31st Annual Meetings

The Atlantic Division of the Canadian Association Geographers

Hosted by Saint Mary's University

October 28th & 29th, 2022

Saint Mary's University

ACAG / ACGA

ATLANTIC DIVISION OF THE CANADIAN ASSOCIATION OF GEOGRAPHERS

DIVISION DE L'ATLANTIQUE DE L'ASSOCIATION CANADIENNE DES GÉOGRAPHES

Schedule

The conference will take place using the Zoom platform.
Meeting links and IDs are as follows:

https://smu-ca.zoom.us/j/81847854429?pwd=MXlhTXlqR0d3S0lRMTBGVUZ1SUVHdz09

Meeting ID: 818 4785 4429
Passcode: 28102022

Friday October 28th, 2022

7:30 pm Keynote Presentation

Ms. Donna Davis – Project Manager
Cogswell Redevelopment Program at the City of Halifax

The Cogswell Interchange was built in the middle of the twentieth-century under the guises of urban redevelopment and renewal. Today the City of Halifax is removing the previous automobile infrastructure to bring a new neighborhood adjacent to the downtown and connecting to the city's rapidly developing North End. Ms. Davis leads this project which will see 16 acres of new mixed-use land become available, changing the face of Peninsular Halifax for decades to come.

8:30 pm Virtual Meet & Greet (e-pub night)

Saturday October 29th, 2022

9:00 am Welcome
9:05 – 10:15 Paper Session I
10:15 – 10:30 Coffee Break
10:30 – 12:00 Paper Session II
12:00 – 1:00 Lunch
1:00 – 2:15 Paper Session III
2:15 – 2:30 Coffee Break
2:30 – 3:00 Proposed/Emerging Research Session (Lightning Round)
3:00 – 3:15 Coffee Break
3:15 – 4:15 ACAG's Annual General Meeting

Session Information

Presentations will be 15 minutes in length, with 10-15 minutes given at the end of the session for questions and discussion.

Session I
Chair –Peter Bush

9:05	Riley Scanlan, Dalhousie University Dr. Alana Westwood, Dalhousie University Modelling forest connectivity in Unama'ki to guide restoration efforts
9:20	Cristian Suteanu, SMU Head or tail? Identifying distribution properties that point to ominous sources of natural disasters
9:35	Md. Moniruzzman, SMU Marking the Million: Assessment of Decadal Land Use Land Cover Transformation in Nova Scotia using Geospatial Technology
9:50	Hannah Kosick, MUN Drivers of change in the Acadian-Boreal Ecotone of Cape Breton Highlands National Park
10:05	Questions & Discussion

Session II
Chair –Mathew Novak

10:30	David J. Lieske, Mount Allison Stephanie Avery-Gomm, ECCC Catherine Priemer, Moutn Allison Assessing the Cumulative Impact of Human Activity on the Long-term Stability of Seabird Colonies
10:45	Simone Cominelli, MUN Carissa Brown, MUN Marine Soundscapes: why are we interested in listening to the Ocean?

11:00	G.M. Towhidul Islam, SMU Modeling Air Temperature Employing Satellite-borne Remote Sensing Over the Province of Nova Scotia
11:15	Md Mehedi Hasan, Saint Mary's University Modeling the Relationship Between Land Use and Land Cover Changes and Land Surface Temperature in Halifax Regional Municipality, Canada
11:30	Patricia Sayuri Silvestre Matsumoto, SMU Khan Rahaman, SMU Mathew Novak, SMU Emergence and spread of Lyme disease through environmental and socioeconomic drivers: a systematic literature review from a geographical perspective
11:45	Questions & Discussion

Session III
Chair - David Lieske

1:00	Maria Javaid, SVC Spatial Pattern of Urban Poverty and Its Environmental Impacts: A Case Study of Walled City and Basti Hamitiyan Bahawalpur
1:15	Blair Cullen, Wilfrid Laurier University, Dr. Luisa Veronis, University of Ottawa Dr. Margaret Walton-Roberts, Wilfrid Laurier University Too Much of a Good Thing? The Rationale for Local Immigration Bodies During Canada's Syrian Refugee Resettlement Initiative
1:30	Ellise Proctor, MUN Forest management alternatives to prescribed burning in Terra Nova National Park, NL
1:45	Johnathan Carter, Geological Survey of Canada Nicky Hastings, Geological Survey of Canada National framework of coastal erosion in Canada.
2:00	Questions & Discussion

