



**Prairie
Climate Centre**
From Risk to Resilience

Communication Strategy: Results and Reflections

**Presentation for OCP Meetings
Halifax, August 2018**



GLOBE AND MAIL OP-ED

OPINION

The oceans need our protection – and our lives depend on them

USSIF RASHID SUMAILA AND IAN MAURO
CONTRIBUTED TO THE GLOBE AND MAIL
PUBLISHED SEPTEMBER 5, 2017

Ussif Rashid Sumaila is a professor at the University of British Columbia and research director of the SSHRC-funded OceanCanada partnership. Ian Mauro is an associate professor at the University of Winnipeg and co-leader of the OceanCanada knowledge mobilization working group.



Framed by three oceans, Canada has the longest coastline of any country in the world, and yet we can easily forget this, in the context of our busy and increasingly urban lives. While the recent collapse of a fish farm off the Pacific coast may have caught your attention, it's important to reflect on the contributions that marine environments make to our daily lives.

GLOBE AND MAIL OP-ED

For example, did you know that more than 50 per cent of the oxygen that we breathe on Earth is produced by marine plants such as phytoplankton, kelp and algae? Most people have no idea that oceans are the single greatest source of oxygen globally – the true lungs of the planet – followed by rain forests. Oceans also regulate the Earth's atmosphere and climate at a planetary scale, making them crucial for maintaining environmental balance and human survival.



The future of the oceans rests squarely on the individual and collective actions we take as a society to manage ourselves. We must reduce our consumptive lifestyles – curtailing both our greenhouse-gas emissions and use of plastics – while supporting community-based and ecologically responsible ocean food systems. This will help increase the resilience of our social and ecological relationships in the face of rapid changes to the oceans.

CLIMATE COMMUNICATIONS

Overview

Communicating climate change: history, challenges, process and future directions

Susanne C. Moser*



Since anthropogenic climate change first emerged on the public agenda in the mid-to-late 1980s, public communication of climate change and—more recently—the question of how to communicate it most effectively have witnessed a steep rise. This paper synthesizes what is known, presumed, and still unknown about how to effectively communicate this problem. An introductory historical overview of climate change communication is followed by a discussion of the challenges that communicators face in trying to convey the issue (invisibility of causes, distant impacts, lack of immediacy and direct experience of the impacts, lack of gratification for taking mitigative actions, disbelief in human's global influence, complexity and uncertainty, inadequate signals indicating the need for change, perceptual limits and self-interest). The core of the paper focuses on key aspects of the communication process (purpose and scope of the communication, audience, framing, messages, messengers, modes and channels of communication, and assessing the outcomes and effectiveness of a communication). These elements are placed in relationship to several contextual factors that affect the communication process. The paper concludes with suggestions for future research on climate change communication. © 2010 John Wiley & Sons, Ltd. *WIREs Clim Change* 2010 1 31–53

Enhancing learning, communication and public engagement about climate change – some lessons from recent literature

Victoria Wibeck*

Department of Thematic Studies – Unit of Water and Environmental Studies, Centre for Climate Science and Policy Research, Linköping University, Linköping, Sweden

(Received 9 January 2012; final version received 23 May 2013)

This paper sets out to develop key messages for the theory and practice of environmental education from a review of recent research literature on climate change communication (CCC) and education. It focuses on how learners of climate science understand messages on climate change, the communicative contexts for education on climate change, the barriers that can be found to public engagement with climate change issues, and how these barriers can be addressed. 92 peer-reviewed studies were examined. The analysis focuses on the goals and strategies of CCC, and how barriers can be addressed given the research findings on: (a) the content of CCC, (b) visualizations, (c) framing, (d) audience segmentation. The paper concludes that CCC and education need to address barriers to public engagement on several levels simultaneously. It recommends that scholars of environmental education focus critical attention on how practice addresses senses and spheres of agency; sociocultural factors; and the complexities of developing scientific literacy given the interpretative frames and prior understandings that are brought to bear by the public in non-formal education settings.

Keywords: climate change; communication; public understanding; public engagement; learning; non-formal education

CLIMATE COMMUNICATIONS

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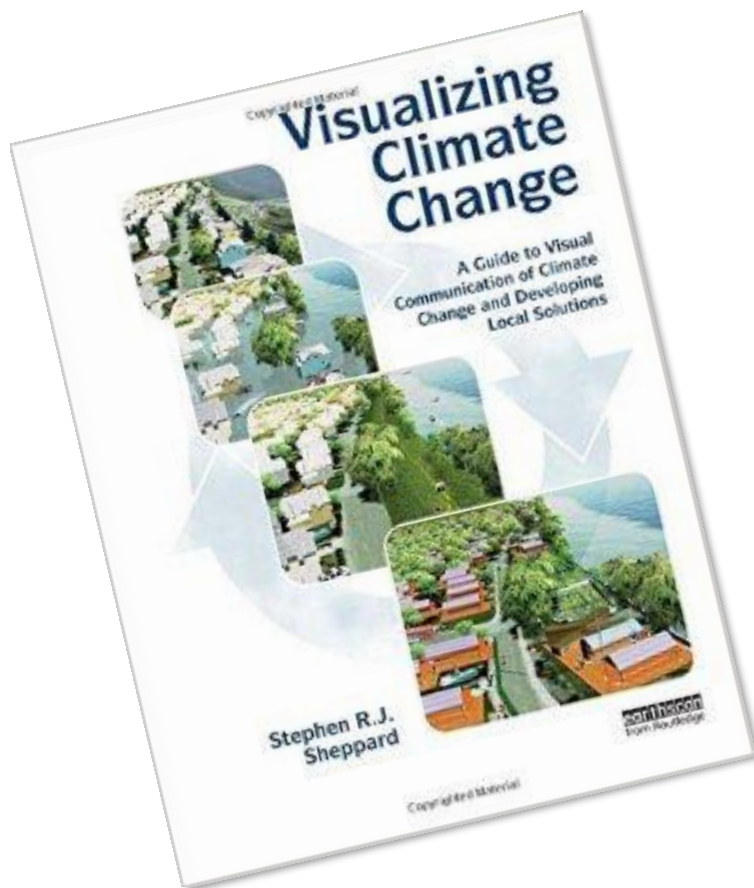
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- a) Content
- b) Visualizations
- c) Framing
- d) Audience Segmentation

