



MEOPAR

MARINE ENVIRONMENTAL OBSERVATION
PREDICTION & RESPONSE NETWORK

From adaptation and resilience planning to action

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Brock University





Tonight's Agenda

- Presentation and update of the project
- Information to Council of next steps & timelines
- To determine opportunities for Council to be engaged along project



Who are we?

- **Project team**
- Liette Vasseur, Principal Investigator; Biology, Environmental Sustainability Research Centre (ESRC), UNESCO Chair
- Brad May, Post-doctoral Researcher, ESRC, ex-Environment Canada
- Meredith DeCock, Masters Candidate, Sustainability Science



MEOPAR Project

Objectives

- To understand coastal communities' vulnerability and strategies for adaptation and improving resilience **through co-construction of solutions**
- To connect many partners working on climate change vulnerability and resilience from the Great Lakes to the Gulf of St Lawrence



Partnership





Coastal communities and climate change

- High pressure from human development, especially in the Great Lakes region due to human activities
- Influence from Lake Ontario
- Climate = magnitude, variation and timing of temperature (air and lake), rainfall, ice, storms, and severe weather events
- Human response to climate change is the ultimate determinant of ecosystem impacts (infrastructure, agriculture, forestry, harvest, habitat loss)



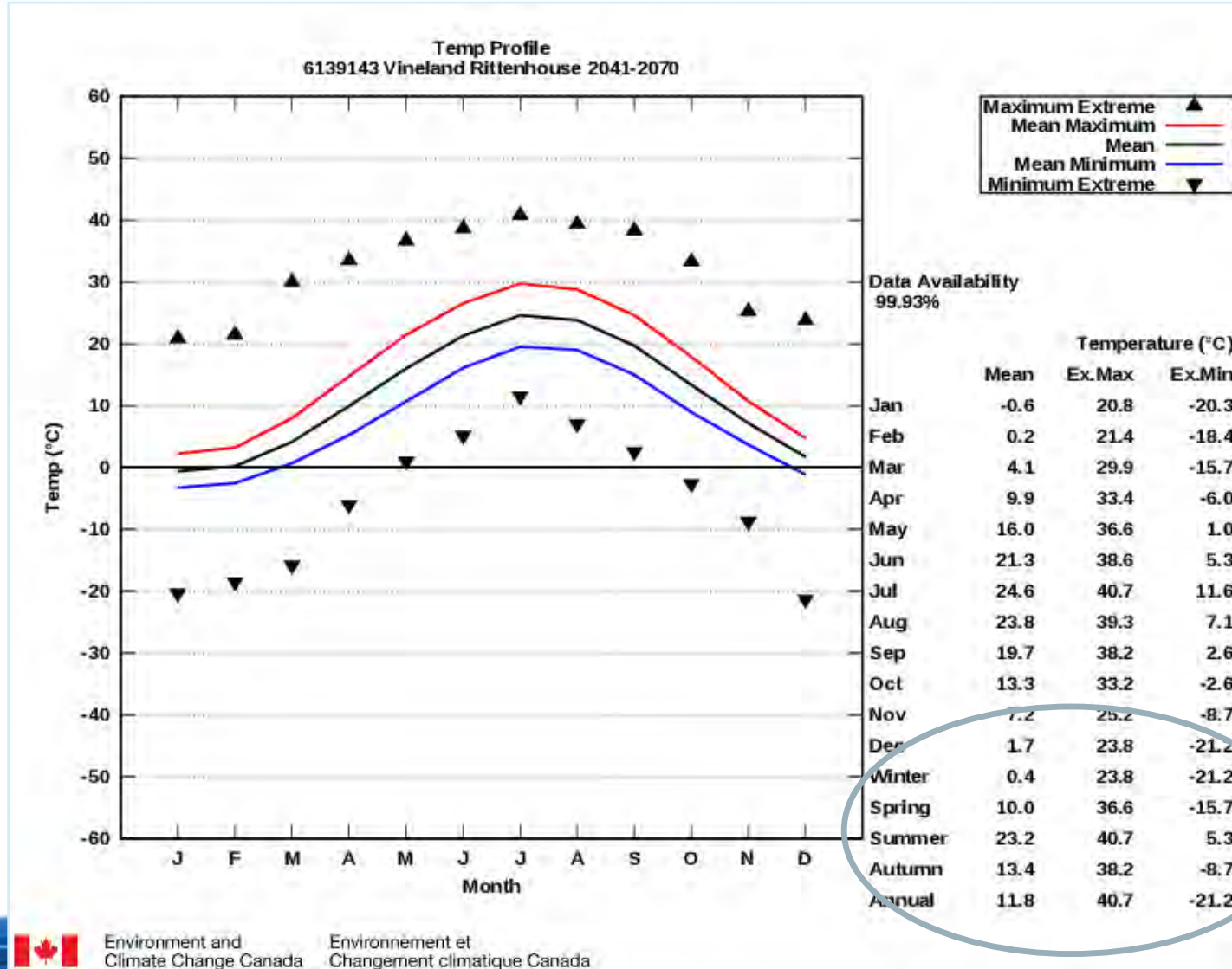
What are extremes events?

