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Canadian Association of Geographers - Ontario Division
Annual Meeting - October 12-13, 2012



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CAGONT 2012 OCT 12-13

The Canadian Association of Geographers – Ontario Division (CAGONT) held its 2012 Annual Meeting from Oct 12-13, 2012 at University of Toronto Scarborough. The meeting was jointly hosted by the Department of Human Geography and the Department of Physical and Environmental Sciences. This document contains the paper and poster abstracts that were part of the CAGONT 2012 program. The author(s) are solely responsible for the content of their abstracts. Abstracts are listed alphabetically by the lead author's last name.

Edited and compiled by:
Tanzina Mohsin
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CAGONT 2012 Plenary Speaker

Dr. Catriona Sandilands

Professor and Canada Research Chair in Sustainability and Culture
Faculty of Environmental Studies, York University

"Dog Stranglers in the National Park: Ecology and Politics in the Rouge Valley"

In April, 2012, the Federal Government formally pledged to create a new "National Urban Wilderness Park" in the Rouge Valley. In many respects, the proposed Rouge Park is a very novel "national park" entity. For example, it clearly does not pass as a wilderness, situated as it is in the middle of the densely populated Greater Toronto Area, and it therefore offers significant challenges to Parks Canada's framework prioritizing preservation and ecological integrity. In addition, unlike many other national parks, the Rouge Park is quite an "organic" institution, in that its creation is, in large measure, the product of extensive lobbying by the Rouge Park Alliance, one of the many non-profit organizations concerned with various aspects of the watershed's ecology and politics. It is not surprising, then, that Parks Canada moved rather quickly away from a discourse of "urban wilderness" toward a new moniker for the Rouge: "the people's park."

As public consultations and other Parks Canada preparations are still underway to transform the Rouge from proposal to Park, it is hard to know exactly what impact nationalization will have on the place. Some observers are optimistic about the "uploading" of management responsibility to the Federal Government, about the rationalization of political jurisdiction, and about the stronger protection against development that the Park may afford. Others are concerned about future relations between the vibrant grassroots volunteer community currently involved with the Rouge in interpretation, restoration and wildlife monitoring, and the sometimes rigid Parks Canada bureaucracy: what will the official "people's park" do to the unofficial one? Others, deploying Parks Canada's mandate, are using the opportunity to pressure for more emphasis on preservation in the Rouge; still others are wondering how the Rouge will fare in the face of \$30 million cuts to the Parks Canada budget.

Rather than address this constellation of issues and concerns directly, this presentation will take as a metonymic trajectory a particular ecological relationship that is of great significance in the Rouge Valley, one that will both affect and be affected by the creation of the National Park: that between human beings (*Homo sapiens*) and dog-strangling vine, or DSV (*Vincetoxicum rossicum*). DSV is considered (by some humans) to be one of the top ten "invasive" plant species in Ontario; the particular pattern of development and emparkment in the Rouge's recent history, combined with its particular location at the intersection of several transportation and utility corridors, has provided an ideal habitat for the fast-moving, fecund, virtually predator-less plant. Thus, at the same time as various groups of humans may be actively creating the conditions for the realization of certain kinds of place-desire in the Park, DSV is busily doing much the same thing: remaking the Rouge in *its* own image.

Following recent scholarship in multispecies ethnography and (more-than-) human geography that emphasizes the active, productive agencies of plants in the construction – and in this case, contestation – of places, the presentation will consider the ways in which DSV and human beings currently interact in the Rouge Park, and how this interaction might challenge Parks Canada's ideas about "the people's park." Issues raised will include: the implication of the discourse of "invasives" in the practice of nationalism, and especially of park nature-nationalisms; the history and biology of DSV and the science and (generally ineffective) industry of its eradication as part of the Rouge's repertoire of naturalizing practices; the typically plant-like liminality of DSV as both agent and landscape element, which allows it to appear in and disappear from human view depending on the discourse





in which the viewing takes place; and the kinds of struggles that may be engendered with DSV, and multispecies senses of place created, in different views of what the Rouge National Park should become.

CAGONT 2012 Special Panel Discussion Session

Diverse Approaches to Teaching in Geography

Teaching in geography traverses the social, physical, economic, and environmental spheres of the discipline. Increasingly, emphasis is placed on diverse ways to teach geography, with emerging academic interest in non-traditional forms of teaching such as experiential learning and service learning. While physical geographers have often moved outside of the lecture hall and laboratory to teach in the field, human geographers are also creating opportunities for co-curricular learning outside of the classroom walls. This panel discusses the diverse ways in which faculty are currently teaching geography and ideas for new forms of teaching and learning engagement within the discipline.

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Vulnerability to Climate Extremes and the Right to Adequate Housing: Experience of Slum Communities in Lagos, Nigeria.

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Keywords: flood, vulnerability, housing rights, slum communities, Lagos.

Abstract

The vulnerability of the urban poor to flooding have been linked to rapid urbanization, environmental degradation, and weak disaster-response, but little attention is paid to factors that engender these problems in the first place or why the poor have persistently been at greater risk. Poverty does not always equate vulnerability; often several factors come into play to exacerbate conditions of impoverishment. In Lagos, Nigeria housing deprivation was found to push the urban poor not only to encroach on hazardous landscapes but also to adopt environmentally intolerable coping and livelihood strategies which undermine the biophysical integrity of land and human settlements, with consequences for increased susceptibility to flood hazard. Drawing on social vulnerability approach, this paper illustrates the relationship between housing rights and vulnerability to climate-induced flooding. The paper traces the genesis of housing deprivations alongside structural factors contributing to flood vulnerability city-wide. It examines the scale of flood impacts on slum communities, the types of coping strategies they adopt, and the effectiveness of these strategies in response to current and future extreme events. A mixed method approach involving a household survey, interviews, and focus group discussions, was employed to generate primary data. The results reveal that conventional approaches to flood issues have masked over social processes and resource deprivation contributing to high vulnerability and low adaptive capacity among slum communities. The paper concludes that building flood-resilient communities will require eliminating social marginalisation in housing and land-use policy and promoting inclusion in environmental management.



Changes in Extreme Temperature Trends in the Greater Toronto Area from 1971 to 2000

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Keywords: Extreme temperatures, temperature trends, climate change, Greater Toronto Area

Abstract

The impacts of extreme temperatures on human health and morbidity have been well documented in many studies. In literature, changes in the trends of extreme temperatures have been studied using percentiles, indicators and climate modeling. The aim of this study is to determine if the trend exhibited in the literature of statistically significant increases in extreme minimum temperatures, is also exhibited in the Greater Toronto Area during the 1971 to 2000 timeframe. A methodological approach using counts is the basis for the analysis. Statistical significance is determined through the use of Spearman's Rank, Kendal-Tau and T-tests. A total of five stations are analysed, three being urban and two representing the surrounding suburban areas. The results indicate that statistically significant decline in extreme minimum temperature counts have occurred. In agreement with the literature, statistically significant increases in extreme maximum temperature counts can not be determined.



The effects of analytical scale on characterizing the spatial patterns of post-fire
vegetation residual patches in boreal wildfires

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Keywords: Wildfires, residual patches, spatial pattern, analytical scale, spatial metrics

Abstract

A natural landscape is a spatially complex and heterogeneous land area containing patterns formed by ecological processes. Wildfire is an example of ecological processes that interacts with various environmental factors to modify the patterns of forest ecosystem. Wildfires typically contain a large number of unburned residual patches of various size, shape and composition. These residual vegetation patches can encompass substantial areas of fire footprints; thus understanding the patterns of residual patches provides insights for emulating forest disturbances with harvesting operations. The ultimate goal of this study is to characterize the patterns of post-fire forest structure, and hence examine their interactions with ecological processes (i.e., wildfire); the ability to quantify landscape structure is a prerequisite for understanding the interactions. This study focuses on eleven fire events, each one ignited by lightning, in the northern Ontario boreal forest; none of the fires were suppressed. The spatial patterns of post-fire residual patches are assessed (at a landscape and class level) based on selected spatial metrics (related to size, shape, configuration and number). It has been noted that spatial pattern is scale dependent; one way of understanding such kind of relationships is to examine how the patterns of residual patches change with scale. We examine the effects of analytical scale (i.e., spatial resolution) on characterizing the spatial patterns. Our results showed that the responses of the landscape metrics can be grouped into three categories: monotonic and predictable response, monotonic change with no simple scaling relationship and non-monotonic change with erratic responses.



Citizenship and Belonging among Jewish-Israeli Trans-Migrants in Toronto

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Keywords:

Trans-migrants; Citizenship; Belonging; Public space.

Abstract

Citizenship is a legal status giving a right to enter, remain and not be deported from a state. It defines a relation to a state and to other citizens. Citizenship also indicates a subjective feeling of identity, and social relations of belonging to a 'nation', to a state, to a city, and to a community.

My study examines the spaces, scales and layers of citizenship and belonging among trans-migrants in Toronto. I am focusing on narratives about their participation in organised diasporic celebrations and pro-Israel demonstrations in the city public spaces. I argue that the loss of benefits (or privileges) available in Israel and the potential benefits that are available in Toronto, shape the political and ethno-national alliances, loyalties and duties of Jewish-Israeli trans-migrants. Participation in diasporic celebrations and demonstrations in the city public spaces (which often involve antagonistic and agonistic encounters with Toronto-based anti-Zionist groups) allow Jewish-Israelis to negotiate ideas about exclusion and inclusion in multiple layers and scales of citizenship. It expands their involvement and visibility in Canadian social, political, and cultural life, and sense of belonging as Israelis and as Jews in the city and the "nation". At the same time, participation is instrumental for their recognition as distinct, yet viable members of the established Jewish community. Finally, by gathering, celebrating, marching, and protesting for Israel, Jewish Israeli trans-migrants in Toronto are re-positioning themselves as legitimate and loyal citizens of the state of Israel in spite of their extra-territorial status.



A Good Label is Hard to Find: Identifying common food allergens on imported ethno-cultural foods

G. Bains, , Harrington, DW., Qamar, Z., Wilson, K.

Abstract

Food allergies currently affect approximately 8.1% of Canadians. Food allergic individuals, caregivers of food allergic children, and people who buy foods for allergen-controlled environments (e.g. peanut-free classrooms) rely on labels on packaged foods to prevent (potentially life-threatening) allergic reactions from occurring. Following the lead of the U.S. FDA, Health Canada recently announced regulations requiring food manufacturers to clearly identify common food allergens (e.g. peanut, egg, wheat) in plain language on packaged foods. However, *importers* are responsible for ensuring that imported foods comply with updated regulations. This research is a pilot study, using a mixed-methods approach to establish the degree to which imported foods meet regulations related to ingredient labeling, and the use of precautionary statements (e.g. “may contain peanuts”). In particular, this research focused on different cultural food products (n=72) available from ethnic-centered, and more mainstream grocery stores within the GTA. Results indicate that although all products sampled had priority allergens identified in ingredient labels, fewer (70%) also displayed a precautionary statement. Foods manufactured in Canada/U.S. were more likely to have precautionary statements than foods processed elsewhere, and foods with particular ingredients (e.g. peanuts/treenuts – 86%) were also more likely to have precautionary statements than others (e.g. wheat – 71%). Qualitative results presented will show that purchasing imported foods be a source of confusion for consumers, as ingredient labels and precautionary statements are often inconsistent, hard to read, or obscured. These results have important implications for purchasing and preparing foods for allergic individuals and/or allergen-controlled environments.



The Spatiality of Housing Price Risk and Return in the Greater Toronto Area

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Keywords: Housing Price Risk, Housing Price Return, Spatial Regression, Spatial Autocorrelation, Cartography.

Abstract

Financial investment theory has concentrated on risk exposure and returns for decades. Many studies apply financial theory to the real estate market, and some of these studies control for its spatial structure. There is a deficiency, however, in studies that examine the spatial relationship of risk at varying spatial scales and even fewer that do so in a Canadian context. The current study addresses these deficiencies by examining housing returns in the Greater Toronto Area at varying spatial scales with rigorous spatial regression techniques. Spatially Autoregressive Lag, Error, and Durbin models are estimated at the Toronto Real Estate Board and Enumeration Area spatial levels. Results of the current study provide insight into the social perceptions of housing price risk as well as determining the spatial effects of data aggregation. The current study also provides individuals and institutional investors a more acute perspective of housing price risk in a spatial context.



Policy and legislation to facilitate development of the forest-based bioeconomy in
Canada

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Presenting Author: **Jean Blair**

Key words: bioenergy, biorefinery, forest, residue, lifecycle

Abstract: The development of forest-based biorefineries has the potential to both provide a source of sustainable, low carbon fuel and increase the value drawn from wood residues to help revitalize the forest sector. Realization of commercial-scale facilities however, will likely be limited by logistical constraints associated with maintaining a consistent supply of woody feedstock and the high capital cost of constructing the facility. It may be possible to address both of these issues by transporting residues from existing sawmills and retrofitting an existing, centralized mill site to a biorefinery. Existing clusters of mills in western and eastern Canada, owned by a single company, provide the basis for scenario analysis to determine if this biorefinery configuration is logistically and economically feasible and environmentally sustainable. The feasibility and impacts of biorefineries sited at an optimal location within each cluster are evaluated using life cycle and economic models previously developed in the Mabee lab and a transportation module developed in this study. Regional differences in mill clusters and feedstock composition, as they affect biorefinery costs and performance are taken into account. A sensitivity analysis is also carried out to examine how existing and future policies and legislative approaches might affect biorefinery development in these regions. The results of this analysis will help inform decisions surrounding the optimal location for biorefineries in Canada as well as highlight policy tools that may be most effective in encouraging the development of biorefineries, highlighting regional differences.