Proposed/Emerging Research Session (Lightning Round)
Chair - Mathew Novak

2:30	Abigale Coad, MUN Re-imaging a Northern Housing System: A Case Study of the Partnership between the K'asho Got'ine Housing Society and Housing NWT
2:35	Josh Lepawsky, MUN Climate change induced water scarcity and the risky futures of semiconductor supply-chains
2:40	Joshua Barrett, Guelph An Evolutionary Economic Geography / New Public Management / Staples Theory nexus?: Conceptual considerations for rural economic development research with local governments
2:45	Maryam Foroutan, MUN Studying in a new home; Housing experiences of international students at Memorial University of Newfoundland and Labrador
2:50	Gabriel Nimoh, SMU The Experience and Challenges of Black Entrepreneurs in Halifax, Nova Scotia
2:55	Questions

Annual General Meeting

3:15 – 4:15 Election of officers, budget update, and presentation of awards.

Abstracts

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An Evolutionary Economic Geography / New Public Management / Staples Theory nexus?: Conceptual considerations for rural economic development research with local governments

Across Canada and beyond, researchers have worked with local governments to determine opportunities and challenges with respect to planning, infrastructure, environmental initiatives, and economic development, among others. However, there is no consensus on a clear conceptual framework amongst scholars for whether local governments successfully facilitate rural economic development. This research proposes a nexus between Evolutionary Economic Geography, New Public Management, and Staples Theory as an interdisciplinary conceptual framework that has potential to fill this research gap. Preliminary findings suggest there are common characteristics between these three concepts and additional fieldwork is required to test these findings. This research is important as it has potential to fill a void in conceptual considerations when conducting rural economic development research with local governments.

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National framework of coastal erosion in Canada

Canada features the longest coastline in the world, measuring at a total length of ~243,000 km, bordering three separate oceans, and inhabited by over ~6.5 million people (circa 2016) – approximately one-fifth of Canada's population. In light of this data, it behooves decision-makers to understand how property, infrastructure, and human life will be impacted by various coastal hazards – including coastal erosion. Research on coastal erosion and accretion – including the rates at which they occur, the natural processes which control them, and the coastal terrains they impact – has been done at local and provincial levels by different universities and provincial governments. However, the Geological Survey of Canada currently lacks a single, comprehensive perspective on coastal erosion for the nation as a whole. Ongoing research addresses this knowledge gap by compiling a literature review of the coastal-erosion research done by multiple separate parties, and integrating it together into a single national framework. The first stage of a nation-wide literature review has been completed, resulting in the compilation of GIS files illustrating coastal erosion in 4 provinces (NB, PEI, NL, and BC) and the territories, and the collection of multiple publications. The second stage currently involves conducting more-targeted literature reviews in order to fill in the remaining gaps (e.g., coastal erosion in Nova Scotia) before summarizing the findings within an Open File document.

Abigale Coad
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Title: Re-imaging a Northern Housing System: A Case Study of the Partnership between the K'asho Got'ine Housing Society and Housing NWT

Chronic housing need is a persistent issue across northern Canada, and disproportionately impacts Indigenous peoples. In the Northwest Territories, approximately 50% of the population of self-identify as Indigenous. However, in regional centres as well as small, settlement communities, the majority of people experiencing chronic housing need and homelessness are Indigenous (Christensen 2017; Statistics Canada, 2021). It is clear from the persistence of chronic housing need, and the implications for Indigenous northerners in particular, that a one-size-fits-all approach to northern housing is failing many. Indigenous communities have long advocated for community-led, self-governed approaches to housing delivery as well as social and health support services for community members experiencing homelessness. However, structural and institutional barriers, and a housing system that continues to position housing as separate from other critical social determinants of Indigenous health, act as obstacles to Indigenous self-determination of housing. In this presentation, I will present the preliminary proposal for my MA thesis project, which seeks to take a more in-depth examination of the institutional barriers to self-determination of housing, and suggest policy change recommendations as a way to reimagine the northern housing system. A partnership between the K'asho Got'ine Housing Society and Housing NWT will form a case study of how a territorial government can improve their support for self-determining, culturally relevant, and safe Dene housing policies.

