting the weather and climate story to those who need to hear it. For the past decade, the Foundation has emphasized the importance of gathering and communicating the best and most up-to-date findings to Canadians, to the media, and—importantly—to the policy and decision makers in government, industry and non-government organizations.

During 2010–2011, many of these communications efforts focused on raising the CFCAS profile with decision makers in the government, to ensure awareness of the value of research as they considered the case for a renewed investment. This resulted in government praise for the organization and its achievements, though no new money.

Other awareness-raising initiatives during 2010–2011 included conferences and CFCAS publications. In May 2010, CFCAS partnered with Environment Canada to host a major national symposium on “Water Security: The Critical Role of Science.” On June 2, 2010, the annual congress of the Canadian Meteorological and Oceanographic Society (CMOS), along with the Canadian Geophysical Union (CGU), held a special session highlighting the accomplishments and impacts of CFCAS-funded research. The session, entitled *CFCAS Achievements—The First Decade*, was an opportunity to look back at CFCAS-supported science on climate and weather, as well as on climate policy and decision-making.

CFCAS hosted its own 10th anniversary retrospective at Ottawa’s National Arts Centre in November. The event acknowledged a decade of achievements by scientists and other members of the CFCAS community, and launched *The Sky’s the Limit*, an illustrated book looking at CFCAS-supported weather and climate research achievements in Canada. The CFCAS 10th anniversary was also an opportunity to raise public awareness and to focus media attention on the continuing importance of weather and climate science across Canada.

Meanwhile, CFCAS published profiles of the work of five CFCAS-supported research networks (bringing the total number of these profiles to nine). The articles were distributed to the CFCAS community and to stakeholders such as Members of Parliament, policy makers, the media and others.

CANDAC facility for atmospheric research in the Arctic located on Ellesmere Island, 15 km from Eureka, Nunavut.

ARCTIC ATMOSPHERE

Our warming climate is transforming the North more than any other region on the planet. Over the past 20 years, arctic temperatures have been rising almost twice as fast as the global average. The **CANADIAN NETWORK FOR THE DETECTION OF ATMOSPHERIC CHANGE** has invested five years in the High Arctic investigating ozone and pollution, and their role in our climate and air quality.

A redesign of the Foundation's website (www.CFCAS.ORG) was launched in January 2011. The site continues to provide valuable information concerning CFCAS-related research, facts, news and conferences, and to showcase weather and climate concerns.

In addition, the Foundation contracted The Weather Network to produce a set of six brief vignettes, profiling key weather and climate issues. These were broadcast on The Weather Network in August 2011 and are now available on the CFCAS website.

Photo: Paul Loewen



MAKING THE CASE FOR CFCAS

CFCAS outreach and communications in 2010–2011 focused primarily on government relations and the media, making the case for renewed federal support for weather and climate research.

In response to a request by Environment Minister Jim Prentice, CFCAS prepared a formal business case arguing for new federal funding and proposing it be channelled through the Foundation. The document highlighted the remarkable performance of CFCAS along with the increasing need for more weather and climate research in Canada.

CFCAS Board Chair Gordon McBean and Executive Director Dawn Conway delivered the document's message in person when they met with interim Environment Minister John Baird on November 24, 2010. It was also forwarded to his successor, Peter Kent, in January 2011.

The Foundation also made its case to the House of Commons Finance Committee in a pre-budget brief submitted in August 2010. The brief, which emphasized the need for stable support for Canadian weather and climate research, was presented by Dawn Conway at

the committee's pre-budget consultations in Ottawa on October 18, 2010.

Meanwhile, the media responded to the CFCAS story with considerable attention, including several articles in major daily newspapers across the country and radio interviews.

The campaign succeeded in raising the CFCAS profile among politicians and others across Canada, but it wasn't enough: the federal government failed to renew the CFCAS mandate in 2011. The Foundation will make other plans.

THE WATER STORY

Water plays a major role in the weather and climate science legacy of CFCAS. It comprises our oceans, rivers, lakes and glaciers. It runs below the earth's surface and its vapour fills our atmosphere. Humans need it, and our climate systems depend on it. Knowing the water story is essential to the future of Canada.



In May 2010, CFCAS and Environment Canada jointly hosted a major national symposium on "Canadian Water Security: The Critical Role of Science" in Ottawa. The two-day conference brought together researchers—including many experts from CFCAS-supported networks and projects—along with decision makers from government and industry.