Women's Autonomy and Health: A Case of Married Women in Ghana

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Keywords: Autonomy, decision-making, health, logistic regression, Ghana.

Abstract

This paper assesses women's empowerment in Ghana in the light of the Millennium Development Goal 3. Data for the study were drawn from the 2008 Ghana Demographic Health Survey with an analytic sample of 1876 married women aged 15-49. Using binary logistic regression in determining the factors that influence women empowerment, this paper examines the relationship between wealth and women's involvement in household decision-making in the context of their healthcare. The findings show that wealthier married women were significantly more likely to be involved in decision-making on their own healthcare (OR=1.56, $P \leq 0.001$). Also, age, tertiary education, and employment significantly shaped the involvement of married women in decision-making on their own healthcare. Surprisingly, Married women from the Northern and Upper East regions were more likely to be involved in decision-making on their own healthcare relative to women in the Greater Accra region. Policies oriented towards an increase in accessibility to tertiary education, employment equity, and the creation of income generating activities for women would enhance women's autonomy and their health status in Ghana.



Mapping Tree Root Distribution in Agroforestry Systems with the Use of Ground Penetrating Radar

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Keywords: Ground penetrating radar, geo-imaging, belowground biomass, agroforestry, forestry

Abstract

Understanding tree root structure and function is critical in an agroforestry system to enhance ecological benefits such as carbon sequestration and tree-crop belowground facilitation or complementarity. However, typical study requires destructive sampling. Ground penetrating radar (GPR) is becoming an increasingly viable technique to measure belowground root systems more efficiently and less destructively. GPR emits electromagnetic pulses that reflect at subsurface interfaces of different dielectric properties including the root-soil interface. The return signal received at the GPR antenna will have a known velocity, travel time and amplitude. Successive return signals along a surface transect are combined to produce a geo-image of the soil profile. When GPR data are collected in a grid arrangement surrounding a tree stem, identified tree root reflections provide 3-dimensional root distribution data. Our objective is to combine the mapped tree root distributions with data from fine root sampling and root carbon content analysis. It is anticipated there will be spatial variance of root distribution and root carbon content between species. These novel techniques could have far reaching implications for other environments of both natural and managed tree-based systems; increasing precision in belowground biomass estimation and improving carbon sequestration calculations. Results and limitations of GPR detection of tree roots will be discussed drawing on data collected from sites in Southern Ontario, Ghana and Costa Rica.



Who's Scene Is It Anyway? Tracing Neighbourhood Transformation in Toronto,
Canada

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Keywords: scenes, gentrification, neighbourhood redevelopment

Abstract

In an increasingly competitive urban landscape, neighbourhoods are branded, defined and seen as desirable, based on their unique mix of cultural and creative capital. However, less is known about the ways in which these neighbourhoods develop over time into attractive places to live, work and play. Using a case study of Dundas West in Toronto, this presentation will demonstrate that the processes of neighbourhood transformation, and scene formation, are not only contested, but also evolving across space and time. Building on the literature on gentrification and neighbourhood scenes, this presentation will propose a five-stage model for understanding neighbourhood change. While the first stage in this model evaluates the preconditions for development, the second stage traces the early emergence of commercial establishments, which signal the start of neighbourhood change. In the third stage, growing commercial and social development coalesce in scene formation, where a unique neighbourhood identity emerges. In the fourth stage, gentrification and mainstream consumption opportunities, such as Starbucks, coexist alongside more authentic elements, and finally, the festivals stage completes the cycle. In particular, this presentation demonstrates that throughout the process of neighbourhood transformation, local actors compete, collaborate and contribute to their changing urban landscape.



The geographic qualities of renewable energy and their implications on energy transition management: insights from Ontario, Canada

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Key words: institutional fit; spatial planning; resource policy; energy region

Abstract: Theories in energy geography suggest that the geographic differences between incumbent and emerging energy resources are the primary source of disruptive change within jurisdictions that are experiencing an energy transition. Failing to acknowledge and adapt to these differences as part of transition management compromises the capacity of government to communicate and manage risks associated with structural changes in the fuel mix. Currently, the geographic qualities of renewable energy (RE) remain underexplored and the energy transition management literature is silent on how these qualities challenge management efforts. This article addresses these gaps in our understanding. Empirical research conducted in Ontario, Canada combined with a systematic literature review reveals that, in stark contrast to fossil and fissile resources, RE resources are immobile; geographically sensitive; land intensive; spatially coincident; fictitious; and fugitive. Although transition management theory currently conceives of geography as merely an 'exogenous selection factor', it is clear from the analysis that geography is actually integral to the transition process. Commensurate institutional reforms are identified, with emphasis on achieving institutional fit, controlling the pace and distribution of development through strategic spatial planning, and improving the reliability and communicative value of knowledge resources surrounding RE development. The role of geographical thought and practice in bringing these institutional reforms to bear on the energy transition is highlighted.



Remembering and Imagining Suburbia: explorations in visual methodologies

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Keywords: memory, imagination, home, visual methods, suburbia

Abstract

This research aims to understand the ways in which suburban place-based memories developed in childhood relate to suburbanites' imagined 'dream homes', ultimately impacting the home selection process. In order to examine this relationship, I draw on four bodies of literature as follows: (1) contemporary suburban theory (2) house & home, (3) memory & imagination and (4) landscape analysis. Furthermore, I pose four key questions. Within the Canadian context, (1) what memories do suburbanites have of their childhood suburban homes? (2) How do they imagine their future 'dream homes'? (3) How do the remembered past and imagined future relate to each other? Finally, (4) how are these memories and imaginaries discursively and visually represented?

Given that this research is focused on intangible memories and imaginaries, multiple methods that emphasize visibility and representation are used to relate suburban place-based memories of the past to the imagined future. Using Scarborough as a geographic starting point, suburban memories are represented through re-collected family photographs that depict their childhood landscapes in suburbia. The imagined future is pictured using mixed media (collage, model-making, sculpture etc.). All materials are accompanied by a short story that describes its importance. Participants then participate in a semi-structured image-elicitation interview to relate the images of the remembered past to the images of the imagined future. This research will culminate in a final group exhibition which showcases the creative work of the participants at a local venue, co-curated by the researcher and participants.



Policy actors and opposition to wind energy in Ontario. Implications for climate
change policy

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Keywords: wind power, renewable energy, public opposition, climate change policy

Abstract

Renewable energy sources are essential for climate change policies aimed at reducing GHG emissions and making the transition to a low-carbon economy. The Ontario government, through the Green Energy Act, has put renewables at the forefront of Ontario's energy future. Public opinion polls in Canada and other jurisdictions have showed that the public is overwhelmingly favorable to the use and deployment of renewable energy and low-carbon technologies. Despite that, the siting of energy projects, whether it is wind power or low-carbon technologies (e.g. carbon capture and storage, gas-fired power plants) has drawn strong public opposition. This paper examines the siting of wind energy projects in Ontario, and focuses of the discourse, actions and interests of major policy actors: the grassroots citizen groups organized as the Wind Concerns Ontario coalition, NGOs, the provincial and municipal governments, political parties, public utilities, public health units, and energy and manufacturing industry associations. The opposition to wind power projects is argued to have been the reason behind the two moratoriums on offshore wind projects (2006-2008 and 2011, the latter still in effect) and one of the major factors in the October 2011 provincial election results. The study draws on three Ontario case studies which reflect both failure and success of wind siting and, more broadly, aims to understand the underlying societal conflicts and political resistance that emerge from real or perceived disproportionate costs and benefits of climate change policies.



Using Field Measured Parameters with the SWAT Hydrological Model to Quantify Runoff at the Sub-Watershed Level.

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Keywords: SWAT, rainfall-runoff modeling, field measured infiltration, Guelph permeameter, Tension disk infiltrometer

Abstract

Hydrological models have evolved to provide spatially variable watershed analyses, but function under assumptions and generalizations due to the stochasticity and complexity of processes and requirements of spatially distributed data. The Soil and Water Assessment Tool (SWAT) is a physically based semi-distributed hydrological model that has been used internationally, particularly to quantify the impact of land use/cover change on runoff quantity and/or quality. The runoff quantity is characterized as the excess of initial abstractions of precipitation: interception and infiltration. SWAT models these two processes based largely on leaf area index (LAI) and the hydraulic conductivity of the soil respectively. SWAT uses LAI values within its database corresponding to the vegetation species from the land use/cover map provided by the user. Similarly, soil texture from the user provided soil map is used to look up hydraulic conductivities from the SWAT database. However, both of these values are subject to generalizations in order to accommodate a wide variety of vegetation and soil types, which may in turn affect the precision of modelled runoff. In this study, hydraulic conductivities and LAI assigned by the model are compared to in situ field measurements. Hydraulic conductivity will be measured by two popular instruments (Guelph permeameter and tension infiltrometer) and evaluated separately on the basis of correspondence between modelled runoff and training/validation data. Indirect measurements of LAI are made with hemispherical photographs. Furthermore, a sampling methodology is tested based on unique combinations of land, soil, and slope to practically integrate field measurements into the SWAT model.



EXPORTING UNDERDEVELOPMENT: The Impact of American Policy on Food Allocation and Shortage in Haiti

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Keywords: Dependency, underdevelopment, international trade, food shortage, Haiti.

Abstract

Haitian independence was achieved in 1804 by African slaves revolting against the French and distinguished that country as the first free Black republic in the world. Despite such auspicious beginnings, external pressures from a colonial legacy have constantly plagued Haiti, particularly American policy. Haiti has been influenced by the “colonial present” of U.S. Foreign policy and is an example of resultant negative externalities. This essay illustrates two ways in which existing international policies are reinforcing the legacy of dependence with the result of limiting Haitian economic self-sufficiency. This is accomplished in the following sections: (1) an examination of international development organizations such as the International Monetary Fund and the World Bank, that have proven counter-productive to Haiti's development; and (2) the role of American policy – both domestic and foreign – in creating and reinforcing an unequal international trade arena. Historically, with regard to Latin America and the Caribbean, processes of U.S. Intervention have been justified under the banner of national security interests presented by geographic proximity. In other instances, involvement has been legitimized with claims of development assistance and human rights-driven motives. By exploring these interventions, this paper shows, for example, how such relations have created food shortages in a country where there is at times a surplus of production. This paper concludes with a discussion of the role of aid in perpetuating underdevelopment while strengthening – and ensuring the continuation of – relationships of dependency.



Macroinvertebrates Does Not Affect Total Mercury or Methylmercury Concentrations

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Keywords: mercury, methylmercury, invertebrate, bioaccumulation, sample preparation

Abstract

Our current research focuses on mercury bioaccumulation in created wetlands in Rouge National Park. Within the park, considerable effort has been focused on creating and maintaining habitat in an effort to further develop biodiversity. Creating wetlands has been one such effort. Previous research by the Mitchell group has demonstrated that mercury accumulates to significantly greater levels in created wetlands. Invertebrate mercury bioaccumulation is strongly related to the risk for mercury bioaccumulation in higher trophic organisms such as amphibians and birds. However, sorting for benthic invertebrates from the benthic matrix is tedious and time consuming. An alternative was sought to the traditional handpicking method for mercury analyses of benthic macroinvertebrates. The ‘salting out’ method was tested, which was a method of separating macroinvertebrates from the matrix based on density flotation in a saltwater solution and has been traditionally applied in ecological studies. We found that the ‘salting out’ method was an effective alternative to handpicking as it did not affect mercury concentrations. Additionally, it took less time to execute and resulted in more accurate abundance measurements of almost all invertebrate taxa. In addition to the above project, bioaccumulation of mercury in green frogs (*Rana clamitans*) is also currently under study. This information will help in determining whether previous research on bioaccumulation in invertebrates applies equally to invertebrate-predating frogs.



Fire History Reconstruction in High Park's (Toronto, Canada) Black Oak
(*Quercus velutina*) Savanna: a Dendrochronological Approach

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Keywords: fire history, dendrochronology, oak savanna, High Park, *Quercus velutina*

Abstract

The reduction of fire occurrence can induce structural and functional changes to habitats causing a global decline of fire-dependent systems. The decline and degradation of global savanna ecosystems has been directly linked to wildfire suppression and the loss of the ecological benefits associated with fire such as the removal of fire-sensitive competitors. This study aims to validate the prescription of controlled fires as an ecosystem restoration protocol (i.e., natural disturbance regimes: prescribed burning). High Park, an ecologically significant black oak (*Quercus velutina*) savanna, is currently undergoing the reintroduction of periodic fire disturbance. However, the historic fire regime is unknown and an appropriate burn schedule (i.e., fire periodicity and intensity) needs to be quantified. As such, 38 *Q. velutina* tree-ring chronologies were used to reconstruct the site-specific fire history. In this 205-year chronology, fire events were determined from fire-scarred samples, establishment dates of both post-fire cohorts and multiple-stemmed individuals. Most oak trees were recruited in the 1870s (i.e., 140 yrs. age cohort). This suggests that there was increased establishment success post-fire thus, this result validates the prescription of prescribed burning as a restoration activity. Moreover, six distinct fire events were recorded but this value is a baseline estimate. Therefore, improved sampling methodologies are recommended. To improve the length and reliability of this reconstructed fire chronology, different tree species (and of different stratified class-sizes) could also be sampled to capture lower intensity fires and extend the chronology.