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Marine Soundscapes: why are we interested in listening to the Ocean?

In physics, sound is a vibration that propagates as an acoustic wave, through a transmission medium such as gas, liquid or solid. However, sound is much more than just a physics phenomenon, and is one of the most efficient ways available to animals for receiving and delivering vital information about the environment. When the medium is sea water, biological sounds can travel for hundreds of kilometers, effectively allowing some marine species (e.g., blue whales) to establish long range communication systems in the ocean. Similarly, the sounds produced as a byproduct of human activity – generally referred to as noise – have the potential to reach and affect remote marine ecosystems, and are often overlapping with the frequencies used by animals. Using examples of recordings collected in the seas of Newfoundland & Labrador, this presentation will explore how "listening to the ocean" can help us better understand the impacts of human activities such as vessel traffic and oil and gas exploration on marine life, and, more broadly, reflect on how sounds and soundscapes are a window for investigating the interaction between human and non-human sensory spheres.

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Too Much of a Good Thing? The Rationale for Local Immigration Bodies During Canada's Syrian Refugee Resettlement Initiative

Since the early 2000s, Canada has seen a proliferation of Local Immigration Bodies (LIBs). LIBs are place-based multi-sectoral councils whose mandate is to address local migration issues. Immigrant settlement is increasingly conceptualized as a place-based process and the growing number and types of LIBs gives new pertinence to the adoption of place-based perspectives. This local mobilization on immigration issues reflects communities' desire to shape their immigration approach. It also raises questions about which approach communities choose to follow and why, including the number and nature of LIBs they opt to adopt.

Using the case of Ottawa, we investigate the LIB community selection process in response to the Syrian Refugee Resettlement Initiative (SRRI) in 2015-16. Ottawa's stakeholders opted to develop a new entity to deal with the SRRI – creating Refugee 613 – rather than choosing the federally funded Local Immigration Partnership (LIP) as their primary response vehicle. Given the success of Refugee 613, this turned out to be a wise choice; interestingly, local stakeholders decided to keep Refugee 613, not discontinue it after the SRRI as originally intended. This situation has left lingering questions about where the LIP's and Refugee 613's mandates begin and end, as well as how to navigate often overlapping terrain in immigrant settlement. The continued existence of Refugee 613 illustrates emerging shifts in Canada's immigrant settlement landscape. Based on our findings, we discuss local communities' agency in immigrant settlement, the role of place in exercising that agency and the maturity of local settlement initiatives.

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Studying in a new home; Housing experiences of international students at Memorial University of Newfoundland and Labrador

While international students' attraction and retention are critical in peripheral regions in Canada, housing insecurity is one of the many challenges this population faces. Growth in student recruitment has not been matched by the development of university residences or the provision of rental housing options. This research investigates the housing experiences of international students at Memorial University, the impact of COVID-19, and how welcomed international students perceive in St. John's and Corner Brook communities. Three major questions in this study are: (1) What are the housing experiences of MUN international students in Newfoundland and Labrador's small and mid-sized cities (St. John's and Corner Brook)? (2) How have these housing experiences impacted and differed after the spread of COVID-19? (3) How do international students perceive receiving communities as welcoming/ unwelcoming?

The mix-methodology and participatory research approach with a combination of methods, including a survey, in-depth interviews, and photo-voice with international student participants, reveal that they are commonly concerned about finding and securing suitable housing. Given the rising housing demands after the COVID-19 pandemic, international students have experienced the increasing precarity of housing in the NL competitive housing market. The outcomes also illustrate international students' various challenges ranging from unaffordability and inaccessibility of housing to scams, discrimination, and exclusion. Interviews with international students in St. John's and Corner Brook highlight their lack of housing information, difficulties in arranging pre-arrival accommodation, issues with belonging, and feeling at home, among other challenges that participants have faced.