The symposium examined the importance of water in Canada and around the world. It explored the relationship of water with extreme conditions and the impact of climate on water quantity and quality. Discussions emphasized the use of science in policy.

The Honourable Michael Miltenberger, deputy Premier and Minister for the Environment and Natural Resources of the Northwest Territories, was a keynote speaker at the event.

A published report on the symposium, by Bob Sandford, was distributed to speakers and provided to organizers of water conferences being held in early 2011. The report is available from CFCAS or can be downloaded from its website, WWW.CFCAS.ORG.

NEWSROOMS TAKE NOTICE

The CFCAS 10th anniversary in November 2010 was an opportunity to call attention to the Foundation's birthday and to its decade-long legacy of accomplishments.

A CFCAS press release on the Foundation's 10th anniversary coincided with media attention surrounding the 16th session of the Conference of the Parties (COP 16) to the United Nations Framework Convention on Climate Change, in Cancún, Mexico. It resulted in several articles about CFCAS in daily newspapers across Canada. The media interest continued from late November through early December, with more articles and with CFCAS Board Chair Gordon McBean appearing as an invited guest on the CBC radio programs "As It Happens" and "All in a Day."

Also in December, CFCAS authored a commentary making an impassioned call for future support on behalf of Canada's climate science community. The article was printed in 10 daily newspapers across the country—including *The Vancouver Sun*, the *Edmonton Journal* and the *Ottawa Citizen*—with a combined circulation of more than a million readers. A separate, CFCAS-written article appeared at about the same time in a nationally distributed *Globe and Mail* climate supplement.

That same month a senior CFCAS-affiliated scientist, along with the Foundation's CEO and its Executive Director, met with the editorial board of *The Globe and Mail*. The meeting was followed by an editorial concerning Arctic science and the essential funding role of CFCAS. A similar meeting with the editorial board of the *Ottawa Citizen* on March 15, 2011 also led to an editorial about vital Canadian climate research, two days later.