Visualizing Climate Change



nature
climate change

PERSPECTIVE

PUBLISHED ONLINE: 12 OCTOBER 2015 | DOI: 10.1038/NCLIMATE2760

Psychological responses to the proximity of climate change

Adrian Brügger^{1*}, Suraje Dessai^{2,3}, Patrick Devine-Wright⁴, Thomas A. Morton⁵ and Nicholas F. Pidgeon⁶

nature
climate change

PERSPECTIVE

PUBLISHED ONLINE: 27 AUGUST 2014 | DOI: 10.1038/NCLIMATE2339

Changing the intellectual climate

Noel Castree *et al.*^{*}

The Climate Atlas of Canada

 **12** Global Climate Models

 **25** Map Variables

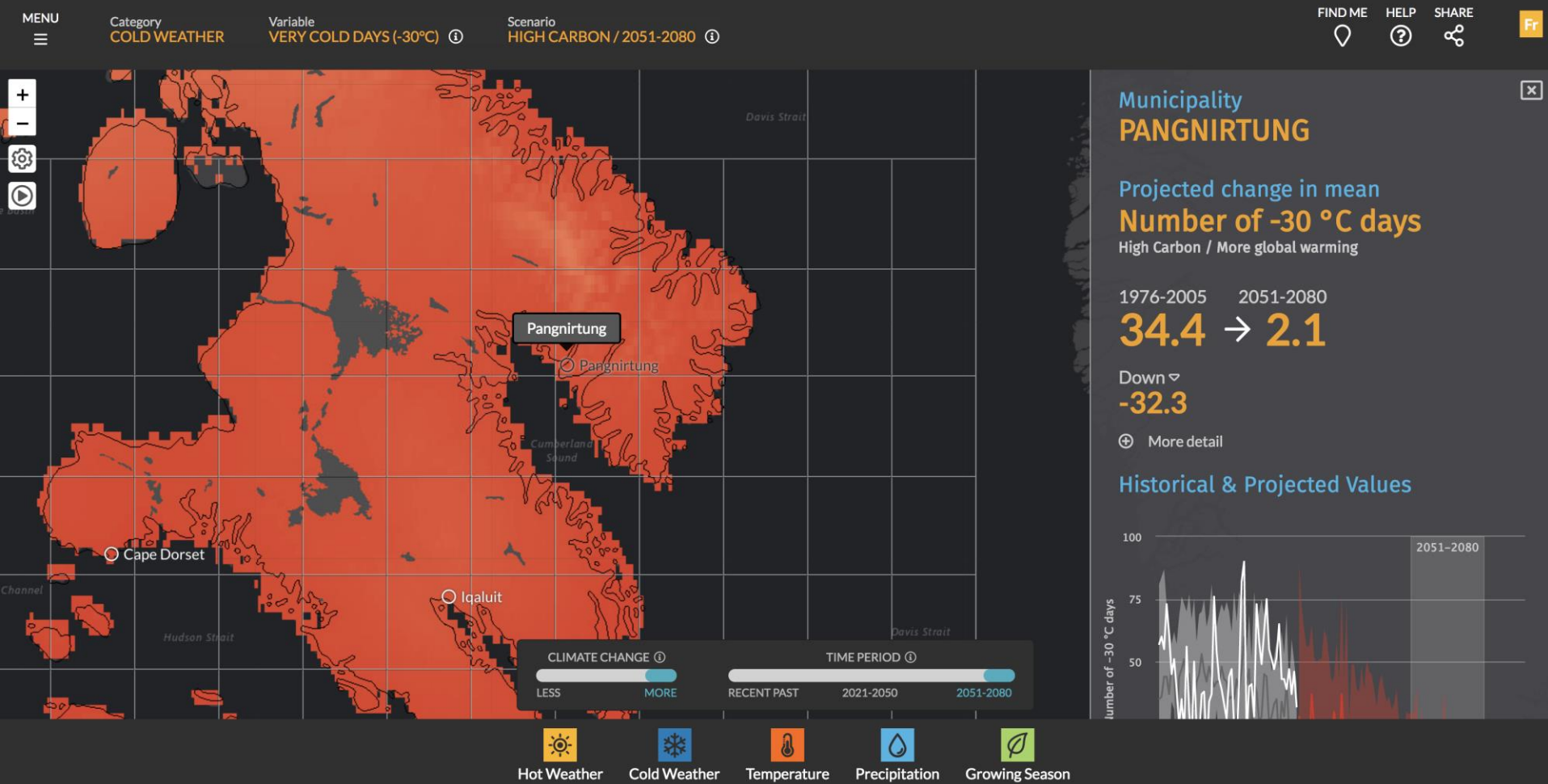
 **300+** Interviews

 **250+** Map Layers

 **2000** Towns, Cities & Regions



Atlas Interface: Local data for ~2000 Towns, Cities and Regions



Connecting knowledge across scales: Data and Communities

24 VIDEOS



100+
Minutes
of Content



Montana First Nation: Community Owned and Operated Solar Company

As their oil wells began to dry up, the small community of Montana First Nation was faced with an unemployment crisis. That's when the idea of solar energy came up and the Nation founded Green Arrow, western Canada's first Indigenous-owned and operated community solar energy company. Green Arrow's team of trained community members is now installing solar panels across all of Alberta.



Seeding Climate Resilience: Farming in a Changing Climate on Vancouver Island

Robin Tunnicliffe has farmed for about 25 years, growing a wide range of organic vegetables for local restaurants and farmers' markets. When she started farming, there was a more predictable climate, but she is now experiencing more weather extremes that put her farm at risk. To combat the problem, Robin is breeding climate resilient seed that is adapted to her specific growing conditions, which gives her hope for the future.



Charlie Clark, Mayor of Saskatoon: Prairie Cities are Part of the Solution

Charlie Clark, the Mayor of Saskatoon, speaks about the changing nature of cities, living in an era of global warming, and how the next generation of young people are demanding action. Despite being a "cold prairie city", Clark believes Saskatoon's sense of community will allow them to move quickly to "show leadership on environmental change".



Northern Manitoba: Winter Roads in a Warming Climate

Ice roads are critical for many communities – especially Indigenous ones – in remote and northern regions in Canada. These cold-weather dependent routes allow essential supplies – including food and building materials – to be trucked in at a lower cost than by plane. However, in a warming climate, these connections are literally melting away.



REEP House, Waterloo: Demonstrating the Benefits of Energy Efficiency

The Residential Energy Efficiency Project (REEP) House is a 100-year old house in Waterloo, Ontario that has been retrofitted to be highly energy efficient. This demonstration project shows how older housing stock can be an effective part of the climate change solution through a combination of cutting edge technology and simple upgrades.



