

Shared Governance and Watershed Management
Planning Framework Project

Research bibliography

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Prepared by



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Torque would like to thank the following, whose initial research has helped to inform volume 1 of the literature review for the Shared Governance and Watershed Management Planning Project Team.

Lisa M. Fox, Sustainability Resources Inc. *Literature Review of Watershed Management Elements: Annotated Resource for Watershed Planning* 28 March 2007.

Jennifer Miles & Chris Selvig; Michael Quinn & Mary-Ellen Tyler. *Environmental Design, University of Calgary: Regionalism & Regional Planning: An Annotated Bibliography*. 15 November 2006.

Electronic files

Items in this bibliography that have proven particularly interesting have been indicated with blue shading as follows.

Association of New Jersey Environmental Commissions (2001). Municipal Environmental Commissions in New Jersey.

All publications of the Association of New Jersey Environmental Commissions have been placed in a single folder titled with the acronym “ANJEC.”

All conference presentations from the conference *Every Drop Counts: Watershed Management Realities* hosted by the Alberta Irrigation Projects Association have been placed in a single folder entitled “Every Drop Counts.” Because these files were .pdf versions of Powerpoint presentations, direct quotations are impossible but information has been gleaned from some presentations that has informed the products being produced by the Project Team.

All remaining documents are titled with the last name of the first author.

Alberta Association of Municipal Districts and Counties and Alberta Urban Municipalities Association (2006). Rural/Urban Cost-Sharing Task Force Tool Kit, online.

The Report and tool kit are the culmination of nearly two years of deliberations and efforts from AAMD&C and AUMA committee members. The Associations embraced an opportunity to demonstrate leadership in rural/urban cooperation, and have provided tools through this website to assist municipalities with the development of cost-sharing agreements. Review: Website resource (“tool kit”) for Alberta local governments seeking to develop partnerships across municipal boundaries to address servicing or resource issues. Lists current methods of collaboration on cross-border issues: annexation, amalgamation, cost-sharing agreements, and inter-municipal development plans (inter-municipal servicing agreements). Focus of this tool kit is cost sharing agreements between rural and urban municipalities, as the current organization of local government lacks formal legislation to dictate a regional authority to manage cross-border issues.

Albright, Ken. “Southern Nevada Water Authority: Coping with Growth.” *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association.
<http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

Alexander, Don. (1996). “Visionary regional planning tradition and the Greater Vancouver Region.” New City Magazine 17: 8-13.

Review: Good discussion of several historical theories of regional development in relation to current Vancouver regional context, noting their emphasis on sustainable development (even before the concept was actually named). Excellent summaries of major theoretical movements/thinkers within (sustainable) regional planning. Regional growth is shaped in the GVRD by cooperative regional planning, land use controls via the Agricultural Land Reserve, complete communities/regional town centres. Focus of regional development to address growth concerns - loss of wilderness and social connectivity values, development that doesn't respect cultural or ecological heritage.

Anonymous (2005). Greenspace Project.

The GREENSPACE Project is examining the value of parks using participatory, visualization and quantitative survey methods. The Project has been supported by the European Commission (DG Research) 5th Framework Programme. The interest is on-going, although the Project formally concluded in a final report and workshop in 2004. For more details contact the Co-ordinator. Rationale Many European towns and cities possess attractive parks or recreational areas. This green space makes an essential contribution to the quality of life of urban citizens. It provides a recreational resource, a peaceful retreat, a medium for social interaction, safe and exciting play areas for children, and a reserve for urban wildlife as well as an attractive backdrop to built development. Yet green space is often not given the same priority as other calls on municipal funds. The portfolio of space is often a legacy of earlier decades and in relatively few cities has the planning of urban squares, parks, green corridors and urban nature reserves been approached in a comprehensive manner. The GREENSPACE Project has begun to define the types and variety of green space and other landscaped public space that best satisfy people's needs. In particular, it has demonstrated how citizen participation can be brought to the strategic planning of “green space” on a continuing basis. Through the unique application of socio-economic techniques, the project has described and quantified the benefits that people attach to different types of green space. It has investigated the various functions (e.g. recreation, social interaction, heritage, ecological) of green space and other considerations such as equity or conflicts of use.

One of the major outcomes of the project will be a Decision Support Package which can be used interactively by planners, decision makers and citizens. Issues The GREENSPACE project has been driven by a number of strategic issues, particularly the need to understand how green space and amenity open space contributes to quality of life. How do people use green space and what value do they attach to it? What types of green space would best meet people's social and recreational needs? How does green space relate to the built environment? How can ecological value be maximised given recreational pressures? In particular, the project has attempted to establish what mix of "green space" is most valued. For instance: traditional parks, wild areas or linear corridors; green areas or new landscaped space such as waterfronts, parks close to home or protected areas to which people will occasionally travel. Scientific Objectives The principal scientific objective has been to apply methods (choice experiments, contingent rating) to determine the value that people attach to the key attributes of green space, both in different contexts (e.g. built environment, naturalness) and depending on the characteristics of the users themselves (e.g. house type, dependent children, regular/irregular users). State-of-the-art visualization techniques (both 3D and dynamic) have been applied to this process in order to increase realism and accuracy. Both types of data have been included within a spatial, GIS-based Decision Support System, which is available to inform planners and parks managers of type of park provision, relative needs (individuals / neighbourhoods), and accessibility considerations (distance, road, bus links). As well as being a practical planning tool, the DSP also has the potential to assist with citizen participation in relation to green space management. Project Team & Funding The Project commenced in January 2001. It is co-ordinated by the Department of Planning & Environmental Policy at University College Dublin and has six partners in other European states, namely The Robert Gordon University/Macaulay Institute in Aberdeen; The University of Surrey, Guildford/University of Brighton; the Eindhoven University of Technology; the Swiss Federal Institute of Technology, Zurich; the University of Hohenheim, Stuttgart, and the Autonomous University of Barcelona.

Anonymous (2005). Millennium Ecosystem Assessment.

The Millennium Ecosystem Assessment (MA) is an international work program designed to meet the needs of decision makers and the public for scientific information concerning the consequences of ecosystem change for human well-being and options for responding to those changes. The MA was launched by U.N. Secretary- General Kofi Annan in June 2001 and was completed in March 2005. It will help to meet assessment needs of the Convention on Biological Diversity, Convention to Combat Desertification, the Ramsar Convention on Wetlands, and the Convention on Migratory Species, as well as needs of other users in the private sector and civil society. If the MA proves to be useful to its stakeholders, it is anticipated that such integrated assessments will be repeated every 5-10 years and that ecosystem assessments will be regularly conducted at national or sub-national scales. The MA focuses on ecosystem services (the benefits people obtain from ecosystems), how changes in ecosystem services have affected human wellbeing, how ecosystem changes may affect people in future decades, and response options that might be adopted at local, national, or global scales to improve ecosystem management and thereby contribute to human well-being and poverty alleviation. The specific issues being addressed by the assessment have been defined through consultation with the MA users. The MA synthesizes information from the scientific literature, datasets, and scientific models, and includes knowledge held by the private sector, practitioners, local communities and indigenous peoples. All of the MA findings undergo rigorous peer review. More than 1,300 authors from 95 countries have been involved in four expert working groups preparing the global assessment, and hundreds more continue to undertake more than 20 sub-global assessments. The findings are contained in the fifteen reports listed in the box above. The MA is an instrument to identify priorities for action. It provides tools for planning and management and foresight concerning the consequences

of decisions affecting ecosystems. It helps identify response options to achieve human development and sustainability goals, and has helped build individual and institutional capacity to undertake integrated ecosystem assessments and to act on their findings. Partner Institutions: Institutions Represented on MA Board Consultative Group on International Agricultural Research (CGIAR) Convention for the Conservation of Migratory Species of Wild Animals (CMS) Convention on Biological Diversity (CBD) Food and Agriculture Organization of the United Nations (FAO) Global Environment Facility (GEF) International Council for Science (ICSU) Ramsar Convention on Wetlands

Anonymous (2005). Re Urban Mobil.

Objective The aim of the project is to analyse re-urbanisation potentials and obstacles of inner-city residential areas and to develop instruments, incentives and strategies for an appropriate and long-term use of these areas taking into consideration changing demographic preconditions. **Scientific approach** Re-urbanisation is meant to be a comprehensive, socially integrative strategy aimed at the development of the housing and living conditions in the entire core city, in particular its historical residential areas adjacent the city centres. While the traditional approach towards urban regeneration and renewal was still focussed on urban growth, at present the ongoing demographic changes (low fertility rates, smaller households, aging) have to be considered as a new and decisive determinant. Therefore, re-urbanisation has to be redefined as a qualitative concept. Complexity and interdependencies of urban development require both an interdisciplinary approach and linkages between research and practice. **Outcomes** Main outcomes of the project in scientific and practical terms will be a modified theoretical model and methodical approach of re-urbanisation, an "Environmental Atlas" and future scenarios for inner-city neighbourhoods, legal and economic instruments as well as tested communication and promotion strategies for re-urbanisation, a toolbox applicable in different European contexts, an information and monitoring system comprising small-scale data on different issues concerning inner-city areas and an international expert team on questions of re-urbanisation. The project will contribute to improving the quality of life in inner-city neighbourhoods with respect to different age groups, social strata and life styles. It intends to involve local stakeholders, to improve the relationships between citizens and local authorities, share know-how about integrated urban development strategies, disseminate methods, strategies and result by way of European urban and science networks. Moreover, long-term impacts are to be expected: With increasing polarisation between growing and declining cities in Europe, many urban regions will be confronted with problems of demographic and overall urban change in future. The project intends to satisfy the need of transferable knowledge and best practice experiences on how to deal with inner-city decline under the conditions of demographic change.

Arce, R. and N. Gullon (2000). "The application of Strategic Environmental Assessment to sustainability assessment of infrastructure development." Environmental Impact Assessment Review 20(3): 393-402.

This paper addresses the need for an environmental assessment of policies, plans, and programmes (Strategic Environmental Assessment--SEA). It presents the concept and procedures of the art in SEA, and focuses on its application to sustainability assessment of infrastructure development. A specific case in Spain is described: the planning of ring and radial motorway approaches to Madrid. Case provides a possible framework for an specific SEA methodology, according to authors.

Association of New Jersey Environmental Commissions (2001).¹ Municipal Environmental Commissions in New Jersey.

¹ All publications from this author or filed as .pdfs in a folder named with the acronym "ANJEC."

Review: Lists responsibilities and structure of Environmental Commissions - a quasi-local level of government in New Jersey focused on environmental matters, providing support to local governments in keeping an inventory of natural resources, land acquisition for conservation purposes, and planning advice with respect to conservation.

Association of New Jersey Environmental Commissions (2003). Planning: Build-Out and Capacity Analysis.

Review: Example of a tool to help understand the impact of land use decisions. Build-out analysis helps to understand economic and social issues arising from future development, and the capacity analysis done on the results helps to describe the environmental impacts of the development. Analyzes the capacity of current infrastructure to manage new inputs and indicates new infrastructure needed to meet future needs.

Association of New Jersey Environmental Commissions (2003). Smart Growth Survival Kit: The Master Plan.

Review: Guidelines for the development of a municipal master plan, although smart growth principles introduced would be applicable at the regional scale, focusing on environmental conservation aspects as well as other sustainable development features (historical preservation, housing, recreation). Notes importance of plan integration with plans set by other levels of government (comprehensive plans as well as individual resource management plans like water or transportation).

Association of New Jersey Environmental Commissions (2004). Open Space Is a Good Investment: The Financial Argument for Open Space Preservation.

Review: Reviews arguments against open space (park land, farm land) preservation by municipalities and provides evidence of cost savings compared to putting a parcel to other land uses. Notes that USA municipalities aren't able to cover the costs of conventional infrastructure to service commercial/residential development ("for every \$1.00 collected in taxes, residential development costs \$1.04-\$1.67 in services").

Association of New Jersey Environmental Commissions (2005). The New Jersey Highlands Water Protection & Planning Act Primer.

Review: Overview of NJ government policy on watershed conservation. Provides details on local government requirements to participate in regional resource management, and the regional body assigned to govern the resource (Water Protection and Planning Council).

Association of New Jersey Environmental Commissions (2006). Commission of the Month.

Review: Website on current activities of Environmental Commissions (EC) in NJ. Most EC are for a single municipality, but some cover 2 such as the Woodstown-Pilesgrove EC. The EC members are appointed for a 3 year term.

Atkins, P. S. (2003). "From the mauling to the malling of regionalism." Public Administration Review 53(6): 583-586.

Five reports that address the topic of regionalism in the US are discussed. The reports are: 1. California 2000: Getting Ahead of the Growth Curve - The Future of Local Government in California, by the Assembly Office of Research, California State Legislature, 2. Special Report: Planning and Service Delivery in Tennessee, by the Comptroller of the Treasury, Office of Local Government, State of Tennessee, 3. Substate Regional Governance: Evolution and Manifestations Throughout the United States and Florida, by the Florida Advisory Council on Intergovernmental Relations, 4. Planning and Growth Management, by the Governor's Office of Planning and

Research and the Governor's Interagency Council on Growth Management, State of California, and 5. Beyond Independence: The Challenge of Regional Governance, by the League of California Cities, Committee on 21. Review: A discussion of the history of regionalism in the USA, focusing on the recent past beginning with the Regan administration. Emphasizes the support to regional institutions provided by the federal government. Trends identified: regional service provision encouraged by local governments to achieve economies of scale, regional planning to address growth concerns and impacts on the environment, administrative streamlining and economic development services.

Australia Local Government Association (2003). State of the Regions Report 2002-03: Regional Economic Governance.

The theme of the 2002-03 State of the Regions report is regional economic governance and along with the traditional update of the regional performance indicators, the Report focuses on governance and the linked issue of growing inequality between regions. This growing inequality is the result of the process commonly referred to as 'globalisation', but in reality represents the outcomes of the shift in economic structure towards the so-called 'knowledge based' or 'innovation' driven economy. Review: Example of Australian trends in regional governance, focused on economic development. Emphasizes need to do TBL reporting and more analysis of "core regional strengths, capacities, strategies and alliances" in order to support regional economic development in the face of globalization.

Baker, D. C., N. G. Sipe, et al. (2006). "Performance-Based Planning: Perspectives from the United States, Australia, and New Zealand." *Journal of Planning Education and Research* 25(4): 396-409.

This article examines the application of performance-based planning at the local level in the United States, Australia, and New Zealand. A review of the literature finds that there have been few evaluations of performance-based planning, despite its being used by many governments. The authors provide a comparative review of the experiences of various jurisdictions in implementing this form of zoning and present observations on its relative strengths and weaknesses. Findings suggest that many of the jurisdictions that adopted performance-based planning subsequently abandoned it because of the heavy administrative burden required, and where performance methods survived, they were typically hybridized with traditional zoning. If performance-based approaches continue to be used, there is a need to better understand the administrative and implementation implications of this type of land use regulation. Review: Excellent discussion of the use of performance based zoning - analyzing the intensity or physical characteristics and functions of a proposed land use in order to determine environmental impacts instead of regulating all types of a particular broad land use category (e.g. commercial vs. residential). Discusses burden of proof, the need to monitor environmental functions in order to establish impacts, requiring greater administrative resources and therefore reducing this tool's attractiveness to municipal governments.

Baker, J. G. (2005). Ecological Infrastructure: A Framework for Planning and Design, Virginia Polytechnic Institute and State University.

Review: A thesis on wildlife management with respect to transportation infrastructure (highway crossings). Provides good background on the use of a systems approach to determining the most effective crossing sites, as past efforts focused on single species crossings instead of sites that would serve multiple species and preserve ecosystem biodiversity (ecological infrastructure of the eco-region). Looks to habitat convergence (mapping/analysis tool) to understand the landscape and determine convergence sites, the most effective sites for crossings. Also suggests that this approach could serve in integrating other ecosystem integrity factors such as water flows, as well as social factors like landscape aesthetics or maintaining agricultural units, with wildlife

management goals. This method could be utilized in the analysis and planning of other forms of human infrastructure/development that causes habitat fragmentation.

Baldassare, M. and J. Hassol (1996). "Possible planning roles for regional government." Journal of the American Planning Association 62: 17-30.

Looks at the results of a survey for the support of regional government among city planning directors in California by state legislature. Concerns of increase growth in California driving interest in regional governance, research into forms and responsibilities. Review: Reviews opinions of the public and planning professionals on regional governance roles and authority. Provides some expert opinion on the topic, which is divided into 2 camps: those favouring regional delivery to address equity and cross-border issues and those who feel evidence of better management of these issues is lacking. Some evidence provided on studies showing local governments were unable to manage certain issues. General consensus (of survey) is slightly in favour of regional management of "system-maintenance functions" (transportation, water & sewers) and environmental (pollution) management. The majority of those surveyed felt that regional management of "life-style services" (schools, police) was best left to the local level, as preferences vary widely. However, survey also found that results varied based on jurisdiction surveyed - San Francisco respondents were more in favour of regional management of growth than LA respondents.

Barnett, J. (2000). Planning for a New Century, Island Press.

Review: This book consists of a collection of essays that Jonathan Barnett, a professor of the Practice of City and Regional Planning at the University of Pennsylvania put together. The essays cover a variety of topics (social equity and metropolitan growth, design codes and their relationship to sprawl, pollution control, transportation theory and practice, housing, public safety, education, etc.) that look into the regional planning approach. Of greatest value is the introduction chapter written by Jonathan Barnett that looks at today's major issues (listed as sustainability, smart growth and liveable communities) looking at why regional planning is needed to solve these issues, regional strategies as well as looking at examples of regional implementation.

Beatley, T. (2000). "Preserving biodiversity." American Planning Association. Journal of the American Planning Association 66(1): 5-20.

Preserving biodiversity represents a major challenge for American planners, as threats to biodiversity are increasingly the result of urbanization and land use change. Present and past conservation strategies, including the federal Endangered Species Act, have not been successful; new, bolder strategies are needed. Long-range land use planning, aimed at creating large-scale integrated ecological systems of connected greenspace and habitat, is the key. Nested approaches in which regional systems of protected greenspace connect with and link to larger statewide and continental systems are necessary. Habitat conservation goals must be more ambitious and wasteful development patterns must be checked if biodiversity is to be preserved. Other elements of the conservation strategy must include new approaches to funding acquisition, creative incentives for conservation on private lands, envisioning new roles for cities in restoring and conserving biodiversity, and giving greater attention to biodiversity conservation in planning curricula. Review: Discusses lack of progress in biodiversity protection over past 25 years, noting efforts such as endangered species legislation bring habitat protection into play too little and too late and that such acts focus too much on individual species while the broader ecosystem is failing. Suggests potential alternative approaches (along with their shortcomings) to ecosystem-based management: USA Habitat Conservation Plans, Biosphere Reserves and large area conservation strategies like Y2Y, Dutch legislation, urban ecosystem planning. Lists land

acquisition/protection as key tool to habitat preservation (land use regulation, fiscal and financial incentives for private lands, transfer of development rights) along with several funding schemes. But also notes role for urban habitat in biodiversity protection - green roofs, flood plains, etc. - as well as ecosystem functions like water filtration, energy use.

Beer, A., T. Clower, et al. (2005). "Neoliberalism and the Institutions for Regional Development in Australia." Geographical Research 43(1): 49-58.

Abstract This paper examines some effects of the pursuit of neoliberalism on regional development policy and practice in Australia, and in particular on the activities and effectiveness of regional development organisations. The paper interprets data from a survey of 505 regional development organisations across Australia through the framework of Jessop's contribution to state theory and his identification of four key trends in economic management under neoliberalism. Regional development policies are seen as a response of governments to electoral pressure from regions, but a response that is constrained by the dominance of neoliberal ideology. The objectives of regional development are predominantly economic, but are often limited to the role of facilitation and the provision of information. Some responsibility for regional development has been shifted downwards to regions, but the effectiveness of the organisations given this responsibility is reduced by the short-term and competitive nature of much of their funding, the lack of coordination between regional development actors at the local level, the proliferation of agencies and the competition between them. The paper concludes that regional development agencies in Australia are in many ways a product of neoliberalism, since they represent one way in which governments can be seen to be responding to regional pressure for assistance but they can do so without incurring significant costs. Yet regional development bodies are also a victim of neoliberalist thinking, since it denies them the resources and the powers they need to be more successful in their work. Review: Discusses impact of downloading of regional economic development responsibility upon local governments, noting the lack of capacity for this responsibility and resultant inability to achieve goals, based on a survey of over 500 regionally-focused development organizations. Main problems are a lack of funding and competition between locally-based agencies, leading to a lack of cooperation amongst these fragmented groups. Authors indicate that basic governance structure is the key hindrance to regional economic development due to its basis in neo-liberal ideology - downloading regional development responsibility without building regional capacity to govern.

Bellamy, J., H. Ross, et al. (2002). Integrated Catchment Management: Learning from the Australian Experience for the Murray-Darling Basin.

Review: Presents summary of research into best practices relating to Integrated Catchment Management. Offers a list of key principles and an ideal model for ICM governance.

Benedict, M. A. and E. T. McMahon (2001). Green Infrastructure: Smart Conservation for the 21st Century. Washington, D.C., Sprawl Watch Clearinghouse Monograph Series.

Review: Excellent definition of green infrastructure, discussion of why it is needed to be planned and implemented in a holistic manner, and case studies relating to the main principles of green infrastructure as laid out by the authors. Also provides examples of initiatives at various scales of management, including regional and the importance of involving stakeholders such as private landowners, and makes a comparison/critique against traditional conservation efforts.

Benedict, M. A. and E. T. McMahon (2002). "Green Infrastructure: Smart Conservation for the 21st Century (Short Journal Version)." Renewable Resources Journal Volume 20, Number 3: 12-17.

Review: A strong article written by Benedict and McMahon that gives a strong overview basis with regards to 'Green Infrastructure'. Looks at Green Infrastructure as the ecological framework

necessary for environmental, social and economic sustainability. The authors take a brief look at the history and progression towards Green Infrastructure while also comparing it to Greenways. Many of the functions and benefits of Green Infrastructure are mentioned in the article while Smart Growth policies and programs are suggested as methods that encourage the implementation of such Green Infrastructure. The authors state that Green Infrastructure should be the first step in developing land use plans while integrating them with built (grey and social) infrastructure. Important principles of Green Infrastructure are discussed.

Bertrand-Krajewski, J.-L., S. Barraud, et al. (2000). “Need for improved methodologies and measurements for sustainable management of urban water systems.” Environmental Impact Assessment Review 20(3): 323--331.

In natural and artificial Urban Water Systems (UWS), there are strong interactions between urbanization processes, discharges of individual, industrial and collective wastewaters, transfer of pollutants in storm water runoff, and their impacts on natural surface and ground waters. The sustainable management of UWS is becoming very important, and needs new research and action methodologies to get a more integrated knowledge and understanding from scientific, technical, ecological, and socio-economic points of view. In this paper, methodological problems associated with modeling, decision-making tools, definition of objectives, metrology, and multidisciplinary are identified. An improved and reliable knowledge about the short- and long-term behaviour of UWS appears absolutely necessary to evaluate indicators and criteria used in various methodologies aiming at assessing sustainability. A multidisciplinary research project, named OTHU (Experimental Observatory for Urban Hydrology), which aims at providing results, knowledge, and methodologies to assess the sustainability of UWS, is then briefly presented. Review: Gives useful information on the limitations of previous tools for urban water management: models and decision-making processes (do not characterize interrelated variables - inter-relations between infrastructure and the urban area are modeled but not the downstream ecological impacts, overtly complex yet do not include enough variables to provide accurate representation, based on static or short-term situations). To address these short-comings the authors suggest a clear definition of objectives is needed, along with better coordination in data collection to allow interdisciplinary collaboration, and strengthening of long term data gathering efforts to provide more complete descriptions of ecosystem processes.

Bow River Basin Council (2005). Nurture, Renew, Protect: The 2005 Report on the State of the Bow River Basin, Bow River Basin Council.

Review: Detailed overview of the Bow River Basin and its water quality and ecological status as of 2005. Provides suggestions for policy changes in order to better manage the river system, based on water quality, hydrology, and ecosystem features.

Branch, M. C. (1988). Regional Planning - Introduction and Explanation.

Review: Basic introduction to regions (types, purposes, coverage) and regional planning. Provides several examples of planning practice in business (oil & gas, electricity distribution, manufacturing) and government (water supply, transportation, coastal zone management).

Brandes, O. M. and D. B. Brooks (2005). The Soft Path for Water in a Nutshell.

Many Canadians believe that our fresh water resources are boundless. The truth is that only a small proportion of our water is renewable and located close to where most Canadians live. Continuing to take more and more water from nature while ignoring wasteful use at farms, factories and households will likely lead us to an arid future of our own making. The best way to secure the future for fresh water is to develop a plan that draws all ‘new’ water from better use of existing supplies and to change habits and attitudes. The ‘soft path’ is a planning approach for

fresh water that differs fundamentally from conventional, supply-focussed water planning. It starts by changing the conception of water demand. Instead of viewing water as an end product, the soft path views water as the means to accomplish certain tasks. The role of water management changes from building and maintaining water supply infrastructure to providing water related services, such as new forms of sanitation, drought-resistant landscapes, urban redesign for conservation and rain-fed ways to grow crops. Reducing water demand provides the cheapest source of ‘new’ water. It can also be implemented more quickly and is less environmentally damaging than any supply alternative. Most current demands can be met with far less water and with water of lower quality than is currently used. High-efficiency toilets, for example, can reduce the amount of water used with each flush by 75 per cent. Further reduction is possible by using reclaimed wastewater rather than drinking water to flush toilets further yet with dry sanitation systems that eliminate water use altogether. The soft path is a planning approach that allows us to unleash the full potential of demand management by changing water-use habits, technologies, and practices. As a matter of principle, the soft path works within ecological limits and promotes local public participation to ensure sustainability of our water resources. Soft path planning looks 20 to 50 years into the future and proposes major changes in our water infrastructure and institutions. The focus is on designing and implementing policies and strategies today that can reduce or even eliminate the need for further supply-side developments for the foreseeable future. Simply put, the soft path offers various routes to guide our current water management onto a sustainable path for long-term ecological and social prosperity. Review: Outlines alternative water management strategy to address sustainable development goals - the soft path - bringing focus away from end goal of providing water to recognizing water use as a means to an end. Therefore, water is supplied and managed as a service with delivery and quality varying based on how the water is to be used. Suggests that best scale for implementing soft path analyses of water resources is provincial, as Provinces have the most jurisdiction over this particular resource in Canada, but also notes that urban areas could be analyzed given sufficient information. Makes reference to several tools that could be implemented at the municipal level to regulate water use. Encourages back casting to develop management strategies that will achieve sustainable development goals.

Brandes, O. M., K. Ferguson, et al. (2005). At a Watershed, Polis Project on Ecological Governance.

Review: Excellent discussion of water management issues and governance. Presents evidence on the need to support ecosystem integrity in advance of water resource use for human consumption, based on the negative consequences to society of ignoring ecosystem functional needs. Suggests several tools for setting and achieving water management goals, such as demand side management and soft path approaches, and relates these tools to the various stakeholder (public, private sectors and government) roles in governance.