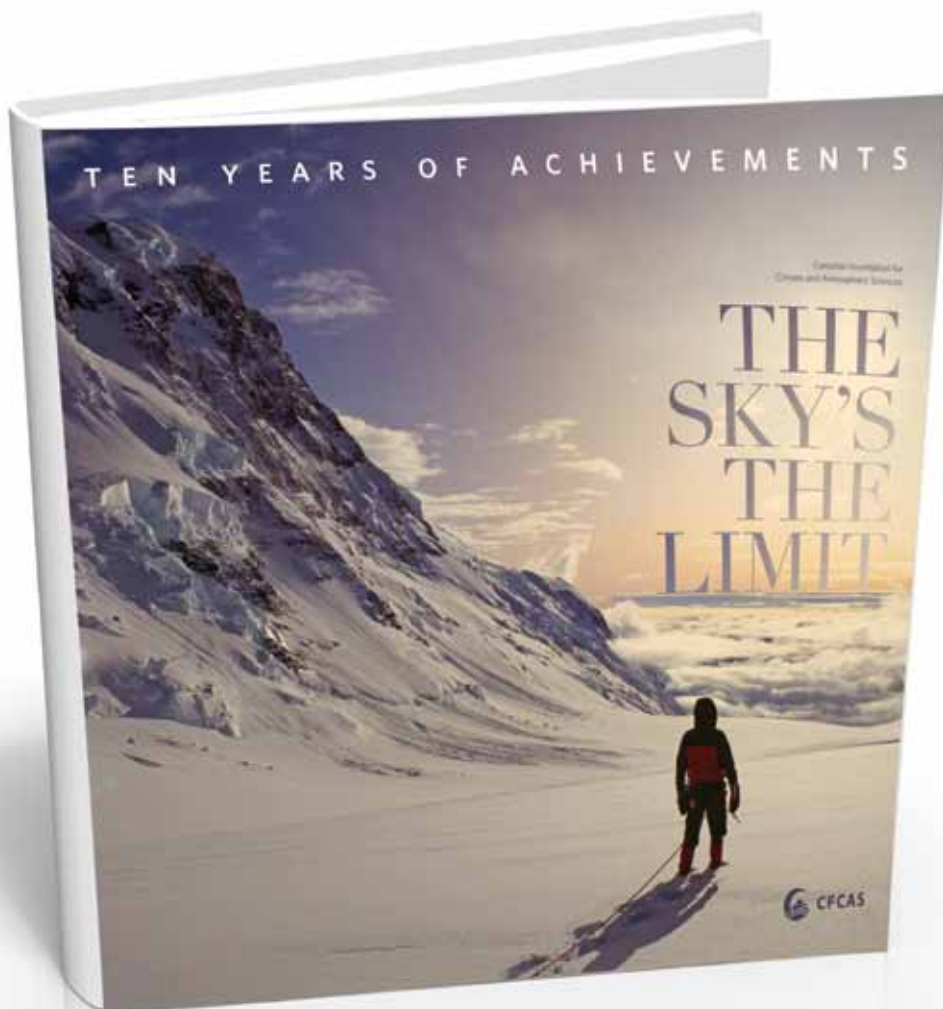
A DECADE WORTH CELEBRATING

CFCAS closed the year by honouring the researchers and supporters who helped make the organization's first decade a success. The November 24, 2010 reception at Ottawa's National Arts Centre provided an opportunity to celebrate Canada's climate sciences community and to look back at the CFCAS legacy.

The Foundation also used the occasion to launch *The Sky's the Limit: Ten Years of Achievements*, a large, illustrated book chronicling

10 years of CFCAS-supported scientific accomplishments. Copies of the book are available from CFCAS or can be downloaded from WWW.CFCAS.ORG.

The anniversary celebration was followed the next day by a "Scientists on the Hill" event. Several researchers visited Parliament Hill and met with Members of Parliament to inform them of climate and weather research achievements and of the importance of the science to Canadians and to our economy.





INTERNATIONAL ACTIVITIES / GLOBAL CHANGE

The changes that affected CFCAS in 2010–2011 were felt well beyond Canada’s borders. For the past decade, CFCAS has played a key role in supporting Canadians active in global climate science initiatives and positioning Canada at the forefront of the world’s climate science stage.

The Stratospheric Processes and their Role in Climate (SPARC) project is an initiative of the World Climate Research Programme to better understand the stratospheric processes that affect the world’s climate. Facing reduced support from CFCAS and other Canadian sources, the international secretariat moved from Toronto to Switzerland in 2011. CFCAS helped to finance the move.

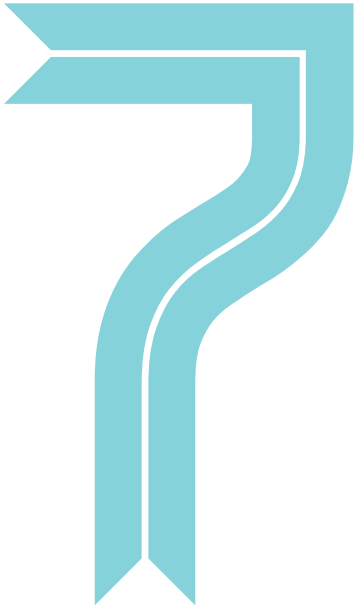
Another major global role for CFCAS has not changed. The CFCAS Board of Trustees serves as the Canadian National Committee (CNC) for the World Climate Research Programme. Annual CFCAS reports on Canadian involvement in the WCRP are presented to the National Research Council (NRC) Canada and help trigger Canadian government contributions to this vital scientific body. This year’s CFCAS report was submitted to the NRC in November 2010 and was highly ranked.

The globally respected work of CFCAS was among the reasons the Foundation was selected to lead the International Group of Funding Agencies for Global Change Research (IGFA) from 2007 to 2010. While 2010 marked the final year for CFCAS at the head of the organization, CFCAS’s Executive Director nevertheless played a role in discussions about international collaboration at an October meeting of IGFA and the Belmont Group (a high-level aggregation of research funding agencies). CFCAS’s Science Officer also contributed to the organizational activities of the Belmont Working Group in June 2010, thereby continuing the support he provided to international activities under IGFA.

OCEANS

When oceans fiddle, the weather dances. Researchers with the **GLOBAL OCEAN-ATMOSPHERE PREDICTION AND PREDICTABILITY NETWORK** have spent five years getting a fix on the links between the sea and sky, to help forecasters predict large, fierce and lasting storms that endanger fishers, sailors, coastal industries and Canadians living near our oceans.