Ouranos Climate Model

Ouranos is a leading innovation cluster in Canada that has been working for decades to help Quebec society adapt to climate change. They have diverse expertise – from agriculture, water and ecosystems to energy, cities, and policy – that is informed by climate simulation and analysis. In this video, we learn about their climate modelling work, and how this research can help Quebec prepare for the future.



Indian Island, New Brunswick: Adapting to Sea Level Rise

Indian Island First Nation is on a peninsula surrounded by water. Through a combination of traditional knowledge and scientific studies, it became clear to Chief Ken Barlow that his community would be underwater by 2100. Barlow and his community are in a race against time to protect homes, raise roads, and potentially even relocate the graves of their ancestors.

Launched April, 2018



LAUNCH OF THE CLIMATE ATLAS OF CANADA



2000
Towns,
Cities
& Regions



300+
Interviews

250+

Map
Layers



12
Global Climate
Models



25
Map Variables

Please join *the Honourable Catherine McKenna, Minister of Environment and Climate Change Canada*, at the *Prairie Climate Centre's* launch of their **CLIMATE ATLAS OF CANADA**. This media and invite only event will include a speech by the Minister, demo of the Atlas, as well as a panel discussion.



April 4th, 2018, 11:00AM - 12:00PM



Glass Room, 4th Floor, Royal Ontario Museum
(Weston Entrance on Queen's Park)



Prairie
Climate Centre

Media and Invited Guests Welcome



CLIMATE ATLAS

Media Info Kit



Press Release and Kit



NEW ONLINE TOOL SHOWS HOW CLIMATE CHANGE COULD AFFECT COMMUNITIES ACROSS CANADA



FOR IMMEDIATE RELEASE – WEDNESDAY, APRIL 4, 2018

Toronto, Ontario:

Canadians now have a map to guide them through the complexities of climate change.

The Climate Atlas of Canada – launched today in Toronto by the Honourable Catherine McKenna, Minister of Environment and Climate Change Canada, and the University of Winnipeg's Prairie Climate Centre – combines climate science, mapping and storytelling to bring the global issue of climate change closer to home for Canadians.

From Toronto to Regina to Victoria and beyond, the tool allows users to explore what unprecedented warming could mean for their towns, cities or regions in the decades ahead. From an increase in searing hot days and warmer nights, to more precipitation and fewer days below zero, it shows no region will remain untouched as Canada's climate changes.

The Atlas is a unique tool in the world. In addition to allowing Canadians to interactively visualize climate data, it also includes documentary videos that bring the human dimension of climate change to life, providing a holistic narrative about how climate change could affect various aspects of Canadian society.

In addition to the launch of the Atlas, the Prairie Climate Centre released a series of reports summarizing what might be expected for Canada's major cities if we continue to follow a high carbon scenario. For instance, the reports show cities that already experience hot summers will face large increases in both daytime and nighttime temperatures, while many historically cooler cities will have to start coping with dangerous heat for the first time. Such changes would have significant implications for the health and wellbeing of residents, for city infrastructure and for local economies.

To increase awareness of the impacts of climate change and encourage action, the Government of Canada provided a \$1 million contribution to the Prairie Climate Centre's ongoing development of the Climate Atlas of Canada. The Province of Manitoba, the Social Sciences and Humanities Research Council, and Great West Life have also contributed to development of the Atlas. It aims to inspire local, regional and national action that will support Canada's shift from climate risk to resilience.



The Climate Atlas: Press Release

Wednesday, April 4, 2018

Quotes:

"In many parts of Canada, it can be tough to recognize how climate change is affecting our lives today, and to imagine the extent of changes ahead. Tools like the Climate Atlas can show us how we can be affected. The more we learn about the changes in store for our cities, regions and country, the more equipped we will be to make smart decisions to minimize risks to our infrastructure, communities and economy."

— Minister of Environment and Climate Change, Catherine McKenna

"Our climate researchers are at the forefront of climate mapping, communications, and citizen engagement nationally and internationally. Their work demonstrates the power of knowledge mobilization – a core strategic pillar of our university – and how we translate research into action that benefits communities, policy makers, and society as a whole."

— University of Winnipeg President and Vice-Chancellor, Dr. Annette Trimble

"The Climate Atlas of Canada innovatively brings climate science and storytelling together, allowing citizens across the country to learn about climate change impacts and solutions. We believe the Atlas can help guide the country towards a less risky and more sustainable future."

— Prairie Climate Centre Co-Director and Principal of Richardson College for the Environment at UWinnipeg, Dr. Ian Mauro

"The Climate Atlas of Canada is an important tool for the country; it will help create awareness, and allows us to visualize and prepare for future impacts from coast to coast to coast. Never before have Canadians had access to climate data in such an accessible and engaging way."

— Prairie Climate Centre Co-Director and Climatologist at UWinnipeg, Dr. Danny Blair

"The Climate Atlas of Canada is an exciting and useful tool to help Canadians understand the impacts of climate change on our country and brings data and stories from 2,000 towns, cities and regions together into a sharply focused picture of Canada's capacity for hope and resilience."

— Glen Murray, Executive Director, Pembina Institute <http://www.pembina.org/>

"For most of my life, I've been combining science and communications to engage Canadians regarding the importance of the environment. Along this journey, I've collaborated with Dr. Mauro on his climate change filmmaking, and believe the Climate Atlas of Canada is a game changer. I hope it helps all Canadians realize the need for immediate and widespread climate action."