Penalized For Being Poor? Gendered Implications of the Ghana National Health Insurance Scheme's Late Renewal Block-Out

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Keywords: Health Insurance, Ghana, Gender, Access to Care, Health Policy

Abstract

This paper addresses the policy implications of the mandatory penalty for individuals residing in the Upper West Region (UWR) of Ghana who have dropped out of the National Health Insurance Scheme (NHIS) but wish to renew their enrollment. As the policy stands currently, those who have not renewed within 3 months of expiry face another 3 month block-out after they have paid to renew their coverage. Using data collected in 2011 from men and women in Ghana's UWR, we use a binary logit model (n=1584) to compare those that remain enrolled in the scheme to those that have dropped out. Our study reveals that there are clear gender differences in the factors contributing to dropouts, and thus arguably a problematic gender division in the impact of the block-out policy. While male drop outs were strongly predicted by variables that measured personal choice (such as satisfaction with the NHIS), female drop outs tended to be more influenced by external factors that had little to do with personal choice (such as unreliable income and being food insecure). Together, these results suggest that, contrary to the original mandate of the NHIS, the block-out policy may be particularly detrimental for the women of the UWR and act to penalize individuals for being poor.



Growing Tourism: 'Farmer-preneurship' in Southern Ontario

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Keywords: Agritourism; entrepreneurship; production, marketing

Abstract:

Scenarios creating financial strife in farming economies are the same scenarios opening up a relationship between tourism and agriculture via 'farmer-preneurship'. I draw on interviews with 27 farmers engaging in agritourism in Southern Ontario to explore the idea of a farmer-preneur and the ways in which they bring together tourism and agriculture. Farmer-preneurs make connections between tourism and agriculture by (1) identifying new trends in popularity for agricultural entertainment products, (2) selling agricultural experiences, (3) finding value for tourism in agricultural resources, (4) adopting tourism as part of agricultural production, and (5) learning 'farmmarketing' skills to sell their product. These connections illustrate how a shift towards non-traditional serviced based enterprises, taking place on many farms, challenge traditional understandings of farming.



Everyday Restructuring of Farming in Southern Ontario

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Keywords: tourism, agriculture, everyday, restructuring, entrepreneurship

Abstract

Despite Southern Ontario's rich agricultural resources (Lister 2007), a decline in farming activities forces many small-scale farmers and family farms to adapt or disappear. As evidenced by the increasing number of farms opening their doors to the public as agritourism attractions, scenarios of agricultural decline create opportunities for service-based, customer-oriented enterprises. In this paper I examine how farmers negotiate a decline in farming activities on a day-to-day basis. I draw on 27 interviews with farmers in Southern Ontario to show that as part of an 'everyday restructuring' 'farmer-preneurial' tactics are employed and normalized through adaptation. Farmer-preneurs re-appropriate space by restructuring the nature of farming practices in the following ways: (1) identifying new trends in demand for agricultural entertainment products, (2) selling agricultural experiences, (3) finding value for tourism in agricultural resources, (4) adopting tourism as part of agricultural production, and (5) learning 'farmmarketing' skills to sell their product. Findings suggest that the meeting of agriculture and tourism challenges the traditional understandings of farming and, arguably, changes the nature of farming.



Biofuels: from a win-win solution to a wicked problem?

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Keywords: transport fuels; wicked problems; planning

Abstract

Current and recent struggles encountered in the development of the transport biofuels sector indicate a significant change in the perception of biofuels. Instead of a win-win solution, transport biofuels have become a major planning challenge. How can human-environment geographers and others concerned with questions of sustainable energy transitions explain the new contested position that transport biofuels appear to occupy? The planning studies literature offers some tools to interpret this change and guide future actions. First, by assessing recent experiences of biofuels in the EU and US against the ten characteristics of wicked problems we find biofuels “fit” the profile of such issues. Second, we observe that differentiated strategies will suit the different challenges facing biofuels development. We argue that without recognition and engagement of multiple perspectives on transport biofuels they will remain a wicked problem and we therefore advocate for strengthened approaches to communication and engagement.



The Effects of Biomass-Based Forest Harvesting on Hillslope Hydrology

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Keywords: Flux, Runoff, Recession, Hillslope hydrology, Forest harvesting, Marcell Experimental Forest

Abstract

Landscape topography and vegetation coverage can influence hydrological interactions in catchment areas. Ecosystem disturbances to vegetation (i.e. clear cutting or more intense biomass harvesting) can significantly affect the interception of water, evapotranspiration, residence times, and perhaps runoff pathways, however little process-level research has previously been conducted and larger-scale watershed studies have had mixed and often conflicting conclusions. We examined the hydrological impacts of increasing biomass removal on a forested hillslope in the Marcell Experimental Forest in northern Minnesota. Triplicate plots on the slope have been hydrologically instrumented and measured for several years. During the winter of 2011-2012 two of the hillslope plots were clear-cut (one with ~80% slash removal as per biomass harvesting prescriptions). Field sampling was conducted during the 2012 spring snowmelt. Analysis of $\delta^{18}\text{O}$ ratios indicates the presence of subsurface flow pathways. Transmissivity feedback measurements on some plots suggest the presence of larger subsurface contributing areas, and recession limb analysis support this theory. Next steps involve normalizing the data across the plots and comparing these results to pre-cut conditions to quantify the impact of harvesting.



A Validation Against Observations of 24 Global Climate Models over Canada:
Which GCMs Model Best, Where?

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Keywords: climate, models, validation, Canada, global climate models

There is a wide selection of climate models available to provide projections of future climate change. All are mathematical models that simulate the functioning of the global climate system varying in size, scope, scale and complexity. The fourth, and most recently published, assessment of the Intergovernmental Panel on Climate Change (IPCC) provides projections of future climate change using twenty-four global climate models under three major greenhouse gas emission scenarios. These provide for a wide range of possible outcomes when trying to inform managers about possible future climate changes. In order to narrow the projections to a handful of models that could be used in a climate change impact study in Canada, all twenty-four global climate models were validated against observations in Canada using the National Center for Environmental Prediction (NCEP) climate re-analysis. This paper will present the methodology for this validation, the results of the validation, and an understanding of which GCMs model the climate best in Canada, and where.



Comparing Hyperspectral and Multispectral Imagery for Land Cover Classification of the Lower Don River, Toronto

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Keywords: Hyperspectral, multispectral, spectral/spatial resolution, PCA, vegetation

Abstract

Urban greenspace is important for the health of cities. Up-to-date databases and information are vital to maintain and monitor growth in cities. During the last decade, advances in spaceborne hyperspectral sensors have been proven to have some advantages over multispectral sensors for land cover monitoring due to increased spectral resolution. The objective of this research was to compare Earth Observing-1 (EO-1) Hyperion hyperspectral data to Landsat 5 Thematic Mapper (TM) and Satellite Probatoire d'Observation de la Terre (SPOT) 5 multispectral data for land cover classification in a dense urban landscape. For comparative analysis, aerial orthorectified imagery provided by the Toronto and Region Conservation Authority (TRCA) was used as a ground truth data for accuracy assessment. This study utilized conventional and segmented principal components (CPCA and SPCA) for data compression on the Hyperion imagery, and used principal components analysis (PCA) as a visual enhancement technique for multispectral imagery. Image processing including the generation of the normalized difference vegetation index (NDVI), and mean texture was also performed for both Landsat and SPOT sensors. An unsupervised ISODATA classification was generated on all images to produce a land cover classification map for a portion of the Lower Don River in Toronto, Ontario, Canada. Experiments conducted in this research demonstrated that hyperspectral imagery produced a higher overall accuracy (5-6% better) than multispectral data with the same resolution for defining vegetation cover. In addition, SPOT generated greater accuracy results than Landsat or Hyperion for vegetation classes.



Creating a Wildfire Model from Remote Sensing of Boreal Forests in Northern Ontario

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Keywords: Normalized Burn Ratio, boreal forest, wildfires, Northern Ontario

Abstract

Ontario's boreal forests cover 41,171,000 hectares. Forest fires in the boreal forest are the main natural disturbance and 2011 was an active year. In Northern Ontario 632,533 hectares were burned compared to 14,823 hectares in 2010 and 20,656 hectares in 2009. The overall objective of this research project is to investigate the extent of the burn areas utilizing remote sensing. Remote sensing provides a cost effective method for monitoring forest disturbance such as forest fires in vast remote areas, and can contribute insight to policy and management objectives. An analysis using remote sensing techniques was undertaken to examine the extent of several forest fires that occurred during 2011 in Northern Ontario. Landsat 5 Thematic Mapper images were acquired for study areas near Wabakimi Provincial Park and Pickle Lake with the time period being from 2009-2011 for both fire study areas. The post-fire image acquisition dates were as close as possible to fire extinguishment to minimize temporal distortions. The analysis utilized the Normalized Difference Vegetation Index (NDVI), Principal Component Analysis (PCA), Tasselled Cap Transformation (TCT), Normalized Burn Ratio (NBR), unsupervised classification and image differencing operations. Favourable conditions for wildfires such as dry conditions, thunderstorms, strong winds and large amounts of fuel were the main factors contributing to the 2011 fire season and they influenced fire behaviour and progression in the study areas. A total of 586 square kilometres (17% of the study area) and 450 square kilometres (18% of the second study area) were burned as a result of the fires.



Meals on Wheels: Exploring the Food Truck Phenomenon in Canada

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Keywords: food truck policy, streetscape redevelopment, creative cities

Abstract

Increasingly, restaurants are fundamental to the local identity of urban neighbourhoods; providing a key cultural marker on a streetscape. However, a fairly new phenomena that has been growing in many urban neighbourhoods, is that of mobile restaurants. Indeed, food trucks are growing in popularity within North American cities as the demand for local mobilized food has led to a continually growing number of new food trucks opening. Food trucks are a fairly urban phenomenon, roaming the streets of many city neighbourhoods and business districts. Through the entrepreneurs that open them, and the inventive food creations that food trucks encompass, mobile food has become a creative urban endeavour. With all new endeavours come challenges and from a planning perspective, food trucks pose many.

This presentation will utilize three Canadian case studies to evaluate the planning challenges and opportunities that food trucks present. The cities of Toronto, Calgary and Vancouver will be examined. Concerns regarding protecting local immobile restaurants and the food safety of mobile restaurants are issues must also be considered. At the same time, food trucks present unique opportunities such as the promotion of entrepreneurship and creativity in the creation of local, sustainable and inventive food movements. This presentation will demonstrate the policy successes and tribulations of these three cities in regards to food truck policy.



Precipitation Input and Antecedent Soil Moisture Effects on Mercury Mobility in
Soil – Laboratory Experiments with an Enriched Stable Isotope Tracer

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Keywords: mercury, isotope, soils, transport, soil moisture

Abstract

Upland environments act as important sources of mercury (Hg) to downstream wetlands and water bodies. Hydrology is instrumental in facilitating Hg transport within, and export from watersheds, but the relative influences of hydrologic factors such as antecedent soil moisture and precipitation in controlling the transport of Hg through upland soils is not well understood. The purpose of this research was to elucidate the relative controls of these hydrologic factors using a full factorial experimental design and the application of a stable Hg isotope tracer to intact soil cores. The experiment was conducted to simulate the broad range in real soil moisture and precipitation input conditions observed in previous field research. We found that antecedent soil moisture and the volume of precipitation input were significant, mutually exclusive controls on newly-deposited, contemporary Hg mobility. These factors had no strongly significant influence on the mobility of legacy Hg. New Hg mobility was enhanced with larger precipitation events as well as from initially drier soils and appeared to move via simple piston flow. The majority (> 99.5%) of added tracer Hg was sorbed to soil organic matter in the surface 3 cm, regardless of the hydrologic treatment combinations. Overall, these results suggest that more extreme precipitation events among otherwise drier conditions could significantly affect the mobilization of Hg from upland environments and its subsequent transport to downstream wetlands and water bodies.



Influences of Confluences on the Morphology of Southern Ontario Streams:
Preliminary Results

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Keywords: confluence morphology, slope, grain size, southern Ontario channels

Abstract

Stream channel confluences represent areas of point specific increases in discharge, flow energy and potential erosion in river systems. It is expected that the channel morphology and sedimentology at these locations should respond abruptly to this rapid change in hydrologic and hydraulic conditions. Analysis of 12 confluence junctions from southern Ontario streams was undertaken in order to interpret the processes that affect the overall structure of the main-stem of the river downstream of the confluence and tributary channels immediately upstream of the convergence. Of the 12 confluences surveyed, tributaries joining at the confluence encompassed a variety of co-dominant and main-stem-dominant channels in order to assess the effect of confluence asymmetry. The confluence reaches also represent a variety of channel boundary conditions including alluvial and mixed alluvial-glacial and alluvial-bedrock configurations. Channel incision and some confinement were also common to many reaches surveyed. Preliminary results of a subset of confluences show that for both tributaries and main-stem reaches, slope and estimated bankfull discharge conform to expected relation of $S \propto Q^{-0.44}$ and main-stem channels are at the threshold for braiding. Tributaries above the confluences do not necessarily conform to the expected channel morphology and this is most likely related to confinement, entrenchment or inherited glacial boundary conditions. The pattern of grain-size variability (obtained using the Wolman pebble count method) through the confluence is highly variable but with notable coarsening of sediments in a few main-stem channels where there is considerable confluence asymmetry.