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Modeling the Relationship Between Land Use Land Cover Changes (LULC) and Land Surface Temperature (LST) in Halifax Regional Municipality, Canada

Rapid urbanization and population growth exerted pressure on the existing land use in urban areas to accommodate people and services. This growth resulted in abrupt changes of land surface temperature in urban settings. Between 1948 and 2016, the mean annual temperature of Canada increased up to 1.7°C, and mostly in urban areas. Halifax Regional Municipality (HRM) had been welcoming significant population growth, including an increase of 9.1% last year that influenced changing the existing land use. We employed satellite-borne remote sensing techniques to track land use and land cover (LULC) change in the HRM area from 2001–2021. Secondary data were obtained from USGS, Environment and Climate Change Canada, and the Government of Nova Scotia to generate models. Supervised and unsupervised image classification techniques were conducted through ERDAS Imagine software, and Land Surface Temperature (LST) was calculated using the Google Earth Engine (GEE) Platform. ArcGIS Pro was used for summarizing and visualization the outcomes. Multiple indices like NDVI, NDBI, and NDWI were calculated to generate the relationships between LULC and LST for the entire HRM. Interestingly, our results demonstrated that most of the urban centers in the HRM underwent up to 2^{O}C temperature change in the mentioned time frame. Furthermore, this research would attempt to generate the Spatio-temporal pattern of LULC changes and causal relationships for the HRM using additional geospatial data (i.e., LiDAR). It might assist the scientific community and decision-makers in evaluating key responsible variables those were affecting LULC changes in the urban environment.

Keywords: Urban Climate, Remote Sensing, GIS, and Geospatial Technologies

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Modeling air temperature upon employing satellite-borne remote sensing over the province of Nova Scotia

Climate change has become apparent globally and the impacts are widely visible. Nova Scotia is exposed to climate change impacts, including during recent extreme weather events, due to its unique geographic location in the North Atlantic region. We are modeling air temperature changes over the province of NS at 1 km spatial resolution to understand temperature anomalies between 2001and 2020, employing Moderate Resolution Imaging Spectroradiometer (MODIS) satellite imagery We are using the Google Earth Engine (GEE) platform to preprocess, analyze and summarize information in the cloud, then bring the data into ArcGIS Pro software to visualize the results. Results demonstrate that urban areas have been experiencing a positive shift of air temperature regimes, with southern parts of the province experiencing more temperature change while comparing to the northern regions. The outcome of this study maybe useful for the province of NS to draw future strategies in relation to climate change adaptation and mitigation measures. Additionally, decision-makers can consider the results for future strategies related to urban and regional planning mechanisms.

Keywords:
Climate Change, Extreme Weather, Spatiotemporal Analysis, Urban Area, Spatial Planning

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Spatial Pattern of Urban Poverty and Its Environmental Impacts: A Case Study of Walled City and Basti Hamitiyan Bahawalpur

The research addresses the spatial pattern of Urban Poverty and its environmental impacts of Bahawalpur City. Study perceives the spatial pattern of urban poverty through a "spatial interrogation" by fragmenting the provided urban services based on population size. The profile of urban poverty is developed to comprehend particular indicators of household's standards of living, Socio-Economic condition and physical environment. The monitoring of intensity of environmental impacts were taken into account in the selected households e.g. housing condition, solid waste & liquid waste management, quality of water, sanitation conditions, and management of Local government & community participation. The research discusses that inadequate consideration had paid to urban poor in the past. It confers that the disparity in urban poverty areas is centered on physical contiguity to urban service area, employments & infrastructure. It was observed that there was spatial discrimination in households of two settlements and they were unaware about the rising of poverty, environmental degradation and the problem associated with it. Results Findings depicts that inadequate urban services and the existing environmental conditions are alarming. more than half of the households in studied settlements were found living in environmentally degraded area with deficiency of basic urban infrastructure, employment source and non-availability of resources to earn money due to lack of opportunity. Ignorance were found as the main causes of the poverty of urban residents, One hand non-affordability to construct permanent toilet sewerage drainage and consumption of toxic material used for domestically were found to pollute water when it seeps in the ground and get mixed with the underground drainage water and atmosphere and one the other hand the vulnerability to the effect of damage sewage lines dumping of waste at open space etc. was found quite high due to poor shelter condition. The disease prevalent rate was found quit often to frequent among the households in the sampled settlement. It concluded that the differentiation of the responsibilities within the government institutions regarding management and up gradation of urban poor was found lacking; their responsibilities were found overlapped hence creating a state of confusion during implementation.