THE FUTURE / A NEW CLIMATE OF CHANGE

The approaching end of the current federal mandate for CFCAS means change is in the air. It means, for instance, that almost all CFCAS financial commitments to research were completed by April 1, 2011, and no new grants followed. It means that only one CFCAS-supported network is expected to continue after October 2011, and that by March 31, 2012, no more federal support will be available to operate the CFCAS office in Ottawa.

But the need to foster, promote and support Canadian weather and climate research continues. If anything, the questions generated by the rapid transformation we see in our atmosphere, our oceans and our climate are becoming more insistent. Questions of how to adapt to change and take advantage of the opportunities change presents are more pressing.

Answers to these questions are vital to the environment, health and economy of millions of Canadians across this vast, weather-affected land. CFCAS remains steadfast in its commitment to helping Canadian researchers find answers—and, in the months ahead, to ensuring that the work of Canada's weather and climate scientists is accessible to governments, to industries and to the public at large.

CFCAS will seek new sources of support to develop the Foundation as a vital link between the scientists who have the research results and world-renowned expertise, and the decisions makers who need them most.

New CFCAS initiatives will put weather and policy options—particularly as they relate to climate adaptation—in the spotlight. The Foundation will work with governments, industry and others to encourage science-based approaches to harnessing new opportunities, and to guard against climate-related disasters.

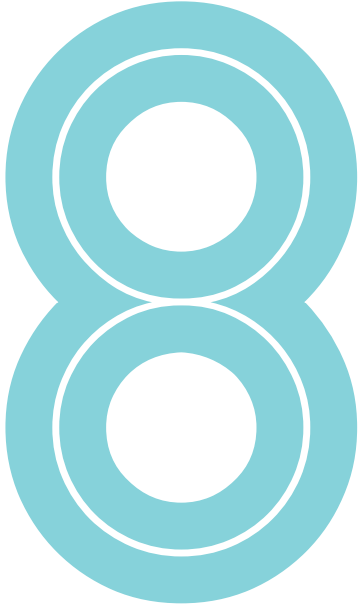
CFCAS has spent a decade creating a legacy of science to help Canadians understand and deal with change. Change is our business. That's why CFCAS is committed to action beyond the end of its federal mandate.

Ten years of CFCAS funding has put Canadian weather and climate research on a solid footing. The Foundation can now continue building support and understanding for this vital area of science—science that is providing Canadians with the information they need to make the right choices in this period of change.

FRESH WATER

Changing snowpacks and thawing permafrost have altered the timing and volume of spring runoff and summer streamflows in Canada's cold regions. The **IMPROVED PROCESSES AND PARAMETERISATION FOR PREDICTION IN COLD REGIONS** network has sought answers to the challenges of managing and predicting the supply of freshwater essential for healthy ecosystems, food security and energy production.





FINANCES

CFCAS tracks the progress, management and output of networks and projects through meetings, reports and audits. Any unused funds are recovered at the end of a project and reinvested in new research.

During 2010–2011, CFCAS received independent performance audits on one project and one network. The audits confirmed that CFCAS policies and procedures are being followed by universities, researchers and grantees.

CFCAS officers continued to attend meetings of the Boards of Directors of all CFCAS-funded networks. In addition, CFCAS staff ran a training session for new network managers.

FINANCIAL HIGHLIGHTS 2010-2011

- As of March 31, 2011 CFCAS had received a total of \$110 million from the Government of Canada and had disbursed or committed this full amount in support of research.
- Investments as of March 31, 2011, totalled \$824,646 consisting entirely of bonds. CFCAS investment practices are focused on AAA-rated securities in accordance with the guidelines in its funding agreement with Environment Canada and the Canadian Meteorological and Oceanographic Society.
- Investment income earned during the year ended March 31, 2011 was \$14,551.
- The net change in the amount invested in grants from the previous year is a decrease of \$7,830,425. This is explained by grant payments that dropped from \$12,702,959 to \$4,872,534, balanced in part by interest earned and \$8,196.59 in funds returned to CFCAS during the year.
- From the monies invested, CFCAS was able to approve nine network supplements totalling \$878,390. Recipients begin receiving funds only when all grant conditions have been met.

Red River flooding in
spring 2010. 