Brandes, O. M. and T. Maas (2006). What we govern and what governs us: Developing sustainability in Canadian water management. Canadian Water Resources Association 59th Annual Conference: “Working from the source toward sustainable management”.

Discusses increasing water scarcity issues in many parts of the world, including Canada. Suggests Ecological Governance as method for reforming institutions in order to develop sustainable solutions to this dilemma, in order to move away from watershed management and towards managing “how people live as watershed citizens”. This process recognizes that sustainable water management is a problem of social decision-making, but based on science to provide the understanding the possible consequences of our choices. Review: An excellent discussion on new methods for addressing water resource conflicts, focusing on ecological governance as the institutional framework to enable new ways of developing policy on ecosystem management activities. Efforts to establish ecological governance must recognize that watersheds are the most

logical jurisdictional boundary for decision-making, that water links and is linked to land and terrestrial ecosystems (playing an important functional role in both) and so links human communities to those ecosystems across space and time, and must reconcile the cultural and economic value of water with its value as a necessity to both human and ecosystem life.

Breuste, J., H. Feldmann, et al. (1998). "Urban ecology."

Brierley, G., M. Hillman, et al. (2006). "Knowing Your Place: an Australasian perspective on catchment-framed approaches to river repair." *Australian Geographer* 37(2): 131--145.

Australia and New Zealand have been at the forefront of many advances in river management through policy and legislative initiatives and the introduction of participatory frameworks. In part this leadership role is a response to the pervasive extent and impact of post-colonial societies on Australasian environments. Core geographical concepts have contributed significantly to the increased recognition of a 'sense of place' in management practice. Grounded and authentic applications recognise explicitly the complexity of interactions across an array of biophysical and social scales. The contribution of geography to river management is particularly significant in the implementation of catchment-framed programmes, the development of generic scientific tools that can be used on a catchment-by-catchment basis, and the application of adaptive management principles that are operationalised within participatory frameworks. Failing to acknowledge geographical concepts can lead to a placeless universalism in river management that is unsustainable and unacceptable in biophysical and social terms. Review: Excellent discussion of the need to integrate scientific methods (spatial, functional, temporal analysis) with sociological values in protecting riverine ecosystems. Provides a basic framework for adaptive management, noting that the most important factor is developing an understanding of the local context - catchment specific attributes and relationships - in advance of setting management activities ("know your catchment"). The framework's goal is to provide a platform with which to predict system responses to management intervention, not to set cookie-cutter requirements unsuitable for management of each unique ecosystem. Key to risk management is to accept uncertainty and natural functions (floods, etc.) as parts of system, not hazardous unwanted events.

Brody, S. D. (2003). "Implementing the principles of ecosystem management through local land use planning." *Population and Environment* 24(6): 511--.

While ecosystem approaches to management focus on broad spatial scales, decision makers increasingly recognize that implementation must occur at the local level with local land use decisions. This article examines the ability of local comprehensive plans in Florida to incorporate the principles of ecosystem management. It seeks to understand how comprehensive plans can effectively contribute to the management of ecological systems by systematically evaluating local plans against a conceptual model of what makes for a high quality ecosystem plan. Results measure the relative strengths and weaknesses of local plans to achieve the objectives of ecosystem management and provide direction on how communities can improve their environmental frameworks. Review: Notes importance of ecosystem management, with implementation at a local scale to address loss of critical natural resources due to land use decisions at this smaller level affecting the larger system. Case study of the ability of local jurisdiction (Florida-based, collaborative governance model) to achieve ecosystem management goals. Results indicate that while the will may be there, the local jurisdictions lack capacity and often create plans touching superficially on obvious ecosystem indicators but not new ones (like habitat fragmentation) of increasing importance or else describes broad goals (ecosystem integrity) lacking specific indicators. Excellent description of planning process and analysis of a survey of implementation in Florida municipalities.

Brooks, D. B. (2003). “Against the flow.” Alternatives Journal 29(2): 29--.

It is now time to shift the priorities from finding new sources of water supply to managing the demands for water. Most programs for demand management depend upon some system for pricing water and wastewater and for seeking out cost-effective improvements. Review: Article on water demand/supply concerns - evidence of need to focus on demand side measures as most supplies have been tapped. Notes need to do more to understand how to measure the value of water with respect to ecosystem services and to determine how they vary with time and place. Lists demand management tools: water pricing, advancing technology to improve efficiency of consumption and collection, and better decision-making/prioritization around what industries get to use water resources (and type -grey vs. potable, etc. -they can use, the “soft path approach”)

Brunckhorst, D. and I. Reeve (2006). “A Geography of Place: principles and application for defining “eco-civic” resource governance regions.” Australian Geographer 37(2): 147--166.

River catchments have been the dominant form of regionalisation for natural-resource management in many countries since the 1980s. Local governments play a considerable role in planning with ever-increasing responsibilities for sustainable environmental management, planning and development controls. There has also been an increasing emphasis on community participation in resource management, which emphasizes the need to re-examine the requirements for spatial definition of resource governance regions. This paper proposes three principles. First, the nature and reach of environmental externalities of resource use should determine the size and nesting of resource management regions. Second, the boundaries of resource governance regions should enclose areas of greatest interest and importance to local residents. Third, the biophysical characteristics of a resource governance region should be as homogenous as possible, which provides resource planning and management efficiencies. The paper describes a range of concepts and empirical techniques used to apply these principles to the derivation of a resource governance regionalisation of the State of New South Wales, Australia. Review: Excellent article on regional boundary definition. Practical example provided of method to combine socioeconomic region with homogeneous biophysical areas, using overlay mapping (GIS), recognizing the interplay between these two spheres in terms of both systemic impacts and the growing desire for public input into management decisions. The GIS was composed of layers created through surveys of public understanding of social and economically important areas - their definition of the cultural region - which were compared to ecosystems boundaries defined by areas of similar climate and biophysical attributes. These bioregions do not necessarily conform to watershed boundaries, but instead focus on similarities in physical and functional characteristics that are of importance to the local community since it is the impacts of the community on the local environment that are of concern and management efficiencies can be achieved via operation over a homogeneous environment.

Butler, W. H. (2005). “Collaborative Environmental Management: What Roles for Government?” American Planning Association. Journal of the American Planning Association 71(4): 462--.

Collaborative Environmental Management: What Roles for Government? by Tomas M. Koontz, Toddi Steelman, JoAnn Carmin, Katrina Smith Korfmacher, Cassandra Moseley, and Craig W. Thomas, is reviewed. Review: Book review. Discusses government's role in either non-governmental initiatives, government supported, or government led environmental initiatives. Characteristics of each case are discussed with the following observations: - Government led efforts had strong financial and technical support but lacked flexibility in issue definition and decision-making processes -Government as supporter cases often followed governmental/institutional structures which decreased innovation and structured goals - Government as follower initiatives showed greater innovation and built social capital

Caffyn, A. and M. Dahlstrom (2005). “Urban-rural interdependencies: joining up policy in practice.” Regional Studies 39(3): 283(14).

The pros and cons of bifurcation of urban and rural regions within the overall framework of regional development are discussed based on the policies and conditions in UK. It is noted that such division is not always conducive to the regional development because of interdependency of the two regions. Hence, an integrated approach on the issue is required in the policies. Review: Suggests alternative methods of regional development, collaborative partnerships, to current urban - rural compartmentalization paradigm. Notes interconnected relationship between urban and rural areas, especially in light of current technological advances in transportation and communication as well as increased interdependencies due to out-migration (suburban sprawl). Provides several case studies, based on a survey of several partnerships, to illustrate motivations for partnership, process, and opportunities/barriers to achieving goals. Partnerships illustrated the benefits to overcoming barriers to achieving joint goals, but also recognized need to maintain local control over some issues that did not have common preferences.

Calthorpe, P. and W. B. Fulton (2001). The Regional City: planning for the end of sprawl, Island Press. Review: The book is written by Peter Calthorpe and William Fulton, whom together have extensive professional, research, and publishing experience related to urban planning. The book is about the importance of moving urban planning towards the regional city. It discusses why this should occur (the regional world of today), problems related to current urban planning and development (everywhere communities, lack of social capital), how to implement the regional city (by design, public policy, feds role as enforcer and awarder), current precedents/case studies (Portland, Salt Lake, Seattle, New York, Chicago, San Francisco, Florida, Maryland, Minnesota), and methods of shaping our neighborhoods into true building blocks of the regional city (Suburbs, urban neighborhoods, HUD's). The book is a must read as it gives a good immersion into the importance of why regionalism and how to best implement it with the addition of strong case studies.

Carr, J. B. and R. C. Feiock (2004). City-County Consolidation and Its Alternatives: Reshaping the Local Government Landscape, M.E. Sharpe.

Review: A collection of essays by political scientists considering the resurgence of interest in city-county consolidation, the rationale for it, costs and benefits, alternatives, and political obstacles. Authors are sceptical of perceived benefits of consolidation in terms of resource savings/efficiency and democracy. Carr argues that “one person's reform is another person's mechanism of disenfranchisement.” Feiock suggests that the compromises reformers have to make with vested interests in order to consolidate usually dissipate the expected benefits. Alternatives to amalgamation suggested: interlocal agreements, special districts, and annexation - seen as lower cost while offering benefits of collaboration.

Castells, M. (2002). “Local and Global: Cities in the Network Society.” Tijdschrift voor Economische en Sociale Geografie 93(5): 548--558.

Chan, R. C. K. (2002). Towards strategic planning and regional sustainability: Hong Kong in the Pearl River Delta Region.

This paper examines the wider spatial and governmental context for promoting sustainable development policies in Hong Kong. It examines the spatial frameworks and the territory-specific approaches adopted in Hong Kong since the 1970s. Despite the claim of a non-interventionist approach, government intervention for the purposes of promoting economic growth was evident in the development model of Hong Kong under the British rule. Additionally, the notion of strategic planning at the regional level was absent from the spatial framework. This was so even

with the growing economic interaction between Hong Kong and the other cities in the Pearl River Delta Region (PRDR) in the 1980s and remained so in the early years of the SAR government. With economic integration between Hong Kong and the PRDR, strategic planning has to take on a different form. The diversity of the socio-economic context and the complexity of political processes in the PRDR offer enormous opportunities to all stakeholders. Hong Kong should be more proactive in bringing the region together with a view to attaining regional sustainability. Copyright © 2002 John Wiley & Sons, Ltd. and ERP Environment. Review: The article is academic in nature and written by author Roger Chan. The article looks at the planning history of Hong Kong. It is a good case study showing how its success has led to environmental degradation within and outside the city area. A need for integrated regional management along with ecological modernization is required to help ensure the sustainability of Hong Kong into the future. Germany is put forward as a good precedent for environmental indicators for helping to measure sustainable development on the regional level.

Chapin, T. (2005). “The Portland Edge: Challenges and Successes in Growing Communities.” American Planning Association. Journal of the American Planning Association 71(4): 453--.

The Portland Edge: Challenges and Successes in Growing Communities, by Connie P. Ozawa, is reviewed. Review: Book review. Discusses Portland, Oregon, which is often held up as a shining example of urban planning for smart growth and environmental sustainability. While the book recognizes that Portland has done well in some areas, it is not perfect. Talks about history of the Metro regional planning organization, which started as a single purpose planning body focused on Transportation. The goal of book is to illustrate Portland's efforts and how they can inform planning elsewhere.

City of Toronto (2000). Building the new City of Toronto: Three year status report on amalgamation - January 1998-December 2000.

Review: A report from the City of Toronto on the costs of amalgamation. Provides excellent detail on the types of costs incurred beyond the fiscal, such as staff resources needed to harmonize the 160,000 bylaws of the individual municipalities before amalgamation. Also discusses budgetary costs of both amalgamation and provincial downloading.
http://www.toronto.ca/city_manager/amalgamation_3yearstatus.htm

Clark, P. C. and Arielle Farina (2006). Copenhagen, Denmark: 5 Fingers Plan, Published by “Open Space Seattle 2100” in pdf format on their website. It is a collaborative project that is looking at designing Seattle's Green Network for the next century.

Review: This is a case example published by “Open Space Seattle 2100”. It is a collaborative project that is looking at designing Seattle's Green Network for the next century. The case example shows how Copenhagen's original 5 finger regional plan along with its Green Structure plan have guided green space planning along incorporating cultural-historical, accessibility, recreational and ecological concerns into account. While the case example is less detailed than others it is still of good value in that it is another Scandinavian example of good green spaces management.

Clark, W. C. (1988). “Functional regionalism in environmental management. (editorial).” Environment v30(n2): p1(2).

Author Affiliations: John F. Kennedy School of Government, Harvard Review: “Functional regionalism is defined as the use of ad hoc institutional arrangements to deal with specific environmental problems over specific areas similarly affected either by the problems or by the steps taken to manage them.” Presents an editorial on the difficulty of responding to environmental dangers due to the problems of transcending traditional boundaries. Examples of

environmental problems that have been addressed and overcome by small groups that respond to just one issue such as the Helsinki Protocol on the reduction of sulfur emissions; Comments on the dynamic aspects of functional regionalism and how it is a good thing albeit limited and should be encouraged.

Collin, J. P., J. Leveillee, et al. (2002). "New Challenges And Old Solutions: Metropolitan Reorganization in Canadian and U. S. City-Regions." *Journal of Urban Affairs* 24(3): 317-332.

This article examines how local public institutions, especially municipal administrations, have adapted their structures and actual practices to respond to new regionalist and metropolitan challenges. We want to assess if, and how much, governmental institutions are really adopting new ways to plan, supervise, and implement metropolitan policies. More precisely, we analyze 35 American and Canadian urban agglomerations that rank as regional capitals or mid-sized urban areas. The emphasis is on the transformation of metropolitan institutions and on metropolitan area taxation strategies. The analysis pinpoints a number of findings regarding the nature and impact of recent institutional reforms. These findings involve: 1) the return in force of the unicity in Canada, 2) the slow development in the organization of the local public sector and the adoption of institutional solutions favouring voluntary associations in the US, 3) the discrepancy between discourse and practice in terms of the objectives targeted by fiscal measures, and 4) the growing role of state and provincial governments in metropolitan institutional and fiscal reforms.

Congress, W. P. (2006). *Reinventing Planning*.

Conservation Ontario (2006). *Conservation Ontario: Representing Ontario's 36 Conservation Authorities*. Review: Provincially mandated organizations focused on watershed conservation. An example of a community/volunteer based organization with a governance board comprised of local government councilors. Key areas of activity: water/land conservation, education, heritage conservation, cultural/recreation opportunities, stewardship, and volunteerism. Authority has ability to lay fines for violations of provincial regulations regarding waterways.

Council of Mayors, S. E. Q. (2006). *History and Achievements*.

County of Renfrew (2003). *County Official Plan*.

Review: An example of a county style regional government in Ontario. Website provides information on the regional plan and authority of the county, based on provincial legislation. Sites linked to from this page provide information on the structure of an upper-tier municipality (county) in Ontario, explaining Renfrew's responsibilities and organization. Interesting note on authority: County plan doesn't have to be adopted by lower-tier municipalities, but County has authority over approving the lower-tier plans.

Cruse, L., B. Dollery, et al. (2005). "Community consultation in public policy: The case of the Murray-Darling Basin of Australia." *Australian Journal of Political Science* 40(2): 221--237.

Community consultation is widely employed in contemporary Australia as a means of improving the formulation and implementation of public policy. However, little is known about the optimal expenditure of effort required for any given consultation. This article develops a rational choice model of community consultation that seeks to encapsulate the major elements involved in optimising consultation effort. The framework is particularly useful for understanding and explaining why actual community consultation processes may be sub-optimal. The rational choice model is then applied to the Living Murray debate over water resources in the Murray-Darling Basin of Australia.

Csabay, Jim. “Water Benefits Beyond the Farm Gate.” *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association. < http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

de Loe, R. (2000). “Floodplain management in Canada: Overview and prospects.” *Canadian Geographer* 44(4): 355--.

Flooding is an important natural process. It plays a vital role in the maintenance of floodplain and shoreline ecosystems. Yet, it also is a hazard, in that floods put human life and property at risk. Review: Discussion of multiple benefits derived from coordinated resource planning, using flood management as case study. Notes how issue has been managed solely from a hydrological point of view, resulting in limited solutions. Need broad cost-benefit analysis to determine if development in the floodplain is the lesser of all evils or not. Also recommends benefits of regional-scale monitoring/planning as resource requirements for effective data collection are not available to local governments.

De Ridder, K. (2004). Benefits of Urban Green Space (BUGS).

The inter-related issues of urban sprawl, traffic congestion, noise, and air pollution are major socio-economic problems faced by most European cities. The main objective of BUGS is to develop an integrated methodology to assess the role of green space in alleviating the adverse effects of urbanisation. Addressing the impact of green areas on such diverse areas as traffic flows and emissions, air quality, microclimate, noise, accessibility, economic efficiency, and social well-being, this methodology will allow to deduce a set of guidelines regarding the use of green space as a design tool for urban planning, at scales ranging from a street canyon or a park to an entire urban region. Potential end-users are actively involved to help focus and steer the work. Supported by a marketing strategy, the ultimate goal is to turn the methodology into a self-sustaining activity, to be offered as a service to urban and regional authorities in Europe.

de Roo, D. M. and Gert (2004). *Integrating City Planning and Environmental Improvement: Practicable Strategies for Sustainable Urban Development*, Ashgate.

Review: In reaction to the current trend of planning towards sustainable urban development and management this book takes a look at 23 cases with regards to integrating city planning and environmental improvement. The publication of the book is a part of a series of books contributing to the mission of the International Urban Planning and Environment Association to resolving environmental conflict. The intended audience is public officials and planning professionals. The introductory chapter that discusses principles of integration and Part B of the book consisting of Regional Approaches to Integration are of value to the regional planner.

Development Assessment Forum (2001). *Good Strategic Planning Guide: Strategic Land Use Planning Underpinning Local Government Planning and Development Assessment Systems and Processes*.

Review: Provides case studies on leading practices in regional strategic planning in Australia. Good information provided by internal stakeholders on process followed in regional planning efforts. Focused on State government's role in each case.

Diamantini, C. and B. Zanon (2000). “Planning the urban sustainable development - The case of the plan for the province of Trento, Italy.” *Environmental Impact Assessment Review* 20(3): 299-310.

The case of the plan for the Province of Trento, currently in progress, is examined. This experience applies an eco-systemic approach to analyze the interactions among the different resource use cycles. Moreover, it tends to overcome the drawbacks of the top-down approach typical of plans, by means of a structured public involvement. In the Province of Trento, a specific attention has to be devoted to the Alpine environment, which is endangered by the urban

sprawl and the intensive use of resources. The plan will provide a deeper knowledge of environmental processes and will produce a set of appropriate indicators to assess the level of sustainability of the province, thus giving guidelines for improving policies and actions. Review: This paper provides an overview of the initiatives for sustainable development taking place in Italy at the urban and provincial levels, stressing some limits they met: unsatisfactory knowledge of environmental conditions, use of too general indicators, modest public participation. A good case example of European efforts to address sustainable development concerns with respect to urban sprawl/growth impacts.

Diamond, J. (2006). “Our Sickly Suburbs: We have the cure. Where's the courage?” The Globe & Mail 5 August: A15.

Review: Editorial on the costs of sprawl, focusing on fiscal measures to provide a practical argument against unchecked growth. Suggests better planning would alleviate the need for more federal/provincial transfers to cities.

Dodge, W. R. (2001). *The Triumph of the Commons: Governing 21st Century Regions*. Philadelphia, PA, USA, Online by the Alliance for Regional Stewardship Monograph Series (Number 4).

Stresses the importance of regional scale governance, states that “almost all major challenges have regional implications.(challenges) are emerging at the neighbourhood, regional and global levels” yet our governance institutions are organized at the local, state, and federal levels. Provides examples of the prominence of metropolitan regions in driving economic growth. Tools discussed: Regional decision-making networks and equitable regional growth compacts, SARGE (Strategy for Achieving Regional Governance Excellence) - a process for conducting a regional governance examination and producing a governance strategy. “regional citizens (the people who govern), regional compacts (the rules for governing the regional commons), and regional decision-making networks (the regional experts, mechanisms, and tools for governing) – the three legs of the regional governance stool”; the SARGE should strive to ensure these legs support the development of the region's capacity to govern itself. Outlines a theoretical governance structure and it's roles in promoting solutions to regional issues without directly providing services (carries out activities via membership) (pg.25). Also discusses methods to ensure authority of regional governance decisions via other orders of government: requirement to consult region on issues arising at state level, cements region's role as mediator of regional conflict, provides legislation to authorize this new form of public/private/civic partnership that acts as an agent of state/local authorities in regional matters, gives priority funding to regional groups that have developed a growth compact and/or have implemented it successfully. Review: Examples of regional governance structures and principles in practice within the USA. A good overview of collaborative governance development and implementation methods, using both real life examples of individual principles in action as well as a hypothetical region to express the potential of best practices to achieve goals.

Dolan, D. (1990). “Local Government Fragmentation - Does it Drive Up the Cost of Government?” Urban Affairs Quarterly 26(1): 28-45.

Discusses lack of evidence that fragmentation increases cost of government, problems this debate has caused in terms of allowing the true problems causing increasing costs to be hidden. Fragmentation can take 4 forms: - proliferation of municipalities within a metropolitan area - overlapping jurisdictions (functions and responsibilities) between cities and county - multiple special purpose bodies, such as school boards, special districts, utility boards/companies - metropolitan boundaries extend across state borders Arguments in favour of centralization are listed, such as less confusion in responsibility (duplication), more accountability, efficiency, lower per-unit costs, ability to make regional decisions. Counter arguments include lack of

accountability (for special purpose districts in particular), increased expenditures (instead of the promised economies of scale), increased choice in services/life-style Review: Lists empirical evidence of no financial benefit to metropolitan-scale government. Provides a regression analysis showing a negative relationship between cost and government fragmentation (once population differences are controlled for). However, analysis also suggests that costs do increase with increased dispersion in government expenditure patterns, suggesting how money is spent (by various agencies) can be more problematic than having multiple governing bodies).

Dollery, B. and L. Crase (2004). "A critical Note on 'Eco-Civic Regionalisation' as the Basis for Local Government Boundaries in Australia." Australian Geographer 35(3): 289-300.

The notion of 'eco-civic regionalisation' has been applied recently to New South Wales by Brunckhorst, Coop and Reeve (2004) in order to identify the appropriate administrative boundaries for 'socio-civic' regions and 'biophysical' regions. On the basis of this analysis, they recommended inter alia that 49 future non-metropolitan 'local government areas' be established. This proposal was adopted with alacrity by advocates of the NSW government's program of compulsory council amalgamation, including official 'Facilitators' appointed by the State government to draft formal consolidation proposals. This paper disputes the applicability of 'eco-civic regionalisation' as the foundation for local government boundaries in Australia. Review: A critique of Brunckhorst's eco-civic regions. Discusses arguments for and against amalgamation of rural municipalities, particularly the evidence against the theory of economies of scale and the high costs associated with amalgamations. Offers useful suggestion that eco-civic regions should be based on more than social networks described by residents, but should look at area that receives government services and what levels of government best manage those services. Author argues that local governments are best for issues that have locally homogeneous preferences and are related to local property. Higher levels of government are needed to address externalities, like water management issues, that cross jurisdictional boundaries.

Downs, A. (1997). "Suburban--inner-city ecosystem." Journal of Property Management 62(6): 60--.

The US metropolitan growth process inevitably drains resources out of central cities and inner-ring suburbs, thereby contributing to both urban decline and great social inequalities within metropolitan areas. An important force in suburban sprawl is the outward push caused by the concentration of poor people within older core areas. This concentration is a key cause of inner-city problems in general. Once poverty concentrations arise in inner-city neighborhoods, they generate 4 conditions that have caused households to move out of such areas and inhibit middle-income households from moving back into them: 1. fear of crime and violence, 2. poor-quality public schools, 3. the unwillingness of most white households to live in neighborhoods with more than about 1/3 minority-group households, 4. the dysfunctional nature of many large public bureaucracies in central cities. All Americans have a large stake in trying to stop urban decline in US metropolitan core areas. The decline of many metropolitan core areas cannot be stopped or reversed without some type of regional governance arrangements. Review: Notes costs of current growth paradigm - social, economic, ecological - and recommends metropolitan government to legislate change. Focused on American metropolitan problems, especially poverty and minority rights.

Downs, A. and F. Costa (2005). "Smart Growth/Comment: An Ambitious Movement and Its Prospects for Success." American Planning Association. Journal of the American Planning Association 71(4): 367--

Smart Growth was originally conceived as a reaction to what many planners believed were undesirable features of continuing growth through "suburban sprawl". Applying Smart Growth principles generates problems by: 1. redistributing benefits and costs of development, 2. shifting

power and authority from local to regional levels, 3. increasing residential density, 4. raising housing prices, 5. failing to reduce traffic congestion, 6. increasing the “red tape” of new development, 7. restricting profits for owners of outlying land, and 8. replacing “disjointed incrementalism” with regional planning. Analysis indicates that prospects for a metropolitan area adopting an entire broad Smart Growth strategy are very low. The political resistance likely to be generated by shifting the requisite authority from local to regional bodies, by raising densities in most neighborhoods, and by blocking outward extension of future growth is too great to be easily overcome. Thus, the central idea of Smart Growth is not very likely to be adopted by many regions. Problems associated with implementing smart growth principles: -need to redistribute costs/benefits of urban development over metropolitan area -inertia against change - land use decision authority rests with local government, but regional-scale growth management decisions require regional-scale or higher authority. Local authorities don't want to lose this powerful tool. But state/provincial intervention is often needed to overcome competitive local government relations. -Fear of lowering residential land values due to increased housing density or low-cost housing entering the neighbourhood (broad smart growth initiatives are often passed, but local implementation is opposed - NIMBY) -Fear of rising house prices - Cost to implement increased transit services is very high and can't keep pace with needs, so traffic congestion continues - Cost to developers increasing due to more red tape - Lost revenue to landowners with restricted development rights -No evidence of regional planning benefits, due to limited practice/no long term efforts, so no evidence this approach is superior to current paradigm - disjointed incrementalism. Review: Discusses differing points of view on what aspects of Smart Growth are to be implemented (e.g. local officials oppose regional authority over-riding them but like the idea of brownfield redevelopment), and problems associated with implementing smart growth principles. Suggests that state/province is the only level of government with power to implement Smart Growth principles that are locally divisive.

Dube, M. G. (2003). “Cumulative effect assessment in Canada: a regional framework for aquatic ecosystems.” *Environmental Impact Assessment Review* 23(6): 723--745.