Hannah Kosick
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Drivers of change in the Acadian-Boreal Ecotone of Cape Breton Highlands National Park

The boreal forest in Cape Breton Highlands National Park (CBHNP) lies at the southern geographic extreme of its range. The Park contains both low-elevation temperate species (Acadian forest) and isolated patches of highland boreal stands. Parks Canada has identified 22 species at risk in CBHNP that rely on boreal forests to survive, yet wildlife in CBHNP is still threatened by biotic and abiotic (a/biotic) factors. The cumulative effects of moose herbivory, continued warming, and an imminent spruce budworm outbreak in CBHNP are expected to increase ecological pressures on the boreal forest. In addition to these stressors, climate change could induce forest range shifts of temperate forests, further constraining boreal boundaries. This study aims to identify where Acadian forest range shifts are occurring in CBHNP, examine if moose are potential biotic constraints on species expansion, and assess the availability of species-specific seedbeds to inform conservation. We identified 28 sites in CBHNP with Acadian forest, boreal forest, and moose meadow characteristics. At these sites, we conducted tree surveys for seedlings and saplings as evidence of range expansion. Additionally, we quantified a/biotic variables by noting signs of herbivory, characterizing seedbed quality, and estimating light availability at target boreal and Acadian seedling microsites. Identifying the areas of CBHNP faced with upslope elevational shifts due to these a/biotic factors will give us greater insight into what boreal stands require immediate attention. This will ensure that conservation efforts are cost-effective and concentrated on the boreal boundaries of greatest concern.

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Climate change induced water scarcity and the risky futures of semiconductor supply-chains

The geography of semiconductor manufacturing is a fundamental foundation on which life with electronics is built. Recent discussions of supply chain risk to the semiconductor manufacturing sector focus almost exclusively on geopolitical risks of statecraft. Combining two global datasets, one on the location of semiconductor fabrication facilities and another on future climate change induced water scarcity scenarios, suggests that shifting environmental conditions also pose significant threats to semiconductor supply chains over the next two decades.

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Assessing the Cumulative Impact of Human Activity on the Long-term Stability of Seabird Colonies

Seabirds are widespread, long-lived, highly mobile upper trophic-level marine organisms that are vulnerable to the many stressors present in the marine environment. Such stressors range from shifting food resources, competition with humans for food, as well as a myriad of other anthropogenic factors (e.g., light pollution, fisheries bycatch). Following up on earlier work looking at cumulative risks to seabirds, the present study will examine long-term breeding records for three species of gull and three species of tern in an effort to answer three key questions: (1) how stable are Atlantic seabird colonies? (2) what impact do specific habitat and cumulative risk factors have on population stability? And (3) where are the 'successful' colonies? Where are the 'struggling' colonies? We propose to use a Bayesian hierarchical modelling approach so that we can simultaneously assess the impact of habitat characteristics and anthropogenic stressors. We expect random variation in colony size to result from random fluctuation in environmental conditions, but expect long-term trends to be driven by the systematic and over-arching influence of stressors. Of special interest to us is the role that wind stress might play in also determining the choice of nesting sites. By constructing the appropriate model and applying its predictions more generally, we intend to assess the 'value' of all islands in the Atlantic near-coastal zone, and hope this information will be used to support decisions around land conservation in the region.