Weather and Camping in Ontario Parks

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Keywords: Weather preferences, weather related decision-making, park tourism, camping, climate change

Abstract

Using a survey-based approach, this study examined stated weather preferences and weather related decision-making for camping for two different provincial parks in Ontario. This study answers the international call for future research assessing the weather sensitivity of different tourism segments across varying climate zones world-wide. The results enable more informed park tourism planning and climate change adaptation in Ontario. Differences in weather related decision-making between the parks were statistically significant (at the 95% confidence level), showing campers at Pinery to be more sensitive to weather than those at Grundy Lake. Overall, parks that are more beach-oriented, closer to tourism generating areas and are characterised by visitors with shorter than average lengths of stay are most sensitive to weather variability and therefore most vulnerable to climate change. As such, it will be most important for parks that rely on this type of tourism generating market and share similar park characteristics, to place a greater planning emphasis on climate change adaptation, as these parks will be more affected by the impact of climate change on park visitation in Ontario. Climatic warming was not perceived by campers to be a major threat to park visitation in Ontario. Instead, heavy rain and strong winds were the most influential weather variables in relation to camper decision-making. In light of the projected increases pertaining to the frequency and intensity of extreme weather under climate change, the emphasis of park planning for climate change adaptation should be directed at responses to these particular weather variables.



A conceptual framework to analyse the pro-environmental behaviour of
participation in a home energy evaluation program

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Keywords: influence of energy consumption, pro-environmental behaviour, home evaluation, information, rewards, advice

Abstract

Despite recognition that reductions in fossil-fuel usage are necessary to reduce environmental harm, energy consumption continues to rise globally. There is a growing need to understand how to effectively influence individuals to reduce their energy consumption, particularly of fossil-fuels. Pro-environmental behaviour is the subset of consumer behaviour that is oriented towards reducing environmental impact compared to other options. It is widely agreed that pro-environmental behaviour and consumption are influenced by multiple factors that occur at multiple scales. This paper presents the development of a conceptual framework to analyse the impact of two sets of factors on the pro-environmental behaviour of the decision to participate in a home energy evaluation program that encouraged homeowners to reduce energy consumption through investment in energy efficiency. The program focused on influencing eight specific decisions within a specified timeframe. The first set of factors was the program structure, defined as the combination of the price of the evaluation, the financial reward structure, the level of government support and partnership. The second factor related to advice giving that occurred during the initial evaluation with a home energy advisor and with the delivery of the report that contained a set of recommendations. This paper will also discuss how this conceptual framework is compatible with the analytical approaches taken by human geographers, and the implications on the selected methodology for analysis.



Regional Analysis of the Impacts of Climate Change on Winter Transportation in
the Western James Bay Region of Northern Ontario

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Keywords: Aboriginal issues, adaptation, climate change, regional climate, western James Bay weather,
winter roads

Abstract

An increase in average surface temperature has been observed in the Canadian arctic and subarctic. Projections of future climate trends in northern Canada have indicated that changes in the variability and intensity of climate conditions are expected to be greater than in other parts of the world. Climate change is of particular importance to people of the western James Bay region of northern Ontario because of the potential impacts on winter transportation such as winter roads and trails. First Nations communities in northern Ontario rely on winter roads for maintaining their physical, socio-economic and cultural ways of life. The purpose of this study is to examine the climate variability across the western James Bay region over time, and how the trends of climate variability affect winter road seasons. To investigate whether there is a temporal relationship between seasonal weather patterns and the historical opening and closing dates of James Bay winter road, temperature and precipitation data for Moosonee weather station are utilized. This study also relies on climate models such as the General Circulation Models (GCMs) to investigate plausible climate change scenarios for the study region. The results of this study are meant to support the study of climate change and adaptation for northern indigenous communities who are facing similar challenges in Canada and worldwide.



The Weekday/Weekend Effect and Its Relation to Population and Ground Level
Ozone Chemistry

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Keywords: Weekday/weekend effect, ground level ozone, air quality, Ontario

Abstract

Ground level ozone, a component of photochemical smog that can lead to serious adverse health effects and crop damage, is formed through a series of chemical reactions involving its two main precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOCs). At high concentrations relative to VOCs NO_x leads to the breakdown of ozone. Over the past decade successful efforts have been made in the Greater Toronto Area to reduce both NO_x and VOCs yet there has been no change in ground level ozone concentrations. One of the reasons for this could be that the area is NO_x saturated. A phenomenon associated with NO_x saturated regions is the weekday/weekend effect. Usually observed in larger population centers, an increase in NO_x emissions during weekday morning rush hour periods can result in ozone scavenging and result in lower ozone concentrations on weekdays. To this point there has been no research examining the relationship between population size of an urban center and weekday/weekend effect magnitude. There has also been no research in Ontario to determine if the day of the week variations in ozone concentrations can be attributed to variations in NO_x concentrations. This study compared the weekday/weekend effect magnitude and population size of 32 towns and cities across Ontario. A statistically significant positive correlation was found between these two variables. A regression analysis suggested that while a large part of the weekday/weekend effect is related to population there appears to be other factors involved as well. In addition, at all sites periods of decreased ozone concentrations coincided with periods of increased NO_x concentrations, supporting the theory that the weekday/weekend effect a result of ozone scavenging by NO_x and that the region is NO_x saturated.



Simulation and Validation of Sea Surface Temperature at the Main Development Region for Tropical Cyclones in Eastern North Pacific Ocean

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Keywords: tropical cyclones, main development region, eastern north pacific ocean, sea surface temperature, interpolation

Abstract

Compare with other global climate models (GCMs), the third version of the Canadian GCM has been attributed with the least error in simulating global and tropical sea surface temperature, an important physical parameter in determining tropical cyclone activity. Here I address the ability of CGCM3T63 to simulate historical (1971-2000) sea surface temperature, focusing at the main development region for tropical cyclones in the eastern North Pacific basin. The feasibility of CGCM to model sea surface temperature in the region is statistically validated. The main development region, when subdivided longitudinally, shows a regional difference in the historical trend of tropical cyclone activity, which also translates to a regional difference of correlation measures between sea surface temperature and tropical cyclone activity. Within the eastern development region, the direction of the tropical cyclone-sea surface temperature relationship reverses between observed and modeled sea surface temperature datasets; while in the western development region, the strength of correlations for observed sea surface temperature is stronger.



Spatial Distribution of Contaminant Concentrations in the St. Marys River

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Keywords: Spatial interpolation, contamination concentrations, St. Marys River

Abstract

The St. Marys River is listed as an Area of Concern (AOC) in the Great Lakes Water Quality Agreement between Canada and the United States. The river system has been severely impacted by modifications to its hydrology, as well as local industrial and municipal discharges. Remedial Action Plans (RAPs) by the Ontario Ministry of the Environment have been developed since 1988. Anthracene, flourene, pyrene, total polycyclic aromatic hydrocarbons (PAHs), and total polychlorinated biphenyls (PCBs) concentrations at depths of 0-5 cm and 5-10 cm in a small portion of the St. Marys River were analyzed in this study. The contamination data were provided by Environment Canada through the Canada Centre for Inland Waters. Ordinary kriging and inverse distance weighting (IDW) spatial interpolation techniques were used to calculate and compare estimates between sample locations for the contaminants. The results show that the 0-5 cm depth is less contaminated than the 5-10 cm depth. The lower contamination levels in the top layer may signify that historical contamination was greater than present day contamination. Overall, the contamination concentrations are all concerning, as all but two Total PCBs samples are categorized above the Threshold Effect Level (TEL) designated by the Canadian Council of Ministers of the Environment. The two interpolation techniques had similar cross validation statistics however the prediction surface maps produced significantly different patterns in some cases. The findings may assist in restoring the natural habitat of the river and to determine contamination sources.



Moving to opportunity? – Migrant farming economies in the Brong Ahafo Region
of Ghana

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Keywords: Sustainable livelihoods; political ecology; poverty; migration; agricultural labour; Ghana

Abstract

Migration flows towards places of agricultural and mineral endowment and other places of higher industrial productivity are common across sub-Saharan Africa. In Ghana, the migration of people from the north to the south has intensified in recent decades largely in response to mounting environmental pressures which have severely undermined agriculture in the region. Using in-depth interviews and focussed group discussions, and drawing on theoretical perspectives from political ecology, this paper examines the everyday lives of migrant farmers from Upper West Region (UWR) who labour in the Brong Ahafo Region (BAR) of Ghana and the challenges they face in these remote agricultural economies. While these migration flows are driven by prospects for improved livelihood security, findings of this study however suggest that, in general, the pre-migration poverty situation and livelihood insecurity of these migrant farmers is significantly exacerbated due to production constraints such as access to land, limited labour, and low prices for their agricultural produce. The study concludes by making relevant policy recommendations which suggest addressing economic and environmental factors which affect livelihoods as a whole.



VGI Online User Communities: A Review of Methods/Metrics for Summarizing their Characteristics

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Keywords: Volunteered Geographic Information (VGI), online user communities, citizen science

Abstract

User generated content has grown significantly in the last decade. Volunteered geographic information (VGI) projects such as OpenStreetMap (OSM) have shown that people will contribute to projects in which there is no direct reward, such as monetary compensation. Who are the people who contribute to these projects and why do they do so? Are there relationships between measurable community characteristics and the quality of VGI? This paper will review current methods/metrics for summarizing community characteristics of online communities associated with user-generated content and the implications they have to VGI.



Land Use Conflict in a 'Peripheral' City: Towards a Research Trajectory

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Keywords: urban development, governance, planning, property developers, urban sustainability

Abstract

This paper outlines a research trajectory investigating the power and politics of urban development in a so-called 'peripheral' urban area. Focusing on a case study in Pickering, Ontario, a city in the Toronto region, this research will focus on the relationships between key actors – including politicians, planners, property developers, NGOs, and concerned citizens – in the conflictual context of urban growth and nature conservation. The Toronto region is a quickly growing metropolis; this growth has generated and continues to generate land use conflict as land, especially land at the urban 'periphery', undergoes change in use, mainly from various 'rural' to 'urban' uses. But how meanings and practices of land use influence how this change in use is perceived and framed in normative terms has not been adequately addressed, despite its importance for those involved in land use conflict and policy development. I will attempt to address these gaps, paying particular attention to narratives of property developers, a group of actors that is often either excluded or caricatured in broad categorical terms in the academic literature. I draw on various literatures, including those on planning and governance in the context of land use and nature conservation, political ecology, and a growing literature on institutions and governance 'beyond the state'.



Sense of Place on Hiking Trails and Implications for Management
in Southern Ontario, Canada

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Keywords: sense of place, hiking, trails, management, environmental ethics

Abstract

I investigate how hikers' sense of place on recreational trails can be used to overcome challenges in trail management. Sense of place is presented as a theoretical concept which has implications for sustaining the human-environment relationship, as well as bridging the gap between the science of ecosystems and their management. People's emotional, physical, social, and contextual connection to a place can help overcome the mechanistic view of nature which has, for many years, dominated environmental ethics. I engage with three independent, not-for-profit, and volunteer-based trail organizations which operate in Southern Ontario for this research. These include the Grand Valley Trail Association (GVTA), Thames Valley trail Association (TVTA), and Avon Trail. Using open-ended interviews with trail organization members, participation observation of the trail environment, and Volunteer-Employed Photography (VEP) techniques, I explore the depth and breadth of this topic. Recommendations produced from this thesis will benefit individual trail users, volunteer-run hiking organizations, and resource managers worldwide.



The Influence of Synoptic Weather Conditions on Extreme Ground-level Ozone
Events in Toronto Downtown area, Canada

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Keywords: Ground-level Ozone, Spatial Synoptic Classification, Extreme, Air Quality, Toronto

Abstract

Ground-level ozone (O₃) is perhaps the most familiar pollutant because of its association with smog and health alerts. The 2000 – 2008 weekday-weekend variations of ozone concentration were examined in relation to the concurrent weather conditions/air masses of the Toronto Downtown area in Canada. The goal of this work is to determine whether the extreme ground-level ozone events were associated with specific weather conditions/air masses. The Spatial Synoptic Classification of Sheridan's (SSC) was used to classify the ambient weather conditions/air masses in Toronto. The results show that there were a total of 85 days (about 2.59% out of the whole study period) listed as days having an extreme ground-level ozone event with the O₃ concentration ≥ 80 ppb, which is the current Ontario 1-hour Ambient Air Quality criterion for extreme ozone concentration, in the Toronto site. In addition, the weather condition/air mass mainly associated with these 85 days was Dry Tropical.



The Effect of Warmer Temperature on Thunderstorm Frequency and Intensity
from 1981 to 2010 in Toronto, Ontario

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Keywords: thunderstorm, climate change

Abstract

Climate change releases more water content into the atmosphere and alters the convection process, which could change the frequency and intensity of thunderstorms. Data from 1981 to 2010 on thunderstorm activities were gathered from Toronto Lester B. Pearson Airport. There were insufficient data to determine the change in thunderstorm intensity in Toronto. Severe thunderstorms were rare throughout the sample period. Frequency of thunderstorm remained relatively constant but linear regression analysis suggested that the thunderstorms spread more evenly throughout the year rather than concentrating in the summer. There are very low correlation yet statistical significance between thunderstorm days and monthly mean temperature in four months (March, April, August, and December), but the trends were in different directions. Thunderstorm season in Toronto appeared to begin earlier and end later as a result of warmer temperature but the total number of days with thunderstorms remained roughly the same. Longer sampling period, more sampling sites, and more parameters to be measured are needed to better determine whether Toronto would experience different frequency of thunderstorms in each month.