Sustainable development of the aquatic environment depends upon routine and defensible cumulative effects assessment (CEA). CEA is the process of predicting the consequences of development relative to an assessment of existing environmental quality. Theoretically, it provides an on-going mechanism to evaluate if levels of development exceed the environment's assimilative capacity; i.e., its ability to sustain itself. In practice, the link between CEA and sustainable development has not been realized because CEA concepts and methods have developed along two dichotomous tracks. One track views CEA as an extension of the environmental assessment (EA) process for project developments. Under this track, stressor-based (S-B) methods have been developed where the emphasis is on local, project-related stressors, their link with aquatic indicators, and the potential for environmental effects through stressor-indicator interactions. S-B methods focus on the proposed development and prediction of project-related effects. They lack a mechanism to quantify existing aquatic quality especially at scales broader than an isolated development. This limitation results in the prediction of potential effects relative to a poorly defined baseline state. The other track views CEA as a broader, regional assessment tool where effects-based (E-B) methods specialize in quantification of existing aquatic effects over broad spatial scales. However, the predictive capabilities of E-B methods are limited because they are retrospective, i.e., the stressor causing the effect is identified after the effect has been measured. When used in isolation, S-B and E-B methods do not address CEA in the context necessary for sustainable development. However, if the strengths of these approaches were integrated into a holistic framework for CEA, an operational mechanism would exist to better monitor and assess sustainable development of our aquatic resources. This paper reviews the existing conceptual basis of CEA in Canada including existing methodologies,

limitations and strengths. A conceptual framework for integrating project-based and regional-based CEA is presented. Review: A discussion of the use of cumulative effects assessment as a tool to manage regional aquatic systems and to monitor the effects of development. This tool illustrates the importance of setting clear monitoring goals and indicators, as well as establishing a reference standard for monitoring across the region consistently in order to do effective analysis of effects and to understand what effects are of importance to the governing body. This tool would be helpful in managing aquatic aspects, and possibly other ecosystem aspects, of a region.

Duffy, D., M. Roseland, et al. (1996). "A Preliminary Assessment of Shared Decision-Making in Land Use and Natural Resource Planning." Environments: A Journal of Interdisciplinary Studies 23(2): 1-16. Review: Good overview of literature on public participation, conflict management, and shared decision-making in the context of natural resource management. Focus on Canadian case studies. Contrasts costs and benefits of consensus based shared decision-making with conventional adversarial decision-making processes. Emphasizes long-term benefits of planning with stakeholders instead of for stakeholders, due to the reduction of future conflict (based on the participatory process building ownership of decision outcomes by all parties). But also notes need for adequate resources to sustain the relationships, as many cases show this causing processes to fail. Suggests success of case studies lay with the focus not on "winning" but on the resolution process seeking "fairness, efficiency, wisdom, and stability".

Editor (1997). "Hamilton-Wentworth region: a memorandum of agreement to amalgamate the region into a single municipality." New City Magazine 17: 13-14.

THE REGIONAL chairman and representatives of a majority of municipalities of Hamilton - Wentworth (four of the six municipalities), representing over 85% of the population, have agreed on principles which will form the basis of a new system of local government in the area. f. There must be a continued capacity enshrined in legislation for broad based, local, democratically elected representation, at the community level, consisting of the councilors in the three (3) Hamilton communities and the councillors and such others as the communities determine in the five (5) other communities: Glanbrook and Dundas to have two councillors each, Ancaster and Flamborough three each, Hamilton West and Hamilton East five each, Stony Creek and Hamilton Mountain six each. Review: An example MOU for the amalgamation of Hamilton-Wentworth. Important notes on need for recognition of variation in tax base and servicing requirements between rural and urban areas and the importance of keeping tax increases low during transition period.

Edwards, A. (2005). "In Seattle, When It Rains, It Drains -- Naturally." Public Manager 34(3): 61--63. The article presents information about the Natural Drainage Systems (NDS) program in Seattle, Washington. Natural drainage projects like this, which have been called green infrastructure, increase rainwater seepage into natural underground systems. They change the flow of water into streams and cut the amounts of pollutant reaching aquatic ecosystems. As Seattle Public Utilities, the city agency that manages NDS, points out on its Web site, natural drainage systems achieve several goals and have common features. Other benefits include better water quality, better environment for urban wildlife, and higher property values.

Elcock, H. (2003). "Regionalism and regionalisation in Britain and North America." The British Journal of Politics and International Relations 5(1): 74-101.

Regionalism: the development of governments and governance structures intermediate between state and local levels has become increasingly significant in the government of both Britain and the United States. Functional issues concerned with the regeneration of rustbelt areas or controlling growth in prosperous areas have resulted in searches for regionalist solutions on both

sides of the Atlantic. However, in Britain there are additional pressures from regions with distinctive cultures, as well as from the increasingly influential ‘Europe of the Regions’. Demands for regional government and governance may be generated from the bottom up by a region’s politicians, business leaders and others but they are unlikely to be successful unless they are encouraged by higher levels of government, at state, national or supranational levels.

Elix, J. (2003). Intractable environmental conflict in Australia (1).(Research & Practice Forum).

Intractable environmental conflicts often have their base in clashes of values between the participants. The long running land management conflicts in the Murray Darling Basin are good examples. Current federal and state governments are coordinating a large, complex and multi-faceted dispute resolution process throughout the Basin. This process focuses on building partnerships and developing collaborative approaches to conflict, but clashes of values among participants have not been sufficiently addressed in design and implementation. Greater attention to system design and evaluation is needed for intractable environmental conflict management.

Farrelly, M. (2005). “Regionalisation of Environmental Management: a Case Study of the Natural Heritage Trust, South Australia.” Geographical Research 43(4): 393-405.

Abstract Regional planning for and management of the environment and natural resources are the new foci of the Australian Government’s funding initiative, the Natural Heritage Trust Phase Two (NHT2). NHT2 attempts to integrate and coordinate the efforts of the many local environmental community groups that work on-ground. By operating at the regional scale, it is expected that more strategic and targeted outcomes will be achieved. This paper examines how the shift to regional-scale delivery has affected key stakeholders in South Australia, focusing on the experiences of a sub-regional environmental community group. Interviews with key regional stakeholders, participant observation and document analysis highlighted difficulties in the transition to regional delivery, for both regional and local groups. Limited funding, restrictive timelines, vague guidelines and prescriptive information, slowed the development of the regional plan and frustrated regional groups. A lack of communication and limited community participation in developing the regional plan created uncertainty and confusion in the sub-regional community group, resulting in mistrust of and alienation from the regional groups. Concern was also expressed over the loss of the local-scale focus, particularly as community leaders moved to higher decision-making positions within the region. It is too early to assess the effectiveness of the regional groups. However, if the issues identified during the transitional phase are not addressed, then the regional groups may struggle to achieve their objectives. Review: Article focuses on the transition to regional scale coordination/funding of ENGOs by government agencies, with the goal being effective regional management of natural resources. Outlines key challenges: lack of communication between stakeholders, timing/funding constraints leading to lack of trust due to exclusion of community participation, lack of input from local stakeholders (municipalities and local ENGOs) creating mistrust of regional plans created by regional groups. Illustrates potential effectiveness of legislation to streamline authority, provide legitimacy to regional efforts by giving financial powers, and provides good summary (references) of regional natural resource management benefits as well as regionalism/regionalisation/boundary delineation in Australian context.

Feiock, R. C. (2004). Metropolitan Governance: Conflict, Competition, and Cooperation, Georgetown University Press.

Review: Editor of excellent book on benefits of regional governance / institutional collective action. Supports regional collaboration, but notes that research has not shown benefits to government amalgamation. See more info on chapters by Oakerson and Post.

Fontan, J.-M. and others (1999). “Community economic development and metropolitan governance: a comparison of Montreal and Toronto.” Canadian Journal of Regional Science 22(1-2): 201-17--.

In the context of globalisation, both Toronto and Montreal have had to face major challenges resulting from changes in the international economy. These changes have been accompanied by various effects such as the decline of the manufacturing sector, increases in unemployment rates, the reshaping of social programs, and the downloading of responsibilities from higher levels of government to intermediate and lower levels. In both agglomerations, various development strategies have been initiated as a reaction to these effects. At the community level, organisations have mobilised to produce innovative approaches to respond to social exclusion. Among these approaches, Community Economic Development (CED) practices aim at making increased linkages between economic and social development. At the municipal level, new programs have been implemented to support economic development by stimulating the private sector. Finally, at the metropolitan level, new structures have been put in place to promote a better co-ordination between municipalities in relation to the private sector in order to maintain or increase the positions of Montreal and Toronto in the new continental marketplace. In this paper, we highlight these strategies and the differences between Montreal and Toronto. We also pay attention to the relationship between CED strategies and both municipal and metropolitan development strategies. We begin with a wider theoretical discussion of globalisation and two of its consequences: the emergence of the new urban question and the re-emergence of metropolitan issues. Then, we examine the economic development strategies implemented in Montreal and Toronto, at the three levels mentioned above. Finally, we discuss new forms of urban governance focusing on the relation of the local to other levels of government. Review: Discusses community economic development (CED) at both the local and metropolitan scales in Montreal and Toronto. Suggests need to explore metro level CED in light of current economic climate of globalization and history of regional collaboration in these cities.

Foster, C. (2002). “Reviving Environmental Regionalism.” Land Lines 14(4): 6.

Throughout North America, there is a growing trend to approach land use, natural resources and environmental problems on a regional basis. Since existing government agencies often lack broad authority, local and environmental leaders are increasingly taking the initiative to address the social, economic and environmental issues of a particular place by reaching across conventional political and jurisdictional boundaries, sectors and disciplines. Interest in environmental regionalism has ebbed and flowed over the years, but its roots are as ancient as humankind’s first home in Africa’s Rift Valley and the early civilizations of Asia, Latin America and the Middle East. Regionalism flourished in Europe during the early nineteenth century and emerged in the U.S. in the form of the western explorations by Lewis and Clark and John Wesley Powell. In the 1930s, regional interest in the U.S. surfaced again in the form of Lewis Mumford’s ecological regionalism and the initiatives of the New Deal. After World War II, the U.S. Congress was persuaded to experiment with unifunctional and political forms of regionalism, such as the federal-state river basin and regional commissions. At the turn of the twenty-first century, prompted by dissatisfaction with the growing numbers, scale and complexity of governmental functions, and coincident with the public commitment to civic forms of environmentalism, the stage was set for the current revival of interest in regionalism. Review: Discusses trends in environmentalism towards addressing local concerns and for coordination of efforts across local jurisdictions tied together by a shared ecosystem - “how regions might be used to advance environmental protection, use and management” - but also recognizes role that social and economic factors play. Good info based on survey of 150 North American regionalism experts.

Foster, K. A. (2001). *Regionalism on Purpose*. 113 Brattle Street, Cambridge, MA, USA.

Review: Excellent resource providing a broad overview of regionalism in the USA, looking at its evolution since the 1600's to present day case studies of US metropolitan regions. Reviews the role and goals of regional management with respect to local and higher levels of government, as well as private/NGO sectors, and reviews evidence of the effectiveness of regionalism in achieving metropolitan goals compared to localism. Defines key roles of regional governance body based on this review and the experience of various US metropolitan regions: to provide services to achieve economies of scale or ensure standard level of service across region, manage services with regional impact and require cross-border coordination. This report was published by the Lincoln Institute, based on their conference, “Urban-Suburban Interdependence: New Directions for Research and Policy”, and is targeted to stakeholders interested in developing regional partnerships.

Francis, G. (2004). “Biosphere Reserves in Canada: Ideals and some experience.” *Environments* 32(3): 3. Since its creation by the UNESCO “Man and the Biosphere” (MAB) Program over 30 years ago, the “biosphere reserve” concept has become a central feature of the MAB program and is vested with high expectations about exemplifying in practice the fulfillment of various international commitments for conserving biodiversity and working towards a sustainable future. The criteria for this designation of recognition from UNESCO are noted. As of 2004, there were 459 biosphere reserves in 97 countries, including 13 in Canada. The approach taken in Canada over the years to promote MAB and biosphere reserves is briefly summarized. Some experiences, with examples from individual biosphere reserves, are reviewed under the themes of local organizational arrangements and governance, and the three main functions of biosphere reserves. These functions are: conservation; promoting sustainable resource use practices and community economies; and developing the “logistic” capacities through research, monitoring, education, training and demonstration projects directed to particular issues that have to be addressed. Limitations on what can be achieved locally in response to changes originating from larger scale political and economic forces, along with other challenges encountered by biosphere reserve organizations in Canada, are not unique to biosphere reserves. Scholarship for biosphere reserves could helpfully address issues of governance, the role of “civic society”, and the dynamics of complex social-ecological systems that set the contexts within which biosphere reserves have to operate. Soon after UNESCO/MAB got underway, it was thought desirable to find places in the world where the MAB ideals were being put into practice and could be pointed to as practical examples. It was a matter of what to call them. Given the rich variety of administrative vocabularies used for different categories of landscape designations in each country (consider the range used in Canada alone), something brief and distinctive was required. UNESCO came up with “biosphere reserve” with the term “biosphere” indicating an association with MAB, and the term “reserve” suggesting continuity with the IBP. To qualify for this “designation of recognition,” areas had to have one or more protected sites (“reserves”) serving conservation functions and providing opportunities for ecological research and monitoring that could inform and help improve resource use and management practices. General guidelines and procedures for identifying such areas were drawn up in 1973-74, and the first biosphere reserves were designated in 1976. Since the Seville Conference in 1995, biosphere reserves have had emphasis placed on their role in promoting “sustainable development” (or “sustainable livelihoods”, “quality economies”) by serving as pilot sites or demonstration areas for “best practices”. The practices include not only those for resource management or ecosystem rehabilitation, but also some more directly related to local economies. The latter include “value-added” processing of local resources into intermediate or final products that increase local employment and community benefits, the branding and marketing of local products, provision of micro-credit schemes or other start-up funding for small businesses in new “niche” markets, and attraction of eco-tourism business to the area based on the local landscapes and cultural heritage. The scale and emphasis is on local

communities situated in rural agricultural, or hinterland resource regions. Review: Discusses the Canadian experience in Biosphere Reserve implementation, providing suggestions for other similar regional sustainable development operations in terms of governance and organization models. Discusses the 3 main functions of biosphere reserve governance, which can instruct Calgary's regional ecological infrastructure governance: ecosystem integrity (both locally and within the larger-scale ecosystem it inhabits), sustainable economic development, and research/monitoring of ecological / social / economic impacts on the reserve. Excellent suggestions for need to expand understanding of ecosystem integrity in terms of both systems/ecology (drivers of ecosystem health) and human interactions with the ecosystem (the impacts on ecosystem health and social /economic development).

Freeman, C. (2004). "Sustainable development from rhetoric to practice? A New Zealand perspective." International Planning Studies 9(4): 307-326.

This article explores the changing conceptions of sustainable development with reference to planning policy and practice in New Zealand. In 1991, when New Zealand introduced its Resource Management Act 1991, the country was seen as being a leader internationally in promoting sustainable development planning approaches. Twelve years later the early optimism has waned and New Zealand is if anything now a laggard rather than a leader in this field. This article explores the ambivalent and uneven relationship with sustainable development that has been evident in central government and within local government planning practice in New Zealand. It goes on to examine the potential that the Long Term Council Community Plans, introduced in the new Local Government Act 2002, offer in delivering sustainable development and transcending the implementation gap between policy statements in support of sustainable development and practice. The example of the city of Dunedin, the first local authority in New Zealand to produce a Long Term Council Community Plan, is used to demonstrate some of the difficulties inherent in achieving sustainable development goals in practice.

Friedman, J. (2004). "Cities in a Global Age: Critical Areas of Theory and Research."

Review: This is an article written by John Friedman who is an Honorary Professor of planning at the University of British Columbia (UBC). The article was received from his personal website at UBC and although the article is academic in nature it is unsure that it went through the typical quality/fact control process that articles go through when being published in Academic Journals. In the article Friedman looks at the nature of today's global economy and many important aspects that cities are dealing with as a result. The article looks at many critical areas of theory and research such as: transnational urbanism, the prospect of jobless growth, the global hunger for spiritual grounding, and the rise of civil society as a global phenomenon. The article strength is pointing out the weakness of global mass consumption and how people/cities are reacting to counter act its lack of social/spiritual fulfillment.

Friedman, J. (2005). "Globalization and the Emerging Culture of Planning." Progress in Planning Volume 64, Issue 3: 183-234.

Review: This is an article written by John Friedman who is an Honorary Professor of planning at the University of British Columbia (UBC). This article received 'distinction of honour' by the association of European Schools of Planning (AESOP). In this well written article Friedman looks at the culture of planning throughout the world. While it is concluded that planning culture can only be plural (responsive to local geographic and historical context), in the second half of the article the author looks at formulating some normative principles that are emerging throughout the worlds cities and regions. It is this second half of the article that is of greatest value to regional planning as it discusses many principles of good practice that can be applied to regional planning in today's global economic world.

Gertler, L. (2005). "Regional planning in Canada." Plan Canada 45(3): 22(3).

Review: Good overview of current status of regional planning in Canada.

Gertler, M. (2000). Transaction Costs. The Dictionary of Human Geography. R. J. Johnston, D. Gregory, G. Pratt and M. Watts, Blackwell Publishers Ltd.

Review: Defines transaction costs.

Gleeson, B. (2003). "Learning About Regionalism from Europe: 'Economic Normalisation' and Beyond." Australian Geographical Studies 41(3): 221--236.

Abstract This paper critically analyses the European Union's regional policy framework and considers its implications for Australia's multi-level governance system. The analysis is made with reference to the 'new regionalist' debates in Europe and North America that have asserted the importance of regional economic development in the context of globalisation. New regionalism's advocacy of 'economic normalisation' as a leading regional policy aim is critically evaluated against the EU policy experience. Conclusions about the adequacy of new regionalist claims are drawn for Australian policy debates. Review: A well written article by Brendan Gleeson who is a Planning professor at the Griffith University in Australia. The article looks at New Regionalism, most specifically as a form of regional economic normalisation, that concentrates on the economic aspects of regional well-being while missing out on the importance of social and environmental aspects. Gleeson is critical of such new regionalist focus on "mercantile" activities as determinants of regional well-being, noting evidence from analysis of EU operations of lack of improvement in social or ecological factors of well-being despite improvements in regional economies (based on employment and GDP indicators). The strength of the article is that it discusses the importance of regional planning, gives a good overview of new regionalism and its implementation in the EU policy framework and also deals with what aspects new regionalism are missing. The article goes into great detail with regards to the EU regional framework of governance.

Government of New Zealand (2003). Local Government Act 2002: PART 2 - PURPOSE OF LOCAL GOVERNMENT, AND ROLE AND POWERS OF LOCAL AUTHORITIES.

Review: The legislation for regional governance in New Zealand. Provides authority to "promote the social, economic, environmental, and cultural well-being of communities, in the present and for the future". Requires local government authorities to take sustainable development principles into consideration and ensure transparent and inclusive decision-making processes.

http://www.legislation.govt.nz/libraries/contents/om_isapi.dll?clientID=90637&infobase=pal_statutes.nfo&jd=a2002-084%2fs.11&record={516A8445}&softpage=DOC

Grimm, N. B. and C. L. Redman (2004). "Approaches to the study of urban ecosystems: The case of Central Arizona-Phoenix." Urban Ecosystems 7: 199-213.

Central Arizona- Phoenix Long Term Ecological Research project focuses on an arid-land ecosystem profoundly influenced, even defined, by the presence and activities of humans and is one of only two LTER sites that specifically studies the ecology of an urban system. In this large-scale project, biological, physical, and social scientists are working together to study the structure and function of the urban ecosystem, to assess the effects of urban development on surrounding agricultural and desert lands, and to study the relationship and feedbacks between human decisions and ecological processes. Our interdisciplinary investigations into the relationship between land-use decisions and ecological consequences in the rapidly growing urban environment of Phoenix are of broad relevance for the study of social ecological systems and cities in particular. Refinements in our conceptual model of social ecological systems focuses our

attention on recognizing the scales and periodicities of ecological and human phenomena, understanding the means and impacts of human control of variability in space and time, and finally an evaluation of the resilience of various aspects of socio-ecological systems especially their vulnerabilities and their potential for adaptive learning. Review: Excellent discussion of integrated research approach to understanding urban ecosystems. Presents several helpful research questions for assessing human-ecosystem interactions, in terms of multi-scale resilience, variations of impacts on various scales of human and ecological phenomena as well as feedbacks between/within scales, what can be controlled (socio-ecological system elements and variability of system phenomena) and how does human control change function (e.g. water diversion removes vegetation from riparian area but provides irrigation to larger vegetated area, supporting more vegetation biomass while impacting hydrological system).

Gunton, T., J. C. Day, et al. (1998). "Land and water planning in BC in the 1990s: lessons on more inclusive approaches." *Environments* 25(2/3): 1--.

CORE was specifically established to develop a provincial land use strategy and facilitate implementation of land use planning processes which would lead the province on a path towards a sustainable future. To assist in the transition to sustainability, CORE coordinated: the development of an overall provincial strategy; regional strategic land use plans; increased public participation and aboriginal involvement; improved government linkages; and dispute resolution processes. The developmental phase of CORE's work was completed in 1995 with the publication of the four-volume Provincial Land Use Strategy series and the approval by government of strategic land use plans for the Vancouver Island, Cariboo-Chilcotin, West Kootenay-Boundary, and East Kootenay Regions of British Columbia. Offshoots from CORE included a wide variety of related and on-going legislation, policy initiatives, and innovative planning processes. As Gunton in his lead article suggests, these changes were not accepted by the forestry and mining industries without some tension and persuasive management by the provincial government. However, they were implemented with surprisingly little controversy. Gunton suggests that the timely coincidence of enlightened self interest on the part of the province's major resource industries, and aggressive public policy making on the part of government, resulted in fundamental changes to resource policy which will improve BC's long run sustainability and social welfare. As well, CORE and its other 1990s predecessors have been valuable catalysts in addressing the need to balance social, environmental, and economic interests through intense public debate, negotiation, and planning processes. In combination these initiatives have unsettled many established approaches to doing business with respect to several land and water basin planning processes in the province. The second land use case study provides a constructive assessment of the shared decision-making (SDM) experience in one of the regional planning processes that CORE implemented - the Cariboo-Chilcotin CORE regional land use planning process. Penrose, Day and Roseland use a set of process evaluation criteria to assess systematically the process which ultimately failed to achieve a consensus in this case study. They claim that although consensus was not achieved, the SDM process illustrated several advantages over conventional decision-making processes. They also suggest that SDM has a potentially valuable role to play in future sustainable land use planning and management processes. Recommendations to improve future SDM processes include providing timely funding, staffing, information, policy direction, and clearer terms of reference. Review: Overview of articles within journal issue - theme: resource management and land use policy in BC. Good summary of governance criteria or principles for stakeholder participation in land use management governance, based on case studies of BC in the 1990s.

Hale, S. S., L. H. Bahner, et al. (2000). "Finding Common Ground in Managing Data Used for Regional Environmental Assessments." *Environmental Monitoring and Assessment* 63(1): 143--157.

Evaluating the overall environmental health of a region invariably involves using databases from multiple organizations. Several approaches to deal with the related technological and sociological issues have been used by various programs. Flexible data systems are required to deal with rapid changes in technology, the social and political climate for sharing and integrating data, and expectations of diverse users. Here we describe how the Environmental Monitoring and Assessment Program and the Chesapeake Bay Program manage their data for regional studies. These programs, which encompass areas of different geographic scales but face similar issues, have adopted some solutions in common, but also have tried some unique solutions suited to their needs. Understanding the tribulations and successes of these programs may help others attempting similar assessments. Both these programs have embraced distributed data systems that are managed by the organizations owning them. Both use common guidelines and policies that assure consistency and quality of data and information. These principles and tools comprise a flexible, sustainable approach that meets modern challenges of data management. Review: A case study of an initiative to manage data from disparate sources for the purpose of achieving regional ecosystem management goals.

Halvorsen Thoren, K. (2000). ““The green poster”: A method to evaluate the sustainability of the urban green structure.” Environmental Impact Assessment Review 20(3): 359--371.

Universal indicators on the sustainability of the urban green structure independent of the specific culture of the country, the region, and even the town, seem to be difficult either to establish or maintain because the opinions differ so much as to their applicability. This notwithstanding, this paper addresses the possibility of establishing a set of relevant indicators. Some of the proposals contained herein are given based on the ideas emanating from the 1987 World Commission on Environment and Development. The importance of the local context as well as the need for more knowledge of the green structure values is also stressed in the paper. The green poster--which has been developed in Norway during the last 10 years--is introduced as a potential to evaluate the sustainability of the urban green structure. As an analytical tool, it has the advantage of providing both a numerical as well as a visualized picture of the situation. Review: Discusses the use of the “green poster” tool to evaluate “green structure” and potentially to help determine the sustainability of the particular green structure in use in a particular area. Focuses on the importance of local context in the development of sustainability indicators as well as in defining the “green structure”, local views on the significance of certain aspects of the ecological or socio-cultural functions of a space can vary. Questions the ecological benefits of compact development.

Hamilton, L. W. and A. Puleo (1997). *The Benefits of Open Space*. L. W. Hamilton, Great Swamp Watershed Association.

Review: Interesting example of USA development costs. An economic analysis of the cost to the taxpayer of a residential/golf course development, in terms of the value of property tax received from development minus the output costs to the municipality for infrastructure, compared to the possibility of leaving the same land as open space, purchased and maintained as natural habitat. Open space, in this case, has more economic value to the municipality than the proposed development.

Heinelt, H. and D. Kubler (2005). Metropolitan Governance: Capacity, democracy and the dynamics of place, Routledge.

Review: Excellent resource on types and principles of regional government and governance. Offers several European and Canadian case studies.

Hoctor, T. S., M. H. Carr, et al. (2000). “Identifying a Linked Reserve System Using a Regional Landscape Approach: the Florida Ecological Network.” Conservation Biology 14(4): 984--1000.

Abstract: We completed an analysis of potential ecological connectivity to identify areas with priority conservation significance and landscape linkages as part of a state of Florida program called Greenways. This is the latest step in the state's design and protection of a reserve system based on an aggressive land acquisition program. We used geographic information systems software (Arc-Info) to develop a decision support model that uses land-use data and information on significant ecological areas-including important habitats for target species, priority ecological communities, wetlands, roadless areas, floodplains, and important aquatic systems-to identify larger areas of ecological priority and potential ecological linkages. The result of this process, the Florida Ecological Network, includes approximately half the state's area, with over half of this network already in conservation lands or public-domain water. This network could provide a linked statewide reserve system containing most of each major ecological community and most known occurrences of rare species. Although the ecological network represents significant progress toward a more integrated approach to biodiversity conservation in Florida, further analysis is needed to (1) ensure that the needs of wide-ranging species, such as the Florida panther (*Puma concolor coryi*) and Florida black bear (*Ursus americanus floridanus*), are addressed; (2) identify other biodiversity elements not well represented; and (3) designate a system of cores and buffers that will address management issues. Reserve design is an iterative process, and future plans need to address new information, including the results of the Florida GAP analysis project and ongoing habitat loss. Review: Discusses Florida's efforts for planning green infrastructure. Focus of efforts is on habitat preservation, as well as species preservation, using GIS.

Hodge, G. (1994). "Regional Planning: The Cinderella Discipline." Plan Canada -: 35-49.

Review: Historical overview of planning in Canada, focusing on the influence of Patrick Geddes.

Hooper, B. P. and J. A. Duggin (1996). "Ecological riverine floodplain zoning: Its application to rural floodplain management in the Murray--Darling Basin." Land Use Policy 13(2): 87--99.