- Rare (5% occurrence) events
- Tornadoes, storms, flooding, heat waves, ice storms, etc.
- Intensity
- Frequency





Vineland Temperature (2041-2070)

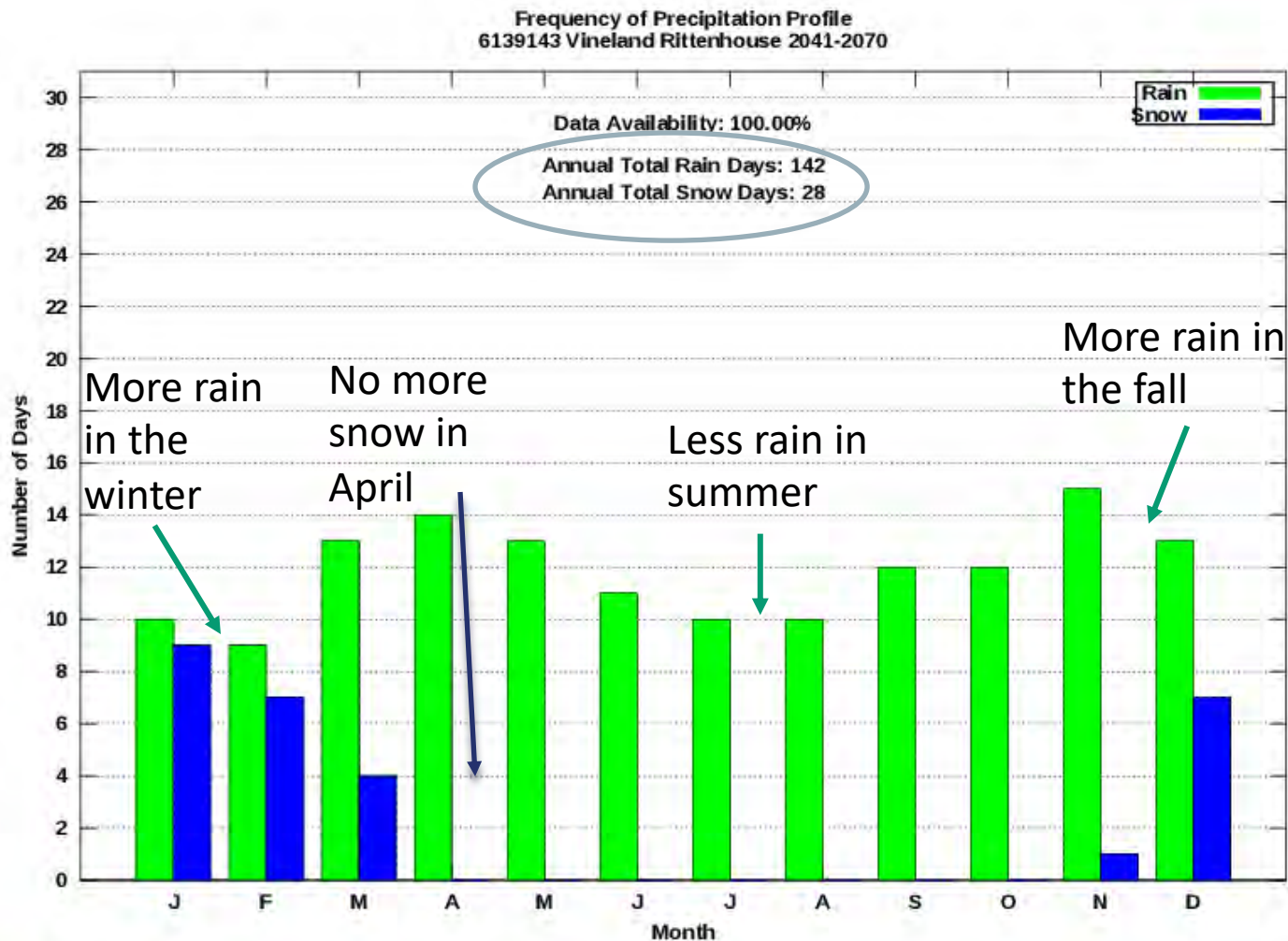


1971-2000 (°C)
Winter: -2.7
Spring: 7.2
Summer: 20.5
Fall: 10.8





Vineland Precipitation (2041-2070)



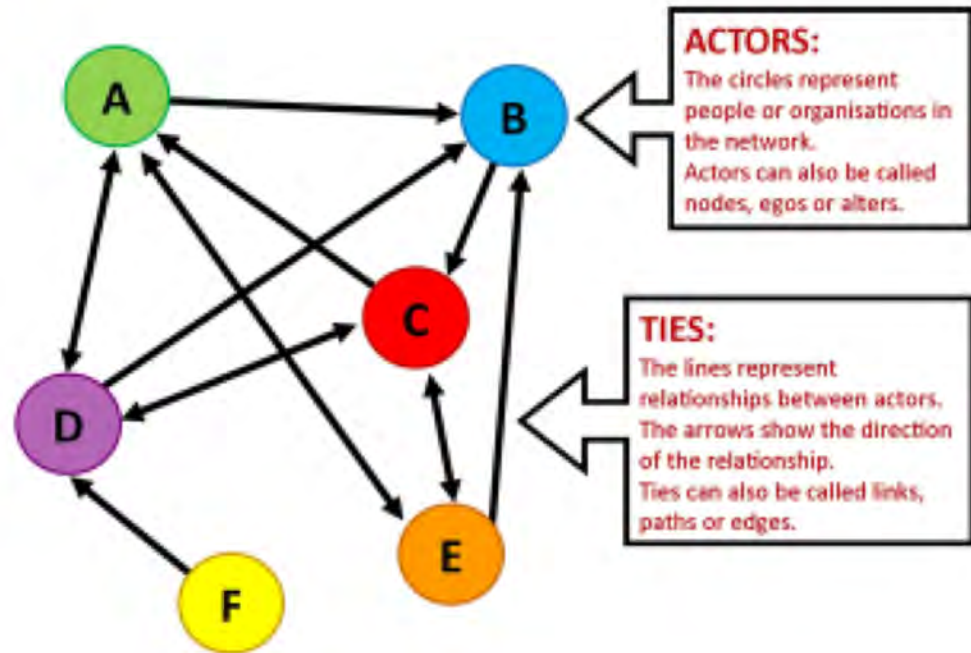


Need to find solutions

- Co-construction: this means **everyone** involved
- Social learning and experience sharing
- Innovations
- Sustainable views

Social Network Analysis

- Gephi





Working with communities

- Community Profile & Adaptation Entry Points
 - Where do we start?
 - What are the issues?
 - What are the most vulnerable parts of the ecosystem?
- Community Engagement (most likely per sector)
- Public meetings / open houses
- Semi-structured Interviews
- Focus Group(s)/Workshop(s)
- Theory of Change Process