— Scientist, Broadcaster and Environmentalist, Dr. David Suzuki

Quick Facts:

The Climate Atlas of Canada launch includes:

- The interactive Climate Atlas of Canada
- Topics on Cities, Climate Science and Taking Action
- Documentary videos about climate change across Canada embedded into the Atlas
- Reports summarizing projected climate changes for Canada's major cities
- Detailed data download and visualization tools across the country



The Climate Atlas: Press Release

Wednesday, April 4, 2018

The Climate Atlas of Canada includes the following assets:

- Data about 2,000 Towns, Cities and Regions
- Video documentaries across Canada (based on 300+ interviews)
- 250 interactive map layers
- 25 climate variables
- 12 global climate models
- 2 emission scenarios (RCP 8.5 and RCP 4.5)

The Climate Atlas of Canada presents data and reports indicating that nearing the end of the century (2051-2080), if we continue to follow a high carbon scenario (known as RCP 8.5), Canadian cities are projected to see significant changes:

- **Calgary:** 44 more frost-free days a year
- **Charlottetown:** 50 more frost-free days a year
- **Edmonton:** typical coldest winter day -28.8°C (up from -35.1°C)
- **Fredericton:** 29 more +30°C days a year
- **Halifax:** typical hottest summer day 33.4°C (up from 29.8°C)
- **Iqaluit:** 103mm more precipitation each year
- **Montreal:** Typical hottest summer day 37.1°C (up from 32.9°C)
- **Ottawa:** 24 more +20°C nights a year
- **Quebec:** 63mm more winter precipitation each year
- **Regina:** Typical hottest summer day 40.7°C (up from 35.3°C)
- **St. John's:** 25 more +25°C days a year
- **Toronto:** 43 more +30°C days a year
- **Vancouver:** Typical hottest summer day 34°C (up from 29.3°C)
- **Victoria:** 45 more +25°C days a year
- **Whitehorse:** 50 more frost-free days a year
- **Winnipeg:** 36 more +30°C days a year
- **Yellowknife:** 37 fewer -30°C days a year

The Prairie Climate Centre team, at the University of Winnipeg, is made up of climate scientists, social science researchers, filmmakers, and communication specialists. Their goal is to inspire citizens' participation, to support communities, and help Canadian society move from risk to resilience.

For a decade, Dr. Ian Mauro has been developing climate change documentaries across Canada, which involve interviews with and insights from over 300 Canadians from all walks of life. The Climate Atlas of Canada is a platform that mobilizes these perspectives and innovatively links them with the best available climate science.

For over thirty years, Dr. Danny Blair has been one of Western Canada's leading climatologists, and has worked for his entire career to create awareness regarding climate change as a pressing issues facing society.



Social Media Roll Out

MASTER ONTARIO TRIP (APRIL 4-5)

SOCIAL MEDIA ROLL-OUT

Prepared by:
Name: Labana Kassab
Branch: Communications

Restricted to Social Media only
Reviewed by the Social Media Team ☒
Social Media Advisor: [Michelle Hanson]



Tweets should be written in 3rd person point of view and should not express an opinion. A link counts for 23 characters and an emoji - 3 characters.

Date/Time Activity	Content (English/French)	Photo / Visual	Retweet Opportunity Include handle(s)
April 4, 2018			
April 4 11:00AM	WATCH LIVE NOW! @PrairieClimate launches its new tool that brings together storytelling and climate science so Canadians can understand the impacts of our changing climate. [link to PCC FB livestream: https://www.facebook.com/prairieclimatecentre/]	Facebook Live Infobyte 11:00AM EST Climate Atlas of Canada	RT on @environmentca
April 4 11:15AM TBC	@PrairieClimate's new Climate Atlas of Canada raises awareness of #ClimateChange impacts in a way that is relevant and understandable for all Canadians. (Link to climateatlas.ca)	Photo from event Example: Minister at event meeting UofW President, Annette Trimbee	RT on @environmentca
April 4 11:30AM	The Government of Canada's Canadian Centre for Climate Services will provide Canadians with reliable climate information to help advance climate resilience across Canada: (Link to ECCS NR)	Infobyte? / Photo from event / video clip of Minister opening marks talking about the CCCS from event?	RT on @environmentca
April 4	Retweet PCC tweets about the launch		

Recent News Coverage



Des étés à 43 degrés en 2050, selon l'Atlas climatique



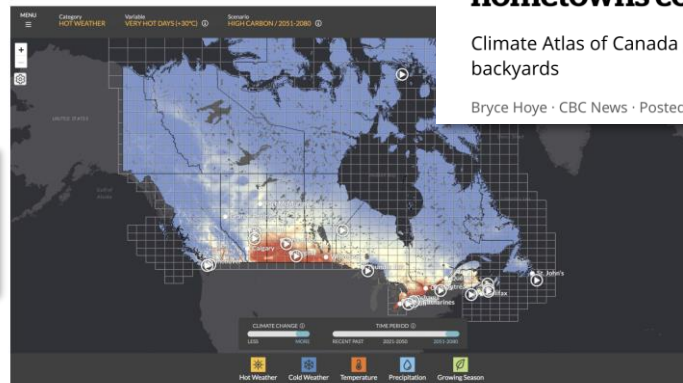
Edmontonians can chart future rise in temperatures with new Atlas tool

HINA ALAM
More from Hina Alam



New atlas shows projected impact of climate change across Canada's major cities

NOELLA OVID
PUBLISHED APRIL 4, 2018



The Climate Atlas of Canada is an interactive website that allows Canadians to explore the impact of global warming in their towns or cities.

CLIMATE ATLAS OF CANADA/CLIMATE ATLAS OF CANADA



New map lets Canadians see just how hot hometowns could get this century

Climate Atlas of Canada gives users interactive peek at global warming in their own backyards

Bryce Hoyer · CBC News · Posted: Apr 04, 2018 10:00 AM CT | Last Updated: April 4

This Interactive Tool Lets People See How Climate Change Will Screw Up Their Towns



Climate Atlas Is A New Interactive Site Presenting The Impact Of Climate Change Anywhere In Canada

Winnipeg Free Press

National climate atlas unveiled -- hot times ahead
Winnipeg-based project seeks to make impact of climate change accessible to all Canadians