Mapping Realizable Renewable Energy Potential in Canada

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Keywords: renewable energy, electricity, mapping, energy policy

Abstract

A unique effort is underway to map and assess the realizable potential of renewable energy in Canada. This paper presents the scope, structure, schedule, and anticipated products of this effort, as well as progress to date. The project begins with the collection of existing data and maps for renewable energy resources (e.g., wind, solar, hydro) across the country and continues by developing and applying a series of modifiers which are intended to reflect realistic constraints on the amount of each of these resources it is feasible to extract. These modifiers include location and available capacity of electricity transmission infrastructure, technology-specific production costs, and social friction. Geography and technologies are limited in the first phase, but will be expanded as methods are refined. The project also includes a worldwide survey of similar efforts. The result of a partnership between the University of Waterloo and World Wildlife Fund – Canada, this project is focused on producing peer-reviewed science to inform the public policy debate on energy issues in our c



The Role of Business Improvement Associations (BIAs) in Local Retail: Case Studies of Port Credit, Streetsville and Oakville

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Keywords: Business Improvement Areas, retail economy, shopping experience

Abstract

Business Improvement Associations (BIAs) have become a common feature of retail districts throughout North America and are promoted aggressively by many municipal governments in their attempts to revitalise urban neighbourhoods. A BIA provides independent merchants with a cooperative mechanism to counteract the attraction of the shopping malls, power centres and big box operations that dominate retail in North America. Most BIAs market their location as unique and emphasize the importance of their special character in providing consumers with a satisfying shopping experience.

The paper presents case studies of three Business Improvement Areas, namely Port Credit, Streetsville and Oakville. Each is located in a larger urban market, each has a recognised retail core within a well-established settlement and each presents itself as a 'village' as a point of distinction from surrounding retail alternatives. Questionnaire surveys of local businesses provide a platform for a discussion of their perspectives on the retail area, the benefits of their location, the challenges they face and their opinions on the activities of the Business Improvement Association. Interviews with executive members of the BIAs allow for an understanding of the operation of the association and provide alternative perspectives to individual merchants on the role of the association in the local retail economy. From the assembled information, we critically consider the effectiveness of each BIA and reflect on the role of BIAs in increasingly integrated and competitive retail urban retail markets.



GIS-based Local Ordered Weighted Averaging: A case study in London, Ontario

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Keywords: Geographic Information System (GIS), multicriteria analysis, local ordered weighted averaging, socio-economic status, London Ontario.

Abstract

GIS-based multicriteria analysis is a procedure for combining a set of criterion maps and associated criterion weights to obtain overall value for each spatial unit (location) in the study area. Ordered Weighted Averaging (OWA) is a generic algorithm of the multicriteria analysis. It has been integrated into GIS and applied to tackling a wide range of spatial problems. However, the conventional OWA model is based on an assumption of spatial homogeneity of its parameters. It is defined as a global model in this paper. To improve the global OWA, a local OWA is developed. The range sensitivity principle is the key for the local OWA model. By such a principle, the local criterion weights are determined. A case study of analysing spatial patterns of socio-economic status in London, Ontario is presented. The result shows that there are substantial differences between the spatial patterns generated by the global and local OWA.



Examining water quality effects of land management practices in an agricultural watershed using a GIS based fully distributed hydrologic model

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Keywords: Fully distributed hydrologic modelling, nonpoint source pollution, beneficial management practices, small-scale watershed, open source GIS

Abstract

Agricultural nonpoint source pollution has led to nutrient enriched streams and lakes, thus disrupting aquatic ecosystems. Understanding the performance of beneficial management practices (BMPs) will enhance performance-based decision making. A GIS based fully distributed hydrologic model is being applied to quantify the water quality and water quantity effects. High resolution LiDAR DEM, land use, and soil type are used to characterize the 206 hectare Stepler Subwatershed, Manitoba, Canada. Modelling is being conducted using the Integrated Modelling for Watershed Evaluation of Beneficial Management Practices (imWEBs) model plugin for open source MapWindow GIS, developed at the University of Guelph for BMP evaluation at the field and watershed scales. Climate data from 2005 to present attained from Agriculture and Agri-Food Canada and Environment Canada provides precipitation, temperature, relative moisture, and wind speeds for the study watershed. Eleven hydrologic monitoring stations provide flow and water quality data, used to calibrate and validate the hydrologic model. Five BMPs are examined in this model; these include small dam, holding pond, conservation tillage, forage conversion, and riparian grazing management. Results from the imWEBs will depict the dynamics of watershed hydrology to assess the current land management practices at the field, farm, subbasin, and watershed levels. Findings will show the performance of each BMP and its overall impact on effluent water quality. This research is funded by Agriculture and Agri-Food Canada and the Society of Woman Geographers Pruitt National Minority Fellowship 2012-2013.



Brazilian Migration to the Rupununi (Guyana)

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Keywords: transnational, Indigenous peoples, geopolitics, political colonization, Amazon.

Abstract

Recent Brazilian migration through the Amazon region and across the Guyanese border has increased considerably, and the study of this transnational movement of people is recognized as critical to future understandings of possible impacts upon the peoples and the environments within the Rupununi. This migration threatens to increase pressures on Indigenous territory within Guyana, resulting in the annexation of traditional ancestral lands and potential losses of subsistence and livelihood practices, as well as disturbances of traditional cultures and ways of life. That these consequences are distributed throughout the Rupununi in isolated geographic regions indicates that Brazilian migration may have differentiated impacts upon the peoples and environments of the region. Brazilian activities include the introduction of large scale plantation agriculture, increases in commercial activity, and the intensification of small scale mining projects, and these varied migration patterns into Guyana can be directly attributable to a series of political and legislative actions in Brazil. I suggest that Guyana is enmeshed within the larger geopolitical concerns of the region, and that the national, regional, and local administrators need to increase their awareness of inter- and intraregional actions in order to better prepare and adjust for potential migratory changes and the associated social and environmental impacts.



Negotiating Wildlife, Land and Livelihoods: The Centrality of Cattle in
Displacement and Re-settlement from the Great Limpopo Transfrontier Park

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Keywords: wildlife conservation, livestock, re-settlement, displacement, southern Africa

Abstract (Abstract)

Conservation induced displacement, or the re-settlement of communities for the purpose of conservation, is not a new phenomenon and has been much explored in the literature in political ecology and beyond. Despite the rhetoric surrounding community based natural resource management, the re-settling of communities with the intent of establishing national parks is still occurring. This is the case in the Limpopo National Park (LNP) in Mozambique where approximately 7,000 people are slated to be removed from the park's interior. The LNP, however, is unique in two ways. The first is that it forms part of the Great Limpopo Transfrontier Park spanning the borders of Mozambique, South Africa and Zimbabwe in the hopes of facilitating the movement of wildlife between these three countries. The second is that the most abundant animal species in the LNP is cattle. There are approximately 12,500 head of cattle residing in the park's interior that will be re-settled with their owners. Not only is cattle the foundation of most people's livelihoods and culture, but it is also subject to an intensifying wildlife-cattle interface as a result of the transfrontier nature of the park and the subsequent migration of wildlife into the LNP. By turning the focus away from the traditional people-centered approach to understanding conservation induced displacement, this paper aims to demonstrate how cattle is both central to the rationale behind re-settlement as well as the negotiating of the re-settlement process and outcome itself.



Conflict, Disease and Displacement: Wildlife (re-)colonization and the
Implications for Cattle in the Great Limpopo Transfrontier Park

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Keywords: wildlife conservation, livestock, colonialism, displacement, southern Africa

Abstract

Transfrontier conservation is praised by conservationists for expanding habitats and facilitating the free movement of wildlife across political boundaries. The Great Limpopo Transfrontier Park spanning the borders of Mozambique, South Africa and Zimbabwe is an example of such an initiative as sections of the international border fence separating the Mozambican and South African portions of the park have been removed allowing wildlife to move freely between the two countries. However, the reality of this movement is that it is largely unidirectional with wildlife migrating from South Africa's Kruger to Mozambique's Limpopo National Park (LNP) leading to a re-populating of wildlife in the area of the LNP. Conservationists refer to this process as a re-colonization of the area by wildlife. However, this process of re-colonization goes beyond the simple moving of species into a new territory as the space of the LNP is occupied by people and their livestock, of which cattle, the most abundant animal species in the LNP, is the most important. By analyzing the interaction between wildlife and cattle in the LNP this paper aims to demonstrate how the process of wildlife re-colonization goes beyond its ecological definition and parallels processes of colonialism as an expansionist, dispossessing phenomenon. Further, using the metaphor of colonialism and focusing on different subjects, namely wildlife and cattle, helps to reveal dimensions of power and a social construction of nature that is often overlooked in discussions about protected areas.

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The Geography of MySpace

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Keywords: Music, genres, creative economy, clusters, scenes

Abstract

This research examines the geography of music scenes in the United States using detailed data collected from the MySpace social networking site. The data, collected in 2007, provides a snapshot of music trends when MySpace was at the height of its popularity as an online platform for sharing music. The variables examined include the number of fans, bands, plays, and views for each metropolitan area, as well as a breakdown by music genre. With this research we are able to examine not only how music trends differ across metros, but also the composition of music scenes within metros. The data confirms much of what we already know about established music clusters in the United States, such as the popularity of country music in Nashville or hip hop and rap in Atlanta, while also highlighting some unexpected or emerging clusters of musical activity, and raising new important questions. Can cities build a successful music scene around one genre, or are places that are home to many genres - like New York - more successful? Does the amount of bands in a city determine its success as a music centre? Or can a small number of very popular bands make the difference? How does all of this influence the location choices of musicians? By compiling and examining this data we begin to find answers to these questions and contribute to existing research on the role of strong music scenes in talent attraction and the overall economic success of a region.



Susceptibility of Soil Bound Mercury to Evasion as a Function of Source Depth:

An Isotopic Investigation at Lab-scale

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Keywords: Isotope, Gaseous Mercury, Source Depth, Evasion, Wetting

Abstract

Current research suggests that factors at the soil surface act to facilitate soil to air fluxes of gaseous mercury, but the role of mercury source location within the soil column in controlling fluxes is not well characterized. Mechanisms within the soil column, resulting from soil wetting and upward movement during drying, may transport mercury to the surface, though the magnitude of this process is uncertain. A series of lab-scale investigations, under controlled conditions, were conducted. We probed the relationship between mercury source depth in soil and the susceptibility of mercury transport to the surface and evasion as a result of wetting. An enriched, stable mercury isotope was utilized to label a thin layer of soil, which was placed at various depths below the surface of a simulated soil column (0, 1, 2, and 5 cm). Gaseous mercury fluxes were measured from the surface of each soil column before and after wetting to field capacity. Observed dry fluxes of the mercury isotope indicated no consistent trend with depth. Saturated soils resulted in suppressed evasion of gaseous mercury. Following wetting, we observed increasing surface fluxes of the enriched mercury isotope that were proportionally related to the proximity of the labeled soil layer to the surface. Transport of the isotope from 5 cm below the surface was negligible. Our data are the first to definitively demonstrate the role of source depth in mercury transport for gaseous evasion from soil surfaces. This will enable better characterization of soil mercury emission in the mercury cycle.



Morphological response to urban development over 60 years: Highland Creek,
Ontario

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Keywords: Highland Creek, urbanization, fluvial geomorphology

Abstract

Highland Creek drains about 100 km² of an intensively urbanized area in Scarborough, Ontario. Urban land use expanded rapidly into the headwaters of the catchment in the 1970s and 1980s resulting in almost 100% urban land use and 53% impervious surfaces. Peak flows after the onset of extensive development were several times larger than under mainly agricultural land use in the 1950s and early 60s. Headwater streams were channelized but the main branches further downstream remained partially natural. Channel width increases and changes in sinuosity were mapped from aerial photographs over several epochs between 1954 and 2005. Adjustment in sinuosity is dominated by engineering of the channel although some natural bend cut-offs occurred. Channel width adjustment varied in its magnitude mainly because widening was limited by bank protection work in many reaches, and constraint by channel confinement. Channel incision has also been prevalent in some reaches. Channel width predictions from several regime equations varied in their reliability and show that the un-engineered reaches adjusted to flow increases quickly, while many engineered reaches remain 'too narrow' for the prevailing flows. Large flood events have had a significant effect on channel adjustment and the river morphology is now dominated by various phases of engineering and channel design intended to maintain natural form while minimizing threats to infrastructure.



**‘Drive-by Shots’: Expressions of Place and Belonging in an Auto-photography
Project with Muslims in Halifax, Nova Scotia.**

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Keywords: Place, Belonging, Qualitative Methodologies, Auto-photography

Abstract

As Crang’s (1997) notion of ‘picturing practices’ reminds us, in an auto-photography project in which participants play a very active role in the production of knowledge through their photography and their narration surrounding those images, their motivations, approaches and challenges must also be included in the overall analysis. My research explores the everyday politics and practice of place and belonging drawing from the images and narratives of 20 Muslim men and women living in Halifax, Nova Scotia. In this paper I discuss the ways in which a critical understanding of what I call participant methodologies becomes enmeshed in the idea of place, self, and belonging. Specifically, I draw from the participation of a married Muslim couple who, through their motivations and approaches to the photography and in their subsequent narration of their images reveal the ways the have developed very different senses of place and belonging in Halifax.

Building a Movement: Solidarity, Activism and Travel from North America to
Nicaragua

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Keywords: Responsible tourism, social activism, critical consciousness, narrative inquiry, Nicaragua

Abstract

Many new forms of tourism have emerged over the past two decades, intending to provide an alternative, responsible approach to international travel. Unlike ecotourism and volunteer tourism, travel motivated by solidarity activism has not been thoroughly explored in the academic literature. Narrative interviews were conducted in Nicaragua in August 2011, with organizational staff and members of a rural host community, and telephone interviews with former travelers in their home communities in Canada and the United States. This paper profiles three organizations that organize solidarity travel experiences and explores the different ways that solidarity is enacted and understood by participants.