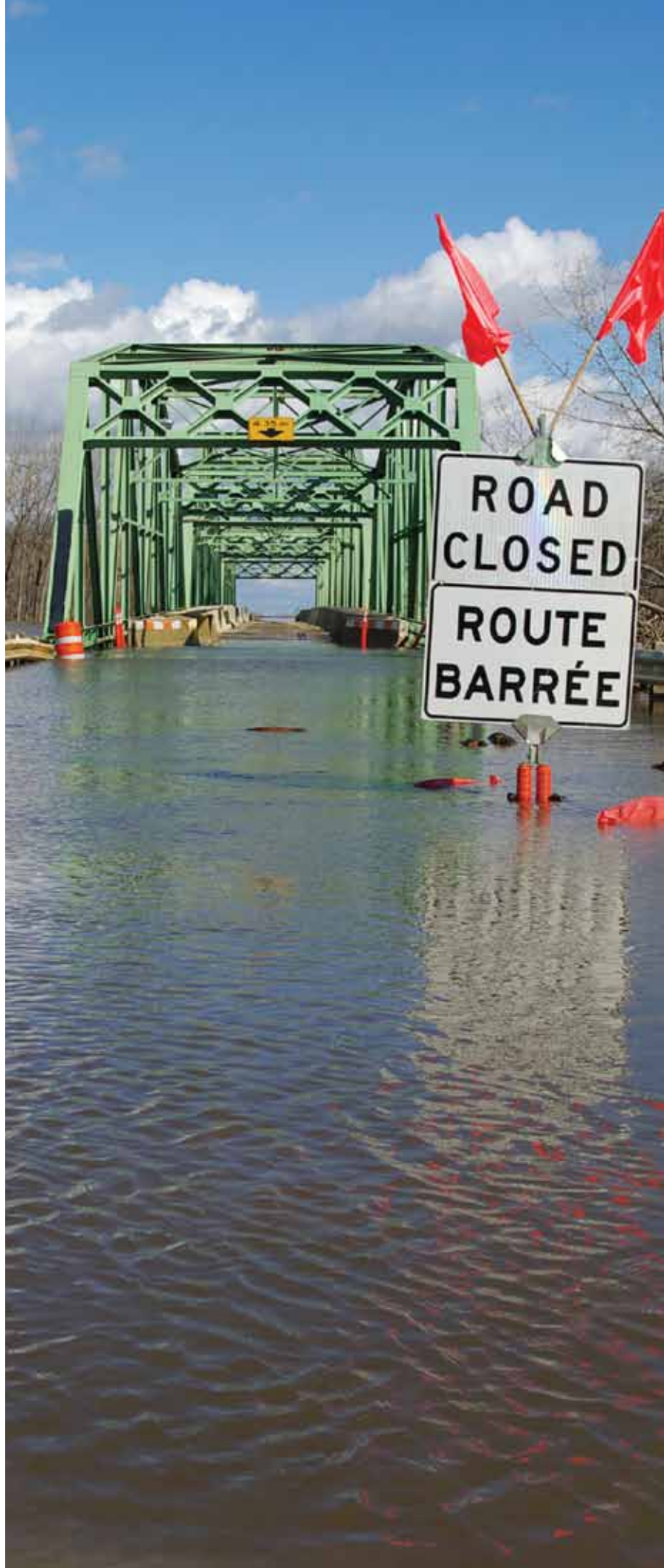
- As of March 31, 2011, a total of \$117,946,206 had been disbursed. Additional funds were provided for international coordination activities.
- The Board of Trustees was kept apprised of the number of completed initiatives and those where a university had returned unspent funds to the Foundation. In each case, CFCAS staff identified the reason(s) for the unused funds, focusing their greatest attention on those grants where the amount returned was more than \$1,000. The main reason for under-spending was difficulty in attracting or retaining skilled research personnel.

FINANCIAL MANAGEMENT

CFCAS applies sound financial management principles to guarantee the best use of the public funds entrusted to it. CFCAS ensures openness and accountability by the following means:

- Quarterly reviews of financial statements by the Board of Trustees;
- Bi-weekly reviews of investments and cash flows;
- Rigid adherence to investment guidelines;
- Reviews of annual financial reports from grant recipients by CFCAS staff;
- Retention of grant funds until required for research initiatives;
- Performance audits of selected initiatives during the year;
- Secretariat reviews of major deviations in grant use; and
- Training sessions on financial management for network administrators.