iPOLITICS



Atlas Launch Impact

MEDIA **80,000,000+** 
Potential Views

\$740,000.00
Advertising Value Equivalency

INTERNATIONAL COLLABORATORS

Germany, Sweden
Guyana, United States

PRESENTATIONS

50+ Presentations 

Provincial, Territorial & Federal
MINISTERS BRIEFED

INFLUENCERS



Catherine McKenna 🇨🇦 ✓

@cathmckenna

Follow

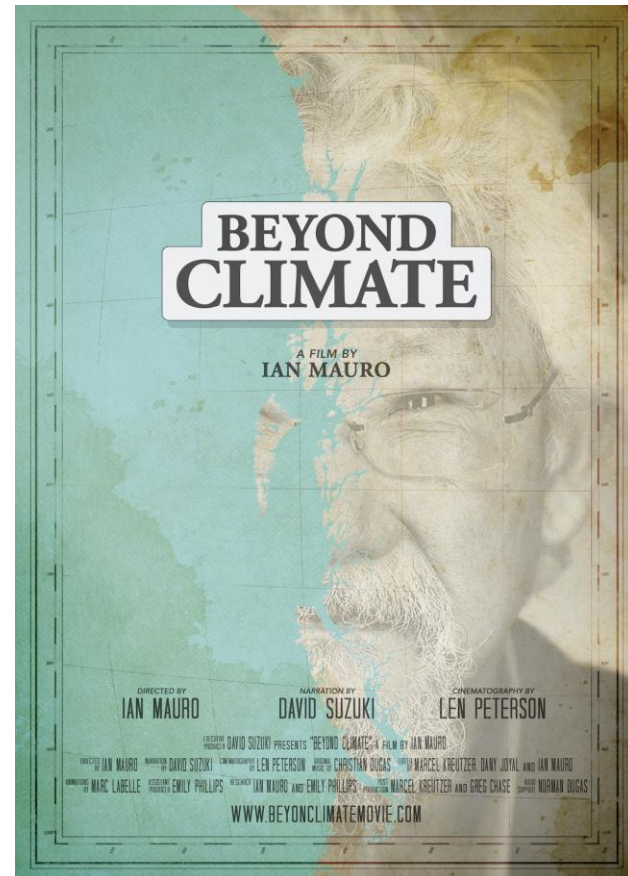
The **@PrairieClimate** is at the forefront of climate mapping and communication. Check out their interactive tool!

➔ climateatlas.ca

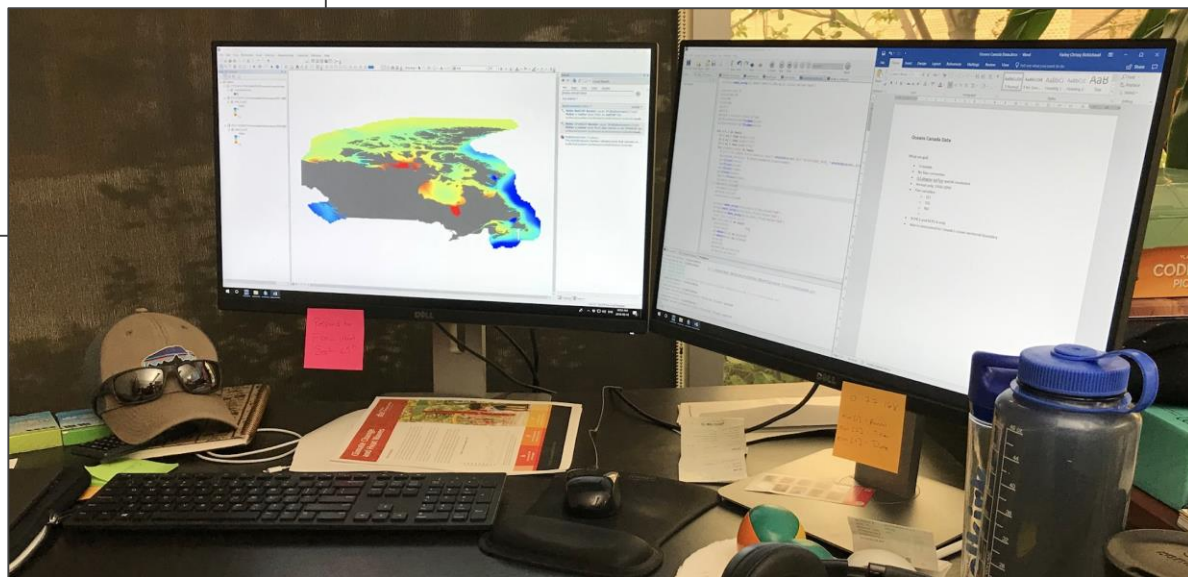
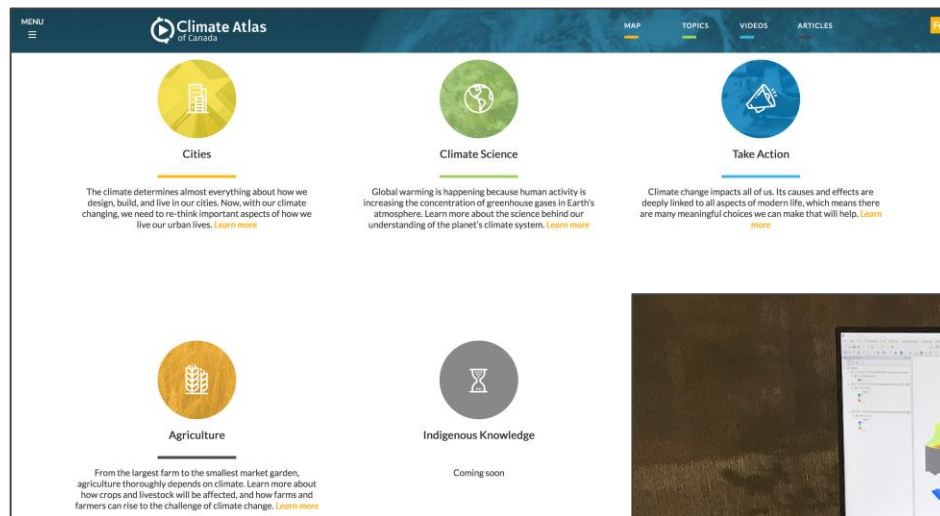