Floodplain zoning is a procedure used to identify areas of varying flood hazard and has been used extensively as a precursor to land use regulation, a non-structural floodplain management measure. Conventional floodplain zoning is based on hydraulic and hydrological analytical techniques, but its application to riverine floodplain environments of the Murray--Darling Basin of Australia is problematic. This paper develops and applies an alternative, ecological approach to floodplain zoning, using biophysical features as flooding indicators. Three zones are identified: low-risk floodplain land, flood-prone land (which includes two sub-categories) and floodway land. Land use policies, based on a land use constraint principle, are then developed for each floodplain zone. Review: Technical discussion of biophysical and geomorphological conditions that affect zoning delineations on floodplains. Good process for integrating non-hydrological systems into understanding of flooding. Good map of the Murray-Darling Basin.

Hornell, M. and L. Walker (2003). "Thinking like a region." Alternatives Journal 29(3): 26.

Review: Case study of Victoria's efforts to develop a regional growth strategy. Succinct discussion of benefits derived from a collaborative planning approach, despite difficulties in reaching consensus among the diversity of stakeholders. Notes that municipalities have the tools needed to address regional growth issues and can achieve regional level objectives if the political leadership was there to sustain it.

Hough, M. (1995). Cities and Natural Process, Routledge.

Discusses the ecological process that operate in spite of urban activity and how urban activity must recognize the importance of the integrity of these processes. Examples provided include the hydrological cycle and the impact of human activity such as land clearing, paving, and pollution

on watersheds. Discussion illustrates the cost involved to address urban impacts, via engineering solutions to the loss of natural systems, as well as the added problems caused to the natural environment by those engineering solutions such as stormsewers (used to convey water instead of rivers) pollution. Looks at different aspects of the environment and provides case examples and design suggestions for alternative human interactions with those aspects. For example, water is looked at with respect to watershed scale management (pg.59) - the need for coordinated restoration strategies (pg.62) and forming partnerships in order to implement strategies (pg.68). Waste management can be looked at from the point of view of waste being an input to new production, such as the use of partially treated wastewater as crop fertilizer (pg. 72). The hydrological cycle is discussed and suggestions for alternative designs recognizing soil type (to set allowable development area for retaining water absorption capacity) and the need for vegetative cover (to prevent excessive erosion, maintain hydrological balance/water storage capacity, prevent loss of species, and preserve wildlife habitat) are given. Wasted spaces are suggested for more efficient use by doubling their duties - golf courses as wildlife habitat and water retention spaces, parking lots with both snow storage (existing function) and water storage capacity, roofs as water storage sites to slow down peak flows and reduce strain on other water management infrastructure. Review: Reviews the reasoning behind seeking to incorporate ecological infrastructure (mainly to increase efficiency of resource use by reducing duplication of ecological services via engineering-based solutions, using ecological infrastructure to achieve goals with less cost in the long-term, and preventing the domino effect of problems caused by engineering solutions) and provides excellent examples of alternative infrastructure options in urban areas. Some of these examples reference projects completed by the author and include a review of the situation several years after the contract was completed (pg.90, 177)

Hough, M. (2004). Cities and Natural Process: A Basis for Sustainability, Routledge.

Review: The book is written by Michael Hough who is a landscape architect by profession and also an Adjunct Professor at York University in Ontario. The book is about the importance of incorporating natural ecological processes as a foundation for sustainable development at local and regional urban scales. Of greatest value are Chapters 1 and 7 as they are concerned with the regional landscape contexts of cities. Chapter 1 discusses the alienation of urban society as people create form in reaction to socially constructed aesthetic and recreational values that have little or no connection to the dynamics of natural process. Recognizing the interdependence between people and nature, it is suggested that natural ecological processes should function as the basis for shaping cities from its landscape and regional perspective. Chapter 7 looks into current mechanisms of incorporating natural ecological processes. Greenbelts, greenways, smart growth, nature as infrastructure and regional planning is looked at with case studies used as examples.

Inman, R. P. (2003). "Should Philadelphia's suburbs help their central city?" Business Review - Federal Reserve Bank of Philadelphia Second Quarter: 24--.

The United States is unique in its commitment to local government as the primary provider of essential public services and in its use of local taxes as the primary means for paying for these services. The Philadelphia metropolitan area is typical of the U.S. pattern. But the city of Philadelphia faces the burdens and responsibilities of all older central cities, including a higher proportion of poor residents than its surrounding suburbs. Such circumstances lead the city to impose higher taxes on city residents, workers, and businesses. Raising revenues through higher taxes, however, becomes self-defeating when tax rates drive people and businesses away. The result is a weaker city and regional economy. How can Philadelphia strengthen its finances? Bob Inman proposes a targeted program of suburban assistance to lower the commuter wage tax and presents evidence that such a program is likely to benefit city and suburban residents alike.

Review: Analysis of Philadelphia's regional economy. Provides evidence of the importance of

fiscal support for regionally beneficial activities. In this case, agglomeration economy is beneficial to suburban areas (higher house values, etc.) but can only be maintained by funding quality of life improvements - addressing poverty and infrastructure.

Isard, W. (2003). History of Regional Science and the Regional Science Association International, Springer.

Review: The book looks into the history of regional science and the regional science association international. Of greatest value in the book is chapter 8 that looks at the where, when and why of regional science. Of most significance is how it defines a region in this chapter. 'Region' is not a mere synonym for 'area,' of course. A regional entity cannot fall below a minimum size determined by the smallest area which cannot support a distinctive social organization. It cannot be larger than the maximum size within which such separate social organization can be maintained.' Each region has distinctive social and cultural functions and indirectly reflect the potential/restrictions of the physical environment. Each region has a high degree of interdependence.

Jenks, M. and N. Dempsey (2005). Future Forms and Design for Sustainable Cities, Architectural Press.
Review: The authors of this academic compilation book are Mike Jenks, Professor Emeritus and Co-Director of OISD, and Nicola Dempsey, a Postgraduate Researcher at OISD. Chapters of greatest interest to regional planning are 3 and 4. Chapter 3 compares the monocentric city region to the polycentric city-region using Tokyo and the Randstad region in the Netherlands as case study examples. Neither system is said to be more economically efficient however the polycentric system is said to consist of a higher quality of life and a more sustainable spatial form. Chapter 4 discusses the multi-modal urban transportation region. Maximum accessibility and sustainability is said to be reached through a multi-modal transportation system that addresses the automobile and combines transportation infrastructure in cooperation with appropriate land use policy.

Joassart-marcelli, P. and J. Musso (2005). "Municipal Service Provision Choices within a Metropolitan Area." Urban Affairs Review 40(4): 492-519.

The authors investigate the decision of municipal governments to out source the provision of public services during the 1980s and 1990sÑa period of increased responsibility for municipalities. This study extends previous empirical work on outsourcing by distinguishing the type of outsourcing used (e.g., public, private, or other types of providers) and treating the outsourcing decision as a dynamic choice. Institutional characteristics and fiscal stress are found to play an important role in explaining service choices. Multinomial logistic regressions indicate that outsourcing was more common for poor cities than for wealthier ones, with the former often relying on government agencies and the latter opting for privatization. Throughout time, these choices are likely to reinforce inter-jurisdictional patterns of disparity in service quality and costs. "Economies of scale may be achieved at different population levels for each type of services. For instance, although the production of transportation services may require large numbers of users before reaching lower average total costs, this may not be the case for police protection or other services characterized by lower fixed capital costs." "although few cities used mixed strategies, those who did were typically worse off fiscally." "Privatization or subcontracting of services via public or private contractors, other public agencies, or mixed." "we find that services were more often privatized in cities with more children, fewer elderly residents, more foreign-born residents, and higher levels of poverty." "Typically, we find a greater incidence of outsourcing among younger, smaller, suburban cities. Older cities with a tradition of public service might face higher political opposition to the privatization or subcontracting of services to other entities" " cities that used alternative forms of service production tended to have lower fiscal capacity and to receive less funds from intergovernmental grants and lower direct federal expenditures, although there is

a large degree of variation among such cities. This confirms the view that outsourcing is away of coping with fiscal stress.” “the benefits of outsourcing may be more significant for certain types of services. For instance, large economies of scale can be achieved by transfer- ring the provision of garbage disposal from small cities to a larger private firm. Such economies may not occur in the provision of police services. Similarly, it may be more politically feasible to give up the production of street lighting than it is to give up planning or policing.” “The fiscal variables do not appear to play a very important role in the choice of outsourcing approach, except that cities with low property taxes are more likely to rely on public providers, and cities with low sales tax revenues and high levels of federal expenditures are more likely to privatize services.” “Although these types of intergovernmental arrangements arguably enable small cities to capture scale economies, it is not clear that they promote other cost savings. For example, as Ferris and Graddy (1986) discuss, many of the efficiencies commonly attributed to contracting out result from sectoral differences such as cost-saving labour practices used by private contractors. This would suggest that the efficiency enhancement associated with outsourcing in Southern California may be somewhat limited by virtue of its heavy reliance on intergovernmental contracting, particularly with counties.” “The choice of outsourcing approach also was highly dependent on the character of service, confirming the work of Ferris and Graddy (1986)” and this is related to the oversight and accountability available to the electorate. “if poor cities under high fiscal stress are more likely to rely on other governments to provide services, they will not gain the flexibility, innovation, and cost-saving benefits typically attributed to private con- tractors. Thus, the services they receive will continue to be more expensive and/or of lower quality than those available in wealthier suburban areas. As a result, firms and residents with greater mobility are likely to move out of the poorer areas, compounding the serious fiscal problems and creating further pressure to adopt alternative methods of service provision.” Review: The method via which a service is contracted out depends upon the type of the service (e.g. garbage disposal is privately contracted out, but EMS/fire services are contracted to another public agency) as certain services have economies of scale at different service levels. And some services, such as parks, police, and planning, are rarely if ever contracted out due to concern about loss of public oversight and accountability. The method employed appears to depend on the type of municipality, and this study suggests that continued dependence of poor municipalities on service provision by other public bodies will not achieve the cost savings hoped for by out-sourcing as would occur if they out-sourced to a private contractor (author suggests that those benefits would be: flexibility, innovation, and cost-savings), as wealthier municipalities seek private contractors to provide those cost-savings and are able to better attract residents. However, there is no consensus that private delivery will result in cost savings - researchers suggest that this may vary by sector.

John, D. and G. Christopher (2000). “A PARTNERSHIP FOR REGIONAL COLLABORATION.” Review of Policy Research 17(2-3): 47--60.

Urban policy is out of alignment with domestic problems arising from the global economy, sprawling metropolitan regions, and distressed neighborhoods. A new urban policy, grandly conceived and dramatically announced and implemented, is needed. Our article maps out a new urban policy framework, with new roles and responsibilities for agencies and institutions, using innovative tools and improved management, with alternative adaptation strategies. Such a policy must be agile and diverse-characteristics not common in federal policy generally.

Johnson, K. N., F. Swanson, et al. (1999). Bioregional Assessments - Science at the Crossroads of Management and Policy, Island Press.

Discusses ecosystem dynamics, multiple scales of ecosystem linkages, and the implications of such for creating uncertainty in efforts to mitigate human impacts on ecosystems. Review: Focus

on interaction of science and public policy. Reviews several examples of bioregional assessments used to inform decision-making around natural resource issues such as urbanization impacts on ecosystems. Notes that Bioregional Assessments are a tool that provides the information needed to aid decisions, not a process at which to make decisions, and that BA need to be carefully structured to provide information that is of use to decision-makers. Suggests adaptive management as a process to make policy decisions, which requires a cyclical process of monitoring and review to deal with the uncertainty inherent in all ecosystem processes. Also provides case studies offering evidence of benefits to inclusive governance (collaboration), inclusive analysis of socio-economic and ecological factors to build stakeholder understanding of interconnectedness, and management at a scale that includes whole systems for the achievement of goals.

Johnston, R. J. and S. K. Swallow (2006). Economics and Contemporary Land Use Policy: Development and Conservation at the Rural-Urban Fringe, Resources for the Future Press.

As external forces increase the demand for land conversion, communities are increasingly open to policies that encourage conservation of farm and forest lands. This interest in conservation notwithstanding, the consequences of land-use policy and the drivers of land conversions are often unclear. One of the first books to deal exclusively with the economics of rural-urban sprawl, *Economics and Contemporary Land-Use Policy* explores the causes and consequences of rapidly accelerating land conversions in urban-fringe areas, as well as implications for effective policy responses. This book emphasizes the critical role of both spatial and economic-ecological interactions in contemporary land use, and the importance of a practical, policy-oriented perspective. Chapters illustrate an interaction of conceptual, theoretical, and empirical approaches to land-use policy and highlight advances in policy-oriented economics associated with the conservation and development of urban-fringe land. Issues addressed include (1) the appropriate role of economics in land-use policy, (2) forecasting and management of land conversion, (3) interactions among land use, property values, and local taxes, and (4) relationships among rural amenities, rural character, and urban-fringe land-use policy. *Economics and Contemporary Land-Use Policy* is a timely and relevant contribution to the land-use policy debate and will prove an essential reference for policymakers at the local, state, and federal levels. It will also be of interest to students, academics, and anyone with an interest in the practical application of economics to land-use issues.

Jongman, R. and G. Pungetti (2004). *Ecological Networks and Greenways: Concept, Design, Implementation*, Cambridge University Press.

Review: The book by R. Jongman and G. Pungetti is academic oriented. The book is a compilation of articles dealing with ecological networks and greenways with all or the majority of authors belonging to the International Association for Landscape Ecology (IALE). The book looks at the Greenways and Ecological Networks, including their historical perspective, and how they have both come to be more multifunctional, having an integrated approach to development (more inclusive of ecological components). The book is of great value as it begins with the theoretical and scientific basis for ecological networks and greenways and then moves to the process and implementation using multiple case studies as examples. The intended audience consists of the scientific and planning professions and is intended to provide information for managing natural resources and minimizing our ecological footprint. Regional scale spatial planning for ecological networks is promoted as the ideal scale of operation although often in cooperation with local and national scales. Chapters 1, 3, 7, 8, 12, and 16 are of significance to regional planning. Chapters 8 and on looks at Case Study examples for greenways and ecological networks. Of greatest value is the landscape ecology principle of 'Ecostabilisation' mentioned in

Chapter 1 along with chapters 12 and 16 covering multiple precedents and a general overview regarding the application of ecological networks and greenways to regional planning.

Jorgensen, E. E., T. J. Canfield, et al. (2000). "Restored Riparian Buffers as Tools for Ecosystem Restoration in the MAIA; Processes, Endpoints, and Measures of Success for Water, Soil, Flora, and Fauna." *Environmental Monitoring and Assessment* 63(1): 199--210.

Review: Technical analysis of a site specific issue - riparian buffer restoration design in the mid-Atlantic/Eastern USA. Provides a good example of research efforts needing to be specific to certain ecosystems in order to understand ecosystem functions. Discusses need to assess the affects of a tool for water quality management, riparian buffer restoration, on overall ecosystem functionality. Good indicator of need to better assess impacts of ecosystem management efforts.

Kane, R. P. (1997). *The Benefits of Open Space*. L. W. Hamilton, Great Swamp Watershed Association.

Review: Broad overview of the benefits of open space preservation for the maintenance of ecological integrity, referencing specific ecosystems and species in the New Jersey tri-state area.

Karkkainen, B. C. (2002). "Collaborative Ecosystem Governance: Scale, Complexity, and Dynamism." *Virginia Environmental Law Journal* 21: 189-243.

Review: Excellent discussion of collaborative ecosystem governance including need to revise ineffective, one size fits all government/regulatory structures based on past ecosystem theories. Ecosystems cannot be managed - we can only manage our impact upon them. The key to achieving goals is information, in order to deal with the uncertainty of ecosystem functions. Suggests ecosystem management processes but notes that uncertainty makes no choice definite, and no solution uniformly applicable. Very good discussion of governance in relation to ecosystem management.

Katz, P. (2006). *A New Urbanist Perspective on Regionalism*, online.

Review: Article makes recommendations on how to get neighbourhoods interested in regional development, encouraging stakeholders to understand how regional development will address issues of concern to them. While sprawl and economic development may not seem as immediately important at the neighbourhood scale, rising taxes and deteriorating quality of services (infrastructure, education) are, according to author. Tools focus on building social capital to support efforts to address regional concerns, via exercises that allow individuals to define their regional "elements of significance" and see affects of their choices on the future of their region.

Kawata, N. (2006). *Urban Natural Areas: Overcoming Ecological Planning and Management Limitations in a Municipal Context*, University of Calgary.

Review: Discusses issues relating to natural areas management in municipal settings and provides information on tools/policies employed to achieve conservation goals. Of main interest is discussion of Portland's overlay zoning, a tool to designate land already zoned for a given use, thereby allowing development to occur but in an ecologically-sensitive manner.

Kay, David. "Wetland Functions and Values." *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association. <http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

Kellas, H. (2006). *Shifting Scales: What is the Role and Future of Regional Governance?* (Presentation to the World Planning Congress, June 20, 2006).

Review: Presentation on the GVRD, a BC example of regional governance, by a high level manager in the organization. Provided info on its role as a service provider within the Lower

Mainland of BC and as a planning body for the region. The GVRD is a federation of 21 municipalities managed by a board composed of municipal councilors (see url), but it was noted that as it is not a formal level of government it has little authority to implement the plans it has developed with respect to these areas: Air quality, Affordable Housing, Liquid waste, sewer/stormwater, Growth management / land use planning, sustainable region, biodiversity plans, Solid waste, Parks, Water-quality & quantity, Conservation Reserves, reservoir management, Transportation, Translink (a separate arm of GVRD). Result of this model of governance is effective utility management but poor track record on plan implementation.

Kimmo Lapintie, O. M. and T. Rajanti (2001). Work Package 2: Governance and Policy Instruments, Helsinki University of Technology, Finland.

GREENSCOM (Communicating Urban Growth and Green) is part of the European Union Fifth Framework Program, Key Action 4 (City of Tomorrow and Cultural Heritage, from the program “Energy, Environment and Sustainable Development.” Its objective is to study and to develop urban planning and governance related to the problems of growing urban regions and their green and open spaces. Growth and green are usually seen to be in confrontation, but the situation is in fact more complex, and the way that these issues are dealt with are related to both national and local politics and cultures. The project consists of two theoretical studies or work packages on communication, governance and policy instruments, seven case studies in five European cities, where tools used by planners and stakeholders are analyzed, and a “toolbox” that is currently being developed. Review: This article is work package 2 of 10 from the GREENSCOM (Communicating Urban Growth and Green) project that is part of the European Union Fifth Framework Program. This document covers the identification of current issues and dilemmas in the use of policy instruments for governing urban growth and green amongst the involved stakeholders; creation of a framework for analyzing governance and policy instruments and the generation of innovative approaches to governance and policy instruments. Of greatest interest is section 4 that deals with policy instruments such as green structure and green structure plans as well as compensation and EIAs. Section 4 also contains case examples of each policy instrument.

Klee, G. A. (1999). The Coastal Environment: Toward Integrated Coastal and Marine Sanctuary Management, Prentice Hall.

Review: A book written by Gary A. Klee, a university professor of 26 years, in an interdisciplinary manner regarding the management of the coastal environment. While the entire book may not be of great value with regards to regional planning, Chapters 2 “Coastal Management: Players And Jurisdictions” and 8 “Open Space Preservation and Management” should be of interest. Chapter 8 discusses the competitors for coastal open space, what it is that is being lost/out competed and the future urgency of protecting the remaining open space as population growth continues to put large amounts of pressure on our environment. Chapter 2 is of greatest value in the book as it looks at the importance of regional coastal management as a tool to manage natural ecosystems while transcending the political boundaries that local, state and federal governments conform to. The new paradigm of Integrated Coastal Management (ICM) built on the building blocks of modern environmentalism is inter-sectoral, inter-governmental and interdisciplinary. It is a model that should be looked into in more detail, as regional planning could learn a great deal from it.

Kwasniak, A. J. (1997). Reconciling Ecosystem and Political Borders: A Legal Map. Edmonton, AB, Environmental Law Centre.

Review: Excellent resource on the legal tools available in Alberta to manage ecosystems. A comprehensive list of regulatory devices available and suggests how they can be used to protect ecosystem elements. Particularly of interest is the discussion on intermunicipal tools offered by

the MGA, including intermunicipal planning authority. Also suggests international tool, Biosphere Reserve designation, as a means to manage an ecosystem which crosses jurisdictional areas. GIS is also discussed as a means to support management efforts and build understanding of ecosystem concerns, but notes need to support data collection as a comprehensive and up to date inventory is required. Municipalities will likely need to pool resources in order to have the capacity to do this effectively and to ensure the data includes each jurisdiction's information.

Lane, M. B., G. T. McDonald, et al. (2004). "Decentralisation and Environmental Management in Australia: a Comment on the Prescriptions of The Wentworth Group." Australian Geographical Studies 42(1): 103--115.

The prescriptions of The Wentworth Group of scientists for delivering improved environmental management and remediation are reviewed against the backdrop of international experience with decentralisation. The Group's preferred means of implementation - here referred to as decentralised regionalism - is examined and shown to be idealised and therefore naive to its complexities and potential pitfalls. Five problem areas are highlighted: 1. defining a 'region'; 2. power, conflict and community; 3. developing mechanisms for accountability; 4. subsidiarity, and 5. the tensions between democracy and technocracy. Review: A critique of a document promoting regional environmental management. Discusses need for more in depth review of types of management focusing on integrating existing governing bodies (concurrent jurisdictions) who all play a role in environmental management, instead of creating new bureaucracies that have overlapping authority, and recognizing that there is "no single right scale for management". Also notes evidence of the inability for voluntary organizations to effectively manage environmental resources, due to lack of authority and 'burn-out' among other common community-driven development problems.

Lang, R. and D. Dhavale (2005). "America's Megapolitan Areas." Land Lines 17(3): 2.

Review: Article describes new geographic classification – megapolitan areas: 'integrated networks of metro- and micropolitan areas.' The author suggests that these regions are good units for managing transportation infrastructure, urban sprawl, and economic development. Sprawl is divided into 2 main types: northern (dense sprawl-high density even at edge of suburban area) or southern (low-density sprawl, quasi-rural edge). Defines regional boundaries by functions - things that are shared across boundaries, good (regional cohesion due to economic or cultural links) or bad (problem-shed: shared infrastructure for commuters).

Larner, W. (2005). "Neoliberalism in (Regional) Theory and Practice: the Stronger Communities Action Fund in New Zealand." Geographical Research 43(1): 9--18.

Abstract Neoliberalism is a term most often used by those working in the field of political economy, including human geographers, to refer to the new political preference for market mechanisms as a way of ensuring social and economic wellbeing. To date, however, analysts of neoliberalism have focused on the decline of the national economy, and on the erosion of universalist conceptions of social welfarism. Much less attention has been paid to the complex and contested processes through which new spaces, socialities and subjectivities are being constituted. Through a case study of the Stronger Communities Action Fund, this paper examines these new spaces, socialities and subjectivities of social policy, including the shift towards heterogeneous conceptions of community, the rise of community based expertise, and the centring of 'etho-politics'. It concludes that neoliberalism is a more contradictory phenomenon than is often recognised. If analysts continue to portray neoliberalism as a monolithic project, and to emphasize what has been lost, rather than examining the complex trajectories of the new, they are much less likely to be sensitive to the different political possibilities offered in the current context. Review: Provides overview of social development in the neoliberal context of regional

politics. Uses New Zealand institutional examples to illustrate opportunities for community development despite anti-neoliberal dogma which suggests that such action cannot occur.

Lefevre, C. (1998). "Metropolitan Government and Governance in Western Countries: A Critical Review." International Journal of Urban and Regional Research Volume 22; Number 1: pages 9-25.

Review: An excellent journal article (cited 76 times) written by Christian Lefevre of L'Institute d'Urbanisme de Paris. The article starts out by looking at the why and how of metropolitan governments and progresses to the reasons for its failures. This is followed by the coming of metropolitan governance. Replacing the top down process of governments, governance is noted as "a process that brings into play the ingredients of 'good governance' directed towards achieving a consensus between the principle actors on the 'common' objectives." The article is of great value in that it gives an excellent review of why governance has taken over governments with regards to regionalism today and also looks at problems associated with metropolitan governance such as the lack of universal application, the reluctance of the local authorities and the need for concessions by central cities to gain the support of the peripheries.

Loreau, M., N. Mouquet, et al. (2003). "Meta-ecosystems: a theoretical framework for a spatial ecosystem ecology." Ecology Letters 6(8): 673--679.

Abstract This contribution proposes the meta-ecosystem concept as a natural extension of the metapopulation and metacommunity concepts. A meta-ecosystem is defined as a set of ecosystems connected by spatial flows of energy, materials and organisms across ecosystem boundaries. This concept provides a powerful theoretical tool to understand the emergent properties that arise from spatial coupling of local ecosystems, such as global source-sink constraints, diversity-productivity patterns, stabilization of ecosystem processes and indirect interactions at landscape or regional scales. The meta-ecosystem perspective thereby has the potential to integrate the perspectives of community and landscape ecology, to provide novel fundamental insights into the dynamics and functioning of ecosystems from local to global scales, and to increase our ability to predict the consequences of land-use changes on biodiversity and the provision of ecosystem services to human societies.

Lovering, J. (1999). "Theory Led by Policy: The Inadequacies of the 'New Regionalism' (Illustrated from the Case of Wales)." International Journal of Urban and Regional Research 23(2): 379-395.

Review: This is well written critique of new regionalism by John Lovering that is cited by 130 other journal articles. Lovering, using case examples from England, talks of 'New Regionalism' being characterized by the historical-empirical claim that 'the region' is becoming the 'crucible' of economic development with normative bias pushing for 'the region' to become the prime focus of economic policy. The trouble of 'New Regionalism' Lovering states is that it is based on inadequate foundations. An attractive and persuasive story that is mostly fiction, but has big battalions of elite circles on its side. Overall an excellent article that gives a critical look at 'New Regionalism'.

Lowery, D. (2000). "A transactions costs model of metropolitan governance: Allocation versus redistribution in urban America." Journal of Public Administration Research and Theory 10(1): 49--.

The apparent hegemony of the public-choice approach to metropolitan governance has been sharply challenged on a number of fronts during the 1990s with a series of new arguments for consolidation emphasizing the role of boundaries in defining interests and property rights so as to structure the distribution of political transactions costs within metropolitan areas. Benefits of fragmentation is also challenged based on research showing no difference in preferences or offerings among tax/service provision packages offered by 10,000 municipalities surveyed-perceived quality of life differences such as ethnicity or class appeared to make more of a

difference in location choice. Discusses benefits of social capital aiding decision-making and statistical evidence of benefits of 'elastic borders' to social development. Also counters arguments of cost savings by fragmented governments, concluding that evidence of bureaucratic waste in consolidated government is weak, but concedes that evidence of cost savings from consolidation is hard to compare to savings from fragmented competition and literature has not provided conclusion. Review: Discusses current theory on consolidated governments vs. public choice theory advocating fragmentation. Fragmentation is challenged based on social (racial segregation) and economic development (lack of coordinated development policy) impacts, as well as the importance of metropolitan boundaries to equitably distribute the political transaction costs. Provides many references supporting the arguments presented. Tends to support government over governance in order to avoid transaction costs of intergovernmental agreements.