The CFCAS Board of Trustees oversees financial management of CFCAS through its Sub-committee on Finance.





AUDITOR'S REPORT

TO THE MEMBERS,

Canadian Foundation for Climate and Atmospheric Sciences:

We have audited the accompanying financial statements of Canadian Foundation for Climate and Atmospheric Sciences, which comprise the statement of financial position as at March 31, 2011, and the statement of operations and changes in net assets for the year then ended, and a summary of significant accounting policies and other explanatory information.

MANAGEMENT'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

AUDITORS' RESPONSIBILITY

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

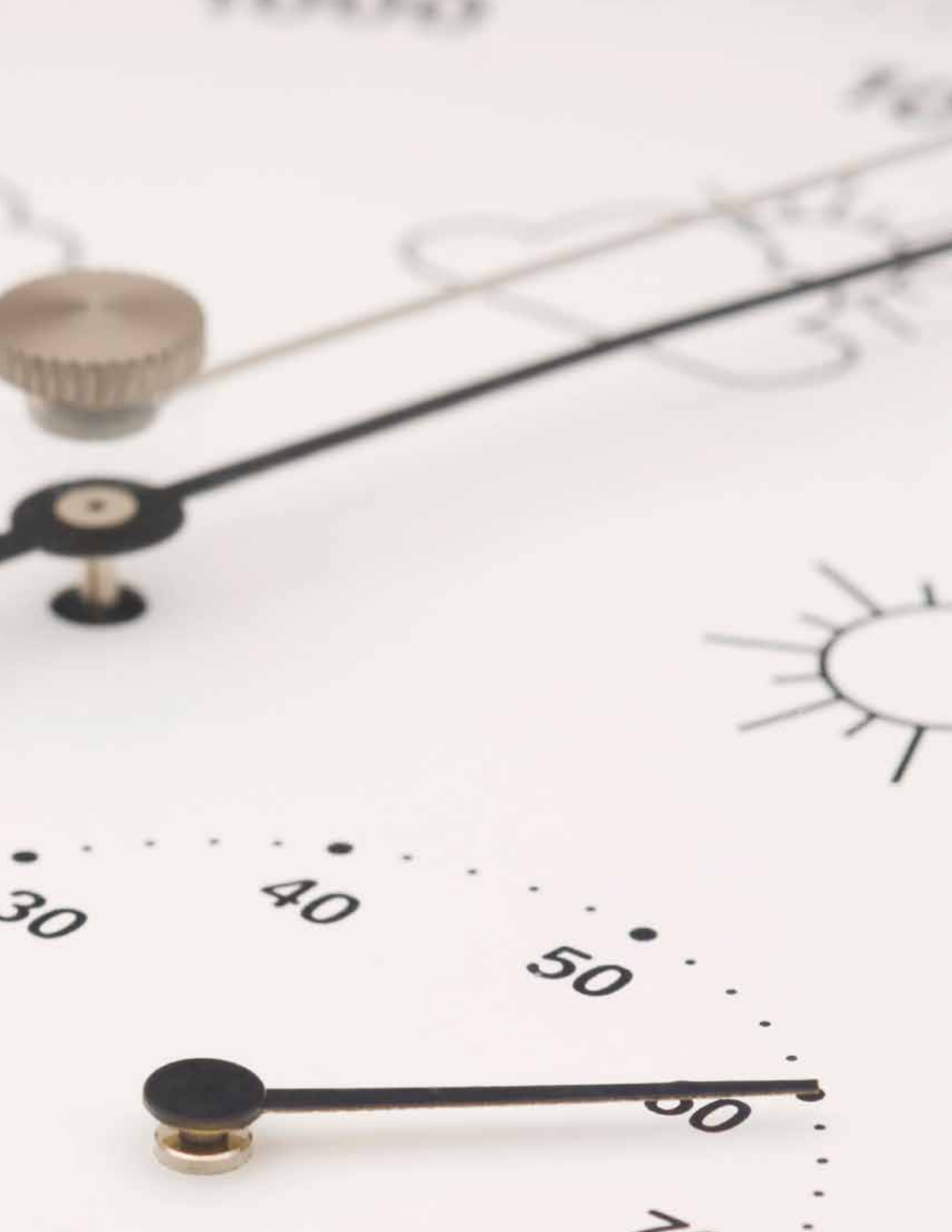
We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