3:08 PM - 26 Jul 2017

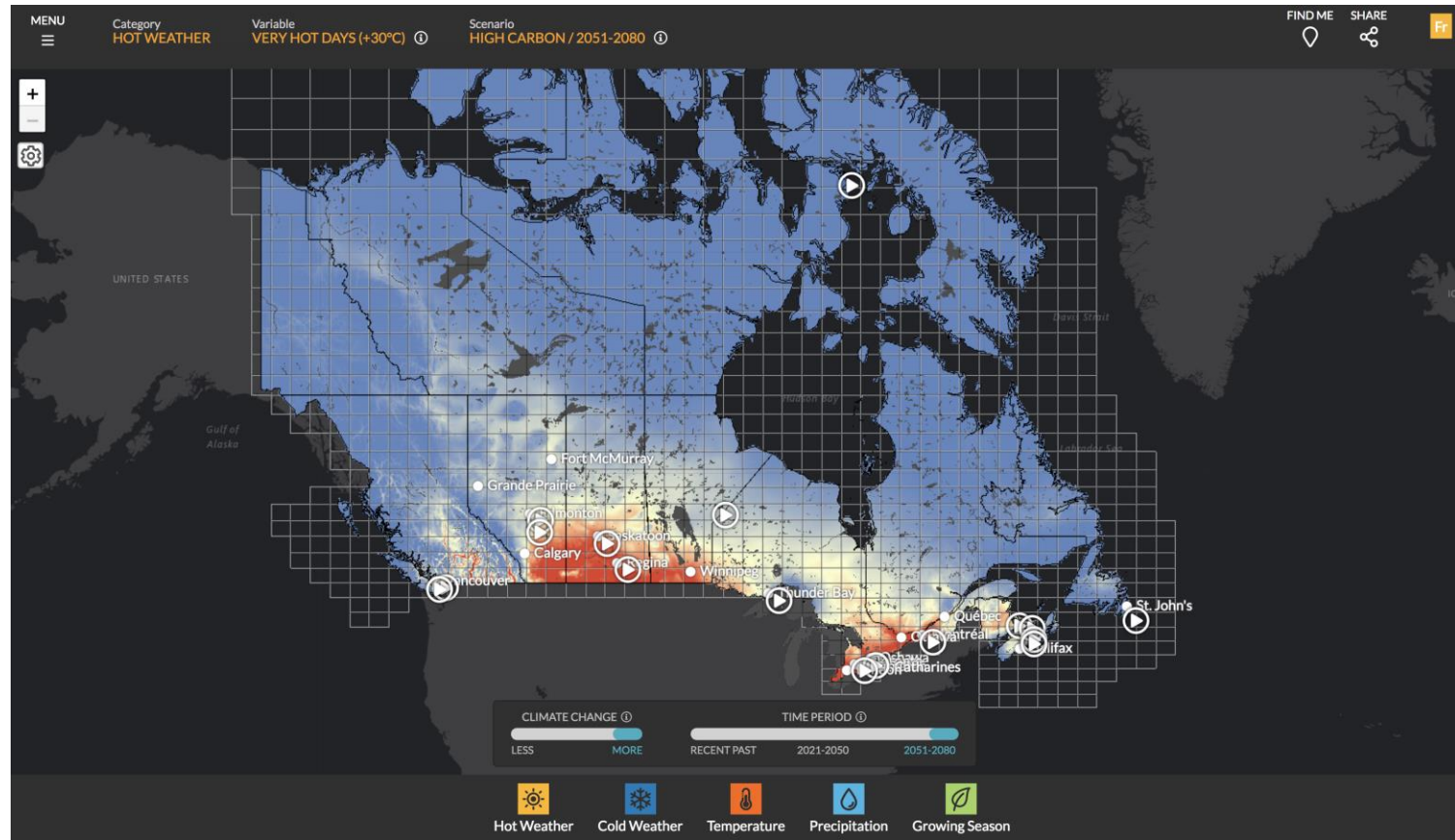
6 Retweets 22 Likes



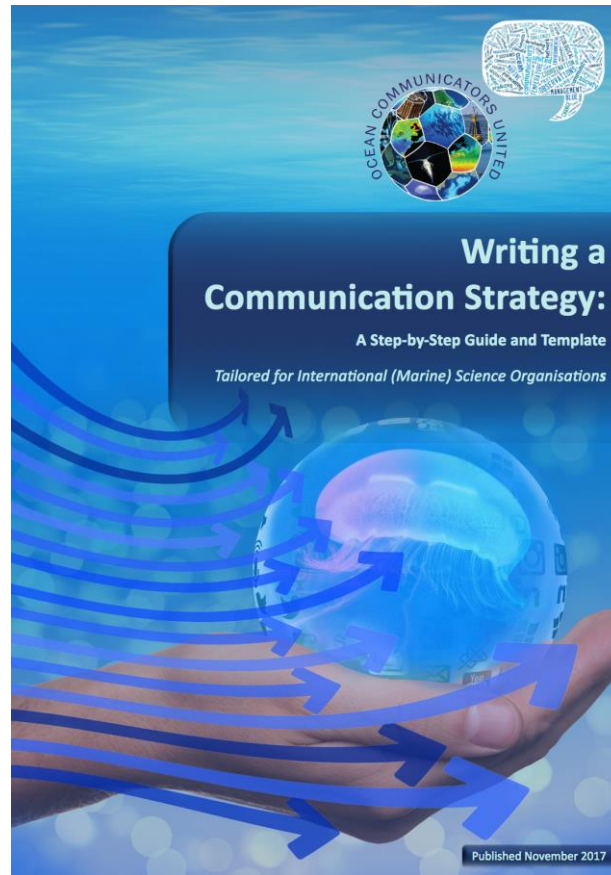
OCEAN TOPIC WITHIN ATLAS



DEMO...



OCP COMMUNICATION STRATEGY



OCP COMMUNICATION STRATEGY

What...

...are the key drivers, trends and forces in the external environment?

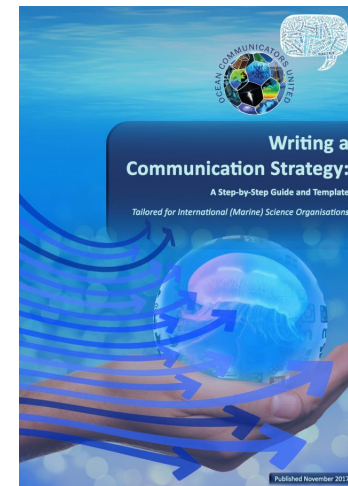
So what...

...are the implications for the organisation and key stakeholders and what are the opportunities (and threats and risks)

Now what...

...should the next steps be?

- honing the opportunities down
- creating some strategic options
- making decisions about future plans.



WHAT ARE THE KEY MESSAGES FOR OUR NEW MINISTER?

Minister of Fisheries, Oceans and the Canadian Coast Guard Mandate Letter (August 28, 2018)



Dear Mr. Wilkinson:

I am honoured that you have agreed to serve Canadians as Minister of Fisheries, Oceans and the Canadian Coast Guard.