Qualitative analysis of the 22 interviews and secondary materials, including blog posts and videos, reveals that staff, travelers and community members feel that they benefit from the exchanges that take place during solidarity travel. However, the study participants also articulated a number of concerns and issues with the practice of solidarity travel, including the limited nature of ongoing contact between travelers, coordinating organizations and the communities that are visited while in Nicaragua. The experience of solidarity travel provided participants with a greater understanding of the connections between Nicaragua and North America, and a critical self-awareness for young travelers in particular, as many were experiencing the Global South for the first time. The successful translation of that exposure and awareness into activism is less certain and is identified as an area for future improvement of the overall solidarity travel experience.



Emotional Geographies of Home:

Meanings and Identities Attached to the Place of 'Home' among Senior Women

Residing in Long-term Care Facilities

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Keywords: home, long-term care, bodies, emotional spaces, temporality & spatiality

Abstract

This research documents the 'meanings' and 'identities' attached to the concept of home among senior women residing in long-term care. The study revisits a research question that has been posed nearly two decades ago: 'can a nursing/long-term care home be called a 'home'?' (Groger, 1995). The study is based upon semi-structured, open-ended interviews with eleven elder women, who reside in a long-term care home in the city of London, Ontario. Returning to the question of 'home', while being cognizant of the recent geographical work on emotions produces interesting findings that provide more depth and nuance to earlier conclusions. In particular, findings demonstrate that temporalities, spatialities, boundaries, tension, and paradox need to be considered when theorizing or legislating 'home' into public policy. The data also suggests that the 'body' and 'home' are intimately linked. The study also contributes towards methodological debates. It combines critical humanism and feminism in its approach. However, it is positioned within the newly developing body of work called emotional geographies. Along with the 'interview', the novel method of using the body as an 'instrument of research' is utilized (Longhurst, 2008). The methodology allows the research to reveal and document 'emotional spaces' occupied by the participants. The findings contribute to social theory about the experience of place. However, also have practical implications for policymakers, managers of long-term care facilities and senior citizens.



Impact of International Migrants' Remittances on Households Consumption Pattern

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Keywords: International Migration, Remittances, Consumption, Nutritious Food, Food Insecurity.

Abstract

This paper investigates the impact of the international migrants' remittances on households' consumption pattern. For many developing countries transnational migrants' remittances are the largest source of external development finance and are becoming attractive 'untapped' resources with potential development attributes. Recent surge in the volume of remittances has intensified the urgency for the better understanding of the dynamics and consequences of these flows. There are a variety of optimistic and pessimistic views about the potential development impact of migrants' remittances since theoretical and empirical investigations into economic impact of remittances have produced highly mixed results. Many remittance recipients are heavily dependent on this source of capital to sustain their livelihoods. It is often argued that households spend remittances mostly on consumption rather investment and therefore the impact of remittances in the economy is not significant. However this paper provides evidence that remittances significantly reduce the vulnerability of food insecurity and promote consumption smoothing which has long term development consequence. Using a large and nationally representative household survey dataset from Bangladesh, this paper shows that migrants' remittances improve the ability of the household to have access to more nutritious food.



Wasting the Waterfront: The Impacts of Failed Regeneration in Edinburgh,
Scotland

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Keywords: waterfront development, regeneration policy, social impact assessment

Centuries of history, world-renowned arts festivals and a strong business sector make Edinburgh, Scotland a city popular for tourist and investors alike. However, in recent years, the financial crisis, political infighting and the mismanagement of major development projects have stifled economic development and forced the city to reexamine its own identity and its role in the global economy. In the early 2000s, the City Council announced a series of major development proposals, including a tramline, airport expansion and what was, at the time, the largest waterfront regeneration plan in Europe. Although the tram line is currently under construction, running hundreds of millions of pounds over budget and on a significantly shorter route, all other development initiatives have failed. How did this happen? What does this mean for locals?

Building upon research on gentrification, place-based marketing and brownfield redevelopment, I apply a Social Impact Assessment (SIA) framework to the current conditions at the waterfront communities of Granton and the Western Harbour, to investigate how local communities are adapting, or failing to adapt, to major redevelopment initiatives. Using City of Edinburgh Council and Scottish Government documents, contemporary scholarship on waterfront redevelopment and Edinburgh based media; this project examines what happens to local communities when major flagship development proposals fail to deliver on their promises.



Land-use Change Detection in a Fast Growing Suburban Area and Its Implications for Sustainable Development

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Keywords: Land Use, Change Detection, Remote Sensing, Urbanization

Abstract

Urbanization of towns transforming into cities is an important environmental issue as the growth leads to the conversion of natural land to build-up land in the suburban area. Documenting and measuring what has already happened are essential to fully understanding the complex processes of town-to-city transformation and ensuring that adequate consideration is given to the ecological and economic effects of the transformation. Using Landsat TM imagery collected in 1995 and 2010, this study investigated the land-use changes that have occurred in Milton, the largest growing town in Canada. Change detection results indicated there is an increase in land area occupied by residential, industrial, water, forest, and golf course classes, and a decrease in land area occupied by agricultural field. Land area occupied by the residential and industrial classes rose by 152.19 km² and 10.05 km² respectively, while land area occupied by agriculture/field decreased by 72.93 km². Furthermore, land area occupied by water increased by 42.83 km². Through land use change detection, researchers could gain a strong understanding of how land use changes over time, generating a clear understanding of localized and regional development patterns that can be translated onto a global scale to study sustainable development practises and the anthropogenic relationships and reactions to global change.



Micrometeorological assessment of controls on canopy level evapotranspiration in
the context of wetland restoration

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Keywords: Ecohydrology, evapotranspiration, energy balance, wetland restoration, Brampton

Abstract

The focus of this research is on the drivers of evapotranspiration, and the ecohydrological interactions within a site scheduled for wetland restoration. It involves studying the energy balance at a former agricultural site in southern Ontario that will be undergoing restoration to establish a wetland ecosystem. The research intends to answer which micrometeorological and hydrological factors will have the strongest influence on evapotranspiration rates and phenology of vegetation both prior to and following wetting. The key aspects being investigated include atmospheric and canopy conductance, site hydrology, species composition, and overall energy balance. Information was gathered from a variety of meteorological sensors on site, as well as from instruments measuring plant-specific properties (including leaf area index and stomatal conductance). These data were used to model evapotranspiration rates using the Penman-Monteith, Granger, and Priestley-Taylor models. With further data collection, these types of models will help assess which variables are most significant in evapotranspiration through the shift from a relatively dry agricultural site to a water-saturated site. Measurements will continue over two growing seasons, both before rewetting is undertaken and afterwards. This presentation will discuss the findings to date, in particular the current trends in evapotranspiration. It will also discuss the methodology used for data collection, and predictions on site ecohydrology following red maple seedling.



“The High Line is totally gay.”

Excessively vegetal spaces and the ec[o]topic politics of plant performativity

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Keywords: queer theory, gay green gentrification, performativity, plants, New York City

Abstract

New York City's High Line is a mile-and-a-half long elevated railroad turned verdant jewel box promenade. As perhaps the first case of gay and green gentrification, the space serves as a rich empirical point of departure for an exploration the queer ecological possibility of a politics of plant performativity. First, I explain how the excessively vegetal condition of the High Line during thirty years of so-called abandonment was mobilized by the Friends of the High Line (FoHL) - a pro-development preservation organization founded by two gay men - in the service of gay green gentrification. In this portion of the presentation, I critically read the recently published *High Line: The Inside Story of New York City's Park in the Sky* (2011), which is the 'official' history of the space authored by FoHL's founders Josh David & Robert Hammond. Second, and in a more suggestive mode, I gesture toward the queer possibility of considering the High Line as something *other* than a clear cut case gay green gentrification. Here, I revisit the apparently overdetermined ground of the abandoned High Line to suggest more-than-human figures of performative resistance. Drawing on Judith Butler and Karen Barad, among others, I consider how the vegetal excesses of the High Line's plants bodied forth new possibilities for the space. Finally, I look to recent work in queer theory and queer ecologies to ask how looking beyond the human might help resist the displacement of those possibilities into a naturalized process of gentrification.



“Well my heart’s in the Highlands”: Historical patterns of specific stream power
in urbanized Highland Creek

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Keywords: specific stream power, digital elevation model, urban watershed, Highland Creek

Abstract

Highland Creek has a completely urbanized watershed which has undergone dramatic changes in discharge hydrology, particularly since the 1970s. Further, the drainage network is incised into a complex architecture of glacial sediments, whereby both channel gradient and native boundary materials are strongly conditioned by this glacial legacy. Historical patterns of specific stream power are mapped for the Highland Creek drainage network to compare pre-urban (1954-1965) and post-urban (post-2000) conditions. Specific stream power, or power per unit bed area (Wm^{-2}), is a measure of the potential energy available in fluvial systems to perform geomorphic work, namely sediment transport. In practical terms, mapping the spatial distribution of specific stream power only requires models of gross channel properties, such as channel slope and width, as well as estimates of discharge conveyed through the drainage network. Specifically for this study: channel slopes are evaluated based on generalized longitudinal profiles extracted from a 10 metre digital elevation model; channel widths are assessed based on analysis of historical aerial photographs; and discharges are estimated from regional regime models and detailed hydrologic modeling. The implications of urban impacts on stream power are investigated using a critical specific stream power approach, with comparisons to measured grain size distributions of Highland Creek bed materials. This study will provide insights into historic changes in sediment transport conditions, as represented by changes in specific stream power, for a glacially conditioned and urbanized watershed.



Developing the Highland Creek Geomorphic Systems Master Restoration Plan

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Keywords: Highland Creek, concept design, urban impact, restoration

Abstract

Highland Creek is a fully urbanized watercourse (104 km²) situated in east Toronto. Historic changes to the drainage network and flow regime have resulted in a highly impacted urban watercourse that is characterized by exposed sanitary sewers, failing engineering countermeasures, and has resulted in degraded and impaired aquatic habitat. The risks to public health and safety are evident by the frequent number of 'emergency works' that are undertaken and the creek's response to the 2005 storm event which led to failure of a sanitary sewer. Recognizing that the erosion issues and risks to public health and safety were systemic rather than local issues, the City of Toronto retained Aquafor Beech Limited to undertake a Geomorphic Systems Master Implementation Plan study (HCGSMIP) and a Stormwater Management Retrofit study. The outcome was intended to define a plan (spatial and temporal) for stabilizing the watercourse, reducing risk to infrastructure and private property, and enhancing fish habitat, rather than reacting to risks through emergency and localized works. The study format was guided by the Adaptive Management of Stream Corridors in Ontario document (MNR, 2003) and fulfilled requirements of the Environmental Assessment process. The proposed concept plan was based on an understanding of historic, existing, and future channel form and processes. Details were developed through technical analyses and consultation with experts in a design charette forum to identify and evaluate alternatives. The final concept plan includes preferred alternatives on a valley segment scale and an implementation plan consisting of a prioritized list of projects..



Local Ideal Point Method for GIS-based Multicriteria Analysis:
A Case Study of the Quality of Employment in London, Ontario

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Keywords: GIS-based MCA, Ideal Point Method, localize, neighborhood

Abstract

GIS-based multicriteria analysis (GIS-MCA) is a procedure for transforming and combining geographic data and value judgments (preferences) to evaluate a set of alternatives with respect to relevant criteria. Ideal Point Method (IPM) is one of the most often used GIS-MCA techniques. It has been applied in many research/planning areas including environmental planning, urban/regional planning, waste management, water resource management and agriculture. One of the limitations of IPM is that it has conventionally been used as a global approach based on the implicit assumption that its parameters do not vary as a function of geographic space. The conventional IPM assumes a spatial homogeneity of its parameters within the whole study area. We propose a new IPM called local IPM. The local vision of IPM is developed by localizing two parameters (criterion weights and ideal/nadir points) based on the range-sensitivity principle. We use the IPM methods to evaluate and analyse the spatial patterns of the quality of employment in London, Ontario. The case study shows that there are significant differences between the spatial patterns generated by the local and conventional IPM. The results of the local IPM not only display the general trend of the quality of employment in London, but also highlight the areas with relatively high quality of employment in different neighborhoods. Furthermore, the local IPM provides a tool for visualizing and exploring spatial patterns. The parameters influencing the local IPM results can be mapped and further examined with GIS.



Do Maternal Exemption Programs within Ghana's NHIS Remove Barriers to Health Care for the Rural Poor

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Keywords: Health Insurance, Ghana, Gender, Access to Care, Health Policy

Abstract

This paper addresses problems regarding access to maternal health care in the context of Ghana's Upper West Region (UWR). With international focus of Millennium Development Goal 5 increasing safe delivery practices in developing countries, Ghana has begun to provide free maternal health care under its National Health Insurance Scheme (NHIS). While the NHIS is considered to be pro-poor policy, there are lingering challenges that may prevent some sub groups from accessing health care. We examine the barriers which may inhibit delivery in health facilities, in spite of this free coverage. We used data from a community health survey (n = 2200) that was conducted in 2011. The sample (n = 386) of women had previously given birth and were between the age of 18 and 60 years. We used a binary logistic regression to predict the factors that influence a woman's choice of recent delivery at home or at a health facility. We controlled for theoretically relevant covariates that measured access to health care, utilization, socio-economic status and demographics factors. The results of the study reveal that particular socioeconomic and demographic characteristics, such as prior enrolment, education, and the number of children previously birthed influence a woman's decision to utilize a health facility in order to receive maternal care. The findings suggest that contrary to the intention of the maternal exemption policy under NHIS, women in the UWR, especially those in low socioeconomic positions, still face numerous barriers in accessing deliveries in health facilities. The results present numerous avenues for policy development pertaining to access and gender equality.