OPINION

In our opinion, the financial statements present fairly, in all material respects, the financial position of Canadian Foundation for Climate and Atmospheric Sciences as at March 31, 2011, and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

Ouseley Hanvey Clipsham Deep LLP
LICENSED PUBLIC ACCOUNTANTS

Ottawa, Ontario
May 30, 2011



STATEMENT OF FINANCIAL POSITION / AS AT MARCH 31, 2011

| | | | 2011 | 2010 |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|
| | OPERATING FUND | RESEARCH FUND | TOTAL | TOTAL |
| CURRENT ASSETS | | | | |
| Cash | \$1,773,483 | \$1,191,418 | \$2,964,901 | \$7,747,702 |
| Accrued interest receivable | 3,828 | 179 | 4,007 | 9,195 |
| Accounts receivable | 16,858 | 102,037 | 118,895 | 239,652 |
| Prepaid expenses | 23,413 | – | 23,413 | 24,800 |
| | 1,817,582 | 1,293,634 | 3,111,216 | 8,021,349 |
| INVESTMENTS (note 3) | 775,022 | 49,624 | 824,646 | 1,426,000 |
| CAPITAL ASSETS (note 4) | 13,229 | – | 13,229 | 7,124 |
| | \$2,605,833 | \$1,343,258 | \$3,949,091 | \$9,454,473 |
| CURRENT LIABILITIES | | | | |
| Accounts payable | \$7,473 | \$ – | \$7,473 | \$1,020 |
| Accrued liabilities | 49,896 | – | 49,896 | 28,115 |
| | 57,369 | – | 57,369 | 29,135 |
| FUND BALANCE | 2,548,464 | 1,343,258 | 3,891,722 | 9,425,338 |
| | \$2,605,833 | \$1,343,258 | \$3,949,091 | \$9,454,473 |

COMMITMENTS (note 5)

Approved on behalf of the Board:



Chair, Board of Trustees



Member, Finance Committee

STATEMENT OF OPERATIONS AND CHANGES IN FUND BALANCES /

FOR THE YEAR ENDED MARCH 31, 2011

| | | | 2011 | 2010 |
|---|--------------------|--------------------|--------------------|---------------------|
| | OPERATING FUND | RESEARCH FUND | TOTAL | TOTAL |
| REVENUE | | | | |
| Investment income | \$10,644 | \$3,907 | \$14,551 | \$205,387 |
| Network Bridge Funding | – | 324,666 | 324,666 | 230,138 |
| | 10,644 | 328,573 | 339,217 | 435,525 |
| EXPENSE | | | | |
| Research grants | – | 4,872,534 | 4,872,534 | 12,702,959 |
| Salaries and benefits | 508,015 | – | 508,015 | 512,174 |
| Rent | 79,241 | – | 79,241 | 78,776 |
| Office supplies and services | 47,006 | – | 47,006 | 51,500 |
| Communications and publicity | 214,602 | – | 214,602 | 94,322 |
| Travel and meetings | 10,975 | – | 10,975 | 29,009 |
| Professional fees | 39,337 | – | 39,337 | 35,649 |
| Insurance | 10,091 | – | 10,091 | 10,052 |
| Workshops | 61,018 | – | 61,018 | 22,302 |
| Amortization of capital assets | 7,528 | – | 7,528 | 7,405 |
| Board of Trustees | 12,251 | – | 12,251 | 25,117 |
| Program Evaluation | – | – | – | 97,556 |
| Grants Review Committees | 10,235 | – | 10,235 | 6,630 |
| | 1,000,299 | 4,872,534 | 5,872,833 | 13,673,451 |
| NET EXPENSE FOR THE YEAR | (989,655) | (4,543,961) | (5,533,616) | (13,237,926) |
| FUND BALANCE - BEGINNING OF YEAR | 3,538,119 | 5,887,219 | 9,425,338 | 22,663,264 |
| FUND BALANCE - END OF YEAR | \$2,548,464 | \$1,343,258 | \$3,891,722 | \$9,425,338 |

NOTES TO FINANCIAL STATEMENTS / MARCH 31, 2011

1. NATURE OF OPERATIONS

CANADIAN FOUNDATION FOR CLIMATE AND ATMOSPHERIC SCIENCES

Canadian Foundation for Climate and Atmospheric Sciences (“the Foundation”) was established by the Government of Canada with a one-time \$60 million grant to be disbursed over six years. The purpose of the Foundation is to fund research and modeling in the climate system and atmospheric sciences, including extreme weather and air quality. The Foundation was incorporated as a not-for-profit organization on February 23, 2000, under the Canada Corporations Act. Effective April 1, 2001 the Foundation became a registered charity under the Income Tax Act.