Ecosystem-based adaptation

- Approach adopted across the world (UN, UNEP, World Bank): based on nature
- “business as usual” no longer enough
- Institutions, partners and adaptive governance
- Bottom-up approach and community involvement (legitimacy): transparency
- Stakeholder participation: Engagement and trust
- People-focused and livelihood security: reduce social and environmental vulnerabilities – goods (e.g. agriculture) and non goods (e.g. recreation)



From the past to the future

- Meredith DeCock
- To assess the coastal vulnerability (both climactic and non-climactic drivers of both positive and negative impacts) of the Town of Lincoln, through historical aerial photographs and GIS



What We Heard – Project Launch

- Vision

Coordinated, collaborative approach to develop shoreline protection solutions that work, uses sound technical and scientific expertise (is objective) and takes away individual isolation and fear

- Like to Learn

- How are Great Lakes water levels managed (*symposium*)?
- Where are priority areas at-risk?
- What are root causes of ongoing erosion issues?
- What options and resources are available to manage?

- Keeping in Touch

- Direct contact, Flyers

- Monitoring Progress & Measures of Success

- Municipal liaison/regular progress reports of meetings
- Community engagement (“*give us a job to do*”)
- No further damage to vulnerable property



What We Heard - Residents

- Vision
 - Cooperation, Coordination, Conversations, Shoreline/Watershed Approach
- Like to Learn
 - How are Great Lakes water levels managed?
 - Are household flood preparation plans available?
 - What are some permanent/lasting solutions?
 - How did other communities respond? (e.g. Toronto Islands)
 - What financial/in-kind resources are available to assist?
 - What is the role of development in changing watershed flows?
- Keeping in Touch
 - Newspaper, Email, Facebook page, Website
- Monitoring Progress & Measures of Success
 - Follow up meetings to connect groups/individuals
 - Standardized shoreline assessment protocols & flood preparation plans
 - Coordinated government response to flood risk at all levels



What We Heard – Management

- Vision

Preparing for Change , Understanding Hazards, Adaptation Planning & Integration, Resilience (reactive/proactive/social), Waterfront, Connect With Community

- Like to Learn

- What is the latest climate risk information and what are the trends?
- How has the shoreline changed over time?
- How can we measure resilience, including social aspects?
- What are some good flood response practices, e.g., erosion control?

- Keeping in Touch

- Adaptation Plan Coordinator & Working Group, Town Halls, Newsletter, Status Reports, Committees, Ward Meetings, Social Media, VARIETY

- Monitoring Progress & Measures of Success

- Communication to residents & uptake of information provided
- Improvements in design standards, integration into planning



Town of Lincoln Communications Plan

- Project will identify and develop potential new outreach strategies and promotional content for effective and meaningful communication with local community about climate change.
- Overall Objectives:
 - Raise awareness of the current and future impacts climate change has locally
 - Support and encourage community involvement in climate change initiatives
 - Provide a framework for future efforts in community engagement & outreach for the Town of Lincoln
 - To be completed by Environmental Management & Assessment students from Niagara College, in collaboration with Brock University.



Deliverables

- Part A: Report detailing suggested communication methods based on data collected from local population and analysis of population demographics
- Part B: Infographics and other informational brochures/posters designed to present climate change and its impacts in easily understood and relatable terms for the general public
- Part C: Dedicated webpage and Facebook page that interested residents and businesses can be directed to for easy access to climate change information and ongoing initiatives in the community



Timelines and activities

- Project duration: 2018-2021
- Profile and interviews by April
- April to November: discussion groups/sector for needs and options
- Winter-Spring 2020: develop ideas and strategies (in connection with the town)
- Summer-Fall 2020: concertation with community
- Fall 2020-Winter 2021: integration of information into plans of the Town
- Final report March 2021



For the Town and Council

- Community Profile needs (see next slide)
- Engaging Council and departments: representatives for meetings
- Focus Groups
 - By community? By sector? A mix of both?
- Regular updates to staff and Council



Gaps – Community Profile

- Birth and mortality rates data
- Home ownership, tenancy rates
- Key municipal organizations
- Major businesses and industries
- Most up-to-date HIRA information



Questions?



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