Media Representations of Suburbs in Toronto from 1990-2012

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Keywords: Suburbs, Media Representation, Toronto

Abstract

Today, more Canadians live in urban than rural areas, and many urban residents choose to reside in the suburbs. The physical and social character of modern suburbs has attracted a great deal of attention from researchers, as well as the media, including local newspapers. Media representations of the suburbs are important not only for the information that they contain, but also because they have the power to shape opinion. Although many scholars have made occasional, selective use of media reports for illustrative purposes, no systematic attempt has been made to survey the manner in which local media portray the suburbs. Relying mainly on the Toronto Star, this paper examines how local newspapers in Toronto portrayed the suburbs between 1990 and 2012. By means of thematic coding, it was possible to analyse the historical trends of media representation. For the most part, the portrayal was critical, although for a shifting balance of reasons. To a limited extent, it is possible to explore how readers, including suburban residents, responded to criticism. Both the criticism, and the response, affects the prospects advocated by many planners for suburban redevelopment.



Energy from waste? Contributions from geographic thought to the management of municipal waste as a sustainable energy source.

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Keywords: Waste-to-energy; municipal solid waste; perception; scale; systems thinking.

Abstract

This paper explores the waste-to-energy (WTE) policy nexus. It is based on a review of academic and policy literature related to municipal solid waste (MSW) governance and the uptake of WTE technologies. These technologies include various forms of thermal treatment that involve controlled combustion (e.g. incineration) or decomposition (e.g. anaerobic digestion) of waste feedstock to produce energy, heat and residual by-products. MSW is that which is generated by households and small businesses and managed by local municipal government or its agents. In Ontario about half of MSW is still landfilled, thus foregoing a significant proportion of its resource potential.

My aim is to show how applying aspects of geographic thought provides insights that may alter perceptions of waste and underpin a transition in its management from negative externality to energy resource. I will proceed by highlighting how specific theoretical approaches and concepts have been evoked or applied within waste research and policy processes and demonstrate what has been the impact of such thinking. I will refer to examples of WTE projects in Ontario, the U.S. and Europe. My specific focus will be on how scalar mismatches and bounded systems thinking within MSW governance create inertias that inhibit uptake and optimization of WTE technologies. In so doing I aim to demonstrate the importance of micro-level, household wasting practices as critical elements of waste management systems established to realize waste's energy resource potential at the meso-level of WTE facilities.



Long Ago, Far Away, and Here and Now: Telling Stories of Relocation for
Understanding and Healing

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Keywords: Place, relocation, identity, storytelling, First Nations education

Abstract

For First Nations peoples, place has a rich and complex meaning (Harris, 2002; Kovach, 2009). Involuntary loss of place has been traumatic (Boutros, 2006; Dawson, 2001; Kovach, 2009), adversely affecting the health of First Nations individuals and communities. Aboriginal scholars increasingly mention stories and storytelling in the context of healing (Archibald, 2008; Dion, 2004; McKeough et al., 2008). In addition to providing a place and a common ground in which to enhance cross-cultural understanding (Chamberlin, 2003), telling stories of relocation can also enhance intra-cultural understanding and increase intergenerational communication among First Nations individuals. Seeing themselves reflected in the curriculum may increase First Nations students' sense of belonging and connection. This belongingness may bolster positive identities within dynamic local and global contexts (Bourn, 2008). A sense of belonging and positive identity may increase the number of years First Nations students spend in school, increasing their education and literacy level -- a recognized social determinant of health (PHAC, 2012). This research acknowledges the links between culture, place, and health (Gesler & Kearns, 2002) and explores the generative potential of storytelling to help individuals and communities recognize the lasting impacts of relocation and thus promote healing.



“Are there peanuts in there? It doesn’t say, but mommy doesn’t know”: Exploring
New Canadians’ Experiences with Food Allergies

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Keyword: Food allergies; new Canadians; perception; experience

Abstract

Food allergies have recently emerged as a public health issue in Canada, and are increasingly recognized as an important risk amongst the general public. Inconsistencies among risk management strategies such as food labeling, and food bans within public spaces have made coping with food allergies difficult. Previous research has suggested that different socio-demographic groups perceive food allergies differently. As one such group, new Canadians (i.e. those who have been in Canada less than 10 years) have been shown to be significantly more concerned about the risks of food allergy. The purpose of this research is to examine newcomers’ perceptions of food allergies. Specifically, interviews (n=8) were conducted with newcomer parents with food allergic children to understand how they cope with and manage food allergies in day-to-day life. Preliminary findings indicate that there are a multitude of barriers and difficulties spanning reading and understanding food labels, keeping an allergen-free home environment, and feelings of worry. As interviews continue, it is clear that food allergies are a priority issue for newcomers with food allergic children. The findings from this study will contribute to the existing body of research as it reveals unique knowledge and insight to the experiences new Canadians face pertaining to food allergies.



Observed variability of nocturnal Urban Heat Island effect and its relationship with
the dominant Air masses at Toronto

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Urban heat Island effect (UHI) is an established phenomenon for the city of Toronto, which is mostly pronounced at night. In general, UHI can be affected by synoptic meteorological parameters such as cloud cover or wind speed, or to generalized synoptic weather regimes created by air masses that reach Toronto. In an attempt to produce a more complete picture of the UHI effect at Toronto, this study used the Spatial Synoptic Classification 2 (SSC2) owing to its versatility, simplicity, and reliance upon readily available surface data. This system uses commonly-measured surface meteorological variables sampled four times daily, including air temperature, dew point temperature, and scalar components of the surface wind vector, mean sea level pressure, and cloud cover. The goal of this research is to apply an objective synoptic climatological approach using SSC2 to identify the weather types affecting Toronto during winter, spring, summer and autumn, and to relate the results to the nocturnal UHI intensity ($>4^{\circ}\text{C}$). It is evident that according to SSC2 the dominant air masses that affect Toronto are (dry polar (DP), dry moderate (DM), moist polar (MP), moist and moderate (MM). We observed that during the study period, 1980-2010, for the early years (1980-1995) in winter and fall DP or MP affect the UHI intensity while in spring and summer it is mostly DM or MM that affect the UHI intensity. In the later years (1995-2010) the situation is somewhat reversed. We observe that an increase in dry moderate and moist moderate air masses at the expense of cold, dry polar masses in winter. As a result less number of UHI days with greater than 4°C are experienced in winter and spring compared to summer and fall. Statistically significant correlations are found between the observed UHI intensity and the dominant air masses at Toronto. This suggests that the variability of UHI intensity is sensitive to the changes of the characteristic of the dominant air masses that affect the climate of Toronto.



What do suburbanites think about the suburbs? A case study of suburban perceptions in Hamilton, Ontario.

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Keywords: Suburbs, Defining suburbia, Neighbourhood perceptions, Hamilton.

Abstract

The literature on the topic of suburbia is vast. Most studies however, have been written from the point of view of suburban outsiders. Very few scholars have asked suburbanites what they think about the neighbourhoods in which they live. This gap is significant because of our growing awareness of various problems associated with the suburbs, notably those connected to the environment and human health. Focusing on Hamilton, Ontario, this study addresses this gap, looking at what suburbanites think about the suburbs in general, as well as their own neighbourhoods. Semi-structured interviews were conducted with 25 residents of single-family, detached dwellings in two neighbourhoods in Hamilton that on most criteria would be considered suburban. Some findings were predictable: many respondents noted that families, children and cars defined suburbs. Other findings however were surprising. There was little consensus on a definition for suburbs. Respondents disagreed as to whether they actually lived in a suburb. These results may have implications for future research on how suburbanites perceive the suburbs, and for policies aimed at reshaping the suburbs to reduce social, environmental, and economic costs of the suburban lifestyle.



A Picture of Community Food Mapping in Malvern, Toronto

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Keywords: Community, Food, Mapping, GIS.

Abstract

The neighbourhood of Malvern is designated as one of the thirteen priority neighbourhoods by the City of Toronto to improve services for people in this underserved area. Food security is identified as one of the key priorities in the neighbourhood, where food security refers to the availability of food in the area and an individual's access to it. Mapping food is vital for the community, as food maps serve as an important tool to assist the people of a community in understanding the assets and opportunities related to food issues within their neighbourhood. The Malvern Community Food Mapping Project is an initiative aimed at providing a visual representation of food initiatives currently taking place in the neighbourhood. The purpose of the mapping project is to create a GIS Food Asset Map and Community Food Maps. The GIS Food Asset Map assists the community's people in visualizing the food initiatives taking place in the neighbourhood and determining food access points, whereas Community Food Maps highlight different resources available to community people and challenges different groups of people are experiencing in accessing food. Community Food Maps were created through map-making workshops, which provided an opportunity to visualize the experiences of the residents with food access. The project report highlights the map-making process and the diverse stories and experiences of different groups of people with food issues in the community.



A quantitative approach for the determination of gradients in natural plant communities

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Keywords: biogeography, deserts, ecology, spatial consistency, vegetation sampling.

Abstract

The most significant objectives of both ecologists and biogeographers are to understand and predict the distribution of biodiversity, especially in the light of recent anthropogenic changes, such as biological invasions, climate change and land use change. Species distribution in general terms is determined by a set of abiotic and biotic factors acting at local and regional scales, where every species experiences different sets of those conditions across its distribution, which vary systematically in space constituting gradients. A general problem associated with studying gradients in plant communities is the lack of a formal conceptualization and determination, resulting in experiments with binary “low versus high” levels of the gradient of interest, which might carry errors for interpretation of results. In this paper I propose a quantitative approach to solve this issue. Initially, I discuss the concept of gradient and its components, and how this information should be translated into field techniques for gradient determination. Gradient length, which can be defined as the spatial extent of the environmental variation sampled within a particular system should also be determined beforehand when studying gradients. Gradient determination should ideally be done *a priori* and consists in the combination of field observations and remotely sensed or available climatic information to establish consistent changes in both plant community structure and the environment, using both multivariate and univariate statistical techniques. I tested this method in 3 coastal desert environments in Peru and Chile, proving to be efficient for gradient determination, although a larger sample size might be required.



Tolerance and Entrepreneurship

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Keywords: creative cities, tolerance, regional economic development , gentrification, neighbourhood redevelopment

Abstract

Of Florida's (2002) original Three T's — Technology, Talent and Tolerance — tolerance has received the least attention. But tolerance, a region's openness to new ideas and people, is a critical factor in how regional economies respond to crises and evolving economic conditions. This presentation investigates how institutional factors affect regional tolerance to new types of entrepreneurship. Using a case study of technology entrepreneurship in Ottawa, I examine how formal and informal institutions in the region have responded to the decline of the local telecommunications industry and the rise of a new form of smaller-scale software entrepreneurship. The study, based on 39 interviews with entrepreneurs, economic development officers, and investors, is used to examine how entrepreneurial actors selected their practices based on their understanding of the economic and social worlds they exist in. The tolerance and openness these institutions showed (and did not show) to have profound effects on how this new type of entrepreneurship has established itself in the region.



Sustainable Development through Agricultural Cooperatives in Brazil:

A Case Study of COOPAMIDO

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Keywords: Agriculture, Cooperative, Sustainability, Brazil

Abstract

Recent literature concerning agricultural cooperatives has demonstrated the economic and social benefits that the cooperatives offer to their membership base as a means to empower small rural farmers; however, research on how cooperatives contribute to a sustainable triple bottom line has received limited attention. Based on the literature and a case study, this paper seeks to identify and provide insight into the extent to which the agricultural business model fosters development as measure by the triple bottom line of social, economic, and environmental sustainability.

The case study of the COOPAMIDO cooperative in Laje, Bahia, Brazil is investigated using structured interviews. The study employed a proportional quota sample, where a minimum of 15% of all groups relevant to COOPAMIDO were interviewed, to measure the extent to which COOPAMIDO contributes to a triple bottom line of sustainable development. The literature and the case study both demonstrated that agricultural cooperatives in Brazil foster economic and social objectives of the triple bottom line; however, the evidence of meeting environmental objectives is less clear. The literature showed mixed results that cooperatives foster environmental objectives, but the case study provided ample support for this theme. We conclude that as long as the cooperative's leadership and members are aligned to promote a triple bottom line, agricultural cooperatives in Brazil have the potential to promote economic growth, include marginalized populations, and conserve the environment; therefore, agricultural cooperatives should be thought



Evaluating the Creative Economy in Peterborough, Ontario

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Keywords: creative cities, rural Ontario, economic development

Abstract

This presentation is based on preliminary analysis of the creative economy in Peterborough, Ontario. Focusing on an examination of the industrial sectors that are present in Peterborough, this research provides a comparison of the Peterborough labour force to Canadian and United States benchmarking regions. In addition to describing the top industrial sectors by number of employed in Peterborough, by the 2-digit and 3-digit North American Industrial Classification System¹ (NAICS), location quotients will also be employed. This presentation will also examine industry establishment clusters at the three digit NAICS level, and provide an analysis of the location of industries in Peterborough by 2-digit NAICS at the dissemination area (DA) level between 2007 and 2011.