Lubell, M., M. Schneider, et al. (2002). "Watershed Partnerships and the Emergence of Collective Action Institutions." *American Journal of Political Science* 46(1): 148--163.

This article examines the emergence of local cooperative institutions-watershed partnerships-that resolve collective action problems involved in the management of natural resources. The political contracting approach to institutional supply suggests that watershed partnerships are more likely to emerge when potential benefits outweigh the transaction costs of developing and maintaining new institutions. We analyze the impact of social, political, economic, and ecological features of watersheds that affect benefits and transaction costs on the emergence of 958 watershed partnerships in the more than 2100 watersheds in the United States. Our findings demonstrate that watershed partnerships are most likely to emerge in watersheds confronting severe pollution problems associated with agricultural and urban runoff, with low levels of command-and-control enforcement, and containing the resources to offset transaction costs. Review: Discusses emergence of new focus on cooperative/decentralized institutions for natural resource management, in contrast with traditional use of centralized (federalist - command and control) methods of overcoming common pool resource conflicts. Command and control regulation is effective in dealing with point source pollution but has proven less effective in other areas of common/natural resource management: non-point source pollution, and ecosystem management across multiple media and jurisdictions. Study looks at 2100 watersheds in the USA to analyze factors relating to the development of cooperative partnerships. Key findings - transaction costs of developing and maintaining a new partnership institution must be outweighed by benefits of more regulatory flexibility, cost-effective locally based solutions/enforcement/monitoring, and better understanding of impacts on local ecosystem.

Maas, T. (2003). What the Experts Think: Understanding Urban Water Demand Management in Canada. Victoria, BC, Canada, Polis Project on Ecological Governance.

Review: Discusses current thought in urban water demand management in Canada, based on expert/practitioner "command and control" policy mechanisms; as well as the obstacles to achieving change in policy to interviews, focusing on why demand side management is being explored, especially in light of major cost of upgrading current infrastructure to accommodate expected growth in demand and the costs to ecosystem integrity; how demand can be reduced through education, economic incentives, and implement demand controls. Notes expert concerns about regional management of water resources.

MacLeod, G. (2001). "New Regionalism Reconsidered: Globalization and the Remaking of Political Economic Space." *International Journal of Urban and Regional Research* 25(4): 804--829.

Amid the near frenzied exaltation of economic globalization and a purported decline of the nation state, a range of sub-national regional economies and urban metropolises are increasingly being canonized as the paradigmatic exemplars of wealth creation. Indeed, across many of the advanced

developed countries a whole host of academics, consultants, influential commentators, politicians and bourgeois interest groups are readily invoking the region to be the appropriate site for regulating global capitalism. In a recent article in *IJURR*, though, John Lovering disputes this emerging New Regionalism, viewing it to be seriously compromised by several practical and theoretical inadequacies. This article has two principal aims. First, and while sympathetic to the general tenor of Lovering's critique, it offers a rejoinder through some sobering reflections on what might be recovered from the range of New Regionalist perspectives currently vying for attention within critical studies of regional development. Second, it presents a series of future theoretical directions for a geopolitically sensitive regional research agenda, drawing on recent thinking from the new regional geography, globalization and the politics of scale, institutional-relational state theory and the regulation approach. An argument is made that a synthesis of these perspectives might intensify our understanding of the social and political construction of regions, the uneven geography of growth, and the moments of re-scaled regionalized state power that now frame the process of economic governance.

Mahoney, John. "Experiences in the Oldman River Basin." *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association. <http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

Markusen, A. (2002). "Two frontiers for regional science: Regional policy and interdisciplinary reach." *Papers in Regional Science* 81(2): 279--290.

Marshall, D. (1998). "Watershed management in British Columbia: the Fraser Basin experience." *Environments* 25(2/3): 64--.

One of the board's key deliverables in its five-year mandate was a strategic plan for sustainability of the Fraser Basin. This plan, named the Charter for Sustainability of the Fraser Basin, was published on 27 February 1997 (Fraser Basin Council, 1997). The Charter is a prescription developed by, and for, the people who live, work, and play in the Fraser Basin. The Charter was developed based on the work of government and nongovernment agencies, committees, and individuals working together throughout the Fraser Basin. Here are some of the key elements of the Charter. The operational arm of the Fraser Basin Council Society is its Council. The Council is the custodian of the basin Charter for Sustainability (Fraser Basin Council, 1997). The Council is unique. Normally, organizations are constructed on adversarial lines. However, the Fraser Basin Council is not, and represents a new approach to doing business which cuts across adversarial lines and other differences in an effort to promote the common social good. It is a nongovernmental organization informed by governments. Governments are part of the council's management structure but it is "arm's length" from governments. It is a not-for-profit, fee-for-service, entity that can, for the first time, legally meld public sector funding with private sector participation. Although the Council is presently funded through equal contributions from the federal, provincial, and local governments, it is empowered to raise funds in many forms: bequests, legacies, property, or other in-kind gifts to augment Council operations. The Fraser Basin Charter for Sustainability is one of the final documents developed by the Fraser Basin Management Board (Fraser Basin Council, 1997). It is a broadly worded document which lays out a vision, principles, goals, and broad strategies for achieving sustainability of the Fraser Basin. Individuals, businesses, community and environmental groups, and governments are invited to promote the Charter and work together to support its implementation. The Fraser Basin Council will be responsible for updating the Charter and encouraging the application of its values and principles. Review: Good overview of the Fraser Basin Council - an example of collaborative governance focused on ecological concerns.

Martin, M. and G. Devier (2006). Boulder, Colorado, Published by “Open Space Seattle 2100” in pdf format on their website. It is a collaborative project that is looking at designing Seattle's Green Network for the next century.

Review: This is a case example published by “Open Space Seattle 2100”. It is a collaborative project that is looking at designing Seattle's Green Network for the next century. The case example shows both the strengths and weaknesses of Boulder, Colorado's open space system. It can be seen that the city is quite progressive as it charges a 0.88% sales tax to aid in funding, maintaining and acquiring open space. Preservation is a central principle in Boulder's Greenway Network System of green corridors. Acquisition of open space through purchases, donations, conservation easement purchases and easement donations has been ongoing since 1898 with current goal of acquiring 11,000 acres. The major weakness of Colorado's open space system is that the large amount of open space in combination with development height restrictions and zoning laws compounds the issue of developable lands and housing affordability often pushing development and population growth to neighbouring cities. Overall the city has quite a holistic functional view of its open space as it sees the importance of a network system of green corridors for many functions including: natural identity, ecological significance (water resources, wildlife habitat, ecosystem), agriculture uses, cultural experiences, recreation, physical barrier to growth and education. <http://depts.washington.edu/open2100/>

Mazzotti, F. J. and C. S. Morgenstern (1997). “A scientific framework for managing urban natural areas.” *Landscape and Urban Planning* 38(3-4): 171--181.

Due to the natural population growth and the influx of population from other areas of the county, South Florida is experiencing rapid growth. Meeting the challenge of conserving regional ecological integrity in urban and urbanizing landscapes will depend on the development of ecological reserve systems. In south-eastern Florida this means managing fragmented, isolated, and frequently disturbed habitat patches for both the conservation of ecological integrity and human enjoyment. A science-based natural area management plan provides a foundation for making the best decisions possible, and the flexibility of modifying them, and fosters public confidence in the process. The scientific framework employed to develop resource management plans for Environmentally Sensitive Lands in Broward County, FL, includes setting goals and objectives based on public involvement through a scoping process and resource inventories and evaluations. Management plans are developed for each site that identify significant resources, threats, restoration potential, and public use alternatives. Management plans are viewed as hypotheses of ecosystem response, and monitoring programs as experiments designed to test them. Management plans should include provisions for modification over time as more is learned about the actual ecosystem response. Review: Although the article is not clear and concise it does however bring up some aspect/factors with regards to managing process. The use of a ranking system to set priorities along with a proactive approach (via setting goals and objectives, public expectations, and the resource base) is the best to minimize problems/conflict before they become major issues, while continued monitoring acts as a safeguard against faulty management. There are no very strong sections associated with this article. The article begins by stating the importance of effective growth management planning with regards to conserving regional ecological integrity. Science-based planning (i.e. make a hypothesis with regards to appropriate management and then test it through monitoring) is stated as a simple management method with flexibility built in through its iterative

McAllister, M. L. (1998). “Shared decision-making: lessons from CORE [Commission on Resources & Environment].” *Environments* 25(2/3): 126--.

CORE was based on a laudable goal, which was to develop a responsive, democratic process for sustainably managing the province's resources. The quest to achieve compromise and conciliation in order to accommodate a plurality of interests rests at the heart of any civilized polity. Nevertheless, it is important to take a critical look at CORE. The initiative stumbled, as so many of these exercises do, with the implementation of the vision -- a far less glamorous stage of the process than that of developing a statement of commitment. Effective implementation was important to its success and acceptance by the wider community. CORE appeared to suffer from a lack of administrative foresight and attention to fundamental questions of political representation and accountability. A review of the CORE literature also reveals an excessive reliance on legalistic principles and practices which were ill-suited in particular to Canadian parliamentary democracy. Despite the difficulties noted above, multi-partite consultation processes can be a useful planning tool if they are managed and structured more carefully with due consideration to the complexity of the Canadian system of government. These processes are more responsive to the values and needs of a wider spectrum of interests than has been the case in the past and they respond to the complex needs inherent in integrated resource management. If the participants in the round tables themselves can reach agreement, they can foster an environment of increased certainty and harmony in land use planning that is a necessary prerequisite for long-term sustainability. Some assert that CORE was the first of its kind in the world and, therefore, is not surprising that it encountered the problems that it did. The CORE initiative may be viewed as a valuable exercise in public consultation but very much experimental in the approach and accompanying processes; as such it was inevitably flawed. Nevertheless, as one former senior member of government noted, "despite all the problems, the land use wars in B.C. have quieted down and the old valley by valley fights have to a considerable degree been replaced by broader scale regional trade-offs" (Edwards 1995). Notwithstanding the difficulties associated with CORE, these land use consensus-based processes now appear to be entrenched in public expectations for on-going consultation. The costs of adversarial positioning and ideological inflexibility on the part of the competing groups is prohibitively high, environmentally, socially, and economically. It is necessary to foster new processes of accommodation. CORE may very well have proven itself to be a very important step toward this process. Although the CORE initiative was terminated in 1996, there are continuing efforts to integrate the continuing land use initiatives into the administrative processes. The BC Land Use Co-ordination Office (LUCO), created in 1994, co-ordinates the work of various ministry programs including the Inter-agency Management Committees and Community Resource Boards to ensure the regional and land use plans are well integrated. The Inter-agency Management Committees oversee strategic land use plans such as the Land and Resource Management Plans. Their job is to overcome the 'stovepipe' nature of vertical government structures and to ensure that the work of various agencies and departments works cooperatively to fulfil the mandate of the strategic plans (BC 1997: 1). Much still remains to be resolved in terms of accountability, co-operation, representation and developing trust and faith both in the process itself and in the decision-makers governing the process. For better or worse, the potential for an improved system of governance for ecosystem management cannot be readily separated from the political ambitions and interests of decision-makers and influential stakeholders in the process. Questions of legitimacy will inevitably accompany such sweeping changes. Despite its flaws, CORE nevertheless represents a first, if painful, step in developing a necessary alternative approach to the complex task of fostering a more sustainable approach to land-use decision-making.

McDonald, L., Allen w, et al. (2005). "Green Infrastructure Plan Evaluation Frameworks." Journal of Conservation Planning 1: 12-43.

Review: Discusses evolution of local government conservation efforts towards green infrastructure planning, offers best practices (particularly in terms of methodology for planning and implementation) so far.

McKenzie, F. and M. Tonts (2005). "The re-emergence of regional policy and planning in Western Australia." Planning Practice and Research 20(2): 201--219.

Review: A review of the structure of Australian government policy with respect to regional economic development. Focus on current trend towards sustainable development policy and the role of Regional Development Commissions in implementation of that policy. Good info on need for high level acceptance of sustainable development, notes problem of implementation when planning and economic/social development governance bodies are separated.

McKinney, M., J. Parr, et al. (2004). "Working Across Boundaries: A Framework for Regional Collaboration." Land Lines 16(3): 5--8.

Review: Article provides information on methods for collaborative regional governance, focusing on principles needed to establish what and how a regional issue is managed. American government and NGO examples from the Author's experience at the Lincoln Institute, where they offer a clinic on "Regional Collaboration". Recommendations for "regional initiatives" are provided, based on the idea that regional issues are defined by crossing jurisdictional boundaries and the area covered is set by the issue and stakeholders needed to address it. Article encourages regional leadership on the basis of several principles, which include: the sharing resources and knowledge, working with or within existing institutions, and focusing on specific goals in the form of objectives to be reached or problems to be solved instead of governing for governing's sake.

Meijers, E. (2005). "Polycentric urban regions and the quest for synergy: Is a network of cities more than the sum of the parts?" Urban Studies 42(4): 765--781.

Polycentric urban regions, or urban networks, are often associated with the notion of synergy, the assumption being that the individual cities in these collections of distinct but proximally located cities relate to each other in a synergetic way, making the whole network of cities more than the sum of its parts. Drawing on economic network theories, an analysis of the presence of synergy is carried out for the Randstad region in the Netherlands, which is often considered a classic example of a polycentric urban region. The analysis focuses on the synergy mechanisms of co-operation and in particular complementarity. The results are mixed. In terms of co-operation, the Randstad has become more synergetic. However, the less complementary economic roles of the cities caused a reverse effect. Review: Discusses "Polycentric Urban Regions", urban networks meant to achieve economies of scale, critical mass, and synergy, to underscore the prevalence of such policy in Europe. Synergy (being more than merely the sum of the parts) is a critical concept as it suggests that such regions could perform on the world stage alongside Paris or London without incurring the costs or agglomeration diseconomies that these large metropolises entail. The article analyses this idea and investigates its operation with respect to the Randstad region, providing an example of cooperation and complementarity (synergy) in action.

Meredith, D. (2005). "The bioregion as a communitarian micro-region (and its limitations)." Ethics, Place & Environment 8(1): 83--94.

The micro-regional focus of bioregionalism is a small unit of physical space, typically a watershed region. In bioregional discourse, natural systems become metaphors for cultural coherence. However, when we look for laws embedded in the natural world, those that are found do not then reveal themselves as principles which apply to systems of culture. Further, within most individuals, the sense of regional identity spans several scales because our past narratives

and present affiliations span several localities. Humans are not immersed in singular niches, nor is the bioregionalist an existential, primordial localist, for his or her choice has been crafted.

Review: Discussion of the bioregionalist concept, illustrating its social basis taking precedent over any scientific/ecological foundation.

Michaels, S. and M. Laituri (1999). “Exogenous and Indigenous Influences on Sustainable Management.” Sustainable Development 7(2): 77-86.

The Resource Management Act, the cornerstone of New Zealand’s legislated environmental policy, reflects the mediation of internationally debated constructs of sustainable development and profoundly local meanings of living within nature. The outcome is a made-in-New Zealand approach to conceptualizing sustainable management in national environmental policy. This paper demonstrates how and why the contribution of non-New Zealanders and the first peoples of New Zealand, the Maori, to this conceptualization differ so profoundly from each other. External influences, such as the thinking of the World Commission on Environment and Development (WCED) on defining sustainable development, have the greatest impact in the initial conceptualization of policy formulation. It is through Kingdon’s (1984) policy stream, rather than through his other two streams of politics and problems, that outside views weigh in most convincingly. First peoples are positioned to be influential in policy formulation through all three of Kingdon’s streams because of their appreciation of locality and long-term commitment to place. These factors are reflective of a philosophy and ideology which is not the bedrock of state legislation about sustainable management. Review: Good description of policy formation process based on Kingdon’s model. Focuses on the impact of certain actors, specifically outside international interests and internal Aboriginal perspectives, on New Zealand’s Resource Management Act and policy of sustainable management (SM). Forces that shaped the RMA include free market ideology (decreasing reliance on government); concern that social development was inappropriate for consideration with natural resource management - this is where NZ’s SM differs from Sustainable Development; Maori governance structures emphasizing local/decentralized resource management.

Michalek, M. (2006). Helsinki, Finland: Close to the Forest, Nature in the City, Published by “Open Space Seattle 2100” in pdf format on their website. It is a collaborative project that is looking at designing Seattle’s Green Network for the next century.

Review: This is a case example published by “Open Space Seattle 2100”. It is a collaborative project that is looking at designing Seattle’s Green Network for the next century. The case example shows that Helsinki, Finland is a prime example of service oriented city (78.7% of workforce) with a great open space system where 1/3rd of the city is green space. It is a network oriented open space plan with connective corridors of continuously forested areas and large habitat corridors going from the densely populated shoreline out to the more rural edges of the greater Helsinki region. The guiding philosophy is to have “green finger” networks for all classes. Culture plays a significant role in how the people have a high priority and respect for the environment in which people work towards a cohesive relationship between man and nature. While the open space system is of use for citizens to occupy and use it is also highly valued for its biological diversity. <http://depts.washington.edu/open2100/>

Mickwitz, P., M. Melanen, et al. (2006). “Regional eco-efficiency indicators - a participatory approach.” Journal of Cleaner Production 14(18): 1603--1611.

Eco-efficiency emerged in the 1990s as a measure of “the efficiency with which ecological resources are used to meet human needs.” Eco-efficiency indicators as tools for regional sustainability policy were demonstrated in a Life-Environment project, ECOREG, in the Finnish region of Kymenlaakso. A participatory approach was utilised to produce indicators that are

relevant for regional decision-makers and that will actually be used. The approach established a system through which decision-makers are able to monitor changes using several economic-environmental ratio indicators, and at the same time obtain information on the social progress taking place in the region. In the future, there will be a need for an ongoing dialogue among the different actors in the region in order to ensure that the indicators are indeed used to promote sustainable development. Review: In this article eco-efficiency is put forward as a means of pushing unsustainable development towards sustainable development. The weakness of the approach is that it lacks strong social aspects with regard to sustainability. A local participatory process of determining appropriate eco-efficiency indicators is seen as necessary especially with regards to having relevance in the local context. The article discussed the problem of having too much yet too little information. A good article overall especially with regards to how it deals with the importance of a local participatory approach to achieving eco-efficiency indicators for a region.

Miller, S. (1997). *The Benefits of Open Space*. L. W. Hamilton, Great Swamp Watershed Association. Review: Discusses natural capital and the economic benefits of ecological infrastructure (open space). Looks to tools such as cost-benefit analysis to argue these benefits. Lists ecosystem functions in detail and ascribes a cost to replace them with anthropogenic proxies. Excellent discussion of economic (and associated social) valuation of open space with several sample calculations based on real situations.

Ministry of Municipal Affairs and Housing (1999). *Local Services Realignment: a user's guide*. Review: A guide to changes in service delivery due to change in provincial legislation (Municipal Act, 2001) resulting in downloading of provincial responsibilities and the amalgamation of municipalities. Key new agencies created by Province: Consolidated Municipal Service Managers (CMSMs) and District Social Service Administration Boards (DSSABs). These comprise a total of 47 municipal delivery agents, which are taking on responsibility for managing the delivery of most social and community health services in Ontario.
http://www.mah.gov.on.ca/userfiles/page_attachments/business/lsr/lsr-e.pdf

Morrison, T. H., G. T. McDonald, et al. (2004). "Integrating Natural Resource Management for Better Environmental Outcomes." *Australian Geographer* 35(3): 243-258.

Severe problems of fragmented policies and uncoordinated implementation undermine natural resource management in Australia. There have been promising signs of progress through activities such as the National Forest Policy, Council of Australian Government water reforms, National Land and Water Resources Audit, the Murray- Darling Basin initiative and the National Action Plan for Salinity and Water Quality to integrate resource policies. There have also been some notable successes at State and local level. But fragmentation endures. This paper provides evidence of the enduring problem of fragmentation and presents a framework to analyse Australia's experience in natural resource management. The analysis reveals the multi-dimensional character of the problems and identifies a diverse set of actions that need to be taken to improve integration in policy and implementation. Particular attention is given to the potential for regional programs to contribute to improved integration and NRM. Review: Discussion of historical push for integrated resource management and defines need for governance over government. Governance characteristics are clearly outlined, differentiates between collaboration, cooperation and coordination while suggesting that to be successful integration is required - participatory decision-making, facilitative resources, functional implementation, strategic commitment, structural reorganization, methodological exchange, substantive outcomes. Also gives examples of these methods in action, discusses draw-backs

Moss, J., G. Wolff, et al. (2003). VALUING WATER FOR BETTER GOVERNANCE HOW TO PROMOTE DIALOGUE TO BALANCE SOCIAL, ENVIRONMENTAL, AND ECONOMIC VALUES? online.

Solving the freshwater crisis requires significantly more investment and spending in the water sector. But getting more money requires broader agreement among stakeholders than exists at present. A powerful way of obtaining broader agreement is to clarify through dialogues our values, value differences, and common ground. When this is done, people and businesses are willing to pay more for water systems and their governance, which in turn enables water systems and their managers to deliver more value to people and businesses. Dialogue about values also strengthens the legitimacy and sustainability of formal political decisions; many of which have been reversed or deferred at great cost because underlying value issues were ignored. Dialogue about values is essential to create a “virtuous circle” of progress in the water sector. This paper develops an initial intellectual framework for such dialogue. Review: Provides suggestions on addressing valuation differences among stakeholders and establishing effective governance of water resources. Focuses on the use of dialogue to build understanding of values and positions on the issue, in order to achieve consensus on management goals. Lists principles of effective governance, suggests types of perspectives and stakeholder groups that may be involved in dialogue to achieve management goals.

http://www.pacinst.org/reports/valuing_water/valuing_water_paper.pdf

Murchie, G., D. Stuart, et al. (1978). Planning in Alberta: A Guide and Directory, Province of Alberta: Inter-Agency Planning Branch, Planning Services Division, Department of Municipal Affairs.

Provides an overview of land use planning history in Alberta as well as the “new” legislation, The Planning Act, 1977. It details the major elements of the act and the overarching themes that drove its development - to provide a system for orderly land development, strengthen local autonomy, encourage public participation, recognize regional and provincial land use concerns, and minimize the time need by the government to make land use decisions (to ensure growth is not hampered by government delays). The authors go on to detail the functions of the government agencies involved in planning at the provincial, regional, and municipal levels. Regional planning is tasked to Regional Planning Commissions (8) set up in 1977 as part of act, although there are some areas not within a regional boundary so planning is undertaken by the Province (mainly in the Northeast). These commissions were responsible for preparing and adopting a regional plan for their jurisdiction, assisting municipalities with their municipal plan if requested by the municipality, offering advice to municipalities, review of subdivision applications, and encouraging public interest in the planning process. Regional jurisdiction was determined by the Provincial Cabinet, while the commission appointees were nominated by the municipal councils with the approval of the Minister of Municipal Affairs. The Ministry also set the number of commission representatives each municipality was entitled. The Province did not have voting rights on the commissions, but could participate in an advisory capacity. Some municipalities did not have a permanent representative on their commission, but could vote on issues that directly affected them. The commissions were financed by the Alberta Planning Fund, which was contributed to by every municipality in the Province via an equalization formula reflecting the municipality's size and type. 80% of the fund was paid for by the Province. Review: Provides an overview of land use planning history in Alberta to 1977 as well as the “new” legislation, The Planning Act, 1977. It details the major elements of the act and the overarching themes that drove its development. The authors detail the functions of government agencies involved in planning at the provincial, regional, and municipal levels, as well as the role of public consultation. Summarizes the structure and authority of the 8 Regional Planning Commissions set by the province in the Act. This is an informational government document, as no analysis is made, and its audience is the general public seeking to understand the legislation.

Murdoch, J. and P. Lowe (2003). “The preservationist paradox: modernism, environmentalism and the politics of spatial division.” Transactions of the Institute of British Geographers 28(3): 318--332.

According to Bruno Latour, the imposition of crude classificatory schemes onto complex entities has two main effects: firstly, the classifications lead social actors to sift the world into the schemes' simple categories; secondly, underlying relations subvert the schemes' functioning, resulting in the production of transgressive 'hybrids'. Thus, classification and relation interact and this interaction shapes both the practice of classification and the world that is classified. In this paper, we examine the interaction between a scheme of spatial classification and the spaces that are enrolled within the scheme. We show that a division between urban and rural areas was put in place in post-war England in order to protect a 'vulnerable' rural nature from urban advance. However, as soon as it was imposed, this division was transgressed by complex socio-economic processes. We assess the response to this transgression by considering the activities of the Council for the Protection of Rural England (CPRE), an environmental group that played some considerable part in constructing the urban-rural divide in the first place. We show that the CPRE has responded to the 'paradox of preservationism' by placing urban-rural divisions in the context of 'ecological' relationships. We illustrate this 'ecologization' of the modernist divide using the example of housing and we argue that the CPRE's ecological approach illustrates how a new alignment between 'urban' and 'rural' may herald a new and more sophisticated form of spatial classification. Review: This is an great journal article that jumps into the cultural conceptions of nature, specifically with regards to the urban-rural divide. An 'ecological' frame of reference is suggested. “No longer can nature be seen as simply a static entity, one that needs to be protected against destructive human actions; rather, it should be conceptualized as fluid and dynamic, and as closely bound into economic and social processes of change. The focus of environmental politics should therefore shift from the preservation of 'pure' nature to the sustainability of 'heterogeneous' relationships, wherein social entities form 'partnerships' of various kinds with natural entities. The goal of environmental policy thus becomes the promotion of these partnerships so as to ensure that natural entities become sympathetically incorporated into the networks that increasingly connect urban and rural spaces.”

Naeem, S. and J. P. Wright (2003). “Disentangling biodiversity effects on ecosystem functioning: deriving solutions to a seemingly insurmountable problem.” Ecology Letters 6(6): 567--579.

Abstract Experimental investigations of the relationship between biodiversity and ecosystem functioning (BEF) directly manipulate diversity then monitor ecosystem response to the manipulation. While these studies have generally confirmed the importance of biodiversity to the functioning of ecosystems, their broader significance has been difficult to interpret. The main reasons for this difficulty concern the small scales of the experiment, a bias towards plants and grasslands, and most importantly a general lack of clarity in terms of what attributes of functional diversity (FD) were actually manipulated. We review how functional traits, functional groups, and the relationship between functional and taxonomic diversity have been used in current BEF research. Several points emerged from our review. First, it is critical to distinguish between response and effect functional traits when quantifying or manipulating FD. Second, although it is widely done, using trophic position as a functional group designator does not fit the effect-response trait division needed in BEF research. Third, determining a general relationship between taxonomic and FD is neither necessary nor desirable in BEF research. Fourth, fundamental principles in community and biogeographical ecology that have been largely ignored in BEF research could serve to dramatically improve the scope and predictive capabilities of BEF research. We suggest that distinguishing between functional response traits and functional effect traits both in combinatorial manipulations of biodiversity and in descriptive studies of BEF could markedly improve the power of such studies. We construct a possible framework for predictive,

broad-scale BEF research that requires integrating functional, community, biogeographical, and ecosystem ecology with taxonomy. Review: Research method suggested to better understand effects of biodiversity on ecosystem functions. Several aspects of functional diversity are explored to seek improved predictive power of experiments in manipulating biodiversity to understand impacts on ecological functions.