During 2004 the Foundation received a second grant from the Government of Canada in the amount of \$50 million. This grant and related investment income is to be disbursed by the end of March 2012.

2. SIGNIFICANT ACCOUNTING POLICIES

FUND ACCOUNTING

The Foundation follows the restricted fund method of accounting for contributions. The Operating Fund accounts for the Foundation’s program delivery and administrative costs. It was established in 2001 with 7.75% of the \$60 million grant from the Government of Canada, in accordance with the funding agreement. During 2004 the operating fund received 7.75% of the \$50 million grant from the Government of Canada.

The Research Fund accounts for the Foundation’s funding of research grants. It was established in 2001 with the remaining 92.25% of the \$60 million grant from the Government of Canada. During 2004 the research fund received 92.25% of the \$50 million grant from the Government of Canada.

Both funds are externally restricted. Capital assets are included in the operating fund.

REVENUE RECOGNITION

Contributions to the operating and research funds are recognized as revenue when received or receivable. Investment income earned is recorded as revenue in the fund which records the related investments.

RESEARCH GRANTS

Research grants are recognized as expenses when the awarded funds are disbursed.

NOTES TO FINANCIAL STATEMENTS / MARCH 31, 2011

2. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

CAPITAL ASSETS

Purchased capital assets are recorded at cost in the operating fund. Amortization is provided on a straight-line basis using the following annual rates:

| | |
|-------------------------------|-----------------------------|
| Computers and other equipment | 3 years |
| Furniture | 5 years |
| Software | 2 years |
| Leasehold improvements | remaining term of the lease |

FINANCIAL INSTRUMENTS

Investments are recorded at cost as all investments are classified as “held to maturity”. Premiums or discounts are amortized over the remaining term of the investment. If fair value declines below cost and the decline is considered not to be temporary, investments are written down to fair value. Other financial instruments are recorded at the initially recognized amount less appropriate allowances.

USE OF ESTIMATES

The preparation of these financial statements in conformity with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

3. INVESTMENTS

| | 2011 | 2011 | 2010 | 2010 |
|-----------------------|-----------|------------|-------------|-------------|
| | COST | FAIR VALUE | COST | FAIR VALUE |
| OPERATING FUND | | | | |
| Bonds | \$774,999 | \$778,266 | \$1,426,000 | \$1,435,924 |
| RESEARCH FUND | | | | |
| Bonds | \$49,624 | \$49,725 | \$- | \$- |

Investments are made in accordance with investment guidelines outlined in the funding agreement.

NOTES TO FINANCIAL STATEMENTS / MARCH 31, 2011

4. CAPITAL ASSETS

| | | | 2011 | 2010 |
|-------------------------------|-----------|--------------------------|----------|---------|
| | COST | ACCUMULATED AMORTIZATION | NET | NET |
| Computers and other equipment | \$38,901 | \$26,368 | \$12,533 | \$5,157 |
| Furniture | 81,373 | 81,106 | 267 | 839 |
| Software | 6,552 | 6,419 | 133 | 535 |
| Leasehold improvements | 18,901 | 18,605 | 296 | 593 |
| | \$145,727 | \$132,498 | \$13,229 | \$7,124 |

5. COMMITMENTS

The Foundation has entered into a lease for office premises. The lease expires on March 31, 2012. Minimum lease payments and occupancy costs to the end of the lease are \$76,000.

6. FINANCIAL INSTRUMENTS

The Foundation's financial instruments consist of cash, accrued interest receivable, accounts receivable, investments, accounts payable and accrued liabilities. Unless otherwise noted, it is management's opinion that the Foundation is not exposed to significant interest, currency, or credit risks arising from these financial instruments and that the carrying amounts approximate their fair value.

7. CAPITAL DISCLOSURE

The Foundation defines its capital as its fund balances, which are externally restricted by the agreement with the Government of Canada. Management's objective, when managing capital, is to safeguard the organization's ability to continue as a going concern, so that it can continue to fund research in accordance with its mission.