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Marking the Million: Assessment of Decadal Land Use Land Cover Transformation in Nova Scotia Using Geospatial Technology

In 2022 January, Nova Scotia marked the milestone of surpassing a million population in the for the first time in the province's history. As a result, the province has experienced changes in land use land cover (LULC) in the past two decades to accommodate the influx of population. Halifax, the province's major city has accommodated most of the new population and accompanying changes to its LULC. This study assesses the decadal LULC changes from 1999 to 2021, considering five major classes of land use changes during this time while employing LULC classifications such as: baresoil, built-up, forest, vegetation and waterbody. Two generation Landsat satellite datasets (Landsat 8 OLI and Landsat 5 TM+) along with machine learning algorithm are adopted to classify data obtained for the year 1999, 2013 and 2021 with an overall accuracy of 87%. Built-up areas and vegetation covers have increased, while waterbodies and baresoil covers decreased across the province. Interestingly, forested areas have been remained static. Results from this study may assist government policies including regarding urban planning and future growth strategies while considering sustainable development goals.
Keywords: Machine learning algorithm, satellite remote sensing, geographic information system (GIS), urban planning

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The Experience and Challenges of Black Entrepreneurs in Halifax, Nova Scotia

Title: The Experiences and Challenges of Black Entrepreneurs in Halifax, Nova Scotia.
Abstract: For many marginalized groups, entrepreneurship is highly regarded as a vehicle towards upward mobility, allowing greater access to wealth and power in the society (Butler 1991; Light 1972; Wingfield 2008). Black entrepreneurs are making an incredible contribution to the economy of Canada; they innovate, create wealth and jobs. However, for a very long time, Black Canadians have been subjected to historical inequality and a culture of Anti-Black racism that has prevented them from growing and scaling up their businesses (Pitch Better, 2021). In Nova Scotia, there are over 21,000 Canadians who identify as being of African descent (Statistics Canada, 2020) yet, the multi-generational effect of slavery has continued to have long-lasting negative impacts on their livelihoods (Cooper, A.et. al, 2019). Moreover, when it comes to starting businesses and working for businesses within the Canadian economic system, Black Nova Scotians remain disadvantaged (Harvi, 2021).
This paper draws upon 20 semi-structured interviews with Black immigrant business owners (N=15) and Canadian-born Black entrepreneurs (N=5) in Halifax. Specifically, the study examines the motivational factors which prompt Black women and men to start their own businesses, the challenges they encounter in creating and managing their businesses, the impacts of the Covid-19 pandemic on their businesses as well as their coping strategies. The study also explores the intersectionality of the challenges faced by Black entrepreneurs along the demographic factors of gender, country of origin and migration status.

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Forest management alternatives to prescribed burning in Terra Nova National Park, NL

Terra Nova National Park (TNNP), NL, is dominated by black spruce. This species relies on fire to open its semi-serotinus cones and release its seeds, and reduce soil organic matter (SOM) thickness for successful regeneration. However, over the last century, active fire suppression in TNNP has greatly reduced black spruce regeneration. As a result, TNNP lacks early and middle stage successional species with a large representation of over-mature stands. Additionally, Kalmia angustifolia establishes in the absence of fire and actively excludes black spruce by altering soil properties. This has caused several areas in TNNP to convert from black spruce stands to Kalmia barrens. Both issues have negatively impacted forest productivity, composition, and structure. TNNP has a responsibility to protect its ecological integrity with black spruce being the most dominant species in the landscape. TNNP has attempted to introduce prescribed burning to resolve these issues, however these burns are not reducing enough SOM and burning can only be used in remote areas where black spruce is not as prevalent. TNNP is highly interested in alternative managements to prescribed burning to promote black spruce regeneration. However, to make informed decisions, TNNP needs to determine the spatial distribution of two key ecological factors, SOM thickness and black spruce seed viability. My project aims to geographically map the reproductive potential of black spruce in TNNP. The information collected and analyzed in my project will provide a more in-depth understanding of TNNP's black spruce regeneration, which will directly contribute to TNNP's boreal forest management.