Prairie
Climate Centre

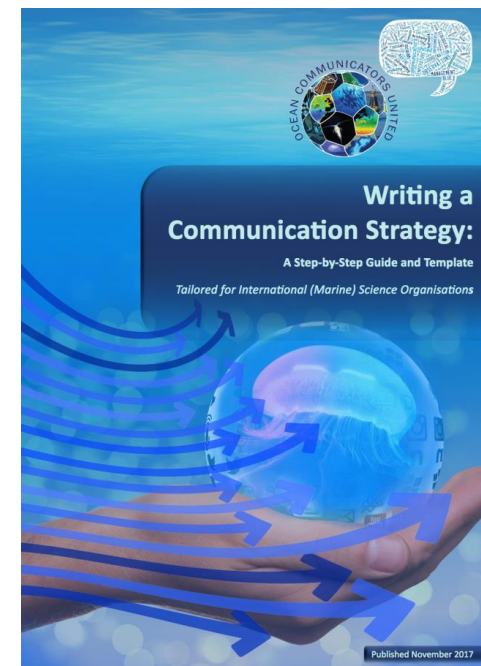
From Risk to Resilience

VIDEO WORKSHOP

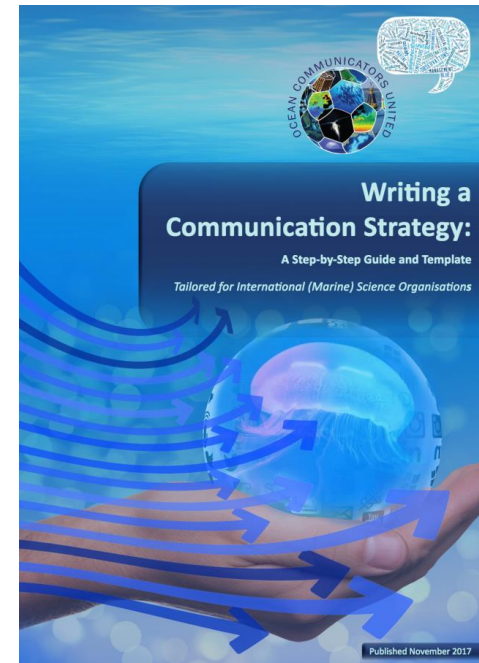
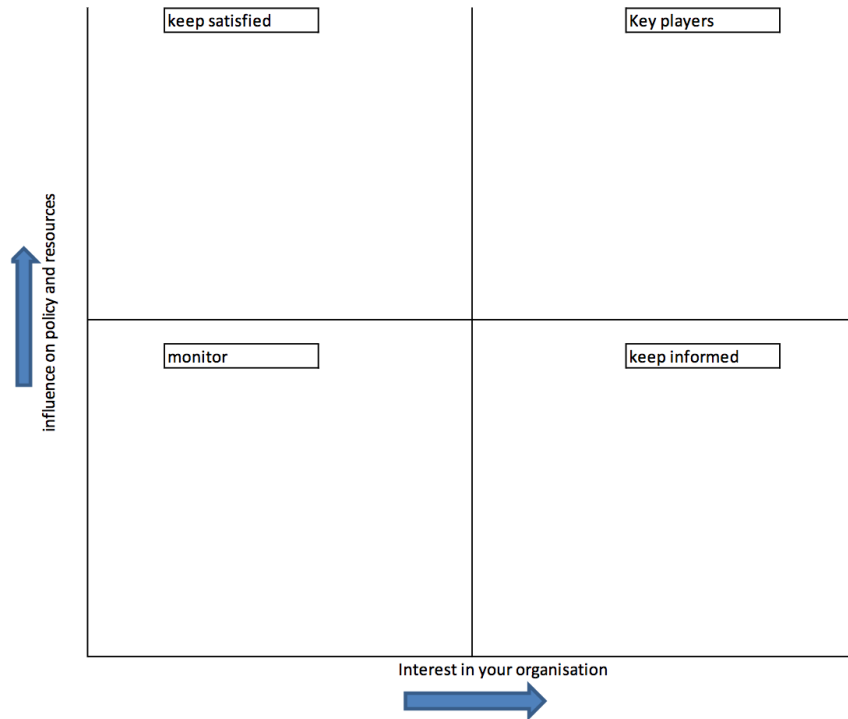
WHO IS OUR AUDIENCE?

Examples of stakeholder groups relevant to ocean science organisations, which may constitute your target audiences:

Stakeholder group (target audience)	Internal/External
Staff	Int
Organisation's management structures, e.g. Board/Executive Committee/Steering Committee/etc	Int
Parent organisation	Int
Members	Int
Individual scientists	Int and Ext
Sponsor organisation	Ext
Research institutes	Ext
National/international science projects/programmes	Ext
National/international funding agencies	Ext
Philanthropic foundations	Ext
Intergovernmental organisations	Ext
Non-governmental organisations and non-profits	Ext
Government departments	Ext
Policy/management programmes	Ext
Industry (e.g. shipping, tourism, fisheries and aquaculture, oil and gas, seabed mining, telecommunications, energy, insurance...)	Ext
Military services (e.g. navies)	Ext
Formal/informal education entities (universities, schools, teacher associations, museums, aquaria...)	Ext
Media, social media followers and science communicators	Ext
General public	Ext



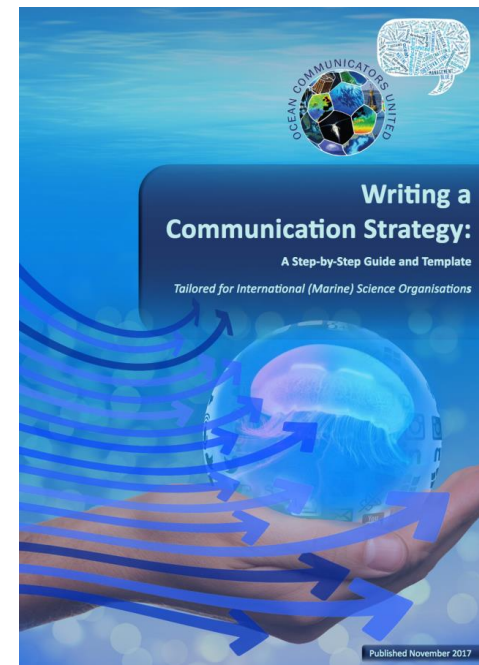
WHO IS OUR AUDIENCE?



WHO IS OUR AUDIENCE?