Ndubisi, F. (2002). Ecological Planning: A Historical and Comparative Synthesis, The Johns Hopkins University Press.

Review: Forster Ndubisi goes through the six major approaches to ecological planning, from the Landscape-suitability approach to landscape ecology. The book is of great interest as it discusses each approach and their ability to solve complex environmental problems. There is little mention of regional planning in the book, but it still may be of use as ecological planning is of great importance towards obtaining regional sustainable development. Ndubisi makes it obvious that human interaction with the landscape is immensely value laden and infinitely complex.

Nelson, A. (2006). Stockholm, Sweden: City of Water, Published by “Open Space Seattle 2100” in pdf format on their website. It is a collaborative project that is looking at designing Seattle's Green Network for the next century.

Review: This is a case example published by “Open Space Seattle 2100”. It is a collaborative project that is looking at designing Seattle's Green Network for the next century. The case example shows how Stockholm, Sweden is probably the best example of an open space system that integrates an ecological systems approach. Stockholm is a place where approximately 1/3 is urban, 1/3 is water, and 1/3 is green space. Its policies focus on the “dual” purpose of urban development patterns and green space preservation ensuring that humans are close to nature and that nature maintains its ecological functions. Stockholms green spaces form a network of interconnected areas, with specific help from its use of development fingers with nodes of development around public transit and green wedges left in between that stretch out from city centre to the suburbs. The case example shows how Stockholm is the only county in Sweden with an official regional planning agency which helps ensure cooperation between its many involved stakeholders including: municipalities, regional entities, and the national government. The case example is of great value which is further highlighted in the interesting statistic that shows that only 22% of Stockholmers and 40% of Stockholm County residents own a car.

<http://depts.washington.edu/open2100/>

Nelson, A. and C. Pettit (2004). “Effective Community Engagement for Sustainability: Wombat Community Forest Management Case Study.” Australian Geographer 35(3): 301-315.

The first significant government sponsored community-based forest management project in Australia was initiated in Central Victoria in 2002. This paper analyses the initial stage of the Wombat Community Forest Management Pilot Project. The paper develops a functional concept of ‘effective community’ for structuring community engagement in these kinds of natural resource management projects. The effective community has characteristics in common with a community of interest, adopts a bioregional perspective, embodies the values of environmental stewardship and interacts in a fully informed way as a ‘discursive community’ (Meppam 2000). The paper offers general advice for organising effective community engagement in such projects and 12 recommendations for governments developing similar initiatives elsewhere.

Nelson, J. G., J. C. Day, et al. (2003). Protected Areas and the Regional Planning Imperative in North America, University of Calgary Press and Michigan State University Press.

Reviews current trends in conservation of natural resources in moving away from the isolationist approach to recognizing the need to manage the environment using a systems approach. This

recognizes the interconnections between ecosystem parts and functions, the interconnectedness of humans with their environment on a cultural level, and the necessity of co-management or shared decision-making due to the cross-boundary nature of ecosystem issues. Focuses on efforts in Canada, Mexico, and the USA to address sustainable development and nature conservation goals and the role national parks and protected areas in achieving those goals. Key Conclusions: Need to broaden programming/planning purposes of protected areas and parks - these spaces play an important role in society beyond recreation and conservation. They also offer ecological and social services: opportunities for research and monitoring of anthropogenic environmental impacts; land use, economic, & cultural services. Protected areas must be planned and managed as part of an overall regional land use plan in order to ensure the protected area can survive, as part of its ecosystem and not an isolated fragment, and to allow the protected area to serve its purpose within the ecosystem in order for this system to be self-sustaining and functioning for the benefit of all its inhabitants. Corridors and buffers are not enough to maintain connectivity and function. Regional scale planning, for maintenance of biodiversity, needs to look at bigger areas in order to include the migratory area covered by some species. An example is the migration of Monarch butterflies across the Western Hemisphere, or the leatherback turtle recovery planning group that spans multiple countries bordering on the Pacific Ocean. Previous efforts to plan protected areas focused on wildlife and biological systems - more attention is needed for understanding the wider atmospheric, geologic, hydrologic, and human dimensions of ecosystem planning, management, and decision-making. Obvious examples are floodplain and aquifer management and the setting aside of land to address the needs/functions of the ecosystem within which these function. Perceptions and lifestyle will not change simply by telling people to do so, now that science has decided that protected areas are not enough to protect our ecosystems. We need to integrate a civic dimension to ecosystem management in order to engage the intertwined economic and social needs of the population with their physical environment. Review: Excellent resource covering issue of ecosystem fragmentation and the inability of the traditional conservation paradigm, the setting aside of isolated protected areas, to achieve goal of protecting ecosystem features if viewed in isolation and outside of whole ecosystem context. Good case study of the Regional Municipality of Waterloo - upper tier government in Ontario.

Nielsen, S. B. and M. Elle (2000). "Assessing the potential for change in urban infrastructure systems." Environmental Impact Assessment Review 20(3): 403--412.

The premise of this paper is that there is a need for rethinking the design of technical infrastructures because of environmental problems, and to understand the dynamics of and the potential for change, urban infrastructure large technological systems must be seen as socio-technical artefacts. This paper offers a methodology for analyzing current infrastructure systems, and a case study, demonstrating that social relations play a significant role as barriers against implementing new management practices. It is argued that there is a need to involve more people in the rethinking of urban infrastructure, and this paper raises some strategic questions concerning planning for the transformation of technical infrastructures into more sustainable systems. Review: Discusses difference in approach to implementation of alternative infrastructure technologies, such as systems that address multiple aspects of management issues such as infiltration trenches to address storm water management concerns of retention and quality instead of using traditional sewer systems that require separate water treatment facilities to address quality concerns in addition to the flow/retention management function of the sewer.

Oakerson, R. J. (2004). Metropolitan Governance: Conflict, Competition, and Cooperation, Georgetown University Press.

Review: Chapter discusses current shift towards metropolitan governance frameworks over government structures, emergence of New Regionalism, and defines key aspects of metro.

governance (as contrasted with government). Widespread move to regionalism without directive from higher orders of government has resulted in: solutions tailored to specific regions, innovations that could be applied elsewhere, and efforts to seek other forms of governance beyond “command and control” or coercion to provide better understanding of each form (no evidence that “command and control” is the best way to go for addressing regional issues). Suggests that fragmented governments, working together for regional governance, is a better form than a centralized authority as it allows civil society more opportunity to participate and allows the benefits of smaller local governments to be expressed regionally (higher civic participation, stronger representation, more opportunities for civic entrepreneurs, stronger accountability).

Olden, J. D., M. E. Douglas, et al. (2005). “The Human Dimensions of Biotic Homogenization.” Conservation Biology 19(6): 2036--2038.

Review: Discusses implications of biodiversity loss in terms of social impacts. Makes economic and social arguments based on the value of species diversity to ecotourism (tourism is the biggest industry in the world) and also to society's 'sense of place'.

Oliver, P. (2001). “What makes catchment management groups “tick”?” Water Science & Technology 43(9): 263-272.

The work of catchment management groups throughout Australia represents a significant economic and social investment in natural resource management. Institutional structures and policies, the role of on-ground coordinators, facilitation processes, citizen participation and social capital are critical factors influencing the success of catchment management groups. From a participant-researcher viewpoint, this paper signposts research directions and themes that are being pursued from the participant/coordinator, catchment group, and lead government/non-government agency perspective on the influence of these factors on the success of a catchment management group in the Pumicestone Region of Southeast Queensland, Australia. Research directions, themes and discussion/reflection points for practitioners include - the importance of understanding milieu; motivation; success; having fun; “networking networks”; involvement of “non-traditional” stakeholders; development of stakeholder/participant partnerships; learning from other practitioners; methods of stakeholder/participant representation; evaluation; the need for guiding principles or philosophy; the equivalence of planning, implementation, evaluation, and resourcing; catchments as fundamental units of Nature; continuity of support for groups; recognising a new role for government; working with existing networks; and the need for an eclectic approach to natural resource management. Review: Discussion of public participation in resource management, partly a result of new legislation making some form of citizen participation mandatory in relation to management of natural resources. Lists efforts to coordinate the participation of stakeholders for the achievement of management goals, in relation to literature on subject of participation. Notes importance of managing the “people” side of the equation, not just focusing on resource management outcomes, in order to motivate stakeholders to stay committed to the work. Also suggests that catchments are the best type of boundary for managing resources and that political boundaries should bend to facilitate effective management.

Ostrom, E. (1995). Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University Press.

Review: Discussion of sociological and political economy theory behind collective governance of common-pool resources. Provides several case studies, illustrating the principles which have shaped some of the most successful and long-lived (100's of years) collective governance institutions for the management of common resources. Illustrates importance of social capital and local control in developing effective governance institutions.

Owen, S. (2006). *Catchment Management*.

Review: As you will be aware there are a range of RMA environmental management plans developed & administered through the ARC. These will raise issues about boundary management. There are also a range of catchment focused projects that have been undertaken within the boundaries of the Auckland Regional Council - have a look at the Mahurangi Action plan (developed in rural catchment north of Auckland) and also the Landcare ICM site - http://www.landcare.org.nz/integrated_catchment_management/nzprojects.asp - the Kaipatiki project. A lot of the catchment management takes place within local authority boundaries - see the Twin Streams project in Waitakere City Council (www.waitakere.govt.nz) or the Kokupu connection (www.northshorecity.govt.nz) - the other 2 urban councils (Auckland city council & Manukau city council) arguably have a different stormwater focus. You may find the Twin Streams project interesting as a community participatory project. You asked about boundaries - the ARC borders the Northland Regional Council in the North. The boundary runs through the middle of the Kaipara harbour. This can prove problematic in the case of RMA plans in the northern part of the harbour are written and implemented by the NRC, while in the southern part by the ARC. This may be problematic with development in the harbour if there are differences in views on what activities/ effects are appropriate. If you have a look on the ARC website (www.arc.govt.nz) or the NRC (www.nrc.govt.nz) websites you will find info on sandmining, aquaculture development cases that have required joint hearings. Of course this all relates to the receiving environment rather than just catchment development however this may provide an illustration of how councils can work together & oppose each other in environmental management practices. Another approach would be to look at how the ARC works within boundaries and engages in catchment management with local authorities. Here is a little bit on the rationale for Regional Council boundaries: <http://www.stats.govt.nz/statistical-methods/classifications/Regional+council+2006.htm> 'Regional Councils were established in November 1989 after the abolition of the 22 local government regions. A total of 14 were defined by the Local Government Commission. In 1992 this was increased to 16. Structure The Local Government Amendment Act (No.3) 1988 requires the boundaries of regions to conform as far as possible to one or more water catchments. When determining regional boundaries, the Local Government Commission gave consideration to regional communities of interest when selecting water catchments to be included in a region. It also considered factors such as natural resource management, land use planning and environmental matters.'

Ozawa, C. (2004). *The Portland Edge*, Island Press.

Review: Excellent resource for inside info on Portland. Written by faculty at Portland State University. Discusses both successes and not so successful aspects of Portland's governance systems, civic engagement, urban planning, housing, transportation, and ecology policies.

Parks, R. B. and R. J. Oakerson (1989). "Metropolitan organization and governance: A local public economy approach." *Urban Affairs Quarterly* 25: 18-29.

New conceptualizations are needed to encompass cumulating research findings that complex, multijurisdictional, multilevel organization is a productive arrangement for metropolitan areas. A local public economy approach recognizes (1) the distinction between provision and production, and the different considerations that bear on each; (2) the distinction between governance and government, and the multiple levels of governance; (3) the difference between metropolitan fragmentation and complex metropolitan organization, and the prevalence of the complex organization over fragmentation; and (4) the necessity for citizen choice and public entrepreneurship in crafting productive organizational and governance arrangements. It may contribute to a rethinking with respect to governance structures adapted to the diversity characteristic of American metropolitan areas. Review: Outlines basic questions in metropolitan

governance debate - governance vs. government, patterns of organization based on local needs and future change, and organization responsive to citizen needs while being efficient and equitable. Defines governance as the capacity to make, change, and enforce rules within which provision and production of goods and services occur. Therefore, metropolitan governance does not require a metropolitan government in order to provide or produce services. Article points to evidence that metropolitan governance, without formal government structure, can be effective and details vertical and horizontal networks as important aspects of achieving metropolitan goals. Pushes “reformers” to stay away from one-size fits all amalgamations for the sake of reducing the number of jurisdictions or achieving economies of scale without any idea of how these goals result in true cost savings.

Parr, J., K. Welsh, et al. (2002). *The Practice of Stewardship: Developing Leadership for Regional Action*, online.

Review: A good article on methods for developing leadership for regional initiatives and ensuring the long-term sustainability of initiatives through collaboration. Provides examples on why leadership was needed and how it helped regionalism in that particular location.

Parson, E. A. (2001). *Governing the Environment - Persistent Challenges, Uncertain Innovations*, University of Toronto Press.

Discussion of the role of government and governance in environmental management, reviewing policy, participation, and long-term trends in management. Includes a chapter on the use of science in policy making, particularly environmental policy, and concerns about funding reductions to research as well as accountability of scientists (or bodies purporting to offer advice using scientific data, even if non-scientists are parties) to the public for their role in policy making. Government science is often peer reviewed internally, eliminating the opportunity for unbiased analysis by scientists outside of government. Another key issue raised was the current practice in Canadian government to have science-based advisory bodies mainly composed of professionals in industry, resulting in a lack of members in social or academic areas to balance perspectives, which also raises concern about the biases of these bodies towards industry protection. Without broader representation and accountability checks, these bodies will likely offer advice that protects industrial interests at the expense of the environment. Also discusses spatial scales of environmental governance, suggesting national initiatives are best for achieving progress as most environmental concerns are global in scale and are impacted by the global economy - the author argues that smaller governing bodies are incapable of operating effectively in opposition to global economic forces. Another author argues that environmental concerns require national level policy to deal with the global economic climate driving activities that degrade it. He also notes that many organisms and ecosystem functions are impacted by multiple international jurisdictions due to the large areas they inhabit or migrate through as well as the global circulation patterns of air and water movement that move pollutants across borders and impacting common property resources. Review: Chapter of interest - #3. Provides counter-argument to majority of environmental management literature advocating for local (bioregional) management of environmental concerns. However, his argument against local efforts to address environmental concerns is not convincing as the author maintains that action to manage environmental concerns must happen at scale that includes all actors involved in the decision-making for effective democracy, which is international level due to the effects of globalization and the power of multinational corporations, yet he also provides much evidence of the ineffectiveness of current international environmental policy. The chapter discusses the ineptitude of all levels of government to achieve environmental policy goals at great lengths. Much of the argument for expanding national jurisdiction rests on the lack of capacity of lower level jurisdictions, but it is not recognized that this lack is a result of the federal levels of government

absorbing more than its share of taxes or preventing local authorities through legislation from accessing the means to become financially self-sustaining. If financial resources were more equitably accessible to lower level jurisdictions, they may develop the capacity to better address the environmental problems caused by multi-nationals. While the idealistic “what ifs” of improved federal environmental decision-making are explored, such as greater authority of international environmental enforcement, the “what-ifs” of improved metropolitan or provincial scale decision-making are ignored by this author without explanation. Only one paragraph discusses the benefits of local innovation and diversity of action on environmental policy. No evidence of a particular authority being better able to address environmental concerns is presented. Each example of one level of government shirking its environmental responsibilities is often accompanied by no indication that the federal government was able or willing to take action to take up the slack or why the federal government would be a better level of jurisdiction to do so over another beyond the economics of scale argument - innovation, ecological and social factors are not considered.

Perlman, D. L. and J. C. Milder (2005). Practical ecology for planners, developers, and citizens, Island Press Washington, DC.

Review: The book was written by Dan L. Perlman, biology academic, and Jeffrey C. Milder, a practicing environmental planner. The book was supported by the Lincoln Institute of Land Policy. The book covers key ecological concepts and offers clear guidelines and information about protecting species and ecosystems to ensure a sustainable future. The book is of greatest value in how it explains why we should protect biodiversity and the natural environment and why ecological integrity is so important to sustainability.

Pickett, S. T. A., M. L. Cadenasso, et al. (2004). “Resilient cities: meaning, models, and metaphor for integrating the ecological, socio-economic, and planning realms.” Landscape and Urban Planning 69(4): 369--384.

Urban designers, ecologists, and social scientists have called for closer links among their disciplines. We examine a promising new tool for promoting this linkage--the metaphor of ‘cities of resilience.’ To put this tool to best use, we indicate how metaphor fits with other conceptual tools in science. We then present the two opposing definitions of resilience from ecology, and give reasons why one is more appropriate for linking with design. Additional specific tools and insights that are emerging from, or being increasingly used in, ecology can further support the linkage with urban design. These include recognizing the role of spatial heterogeneity in both ecological and social functioning of urban areas, the integrating power of watersheds, social and ecological patch dynamics of cities, the utility of spatial mosaic models to capture function, the use of an integrated ‘human ecosystem’; modeling framework, and the consequent perspective of metropolitan areas as integrated ecological-social systems. Three additional tools are related to the adaptability of people and human institutions. First is the recognition of a ‘learning loop’ in metropolitan ecosystems in which people respond to and affect ecological change, the use of urban design as experiments whose ecological and social outcomes can be measured, and finally the potency of a dialog between professionals and citizens, communities, and institutions, to support both research and design. The metaphor of resilience, and its technical specifications, draw these diverse strands for linking ecology and planning together. Review: Excellent description of ecosystem dynamics, including anthropogenic impacts, using ecosystem resilience to define impacts. Uses watershed as metaphor for understanding dynamics of urban environments (habitat/structural patches=neighbourhoods or types of land uses). Suggests that dialogue based research efforts into human-nature interactions (planning and management functions within the human ecosystem framework) can impact how humans interact with nature

and aid in making the system more resilient - the beneficial effect of participation on aiding in understanding the system for both the public participants and the decision-makers/managers.

Pickett, S. T. A., M. L. Cadenasso, et al. (2001). "Urban Ecological Systems: Linking Terrestrial Ecological, Physical, and Socioeconomic Components of Metropolitan Areas." Annual Review of Ecological Systems 32: 127-157.

Ecological studies of terrestrial urban systems have been approached along several kinds of contrasts: ecology in as opposed to ecology of cities; biogeochemical compared to organismal perspectives, land use planning versus biological, and disciplinary versus interdisciplinary. In order to point out how urban ecological studies are poised for significant integration, we review key aspects of these disparate literatures. We emphasize an open definition of urban systems that accounts for the exchanges of material and influence between cities and surrounding landscapes. Research on ecology in urban systems highlights the nature of the physical environment, including urban climate, hydrology, and soils. Biotic research has studied flora, fauna, and vegetation, including trophic effects of wildlife and pets. Unexpected interactions among soil chemistry, leaf litter quality, and exotic invertebrates exemplify the novel kinds of interactions that can occur in urban systems. Vegetation and faunal responses suggest that the configuration of spatial heterogeneity is especially important in urban systems. This insight parallels the concern in the literature on the ecological dimensions of land use planning. The contrasting approach of ecology of cities has used a strategy of biogeochemical budgets, ecological footprints, and summaries of citywide species richness. Contemporary ecosystem approaches have begun to integrate organismal, nutrient, and energetic approaches, and to show the need for understanding the social dimensions of urban ecology. Social structure and the social allocation of natural and institutional resources are subjects that are well understood within social sciences, and that can be readily accommodated in ecosystem models of metropolitan areas. Likewise, the sophisticated understanding of spatial dimensions of social differentiation has parallels with concepts and data on patch dynamics in ecology and sets the stage for comprehensive understanding the human ecosystem framework.

Piper, J. M. (2002). "CEA and sustainable development: Evidence from UK case studies." Environmental Impact Assessment Review 22(1): 17--36.

Cumulative effects assessment (CEA) offers opportunities as a means of moving towards sustainable development. A set of four UK cases of CEA are examined to ascertain the extent to which the principles and tools of sustainable development have been incorporated into the studies. The evidence (derived from case documentation and from stakeholders contacted) suggests that the potential of CEA has not been not fully realized in these cases and there is need for more awareness of what issues must before CEA makes a broader contribution to meeting sustainable development objectives. Review: Notes the usefulness of Cumulative Effects Assessment in addressing problems caused by the "nibbling away" of resources. Provides list of "Sustainability Assessment" principles. Looks at real examples of CEA projects and their incorporation of sustainability principles, and also notes hypothetical situations that illustrate the usefulness of CEA in making decisions on resource use (technological change example allowing for increased development as water treatment technology improves). CEA "could make a contribution, in moving economic and land use policy towards sustainable development." Also notes inadequate implementation of Sustainable Development policy, despite being a part of national policy for over a decade in the UK.

Pirani, R. (1997). *The Benefits of Open Space*. L. W. Hamilton, Great Swamp Watershed Association. Review: Discusses current urban environmental concerns and provides examples of how ecological infrastructure preservation, or pollution prevention, is more cost effective than "end of

pipe” solutions to pollution problems after the damage is done. Also suggests incentives for moving beyond government managed infrastructure, such as tax breaks or TDR for preserving farm land. Examples: New York's purchase of land to protect its watershed instead of building a water treatment plant saved millions of dollars; NJ school districts would save \$400 million if development of communities followed smart growth principles instead of sprawl; the Bluebelt project in New York City has greatly reduced the number of expensive storm sewers it will have to build and has provided wildlife habitat and public open space.

Poel, D. H. (2000). “Amalgamation perspectives: citizen responses to municipal consolidation.” Canadian Journal of Regional Science 23: 31-48.

The 1999 Halifax Regional Municipality (HRM) Citizen Survey is used here to study citizen responses to a municipal amalgamation that created the Halifax Regional Municipality. The analysis of this survey brings forward citizen-based assessments of the amalgamation decision and subsequent municipal governance. Questionnaire items are used to create measures of citizens' views concerning amalgamation, the relationship between the urban and rural spaces of the new municipality, the performance of the HRM political leadership and the impact of amalgamation on municipal services. There are two key research questions. How did HRM citizens assess amalgamation after three years of experience? What factors best explain citizens' views towards amalgamation? The political and policy context of the amalgamation decision taken unilaterally by the Nova Scotia provincial government is briefly described. In turning to the survey data, key variables are developed and then used in a model of citizens' amalgamation perspectives. Review: Citizen views are analyzed and indicate that in this case amalgamation is not viewed positively in the Halifax region. Only certain services appear to have benefited from it in the opinion of residents (mainly recycling/compost/garbage collection). Supports trend in literature that regional-scale government activities rarely achieve all goals, and that regional government is better suited to focus on particular service areas, if wanting to seek economies of scale, or issues, to achieve economies of scope, instead of becoming a broad governing body.

Pollock, R. M. (2004). “Identifying Principles for Place-Based Governance in Biosphere Reserves.” Environments 32(3): 27--.

Although public participation - especially in the form of government-led consultations - has been criticized as tokenistic and top-down, citizen demands for greater legitimacy, transparency and authentic engagement have resulted in the self-organization of countless community groups and nongovernmental organizations. Similar to earlier work in social movement theory, growing interest in civil society organizations (CSOs) shifts attention away from the role of market, state and family to explore the nature of civil society - “in other words, the realm of culture, ideology and political debate” (Kaldor, 2003). Civil society is described by Swift (1999: 4) as “the population of organizations trying to change some aspect of society, including government policy, cultural values, corporate practices, and the activities of intergovernmental organizations.” Ahmed (1999: 30) describes Canadian environmental civil society as: a “vibrant community of voluntary associations, non-governmental organizations, student activists, scientists, researchers, professionals, and citizens' committees.” While this may be true, it is equally important to examine the complex networks of institutions and relations between civil society, government and business which together constitute the basic “players” in any governance scenario. Indeed, a key challenge for biosphere reserves is to balance local and immediate concerns with a broader regional and long-term view of socioeconomic and environmental change. Effective citizen engagement at both the local level (face to face) and the institutional level (networked organizations) will require strong facilitation and committed champions to ensure adequate support. Throughout biosphere reserve deliberations, every effort must be made to cast the net widely and ensure broad representation. Champions are needed at both the community and

regional scales for awareness and interest to grow. In order to widen the membership in support of the biosphere reserve model, processes must be perceived by residents and decision-makers as open, and widely inclusive from the outset. Champions should be seen as having a shared interest in biosphere reserve designation, but not monopolizing the process at the expense of other groups' participation. Making clear the various benefits of biosphere reserves is an important starting point; however, specifying what the biosphere is not may be equally important, especially where biosphere reserves are assumed to actually "reserve" land or impose international legislation on top of existing municipal jurisdiction. Third, groups undertaking a biosphere reserve nomination become part of the actor set and start promoting alternative domains. Networking results in others addressing these issues, in largely collaborative fashions. The result may be changes in the rules that govern certain spaces or sectors - such as new or revised plans, guidelines or legislation that better deals with specific environmental problems. According to the "organizational ecosystems," domains and regimes are phases in institutional development that continually evolve and thus may be newly created, adapted or devolved. The institutional arrangements within each biosphere reserve create permanent forums that can provide logistical support to a variety of organizations pursuing conservation and sustainable development projects. Although biosphere reserves in Canada are institutionalized to different degrees and in different ways according to the distinctiveness of their place, like other protected areas "they must seek organizational arrangements that are sufficient to carry out sustainable development within their domains." ([Francis] 2003: 238). As the literature suggests, structures that provide opportunity for political involvement are critical to the development of social capital. Biosphere reserves, along with similar regional initiatives, are poised to contribute new understandings about engaging citizens in place-based governance and the role of civil society in cultivating solutions for sustainability. Review: Excellent article, discussing evidence supporting citizen engagement and participation in decision-making, as well as the challenges in following this method of governance. Provides good list of criteria for effective citizen engagement, based on a review of the literature in this field that indicates public opinion and ineffective operations is driving a shift towards a more collaborative governance model, and gives examples of stakeholder-driven initiatives to re-define governance domain such as the move from municipal management to regional governance of the Niagara Escarpment. Suggests biosphere reserves as an approach to regional governance, based on research suggesting benefits of tying a sense of place to a collaborative governance model. Also lists tools for region ecological governance: collaborative planning & community-based ecological monitoring.

Post, S. (2004). Metropolitan Governance: Conflict, Competition, and Cooperation, Georgetown University Press.

Review: Chapter discusses theory of institutional collective action, identifying 5 factors that influence likelihood of local government cooperation: geography, group size, common policy objectives, leaders and policy entrepreneurs, and incentives/coercion. Suggests that a lack of comprehensive research into motivations for inter-municipal cooperation ("how and when local leaders are able to aggregate constituent preferences") hinders ability to develop effective regional policy.

Postel, S. L. and B. H. Thompson (2005). "Watershed protection: Capturing the benefits of nature's water supply services." Natural Resources Forum 29(2): 98--108.