Patterns of bacterial community composition between areas of differing
methylmercury production in an experimental sub-boreal peatland

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Keywords: methylmercury, mercury methylating bacteria, bacterial community composition, peatland, sulphate

Abstract

Wetlands are key sites for the bacterial production of methylmercury (MeHg), a highly toxic and bioaccumulative form of mercury. Sulphate reducing Deltaproteobacteria include the most potent known methylators, and have been the best studied, but the recent discovery of other methylating taxa in lakes suggests that the full diversity of mercury methylators remains to be explored. Northern peatlands, given their vast extent and vulnerability to climate change-related enhancement of bacterial processes, are a particularly important biotope in which to understand the identity and diversity of mercury methylators.

A sub-boreal peatland was amended with sulphate from 2001 to 2008 at environmentally realistic levels. Methylmercury concentrations in peat were significantly increased in association with sulphate additions over both the long and short term. In spring 2009, triplicate soil cores were taken from which cgDNA was extracted and all bacterial 16S DNA sequences present sequenced. Data on soil methylmercury concentration, total mercury, % methylmercury, mercury methylation rates and % organic matter were also collected. 7053 OTUs were identified representing 236 families, 134 orders, 87 classes and 30 phyla. We hypothesize that bacterial community composition will differ more between than within treatments, and that there will be a higher proportion of Deltaproteobacteria in sites with higher mercury methylation. Analysis will be conducted via weighted UNIFRAC distance matrices and environmental clustering analysis, which will identify which, if any, environmental variables explain patterns in community diversity and abundance.



Seasonal and Weather Effects on Behaviour among Urban Aboriginal Participants,
Urban Non-Aboriginal Participants and Remote Aboriginal Participants in Ontario,
Canada

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Keywords: Aboriginal people; seasonality; weather; behaviour; remote

Abstract

The influence of seasonal change and weather on mood, social activity, weight, food consumption, and sleep length were compared among an urban Aboriginal group (n=43), an urban non-Aboriginal group (n=49), and a remote Aboriginal group (n=39) in Ontario, Canada. Behaviour items were measured using the Seasonal Pattern Assessment Questionnaire. The associations between behaviour items and meteorological data were examined through Spearman correlation and multiple regression analyses. Seasonal variation in behaviour items was observed for each group. Weather variables had statistically significant associations with each behaviour item for each group, except for the remote Aboriginal group, where positive mood, high social activity, and a decreased sleep length were not associated with any weather variable. Compared to urban groups, the remote Aboriginal group had the fewest significant correlations between weather variables and behaviour items, despite living in a more extreme climate. A different lifestyle and adaptation may be contributing factors to an increased tolerance to weather among remote Aboriginal people.



Downstream Variability of Fluvial Form, Process, and Character in a Small
Deglaciaded Watershed, Southern Ontario

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Keywords: Fluvial forms, downstream channel and floodplain adjustment, semi-alluvial channels

Abstract

Conventional watershed models possess predictable downstream trends in channel morphology, bed sediment size, and floodplain structure that are predicated on decreasing channel slope and sediment supply downstream. Many deglaciaded watersheds, however, possess complex longitudinal profiles and spatially variable sediment sources derived from the last glaciation. Accordingly, downstream patterns in channel morphology and channel and floodplain properties may diverge from conventional watershed models. Within a small, deglaciaded watershed, downstream trends in channel and floodplain properties are often poorly defined, and in many cases, deviate from expected trends. This is most true for sedimentological variables where multiple co-dominant controls exist, while morphological and hydrological variables better conform to expected downstream trends. Additionally, five distinct fluvial forms were identified, which are organized in a spatially variable but generally inverted arrangement that broadly follows the variability in channel slope where stable, low-energy forms dominate the upper and middle watershed while more dynamic, high-energy forms occupy the lower watershed. The results underline the importance of channel slope in determining the spatial organization of fluvial processes and forms, in addition to influencing downstream trends in channel and floodplain properties.



Adaptive Capacity, Climate Change and Development Equity: A Critical Analysis
of Canada's Approach to International Co-operation (1992-2010)

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Keywords: equity, international development cooperation, climate change adaptation, climate change impacts and extremes, greenhouse gas emissions (GHGs)

Abstract

This paper examines the basic question of what are Canada's international responsibilities with respect to the climate change adaptation imperative in the developing world. This is a fundamental development equity issue to be resolved between nation states since it is widely acknowledged that less-developed countries are far more vulnerable and have less capacity to implement measures to adapt to climate change impacts, extremes and hazards. In light of industrialized countries disproportionate responsibility for the GHGs that will profoundly affect developing countries via climate change impacts (sea-level rise, glacial melt, temperature change) and extreme weather events, this topic has become a major focus of international development cooperation. It is argued that integrated domestic and international policy approaches are required from countries' like Canada to minimize the long-term global impacts of climate change resulting from rising GHGs. The evidence reveals there are significant opportunities for Canadian policy innovation through both international development cooperation and domestic greenhouse gas reductions policy measures and practices. Utilizing various qualitative and quantitative methodologies, including the Organization for Economic Cooperation & Cooperation (OECD) 'climate lens', this research reviews and considers two decades of Canadian multi-lateral, bi-lateral, and domestic climate change and development data to critically analyze and provide recommendations for the improvement of Canada's international record on domestic climate change mitigation and support for adaptation in the developing world.



“Winds of Change”: Explaining Support for Wind Energy Developments in
Ontario, Canada

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Keywords: Wind Turbines, green energy, Green Energy Act, opposition, environmental risk, climate change, air pollution, community well-being, conflict

Abstract

This thesis addresses a major gap in the wind turbine and risk assessment literatures. It explains local support for wind energy in some areas in spite of vocal opposition in others. Findings from Port Burwell and Clear Creek, Ontario indicate that social and contextual forces may help explain much of the difference in opinion between the two communities. The case study was focused through 21 in-depth interviews. The interviews were analyzed verbatim using NVIVO 9 software. The findings were found to be consistent with Kasperson’s theory of the Social Amplification of Risk and seem to explain why Port Burwell is an area of high support for wind turbines while other places, like Clear Creek to an extent are not nearly as supportive. Ultimately the thesis calls for a policy change and rededication to promote effective green energy policy in Ontario.



Non-Human Geographies of Justice across Two Southern Ontario Landscapes

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Keywords: ecological restoration, environmental justice, Greater Toronto Area, non-human agency

Abstract

Environmental justice scholars and activists explicitly link ecological degradation and human social equality by recognizing the disproportionate adverse effects of environmental burden on marginalized populations. Conversely, a growing body of literature in geography and other disciplines acknowledges the central role of the non-human in social outcomes. Work on environmental justice and the active role of the non-human have only recently begun to converge. This paper integrates the two fields by considering how non-human agency may have partially contributed to environmental (in)justice outcomes at two case study sites in the Greater Toronto Area. Drawing on community interviews, archival research, and analysis of government and policy documents, the paper demonstrates how turtles, soil, and a landfill helped foster an equitable ecological restoration at the Beare Wetland in the Rouge Park, while contamination patterns and a newly-emergent wetland aided in a more ambiguous outcome at the Birchcliff Quarry Lands in East Toronto. The case studies reiterate the centrality of a diverse multiplicity of actors for ecologically- and socially-equitable outcomes with implications for the understanding of human and non-human geographies of justice across sites.



Characterizing water balances of shallow lakes in Wapusk National Park,
Manitoba, using water isotope tracers

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Keywords: Hydrology, Water Isotope Tracers, Wapusk National Park, Hudson Bay Lowlands

Abstract:

Wapusk National Park (WNP), located within the Hudson Bay Lowlands (HBL), contains over 10,000 shallow, thermokarst lakes and ponds spanning the boundary between discontinuous and continuous permafrost. Over the past ~50 years, this area has experienced some of the greatest warming in the circumpolar North and is considered one of the most sensitive regions in northern Canada to permafrost thaw. In response to this warming, the landscape is becoming increasingly dynamic and little is known regarding how the hydrological conditions of the freshwater lakes are responding and how they will continue to change in the future. Surface water samples from 37 lakes spanning three unique ecotypes (coastal tundra, peatland, boreal forest) within WNP were collected three times a year (spring, summer, fall) over a three year period (2010-2012) and analyzed for water isotope composition (¹⁸O, ²H) to assess seasonal and inter-annual hydrological variability. Isotope-mass balance models are being utilized to quantify the relative influence of hydrological processes (snowmelt, rainfall, evaporation) on lake-water balances. Preliminary results indicate that the 37 lakes reflect a broad range of hydrological conditions and that rainfall may be becoming a more influential source of water on the lake water balances relative to snowmelt. We have also observed that a number of lakes in our study set have repeatedly dried up during mid-summer. Overall, this research will identify the implications of rapid environmental change on the hydrological functioning of aquatic ecosystems in northern Canada caused by permafrost thaw and climate warming.



Underground Thermal Energy Storage Site Selection in the Toronto Region

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Keywords: Thermal energy, site selection, GIS, geoprocessing, Toronto

Abstract

Underground thermal energy storage is a technology that reduces the energy needed for space heating and cooling. It works by “storing” excess heat or cold in the Earth’s subsurface when it is not needed and drawing it out when it is. For example, by storing warm water underground in the summer and pumping it out in the winter to heat a building.

The two most prevalent types of underground thermal energy storage systems are aquifer thermal energy storage and borehole thermal energy storage. In the former, hot or cold water is stored in aquifers by pumping water underground, and in the latter thermal energy is stored in rocks by heating the subsurface by pumping fluid through underground pipes.

Whether a system is feasible at a particular site depends partly on the ability of the subsurface to store heat. This can be determined by identifying specific properties of the subsurface such as porosity, hydraulic conductivity hydraulic head, and the composition of material. A previous study (*Wong and Ford, 2010*) used a geographic information system model to identify areas where systems are most feasible using groundwater modelling data.

This work builds on that study by exploring the use of web GIS to allow users to filter based on geologic parameters. This allows users to tailor the results to a specific type of system. It is distributed using an ArcGIS geoprocessing service which allows web enabled applications to access geographic tools and data which are stored on a central server.



Corporatizing Water Supply and Sewerage Services: A Case Study of Dhaka,
Bangladesh.

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Keywords: Corporatization, Co-operative Model, Revenue Management, Water Privatization, Utility Services

Abstract

Efforts to commercialize water supply and sanitation in Dhaka, Bangladesh, have been pushed vigorously by internal and external proponents of neo-liberalism. The paper takes a critical look at these developments and analyzes the role of multinational finance institutions in this process. In particular, it looks into the role of these finance institutions in funding reform projects to corporatize Dhaka Water Supply and Sewerage Authority (WASA), examining the impacts on end users, especially marginalized sections of society. The paper describes how, in the process of corporatization, Dhaka WASA is and will continue to be more assertive in its commercial orientation than it was previously. The paper also studies a highly touted 'successful' co-operative model for revenue management called Program for Performance Improvement (PPI), seen by some as an alternative to privatization. It will argue that the model in fact emerged as a consequence of the commercialization efforts of neoliberal reforms and that the revenue management model has created an isolated business unit with a reclusive management that undermines the egalitarian objectives of the water utility as a public service entity.



The Contradictory Nature of Market-Oriented Conservation:

Ecotourism in Northern Thailand

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Keywords: Conservation, development, neoliberal logics, ethnic minorities, ecotourism

Abstract:

Conservation policies worldwide are increasingly turning towards market-oriented strategies to address the difficulties in reconciling conservation and development interests within inhabited protected areas. Ecotourism is being increasingly adopted as a livelihood strategy by communities living in protected areas in the hopes that conservation and development might be achieved simultaneously. However, the promise of ecotourism to reconcile environmental and economic concerns relies on the production of both environmentally and economically minded participants, while promoting a very particular image of nature (aesthetic, lush, managed) to be sold to the tourist. The contradiction in encouraging both self-maximizing entrepreneurial ethics and modest conservation-friendly living ironically forces conservation and development interests into opposition. This research examines the inherent contradictions of market-led conservation projects through a case study of ecotourism in Ban Mae Klang Luang, a village lying within the Doi Inthanon National Park in Northern Thailand. I discuss the paradoxical encouragement of discourses of nature conservation and entrepreneurial values that influence community members' behaviours, actions, and livelihood choices. This research suggests that the adoption of ecotourism as a market-oriented conservation strategy encourages community members to make decisions based on self-interested monetary benefits that are inconsistent with conservation goals.



Impacts of Eco-Industrial Park Construction on Carrying Capacity of local environment: a case study of Guangzhou China Eco-industrial Park

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Keywords: carrying capacity; China; green economy

Abstract

An eco-industrial park (EIP) is a kind of industrial park developing industries according to concepts of cycling economy and industrial ecology, which can significantly reduce industrial pollution. China has been building eco-industrial parks since 2000. The state approval procedures are basing on evaluation of infrastructure construction and performance assessment, focusing more on businesses cooperation but not enough on local eco-environment. This paper, taking Guangzhou EIP as a sample, is trying to clarify the impact of building EIPs on the carrying capacity of local eco-environment by mapping the gap between the ultimate carrying capacity and the actual carrying capacity of local environment. In this study, the impacts are demonstrated by the changing of the carrying capacity of Guangzhou EIP area, and the carrying capacity is estimated using a comprehensive index system which is built on correlation analysis and analytic hierarchy process. By comparisons of various indexes and their constantly changes, the main impact factors of EIPs on local eco-environment were determined, which may give some suggestions on how to improve China EIP approval systems. And the new angle of assessing EIP will contribute to rethinking the design of energy flows and material flows within a closed area and application of the concepts of local cycling economy and green energy.