Example 2.3. Stakeholder mapping diagram

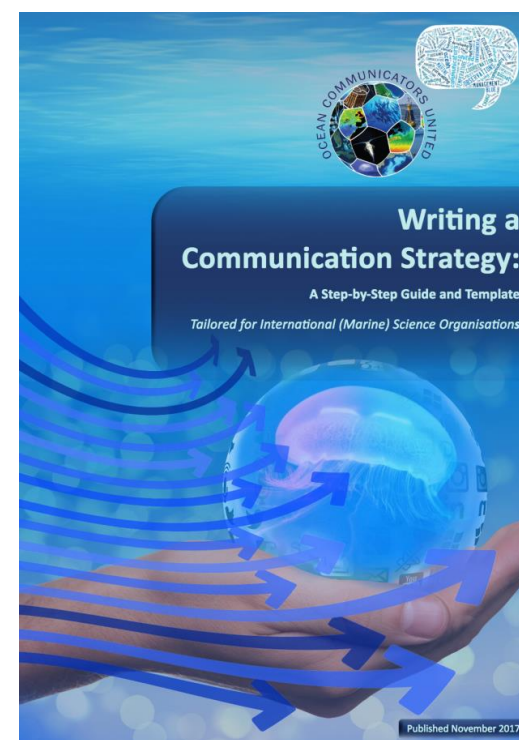
The following example was taken from KnowHowNonProfit.org.



WHO IS OUR AUDIENCE?

Example 3.1. Stakeholders and messages: Example from IODE-OceanDocs:

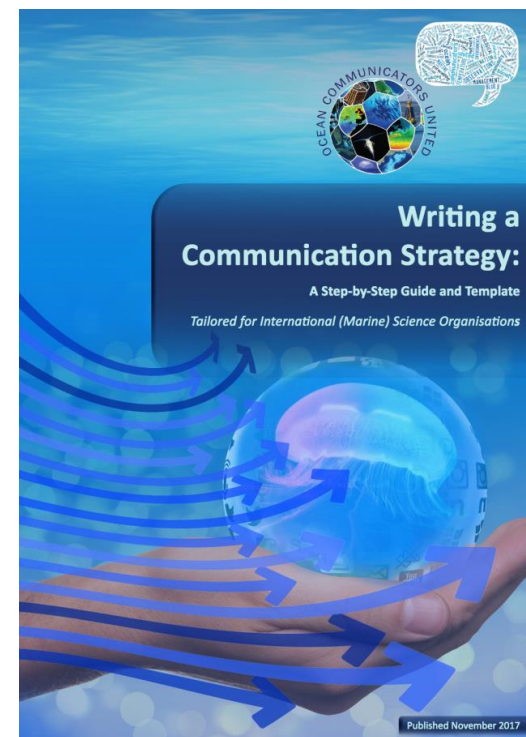
Stakeholders	OceanDocs Value/Message to Stakeholder **
Marine Science Libraries	<ul style="list-style-type: none"> • Removing barriers and fostering open access to scholarship • Raising the profile of the library's curatorial and facilitation roles in scholarly communication processes • Raising the profile of the library's role in showcasing research at its parent institution • Demonstrating how the library contributes to advancing the institutional mission and goals • Saves time and resources (not hosting your own) • Trusted thematic global digital repository • Kudos of contributing to Unesco/IOC information product • Global community contribution • Contributing to the open access movement • Persistent Identifier (URI) allocation
Researchers	<ul style="list-style-type: none"> • Increasing exposure of an individual scholar's forthcoming and already published work (pre-prints and post-prints) • Providing exposure for a scholar's unpublished work (like working papers) • Supporting workflows for managing and disseminating digital content • Offering publishing services for a spectrum of the institution's intellectual output • Attracting audiences for content that is not easily discovered in the corpus of scholarship • Broadening dissemination of academic research to the public • Contributing to the open access movement • Compliance with Funder's mandates • Fostering scientific collaboration • Avoids duplication of effort • Build on previous research results • Increased citations • Saves time and resources • Persistent Identifier (URI) allocation
IOC Member States Organizations Partner Organizations	<ul style="list-style-type: none"> • Showcasing organizations' intellectual output and raising prestige • Providing a source of metrics for organization-level scholarly outputs • Helping the organization to demonstrate its value to its communities and funders • Providing the means to publish and provide discovery and access for all types of intellectual and cultural assets produced at the organization (e.g., working papers, presentations, conference proceedings, etc.) • Saves time and resources • Avoids duplication of effort



WHO IS OUR AUDIENCE?

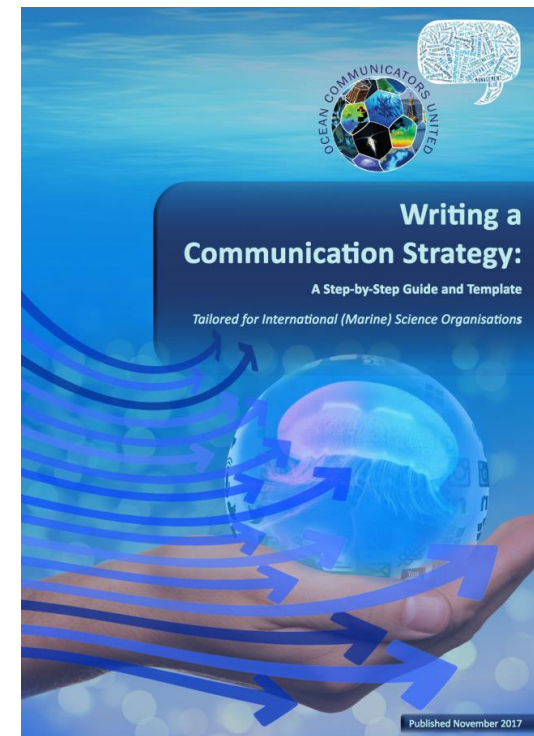
Policy Makers. Government Agencies	<ul style="list-style-type: none">• Supporting national research assessments, science indicators• Demonstrates the societal benefits of publicly funded research• Contributing to the open access movement• Supporting knowledge transfer and economic growth• Provides return on investment
Professional Societies eg IAMSLIC	<ul style="list-style-type: none">• Complementary trusted thematic digital repository• Contributing to the open access movement• Coordinating work with existing and emerging subject-based or funder repositories

** Some material from: Calhoun, K. (2014) _Exploring Digital Libraries. Chap 8. The Prospects of Open Access Repositories. Facet.



WHO IS OUR AUDIENCE?

	Subscription	Website	Newsletter	Workshops/meetings	e-news	Science publications	Programmatic articles	Reporting	Social media	Annual highlights	Other products	Merchandise	Media	Videos/interviews
Individual researchers														
Data Centres and Programmes														
Research Institutes														
International Science Programmes														
National science projects														
Intergovernmental agencies														
National Funding bodies														
International Funding Bodies														
Philanthropic funding bodies														
Policy and management programmes														
Governmental departments														
Shipping														
Tourism														
Fisheries														
Navies														



Thanks for your support!

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada



Health
Canada

Santé
Canada

SSHRC  CRSH



Prairie
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From Risk to Resilience