Healthy watersheds provide valuable services to society, including the supply and purification of fresh water. Because these natural ecosystem services lie outside the traditional domain of commercial markets, they are undervalued and underprotected. With population and development pressures leading to the rapid modification of watershed lands, valuable hydrological services are being lost, which poses risks to the quality and cost of drinking water and the reliability of water

supplies. Increasing the scale and scope of programmes to protect hydrological services requires policies that harmonize land uses in watersheds with the provision of these important natural services. This article summarizes key attributes of hydrological services and their economic benefits; presents a spectrum of institutional mechanisms for safeguarding those services; discusses programmes in Quito (Ecuador), Costa Rica and New York City; and offers some lessons learned and recommendations for achieving higher levels of watershed protection. Review: Excellent review of the importance of watersheds for ecological and anthropogenic services and methods to protect those functions. Emphasizes the importance of linking land uses and their impacts on watershed functions, as well as water users to water supply areas so that those who reap the benefits of watershed protection compensate the rural land owners that provide this service. Also discusses need for more research into the value of watershed services, in order for water suppliers to understand benefits and costs of protecting a given landscape for the purpose of water quality protection, for example.

Powell, J. M. (2005). "The Empire Meets the New Deal: Interwar Encounters in Conservation and Regional Planning." *Geographical Research* 43(4): 337--360.

Abstract British imperial and American experiences in conservation and planning are providing fresh interdisciplinary challenges for university teaching and research. The Roosevelt administration's 'New Deal' included government-sponsored interventions in soil erosion and water management and sophisticated regional development agendas. Reviewing samples of the latter areas of concern, this article explores the proposition that, although the British Empire was scarcely bereft of comparable interwar programmes and was becoming somewhat preoccupied with centrifugal tendencies, persistent porosity, exhausting struggles with postwar reconstruction, and comprehensive economic depression, New Deal evangelism was in fact variously anticipated, harnessed, challenged and ignored. A discussion of widely separated national and regional examples locates a layered interplay between uneven imperial and US pulsations, independent local manoeuvres, and critical inputs from key individual agents. The most important filters included the presence of comparatively robust bureaucratic infrastructures and the cultivation of international relationships by scientists and technologists. Encounters with convergent revisionism suggest cautionary leads for students, researchers and teachers alike. Reconstructions of selected contexts underline the presence of familiar posturing, opportunism, and astute patriotic deployment during the emergence of modern styles of globalization. Review: Comparison of the historical context for regional conservation and regional planning efforts in the USA and Britain. Focused on the "interwar" years between the first and second World Wars.

Priskin, J. (2003). "Issues and Opportunities in Planning and Managing Nature-based Tourism in the Central Coast Region of Western Australia." *Australian Geographical Studies* 41(3): 270--286.

Abstract Research reported here identified planning and management issues relating to integrated development of nature-based tourism in the Central Coast Region of Western Australia. Stakeholder views were gauged through a workshop involving 45 people and a series of interviews. The workshop was also designed to stimulate interest in the establishment of a regionally, integrated tourism group to address any issues identified. Participants included members of the tourism industry, the community, and representatives of government and non-government organisations. Seven individuals participated in interviews, including the chief executive officers of the local authorities and regional development commissions. The results indicate that the regional tourism industry is fragmented and uncoordinated, which is hindering regional development. Implementation of regional tourism planning is virtually non-existent in the Central Coast, due to the lack of a regional tourism policy. Management of tourism resources is restricted by limited coordination between industry and government, and especially by inadequate resource provision to local authorities and land management agencies. An outcome of

the workshop was the formation of a regionally integrated tourism group, the Turquoise Coast Sustainable Development Steering Committee, to implement recommendations arising from the workshop. However, the group has met with limited successes to date, owing to a range of political and sectoral issues beyond the scope of tourism planning. The research highlights difficulties in implementing collaborative tourism planning initiatives at the regional scale. Review: Discussion of the challenges and opportunities discovered in efforts to develop a regionally based tourism industry. Illustrative of regional economic development efforts, as well as the benefits of collaborative efforts across public and private sectors. Challenges were often rooted in lack of access to broader authorities to address issues beyond the scope of the industry members.

Pritchard, B. (2005). “Unpacking the Neoliberal Approach to Regional Policy: a Close Reading of John Freebairn's 'Economic Policy for Rural and Regional Australia'.” *Geographical Research* 43(1): 103--112.

Abstract A close reading of a neoliberal intervention in policy debates on 'the regional economic problem' is used to throw light on this method. When it is compared to economic geography, the neoliberal approach advances a relatively simplified conception of regional economic and social life that pays little regard to their richness, complexity and grounded realities. Correspondingly, this approach encourages a vision of regional policy that normalises and exonerates the spatially uneven outcomes of market forces. This article argues that policy-makers' ends in the field of regional development should be alert to the limitations that arise from the neoliberal tendency to override the evidence of empirical complexity in favour of a more simple narrative. Review: Emphasizes the simplistic worldview of neoliberalism in regional economic development. Notes need for more efforts to develop empirically based policy fit to its context instead of one-size-fits-all policy developed under the neoliberal guise of efficiency - ill-fitting policy is rarely efficient.

Province of Ontario (1990). Planning Act, 1990.

Review: Legislation under which municipalities have jurisdiction over land use planning and allows for the creation of Planning Boards either for a single municipality (upper or lower tier) or for two or more municipalities. Joint planning boards can be created by agreement by the municipal councils involved or by the Minister (Province). In the later case, it is stated that the Minister will define the area of jurisdiction and the members of the board will be appointed by either the Minister or the Councils. http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90p13_e.htm

Province of Ontario (1999). Local Services Realignment.

Review: Provides information on Ontario's realignment of municipal authority and the creation of regional authorities for the delivery of “social and community health services”. http://www.mah.gov.on.ca/userfiles/page_attachments/business/lsr/lsr-e.pdf

Province of Ontario (2001). Municipal Act, 2001.

Review: The legislation which governs municipalities in Ontario. Details the 2-tier method of governance, lower-tier municipalities and upper-tier governments (counties, regional municipalities or districts), as well as the amalgamation model employed in the large urban municipalities, particularly Toronto. Outlines authority of each level, representation requirements, and the powers delegated to each tier by the province. Interesting feature of legislation: taxation rates are set by upper-tiers, but both levels can tax. http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/01m25_e.htm#BK201

Province of Ontario (2005). Places to Grow.

Review: Website for legislation directing the province to set growth management plans for regions in Ontario. Overrides local government (upper and lower tier) official plans.

Rainnie, A. (2004). "New Regionalism in Australia." London: Ashgate.

Ravindra, M. M. (2004). "A Road to Tomorrow: Local organizing for a biosphere reserve." Environments 32(3): 43--.

A key element here is time. Building the kind of coordinating framework a biosphere reserve entails and getting people involved with it takes time. Figure 1 shows a bar graph of the time involved in developing Canada's current biosphere reserves. Over the years, it has generally taken increasing amounts of time to develop a new biosphere reserve, to the point that, as of 2004, it can take five or more years from conception to designation. This is mainly due to the more explicit emphasis on the sustainable development function of a biosphere reserve since 1995 and the need now to provide some evidence that the capacity to conduct the logistics function is already in place and operational to some degree before a designation is received from UNESCO. In those cases where official recognition occurred relatively quickly, there had already been extensive biosphere reserve-type activity underway. In the Niagara Escarpment, for example, the biosphere reserve nomination took only two years, but it followed 12 years of multi-sectoral planning, subject to extensive public involvement. In other cases, a deliberate decision may be made to develop inter-organizational collaborative activities that are consistent with the biosphere reserve model, but without raising a debate about securing a designation from UNESCO until some later time, if at all. Getting the biosphere reserve messages clear and consistent is therefore crucial. This can be tough for local organizers because it can take a long time to wrap your head around the biosphere reserve concept. At heart, it is a kind of philosophical notion - not a 'thing' so much as a world view - and as such is very much about changing the way we live. This in itself can be a hard sell, and the challenge of clearly presenting the biosphere reserve concept is aggravated by its frequent confusion with protected areas (such as national or provincial parks). Timing of simultaneous conservation initiatives with discussion of a biosphere reserve has slowed or unraveled more than one local biosphere reserve process in Canada. When managing information, therefore, it is important to identify potential controversies in advance, and to head them off at the pass. Unknown things happen: No matter how well organized you are, unknown, unpredictable, unforeseen things will always occur. Land claims, proposed park expansion, forest fire, closure of a research station, funding cuts, local crisis, death of a community leader - these may crop up at any time and threaten to derail a biosphere reserve process. Similarly, unforeseen events may also occur that could enhance or speed the development of a local biosphere reserve. Retirement to a biosphere reserve area of someone with leadership skills and organizing expertise has helped to move local projects forward in the 1000 Islands, Georgian Bay, and other areas. Unexpected, and for the most part unasked for, graduate student work has moved at least two proposed biosphere reserves towards designation and has significantly influenced the development of the biosphere reserve programme in Canada as a whole. The challenge for local biosphere reserve organizing groups is to recognize opportunity when it comes up, and to have the flexibility and adaptability to be able to profit from it. Review: Defines the concept of biosphere reserves and discusses Canada's internationally recognized approach to their creation/management via community involvement while recognizing implementation challenges. Discusses some variables affecting biosphere management that are applicable to any sustainable development initiative, such as the need to initiate action as soon as possible, through the development of resources or similar work, in order to encourage participation and build awareness instead of focusing on starting only with education campaigns that don't get people interested in participating (as there's nothing to participate in).

Reid, B. (1996). “New agendas for regional government.” New City Magazine 17: 14-20.

Review: Excellent discussion of regional government in the Canadian context. Focuses on the Pacific Northwest area due to favourable economic conditions over the past few decades that have encouraged regionalism debates, due to growth and concern over ecological issues, while other areas of North America have experienced economic recessions. Also notes that regional government has also been pursued in order to achieve economic goals, when municipalities must pool resources, which often override ecological management concerns.

Rijsberman, M. A. and F. H. M. van de Ven (2000). “Different approaches to assessment of design and management of sustainable urban water systems.” Environmental Impact Assessment Review 20(3): 333-345.

The implications of sustainability on a construction level are quite well known, for example, with respect to the use of resources and emissions. On a higher level, sustainable development is not univocal. There are various sustainable solutions to a problem. Sustainable development is a complex problem, and in urban infrastructure a specific solution usually is the result of a planning process in which people from various backgrounds are involved. Different people have different perceptions of urban infrastructure and its management. A system of four basic approaches is presented, distinguishing so-called eco, ratio, socio, and carrying capacity approaches. This system, based on an extensive literature review, can facilitate the process leading to a workable consensus on sustainable development. The approach and planning process has to meet a certain set of requirements. Requirements are given, partly based on experience with planning for urban water infrastructure dealing with ‘natural’ water flows in three cities.

Robinson, C. (2001). “Working Towards Regional Agreements: Recent Developments in Co-operative Resource Management in Canada's British Columbia.” Australian Geographical Studies 39(2): 183--197.

Canada's experience with 'regional agreements' has attracted considerable attention in Australia as a means by which Indigenous people can secure their native title rights to land and sea and ensure they can participate in the development and management of their homeland territories. However, regional agreements implemented in Canada thus far have often taken years to negotiate. To provide a degree of certainty for resource management and decision-making while the native title claims process is underway, Canadian governments have proceeded to establish interim resource use and management agreements with Indigenous communities. While both governments and Indigenous people stress that interim arrangements do not replace or limit the scope for future claim settlements, it is recognised that the development of such co-operative relationships will make long-lasting formal agreements easier to achieve. This paper draws on several recent examples of interim agreements that have been negotiated for the salmon fishery resource in the Skeena River catchment, and considers how these local experiences offer useful approaches for resource management and native title issues in Australia. These examples demonstrate the importance of building shared understandings of resource values and management approaches prior to cementing co-management partnerships in formal settlements. They also show some of the problems and prospects facing Indigenous peoples in their efforts to benefit from such co-management agreements. Review: Australian review of Canadian efforts to develop inclusive resource management agreements with indigenous people. Discusses the benefits of collaborative (interim) decision-making, especially in light of uncertainty around in-progress land claims negotiations.

Robinson, I. M. and G. Hodge (2001). Planning Canadian Regions, UBC Press.

Review: Excellent discussion on historical context for regional/metropolitan planning with a Canadian perspective. Discusses planning from both a rural and urban region perspective, using examples from Canada. Extensive discussion of Alberta's regional planning history and current

activities/tools. Compares planning outcomes of different Canadian metropolitan regional planning agencies and suggests future course of action for implementing regional governance. Lists Canadian tools for regional environmental management: Environmental Impact Assessments, Cumulative Effects Assessment, State of the Environment Reporting, Round Tables (collaborative decision-making/advisory bodies), Bioregionalism (see Toronto area efforts), Ecosystem-based Planning Approach, Sustainable Development.

Rodenburg, C., T. Baycan-Levent, et al. (2002). "Urban Economic Indicators for Green Development in Cities." *Greener Management International*(36): 105--.

This paper is part of the European Union project on the Development of Urban Green Spaces to Improve the Quality of Life in Cities and Urban Regions (URGE).ⁱ The paper aims to describe urban economic indicators for the evaluation of existing urban green structures and green spaces by using a taxonomy of indicators and to develop an economic framework for the development and management of green spaces in cities. A functional typology of urban green spaces based on a set of indicators of the Organisation for Economic Co-operation and Development (OECD), which is described as pressure-state-response (PSR) indicators, is used for the determination of the relevant economic dimensions, criteria and indicators of urban green space. From an economic perspective, there are four relevant dimensions of urban green spaces that refer to the functions that have an impact (directly or indirectly) on environmental sources, welfare and quality of urban life, financing and management of urban green. This economic framework provides an opportunity to discuss the complex relationships of the multi-dimensional structure of urban green spaces. It provides also a useful framework for the social, ecological and planning perspectives, policies and management issues. ABSTRACT FROM AUTHOR Review: Good article that takes a broader look at urban green spaces and its economic indicators. Economic indicators for urban green space is classified into four relevant dimensions. They are socio-economic, environmental, merit and financial. The article looks at the many functions of urban green space and attempts to understand them from an economic perspective. The overall goal of the URGE project that the article discusses is to the creation of integrated criteria to develop a common language for green planning and management, that is to help long term policy implementation with regards to urban green space.

Roseland, M., J. C. Day, et al. (1998). "Shared decision making in public land planning: an evaluation of the Cariboo-Chilcotin CORE process [Commission on Resources & Environment]." *Environments* 25(2/3): 27--.

CORE encouraged all sectors to submit any and all information, proposals, and recommendations directly to the Commission. CORE summarized all of these and scheduled a meeting in the region in April 1994 to review its preliminary land use plan. Through the summer and early autumn, there were extensive media campaigns and political lobbying efforts by all sectors. CORE prepared a 237-page land use plan for the region and delivered it to the provincial Cabinet in July 1994. When Commissioner Stephen Owen went to the region to announce the plan, protests were staged by workers fearful of job losses they believed would result if the CORE plan were implemented. In the summer of 1994, the province appointed a new mediator to shuttle between the industry coalition, the conservation coalition, and the other non-allied sectors to try to reach agreement. In September 1994, more than two years after the start of the Cariboo-Chilcotin CORE process, an agreement was reached. Regional interests continued to negotiate details of this agreement behind closed doors through the fall while the government land use coordination agency prepared the plan document. In February 1995, the province released the Cariboo-Chilcotin Land Use Plan (BC, CORE, 1994d). With little apparent success, the value of SDM in land use planning might be questioned. However, evaluation of the Cariboo-Chilcotin process revealed positive aspects of SDM which illustrate several key advantages of participatory

decision-making over conventional approaches based on administrative discretion, legislative reform, or litigation. First, the Cariboo-Chilcotin initiative included many sectors. In so doing, it involved in the decision process a wider range of interests and values than would typically be included in conventional processes. Second, the process provided a forum for dialogue between participants, some of whom would not have communicated otherwise. As such, it gave participants an opportunity to build relationships and develop understanding of others' interests. Communication and relationships were enhanced not only between sectoral representatives but also between sectoral representatives and government agency staff. Third, the SDM initiative forced government agencies to improve interagency communication, cooperation, and collaboration. Agencies had no choice but to integrate their efforts given the multitude of issues brought to the table, combined with the table's overall objective of integrated land use planning. Fourth, the Cariboo-Chilcotin process proved to be an important catalyst for the collection of information and its application in land use planning. Powerful evidence of this was found in the province's efforts to identify and evaluate candidate protected areas. As well, demands of diverse interests intensified the province's efforts to fill a myriad of information gaps including: those that exist for agro-forestry activities such as harvesting of mushrooms, berries, and herbal medicines; historical and archaeological sites; and visual quality ratings of landscapes important to tourism interests. Finally, the Cariboo-Chilcotin process strove to incorporate social, economic, and environmental issues in the decision process. Although the table failed to integrate these tenets of sustainability in meaningful, practical ways, the concept of sustainability was brought to the fore. All participants were given an opportunity to articulate their visions of a sustainable future for the region. Some critics may question the value of SDM because the Cariboo-Chilcotin CORE process did not achieve consensus. Further, they might argue that government-sponsored, conventional, closed door, "shuttle" negotiations between sectors following the release of CORE's Cariboo-Chilcotin Land Use Plan were more successful because an agreement was reached. Two responses countering this argument are offered. First, unlike the CORE process, these latter negotiations took place with the benefit of critical policies in place such as the Forest Practices Code of British Columbia Act and the Forest Renewal Act. Second, the government plan which resulted from these negotiations would not have been possible without the previously discussed groundwork accomplished by the CORE process. The land use recommendations developed by CORE incorporated much of the work of the Cariboo-Chilcotin Technical Working Group, as well as information brought to the Commission by sectors who participated in the CORE process. This information was, in turn, used by the provincial government in developing its Cariboo-Chilcotin Land Use Plan. Indeed, the CORE recommendations and government plan were very similar, the most notable difference being the split in the percentage of land allocated between integrated and enhanced resource management zones. Review: Case study of shared decision making (SDM) process used to develop land use plans. Authors suggest this method of decision making aids in achieving outcomes that are sustainable, due to its requirement for full stakeholder participation that brings diverse interests to the table which may otherwise be ignored and cause negative impacts after the fact. Authors feel that key to success was dialogue amongst stakeholders, as even though another negotiation process was used to achieve the final decision document, the end result was very similar to that achieved solely via SDM.

Rossi, U. (2004). "New Regionalism contested: some remarks in light of the case of the Mezzogiorno of Italy." International Journal of Urban and Regional Research 28(2): 466--476.

This article attempts to re-consider the debate that has recently developed around the so-called New Regionalism with reference to the studies regarding the emergence of a 'new' competitive Mezzogiorno of Italy. The first two sections of the article are devoted to a critical analysis of the literature on the New Mezzogiorno. It is argued that this literature has, on the one hand, fruitfully called attention to the emerging experiences of regional development in the South of Italy; yet, on

the other hand, in throwing positive light on local economic development in the South of Italy, it has underestimated the more troublesome phenomena that these experiences reveal, especially from the point of view of capital-labour relations. The third section of the article is devoted to showing how the limits and contradictions of the new regionalist approach to local development are reflected in the new course of regional policy that has been embraced in Italy in recent years. Finally, in the concluding section, the article argues for a shift towards a critical approach to research on the Italian southern regions and local productive systems. This article by Ugo Rossi takes a look at the implementation of New Regionalism in the depressed region of Southern Italy called Mezzogiorno. While the article does point out some positive aspects with regards to New Regionalism such as the implementation of field investigation, bringing back qualitative methods of research and the issue of economic and social development the majority of the article is more of a critique of New Regionalism. Rossi discusses New Regionalism's institutional 'tautological trap' where the negotiation process becomes the goal of regional policy instead of better regional performance. Much of the critique is in line with John Lovering's research although it is not as in depth with regards to New Regionalism in general but more specifically to that of N.R. in Southern Italy. Overall the article is still good as it provides a critique of New Regionalism that was implemented without great success.

Rouget, M., R. M. Cowling, et al. (2003). "Identifying spatial components of ecological and evolutionary processes for regional conservation planning in the Cape Floristic Region, South Africa." Diversity & Distributions 9(3): 191--210.

Conservation seeks ultimately to protect and maintain biodiversity indefinitely. Most biodiversity features targeted in past conservation planning have been largely aspects of ecological and biogeographical pattern rather than process. However, the persistence of biodiversity can only be ensured through consideration of the ecological and evolutionary processes that underpin biodiversity, as well as its present spatial pattern. This paper identifies spatial surrogates of ecological and evolutionary processes for regional conservation planning in one of the world's biodiversity hotspots, the Cape Floristic Region. We identified six types of spatial components (namely edaphic interfaces, upland-lowland interfaces, sand movement corridors, riverine corridors, upland-lowland gradients and macroclimatic gradients) as surrogates for key processes such as ecological and geographical diversification, and species migration. Spatial components were identified in a GIS using published data and expert knowledge. Options for achieving targets for process components have been seriously compromised by habitat transformation. Between 30 and 75% of the original extent of the spatial components currently remain functional. Options for achieving upland-lowland and macroclimatic gradients are very limited in the lowlands where most of the habitat has been transformed by agriculture. We recommend that future studies place their research on ecological and evolutionary processes in a spatially explicit framework. Areas maintaining adaptive diversification (e.g. environmental gradients, ecotones) or containing historically isolated populations should be identified and protected. The spatial dimensions of eco-logical processes such as drought and fire refugia also need to be determined and such insights incorporated in conservation planning. Finally, connectivity within these areas should be ensured to maintain species migration and gene flow. Review: Excellent discussion of the need to understand and conserve the underlying ecosystem processes that support biodiversity. Most biodiversity features targeted in conservation planning have been focused on ecological and biogeographical pattern rather than process. This paper identifies spatial surrogates of ecological and evolutionary processes for regional conservation planning. While "more is better" is sometimes true, an ecosystem process may not need more but instead specific spatial components protected for specific features. "Ensuring that protected areas represent all biodiversity features to some extent will not necessarily guarantee their persistence. Ecological and evolutionary processes should be directly incorporated into conservation planning by

identifying the spatial requirements of these processes.” A key feature of this article is that it focuses specifically on processes that are likely to be inadequately protected in a conservation plan based on generic design criteria or focal species. But major drawback of this research is its determination of no ecosystem value of urbanized land units.

Ruijgrok, E., P. Vellinga, et al. (1999). “Dealing with nature.” Ecological Economics 28(3): 347--362. The trade off between ecology and economy has become an important issue in the evaluation of planned interventions in the Dutch coast. The complexity of the issue is reflected by the long and difficult national debates that these interventions cause. Both public policy makers and private stakeholders seem to be in need of instruments to support the lengthy decision making process. The aim of this article is to discuss what type of instrument is needed to facilitate the decision making process by addressing the following research questions: (1) Can the way in which stakeholders are dealing with nature in practice, be explained by their basic views on nature? (2) Can trends in public policies be explained by these views on nature? The answers to these two questions are obtained by conducting a survey among public and private parties involved in a case study of a planned intervention and a historical review of policies in the field of nature conservation and coastal zone management. The findings are translated into a description of necessary decision support instruments. In order to explain how stakeholders wish to deal with nature in land use plans, a framework of attitudes towards nature, basic views of Conservation, Development and Coevolution, views on nature in the region and design strategies is used. Both the case study and the historical review reveal that the views of Conservation, Development and Coevolution coexist within Dutch society, but a strong tendency towards the Coevolution view can be discerned. According to the Coevolution view, both society and nature are allowed to change and to inflict change upon each other as long as sustainability prospects are enhanced both for society and nature. Though the Coevolution view is very attractive intellectually, it is still in its infancy and the envisaged policies remain quite vulnerable due to a lack of adequate instruments to internalize the value of nature in economic transactions. Though theoretical concepts, such as socio-economic valuation, are available to facilitate the trade off between ecology and economy, these still lack practical applicability. Even if appropriate decision supportive instruments are developed, society is likely to bounce back to a Conservation approach in its actual decision making, as long as there are no institutional and legal arrangements to ensure their use. Review: A good article dealing with the value of nature. Anthropocentric (human derived value) and Ecocentric (All nature having intrinsic value) attitudes towards nature as well as 3 different views with regards to nature are discussed (Conservation, Development and Functional views). Such attitudes and views towards nature are seen as important to understanding the motivations, policies and decision making practices with which nature is valued and accounted for in society. The article's strong point is its discussion of how society is moving from a Development View of nature to a Coevolution Functional View of Nature where it is understood that a balance between nature and society are seen as interdependent and necessary. Valuation instruments along with institutional and legal arrangements are needed to ensure we reach the balance of Coevolution.

Sagan, I. and H. Halkier (2005). Regionalism Contested: Institution, Society, and Governance, Ashgate Publishing.

Sancton, A. (1999). “Differing approaches to municipal restructuring in Montreal and Toronto: from the Pichette Report to the Greater Toronto Services Board.” Canadian Journal of Regional Science 22(1-2): 187-99--.

“proposed new institutions would not resemble existing metropolitan governments. They would not be providing many -- or any -- services themselves. They would be facilitators, arrangers,

brokers, promoters, and strategic planners. They would steer, not row. In short, they would represent all the apparent virtues of the “new public management” (Hood 1991)” Montreal recommendations: Metropolitan council made up of exclusively of municipal councillors from entire Census Metro. Area. Existing upper-tier authorities within the region, including the Montreal Urban Community, were to be transformed into “intermunicipal service agencies” and were expected to be of less importance than both the municipalities and the Montreal Metropolitan Region. “Although merging municipalities had been considered as a solution., it would not be a satisfactory one” because the priority need was for “a coordinated and coherent framework at the metropolitan level”. Although the report suggested that mergers were needed in the future to reduce “problems of unity and partnership”, it never suggested a minimum municipal size (Quebec 1993). Ontario: A new metropolitan authority was needed that would include Metro's territory and that of the surrounding regions of Halton, Peel, York, and Durham; its members would be indirectly elected; some services (e.g. policing) would still best be provided by inter-municipal bodies covering the territories of the existing upper-tier units that would otherwise be abolished; municipal mergers, though potentially desirable, were not an immediate priority (Ontario 1996). Instead of this, the megacity was created. A year after, the Greater Toronto Services Board was created to deal with metropolitan issues within the megacity and relating to the remaining independent municipalities/regions surrounding Toronto. The Board is made up of members of the municipal government councils. “By-laws to establish GTA strategies require a two-thirds majority in order to be approved.” It manages the operations of Go Transit and has the authority to “collect funds from the City of Toronto and the four regional municipalities in exactly the same way that individual regional municipalities collect funds from their local constituent units.” Review: Discusses history of Ontario/Quebec's efforts to manage metropolitan issues with respect to Toronto/Montreal. Focuses on taskforces from each city, that were tasked with recommending new arrangements for the governance of their largest metropolitan areas. Both provided similar recommendation, to have a regional scale planning body instead of service provider, and neither suggested amalgamations to form a 'megacity'. Good summary of recommendations in favour of metropolitan governance, both factual and anecdotal - for global competitiveness, to destabilize power of central city, to bring in the suburban tax base (anecdotal equity for central city) and conversely the inability of the centre city to access this funding (factual analysis) - and discusses issue that these recommendations often come without justification. New governing bodies “would be facilitators, arrangers, brokers, promoters, and strategic planners. They would steer, not row.”

Sancton, A. (2003). Why Municipal Amalgamations? Halifax, Toronto, Montreal, Prepared for a conference on ‘Municipal-Provincial-Federal Relations in Canada’ Institute of Intergovernmental Relations, Queen’s University, May 9-10, 2003.