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Modelling forest connectivity in Unama'ki to guide restoration efforts

Maintaining landscape connectivity is a major concern among land managers and is often included in conservation targets. Quantifying connectivity is therefore an important component in guiding protected area planning, habitat restoration and resource extraction. Ecological connectivity is the ability of a landscape to support the movement of species and ecological processes. This research seeks to quantify the connectivity of boreal forest in northwestern Unama'ki, Mi'kma'ki (Cape Breton, Nova Scotia, Canada) and within and surrounding the Cape Breton Highlands National Park (CBHNP). Large tracts of boreal forest in this region have been lost due to both a spruce budworm outbreak followed by heavy moose browse as well as logging. Using the spatial prioritization software, Zonation, I am producing a model of boreal forest connectivity at several time steps (1989, 1999, 2009 and 2019). Zonation prioritizes areas for their contribution to connectivity and conservation objectives based on selected features in a study area, such as species occurrences, distribution data, habitat quality, anthropogenic disturbance, and any other features of interest. CBHNP has begun a tree planting program to restore boreal forest and is interested in increasing forest connectivity through their efforts. The output of this Zonation model will highlight priority areas for connectivity as well as areas that were previously connected but are now fragmented. Several of these recently fragmented regions within CBHNP will be recommended as potential tree planting sites to ensure forest restoration efforts contribute to landscape connectivity.

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Emergence and spread of Lyme disease through environmental and socioeconomic drivers: a systematic literature review from a geographical perspective

Lyme disease is the most significant vector-borne disease in the Northern hemisphere. It is caused by Borrelia bacteria and transmitted by *Ixodes scpapularis*, the blacklegged tick. It is recognized in the literature that the effects of climate change have influenced tick and host habitats, consequently affecting the spread of Lyme disease across the landscapes. This systematic literature review aims to investigate Lyme disease's environmental and socioeconomic drivers from a geographical perspective. Using the descriptors of Lyme disease & spatial analysis from 1992 to 2019, we have found 114 studies, of which 68 (59.64%%) have focused on environmental factors (e.g., temperature, humidity, and vegetation), 18 (15.78%) on socioeconomic (e.g., dynamic population, income, tick exposition, and urban land usages), and 39 (34.21%) have investigated Lyme disease spatially without associating any of these factors. Among all the studies, only 11 (9.64%) considered an integrated approach of environmental and socioeconomic drivers. Most studies have focused on The United States (n=65, 57.01%) and Canada (n=21, 18.48%) as the study area, including one on Nova Scotia. The remaining studies (n=28, 24%) have investigated Lyme disease in Europe. Overall, these studies use the regional scale (n=95, 83.33%) instead of the local (n=11, 9.64%); 16.66% (n=8) use both regional and local scales, and none of them emphasize the global scale. This is an initial effort to understand geographical patterns of Lyme disease in Nova Scotia, which can help achieve a better understanding of the locational spread of the disease and assist public policies.

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Head or tail? Identifying distribution properties that point to ominous sources of natural disasters

Since natural disasters are characterized by a wide variety of processes acting in complex evolving circumstances, distinct types and sub-types of events are usually recognized and treated separately. While undeniably effective, this approach makes it difficult for scholars to uncover event traits that apply to natural hazards in general, rather than to specific categories of hazards only. However, if features of a wider generality can be found, they are likely to make useful contributions to the science of natural hazards.
This paper shows that the study of distribution properties, both for physical processes involved in natural hazards and for anthropic features designed to protect us against natural hazard events, can offer insights into deep sources of natural disasters. Two broad categories of distributions can be distinguished. Their theoretical and practical meaning only becomes discernible, however, if the relevant distribution ranges are compared: their "head" vs. their "tail". The paper demonstrates that distribution tails detain the key to the uncovering of an unsettling conclusion: the size of physical processes involved in natural hazards can exceed, in mathematically as well as practically consistent ways, the capacity of anthropic structures to withstand their impact. The paper also suggests ways in which the identified deep-seated discrepancies can be successfully addressed in the future.