Review: Reviews various government efforts at regional governance as well as the detractors. Examples include LA and reports of diseconomies of scale for certain services when multiple large municipalities are managed jointly (like LA and the San Fernando Valley). “There have been three types of explanations for the adoption of these similar (amalgamation) policies: 1) provincial governments were responding, directly or indirectly, to pressures caused by globalization; 2) provincial governments were responding to demands of internal political forces, which may or may not have been similar in each province, but which were clearly independent of globalization; or 3) provincial government were acting ‘autonomously,’ with little regard to internal political pressures. The main argument of this paper is that it is the third type of explanation that best fits the facts.”

Sancton, A. (2005). “The governance of metropolitan areas in Canada.” Public Administration and Development 25(4): 317--327.

This article briefly examines five significant Canadian developments with respect to the governance of metropolitan areas: annexations and mergers such that there is one main municipal government for the metropolitan area, two-tier metropolitan government, the amalgamation of two-tier metropolitan systems into a single municipality, demergers in Quebec, and the creation of flexible and innovative entities for metropolitan governance. Special attention is paid to the Greater Toronto Area, a continuous built-up urban area that transcends at least three metropolitan areas as defined by Statistics Canada. In the absence of any authority covering the entire metropolitan area, it now appears that the Ontario provincial government is becoming the key policy maker. As an example of a flexible and innovative form of metropolitan governance, the Greater Vancouver Regional District merits attention elsewhere in the world. Canada's experiences with so many different institutional arrangements in recent years means that there is much to be learnt from their obvious failures and occasional successes. Copyright © 2005 John Wiley & Sons, Ltd. Review: Excellent summary of Canadian examples of metropolitan governance. Discusses unique features of each type, as well as benefits and challenges. Single tier (Halifax, Toronto, Calgary) - Halifax has different property tax rates for different real estate (urban, suburban, rural); problem with single tier is the growth that eventually occurs outside its limited boundaries, when growth management/taxation equity was the reason why a unicity form was sought. Two tier - (Ontario, Quebec, Manitoba) upper-tier manages metro planning and major physical infrastructure, it is usually not hierarchically superior to the lower-tier local governments (directly elected superior upper-tier in Winnipeg caused major problems). Highlights GVRD as example of metropolitan governance that combines local self-government through municipalities with a metropolitan level institution that can both provide a degree of consensual metropolitan leadership (the strategic plan) and a framework within which municipalities can voluntarily cooperate with each other.

Sandstrom, U. G. (2002). "Green Infrastructure Planning in Urban Sweden." Planning Practice & Research 17(4): 373--.

Focuses on green infrastructure planning in Sweden. Definition of the criteria of evaluation; Evaluation of the green plans of seven cities in Sweden; Indicators that received the most attention; Identification of recreation as the most important objective of urban green spaces. Review: The author discusses the multiple uses of green infrastructure and evaluates several cities throughout Sweden to determine which uses are taken into account in their Green Plans. Aesthetic, functional, ecological, technical, symbolic and speculative are put forward as some of the multiple uses of green infrastructure. The author also notes that cities tendencies to build up and move towards compaction nowadays is having a negative impact on existing green spaces. It is noted that green infrastructure requires the same status as other physical urban structures (buildings and highways) so that its many functions be taken into account. Good, well written article that discusses the multiple functions of green infrastructure and how cities in Sweden are not fully taking advantage of these multiple functions in their planning.

Sauchyn, Dave. "Climate Change: What is in the Future for Southern Alberta? Getting Started on Adaptation." *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007.* Calgary, AB: Alberta Irrigation Projects Association. <http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

Scott, A. and M. Storper (2003). "Regions, Globalization, Development." Regional Studies 37(6 - 7): 549--578.

Review: Notes importance of regions as economic drivers, shaping macroeconomic processes, and the positive relationship between agglomeration and development. Cites many historical and current arguments supporting this theory, and elaborates on the significance of regions being

focus points for innovation and the creation of dense (variety of skill) labour markets, via policy interventions and investment in social capital.

Seholl, J. and A. Schwartz (2005). “Making Your Resources Count.” Planning 71(8): 38--41.
The article presents information on the Natural Infrastructure Project for Southwestern Pennsylvania, which is an attempt to establish a new direction in regional planning, one that offers a unique opportunity to identify and balance key natural infrastructure uses. Natural infrastructure is a more comprehensive term that encompasses all the uses of natural world and attempts to strike a balance between ecology, cultural heritage, human use and economics. Thus, it includes traditional green infrastructure uses such as trails, agriculture, forestry, hunting, camping and fishing. But it also encompasses natural resources such as coal mining, aggregate extraction, public water supply, landfills and other public services. The Natural Infrastructure Project has three major components--regional case studies, a natural infrastructure atlas, and a natural infrastructure framework. The project began with a survey of 59 U.S. and Canadian metropolitan areas. To measure economic vitality, the technical team created an index of population growth, job formation, and gross national product for each area. It then looked at natural resources, publicly accessible land and climatic conditions. Review: The article is not from an academic journal. The article puts forward the case for natural infrastructure instead of green infrastructure. Natural infrastructure includes natural resources and seems to be similar to ecological infrastructure. The importance of natural amenities to regions, specifically the residences, especially in today’s service oriented economy is highlighted in the article. A good article overall that puts forward a new type of infrastructure management with a framework (value matrix) that can potentially be used at multiple scales and for many planning issues.

Seppala, O., J. Hukka, et al. (2001). “Public-Private Partnerships in Water and Sewerage Services: Privatization for Profit or Improvement of Service and Performance?” PUBLIC WORKS MANAGEMENT & POLICY 6(1): 42-58.

There is no empirical proof that private enterprises manage and operate facilities more efficiently than public ones. Instead of privatization, it is better to promote viable public-private partnerships and commercialization of services. The core businesses of water and sewage works should preferably be retained by a municipality-owned enterprise. In the selection of the mode(s) of water service implementation, one must consider the nature of the services, the long-term experiences, and transaction costs. The nature of water and sanitation service activity itself requires that long-term development should be considered in decision-making. The institutional framework must be such that all parties benefit from cooperation. Whichever management or contract model is selected, the ownership of the utilities should preferably remain in the hands of municipalities whose decisions on services citizens should be able to influence through local democracy. The responsibility for arranging water services lies de facto with the public sector. Review: Discusses the evidence against privatization of water utilities, in terms of past experience and economic arguments (competition theory, institutional economics), as well as the difference in the delivery of water services compared to other utilities such as electricity making it less conducive to privatization. Literature provides no evidence in favour of privatization as well. Notes need to measure effectiveness against system goals and provides some examples of water service management goals. In privatized environment, extensive regulation is needed to meet those goals, leading to more complexity than if managed directly by the government. Suggests P3 model - contracting out non-core services while government maintains core control - to capture benefits of private sector competition and expertise.

Sieverts, T. (2003). Cities without cities, Spon Press New York.

This book investigates the characteristics of today's built environment: no longer simply a city but increasingly large conurbations made up of a number of development clusters, linked by transport routes. The diffusion of the once compact city into a city web, the 'meta city' is mirrored by changes in society from communities with strong social cohesion and interest in their towns and cities to individuals pursuing their own goals, with global social links and little interest in their own town or city other than the quality of their personal space. The account is complex and on a number of levels; social, philosophical, economic and environmental. The difficulties in managing or even controlling the city web, divided arbitrarily into areas of limited size and political power, are enormous. Areas compete with each other rather than co-operate. The book provides a better understanding of this new type of urban form and argues for a change in planning systems for better management.

Silva, C. N. and S. Syrett (2006). "Governing Lisbon: Evolving Forms of City Governance." International Journal of Urban and Regional Research 30(1): 98--119.

Abstract For Lisbon, a dominant national capital and increasingly internationalized city, the last 30 years have witnessed a period of dramatic growth, modernization and dynamism. As the socioeconomic landscape has changed, so too has the political and institutional one, with a significant evolution in the nature of systems of governance to manage, respond to and lead the city through this period of intense transition. Whilst increased global and particularly European integration has been an important driver to change, critically it has been the interplay of these global forces with the role and constitution of the national state and political developments at the level of the city, region and municipality that has shaped the evolutionary path of governance change. This article analyses recent governance change within Lisbon to argue that governance transition within Lisbon is characterized by significant change with regard to the relationships between public and private sectors, but also by strong continuities with regard to the dominant role of the central state in the absence of political devolution. The result is a governance system marked by structural constraints that limit the city's capacity to deal with current strategic challenges in an integrated, coordinated and inclusionary manner.

Slocombe, D. S. (1993). "Implementing ecosystem-based management." Bioscience 43(9): 612--.

Presents the theory and practice that facilitates implementation of ecosystem-based management. Regional planning and management of ecosystems; Management in protected areas subjected to internal and external threats. Review: The article discusses the importance of ecosystem-based management especially for its application to regional planning and management. Case studies are used as examples of ecosystem-based management and obstacles from their experience is discussed. The components of ecosystem's approach as well as its similarities to systems approach is discussed. 3 major implementation problems (defining the management unit developing understanding, and creating planning and management framework) associated with ecosystem-based management are discussed. The article is most strong in that it shows the ecosystems approach and how it should be implemented at the regional scale in order to better understand local and regional economies, cultures, societies, and their interaction with the environment.

Smith, P. K., B. Veale, et al. (2001). "Achievements of the Grand River Conservation Authority, Ontario, Canada." Water Science and Technology 43: 45-55.

Review: Discusses success of catchment authority in Ontario, focusing on innovative partnerships with the business community, government, universities, First Nations tribes, environment groups and the general community that "have been the hallmark of a broad-based river management program that has returned the Grand River to a healthy environment and usable resource."

Smyth, P., T. Reddel, et al. (2004). “Social inclusion, new regionalism and associational governance: the Queensland experience.” International Journal of Urban and Regional Research 28(3): 601--615.

In recent years there has been a resurgence of decentralized social governance concerned with the spatial dimensions of disadvantage. This article examines aspects of this resurgence in the Australian state of Queensland where, after the hasty birth of 'place management' in response to the rise of 'Hansonism', a plethora of 'joined-up' policy initiatives were undertaken in relation to the regional dimensions of poverty. We propose that these trends reflect in part new ways of thinking about the spatial aspects of disadvantage which have emerged in recent years and which have the potential to take regional policy beyond the narrow confines imposed by neoliberal economic orthodoxy. These new ways of thinking have arisen in social policy through the reframing of disadvantage in terms of social exclusion and in regional economic policy through the influence of the so-called 'new regionalism'. The article shows how together these bodies of theory point us towards a new model of 'associational governance'. The article reviews recent Queensland experience and indicates those features of 'associational governance' which have become characteristic of locality-based social policy ideas in Queensland. 'Joined-up' and regional policy aspirations of the Queensland State government have shown the influence of these new approaches. The political and policy sustainability of these trends, however, is uncertain. The lingering shadow of managerialism and neoliberal policy frameworks remains a significant barrier to the innovation and viability of these approaches. More directly, the inherent limits of the 'local' or 'regional' initiatives in the face of broader national and global factors will significantly constrain the capacity of associational governance systems to deliver positive democratic, social and economic outcomes. The article examines recent Queensland policy reforms in light of this complex set of factors and concludes by offering directions for future research and policy development. Review: Focuses on the integration of social development with economic policy. Looks at case of Queensland, whose government is in the initial stages of implementation of such policy, which the author describes as “associational governance” - decentralized networks focused on community engagement and P3s. Focus of this form of governance is equity across disadvantaged areas of the region.

Solecki, W. and C. Rosenzweig (2004). “Biodiversity, Biosphere Reserves, and the Big Apple - A study of the New York metropolitan region.” Annals NY Academy of Sciences 1023: 105-124.

Biosphere reserve planning used to achieve natural resource management goals in the New York Metropolitan Region: to improve biodiversity and monitor long-term ecological trends, sustainably manage water resources, and restore amenity value through restoration (mainly looking at areas around water bodies). Strategy focuses on delineating 3 areas: core, buffer, and transition management zones. The core areas are the most significant and important to protecting biodiversity, with the buffer protecting the core and the transition zone being just that. There can be multiple cores in a region and being designated a core doesn't necessitate strict management constraints, it is more a “political act that adds to the legitimacy of environmental protection strategies that already exist”. Suggests that reserve strategy will enable “a system-wide review and analysis of synergistic impacts of water pollution on regional ecological conditions. Suggests benefits of regional management: more effective through cooperation on wider spectrum of environmental concerns, and more efficient management by reducing the per unit cost of pollution reduction. Notes potential benefits of biosphere reserve planning with respect to climate change impacts, such as reduced vulnerability to flooding by reducing impervious surfaces, and lists other regional problems such as the area's large ecological footprint compared to other international urban centres of similar population size. Regional organizations in the NY/New Jersey area that could help promote biosphere reserve (regional)planning goals: Regional Plan Association, Port Authority of NY/NJ, Metropolitan Transportation Authority, EPA Region II, NY/NJ Harbor Estuary Program. Suggests that utilizing biosphere reserve planning strategies in

their operations will help to integrate environmental management proposals into their decision-making practices. Review:

South East Queensland Council of Mayors (2006). History and Achievements.

Review: Website lists achievements of council, offers case study info on Brisbane's efforts to implement regional governance. Notes efforts to address sustainable development issues - economic development, population growth, and transportation.

Stabler, J. C. (1996). "Economics and multicomunity partnerships." Canadian Journal of Regional Science 19(1): 83-105.

Discussion of economic factors in encouraging regional management of resources - economies of scale (but only if operating a maximum output - less efficient to operate at lower level), central place theory, economies of scope, transaction costs. Factors discouraging regional partnerships include investment equality (will each partner benefit equally from their investment) and partner autonomy ("the less threatening the proposed partnership is perceived to be, the more attractive are the potential cost savings"). In cases where the benefits are seen to outweigh concerns, enabling legislation, if anything, is usually all that is required of senior governments to establish the appropriate policy framework. In circumstances where this is not the case, voluntarily formed multicomunity partnerships are much less common, therefore, existing governance structures are unsuitable. Concerns with current models of regional governance: - Rarely do economic regions coincide with existing municipality, metropolitan, or county boundaries - senior government program funding is usually provided by way of conditional, close-ended, matching grants to each activity individually or to each system (such as a school district). Often the boundaries of these service areas (many defined decades ago) do not coincide with existing political jurisdictions, economic regions, or each other. Further, local residents and local elected officials have little or no say in the configuration of the systems that deliver these programs and only limited and indirect responsibility for efficient use of funds within any one of the systems (through membership on boards). Clearly, it is easy for board members to view themselves primarily as representatives of their home community and conduct themselves accordingly. Recommendations: * development areas need to be defined in terms of the economic forces, the trading and employment relationships, that are shaping them. Within this framework, the boundaries of service delivery areas and their administrative structures also need to be re-examined; * governance structures designed to strengthen the rural economy need to have the appropriate political, fiscal, and administrative authority to accomplish their objectives. (14) With increased responsibility would come greater accountability. Appropriate geographic-administrative structures would require greater fiscal responsibility. Perhaps this would require providing local governments access to personal income taxes. Perhaps it would require lump (unconditional) transfers to local jurisdictions rather than special purpose (conditional) transfers administered by provincial line departments. It is clear, however, that what is required is a structure that replaces the present incentive for strategic behaviour at the level of the individual community with an incentive to identify with, and to be accountable for, the economies of larger regional entities. Review: Discussion of economic factors in encouraging regional management of resources in Canada. Makes recommendations on how to change current situation based on the challenges outlined by the author.

Stalker, Nancy. "Tools for Conservation, City of Calgary." *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association. <http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

State of California Speaker's Commission on Regionalism (2002). *Speaker's Commission on Regionalism - Final Report: The New California Dream Regional Solutions for 21st Century Challenges*.

Review: Report to the State Assembly of California on new approaches to governance in order to address regional issues. Comprehensive list of goals, funding and authority challenges, and strategies for implementing Collaborative Regional Initiatives (non-governmental regional governance institutions). Some info not relevant to Canadian legislative context, but discussion of barriers to achieving regional goals is informative.

Stren, R. and R. Cameron (2005). "Guest editor's preface metropolitan governance reform: an introduction." *Public Administration and Development* 25(4): 275--284.

No Abstract.

Sumits, A. and J. Morrison (2001). *Creating a Framework for Sustainability in California: Lessons Learned from the New Zealand Experience*, online.

A review of the NZ RMA legislation - the RMA represents a visionary attempt to create an all-encompassing sustainability framework for the country, with numerous elements that hold promise for achieving that mission. Review: Analysis of New Zealand's government reforms and their applicability to California. Notes governance and sustainability principles that can be transferred across jurisdictions. Key benefits of NZ approach: better integration of land/air/water management along watershed boundaries to prevent cross-media transfers of impact and encourage integrated decision-making, strong consultation/education component built stakeholder support, greater accountability Also reviews shortcomings - vague scope/ambiguity of sustainability definition, not proven effective on broad sustainability initiatives like growth management, lack of capacity at local regional level due to national government failing to meet legislated responsibilities to support them, trade-off of less efficiency for more public involvement, trade-off for taking effects-based approach to regulating environmental impacts means that a high level of certainty in current data is required for effective decision-making (activity-based approach would be better in cases where info is lacking).

http://www.pacinst.org/reports/sustainable_california/sustainable_california_summary.pdf

Taylor, P. (2004). "Resilience and Biosphere Reserves." *Environments* 32(3): 79--.

These states are familiar because they are the ones that we frequently observe in nature. Examples include systems such as young and old forests. Young forests tend to have rapid rates of plant growth; intense competition for light, space and nutrients; and rapid absorption and cycling of nutrients - all characteristics of the exploitation (r) stage. In older forests, mature trees have 'locked up' those same components, hence, existing in the conservation (K) stage. Mature forests are stable configurations of states - many can remain as mature forests for long periods of time, and can face considerable external disturbance and remain as forests. However, eventually, the accumulated capital - such as leaf litter and biomass stored within trees - coupled with some set of external conditions - such as, dry summers or lightning - can produce conditions, perhaps fire or an insect outbreak that can rapidly shift a forest into an alternate configuration. This is the short, but critical 'release' stage. It is short, because it usually occurs over short time scales, and critical because it is within this stage that accumulated capital is released into the system, and in which the future re-organization of the system begins. It is this latter component that is termed the 'back loop' ([Gunderson] and [Holling] 2002). The Panarchy metaphor is based on four key features that are depicted in socio-ecological systems (Holling and Gunderson 2002). First, change is episodic. There exist periods of slow accumulation of capital (natural, social and economic) interrupted by periods dominated by the release of that capital and its reorganization into a new configuration. It is argued (Carpenter et al. 2001; Scheffer and Carpenter 2003) that this episodic behaviour is a result of components of the system that change rapidly interacting

with those moving more slowly. These so-called 'fast' and 'slow' variables are critical to understanding how the system can suddenly shift from one configuration of states to another - a 'regime shift' (Scheffer and Carpenter 2003). A superb example is found in the examination of Caribbean reefs by Bellwood et al. (2004). In the past decade, Caribbean reefs have been transformed from coral-dominated systems to algal-dominated systems. The critical slow variables were likely a transition from a multi-species herbivorous fish community to a single species of grazing starfish coupled with slowly increasing levels of nutrients into the system. The critical fast variable responsible for the regime shift was disease that struck the starfish community, rapidly removing the remaining algal grazer. Each variable on its own might have changed the system slowly, but the two variables combined caused a regime shift. Review: Suggests the use of Resilience Analysis as a tool to manage ecosystems and set policy to prevent rapid change into some undesirable configuration. Tools use is discussed within the context of biosphere reserves, areas which recognize special status for natural systems but also include human settlements. Useful for thinking about the analysis of socio-ecological interactions within other regions (i.e. anywhere) even if they don't have UN Biosphere Reserve status.

Ten Brink, B. (1991). "The AMOEBA Approach as a Useful Tool for Establishing Sustainable Development." Kuik, O. and H. Verbruggen, In Search of Indicators of Sustainable Development: 71--87. Review: This is an academic article put forward by the author Ben ten Brink. The article proposes using the AMOEBA methodology approach as a sustainability indicator that provides sufficient ecological information essential. While AMOEBA has the potential to be a very useful sustainability indicator for policy-makers it is knowing how to choose the right indicators for its visual approach as well as how to determine the guarantees and risks involved in choosing where ones policies should lie with regard to the reference system.

Thomas, M. R. (2003). "The Use of Ecologically Based Screening Criteria in a Community-sponsored Open Space Preservation Programme." Journal of Environmental Planning and Management 46(5): 691-714.

The Meridian Township Land Preservation Programme is the first community-sponsored, open space and natural areas preservation programme in Michigan using ecological principles in the ranking of properties for acquisition. The programme was established through a collaborative, multi-stakeholder effort that resulted in a model ordinance, operating procedures, guidelines for landowners to nominate their properties for consideration, and a set of criteria for property selection. The screening criteria include ecological value, natural or functional value, parcel size, surrounding land use, environmental quality, and aesthetic value. The criteria were developed to reflect principles established by landscape ecology and land conservation objectives to maintain a maximum degree of biodiversity and to develop, manage and maintain ecological infrastructure through management of protected areas. The programme is entirely funded through a local millage, which will raise nearly \$10 million over 10 years. The target for acquisition of open space is approximately 10% of the currently undeveloped parcels in the township. Review: Info on using ecological principles in the ranking of properties for land acquisition to achieve goal of protecting ecological infrastructure from loss to urban development due to high growth. Notes tools used to protect open space (transfer of development rights, pay landowner to protect, land trust etc.). Nature Conservation Programme criteria used to determine ecosystem value - best criteria list seen in this review: size, heterogeneity, diversity, rarity, typicalness and fragility (susceptibility to change), along with functional ecological and aesthetic value.

Tomalty, R. (2002). "Growth Management in the Vancouver Region." Local Environment 7(4): 431--445. The Vancouver Region is widely recognised as one North American jurisdiction where strong growth management plans and policies have been put in place in order to control urban sprawl.

While many authors have lauded the region for its good planning intentions, there has been little in the way of assessment of actual performance. This paper attempts to identify some quantitative growth management goals that have been (officially and unofficially) espoused by planning authorities in the region, and to measure these against actual trends. The results are mixed: on the one hand, some key growth management goals adopted by the region are not ambitious compared with existing trends and even these goals are not being met. For instance, the supposedly compact scenario adopted by the region deviates hardly at all from existing growth trends, which regional planners had clearly identified as untenable and requiring drastic change. On the other hand, the region's goal of preserving extensive green areas has been achieved without being watered down during goal formulation or implementation. Whereas these findings may appear contradictory, they are not: conservation in the region has not compromised the potential for growth in the region—at least for the time being. The real test of regional growth management efforts will come in the near future when further expansion meets the 'green wall' on the periphery and NIMBY resistance against densification within existing urban areas. The study suggests that the current structure of regional planning, relying on a partnership between municipal and regional governments, has served the region fairly well in building support for the need for growth management and in elaborating growth management vision. However, there is serious doubt about the ability of this system to set ambitious growth management objectives and to see through the implementation of those objectives in the face of social forces attempting to preserve business-as-usual trends in the region. Review: This is a journal article written by Ray Tomalty who takes a look at growth management in the Vancouver Region. While usually everyone hears nothing but applause for regional planning in the Vancouver Region, this article goes to show that regional planning there is far from all sunshine. While the Greater Vancouver Regional District (GVRD) uses a consensus model with a horizontal relationship, Tomalty has found that it is not as effective as assumed. The GVRD is adept at minimizing open conflict as it provides a mechanism for agreement but without a mechanism for enforcement therefore creating a dilution of ambitious planning tools. While good progress has been made regarding Green Zones, partly because it was previously protected and has left plenty room for development, less progress has been made with regards to key sustainability indicators. Overall the GVRD has shown a need for incentive mechanisms such as enforcement powers and funding.

Toner, Jason and David Hill. "Water Education in Alberta: Every Drop Counts and a Whole Lot More." *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association. <http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

Town of Caledon (2006). Town Governance.

Review: An example of regional municipal governance in Ontario. Provides information on the governance structure, particularly its elected representatives, of the Region of Peel as well as its constituent lower-tier municipalities: Caledon, Brampton, and Mississauga. Focused on Caledon's place within the structure and the town's responsibilities.

<http://www.town.caledon.on.ca/townhall/departments/administration/governance.asp>

Tweed, C. and P. Jones (2000). "The role of models in arguments about urban sustainability." *Environmental Impact Assessment Review* 20(3): 277--287.

The pursuit of urban sustainability poses problems of how to evaluate proposals for new development. Without an agreed basis for comparing alternatives, it may be difficult to justify one set of proposals over another. Mathematical modeling, by quantifying aspects of the urban environment, is often promoted as the most credible way of assessing sustainability. But the use of models in practice raises many issues that need to be considered if models are to gain

widespread acceptance. Four United Kingdom universities are researching an energy and environmental prediction (EEP) model to predict energy consumed and emissions produced by the built environment and traffic. As well as further technical development of the model, the research aims to study how the model can be used by different organizations to promote sustainable decision making. In this short paper we examine the role that models in general can have in supporting decision making about urban sustainability. Review: Discusses the lack of appropriate information for making sustainable development decisions about urban environments. Notes benefits but also cautions the use of models in SD decision-making and contrasts 2 types - complex/multi-variable vs. simple/few variable. Notes efforts of UK universities in advancing models to predict energy use by the built environment - possibly useful in understand built environment interaction with natural, effects on temperature and GHG emissions produced depending on how energy is managed between the 2 systems.

Ufz Centre for Environmental Research Leipzig-Halle (2001). URGE Development of Urban Greenspaces to Improve the Quality of Life in Cities and Urban Regions, the European Commission, DG Research, Key Action “City of Tomorrow and Cultural Heritage”.

In the URGE project, we consider urban green spaces as an important contribution to the sustainable development of cities. The research group recognises the potential of green spaces to improve the quality of urban life. However, we are also aware that this potential is not being realised, as current management practices have to be considered as sub-optimal. Therefore, the project includes the elaboration and testing of an interdisciplinary catalogue of methods and measures, based on experience from various European cities. This catalogue is comprised of criteria with which to evaluate ecological, sociological, economical and planning issues. The participating cities will select two green spaces each which they consider to be examples of best practice. These will be used as case studies, by means of which to test the applicability of the criteria. The Comparison of the results of these analyses will enable the consortium to evaluate the green spaces, according to their contribution to the quality of life in urban areas. This will allow conclusions to be drawn about the effectiveness of national and regional policies and their implementation. The knowledge gained will be used to improve existing green spaces and to optimise urban green policies in Europe. Review: Section C of the URGE Manual deals with 'Good Practice' Case Studies. Of greatest interest within this section are the 'city level' good practice examples. Each green space example looks at key issues, actions taken, stakeholder participation and community involvement, funding, problems and principle lessons learned. Multiple Authors: Interdisciplinary Department of Urban Landscapes (UFZ), SRC, Institute of Ecological and Regional Development, Dresden (IOER), University of Helsinki, Department of Ecology and Systematics, Division of Population Biology (UH), Department of Spatial Economics of the Vrije Universiteit, Amsterdam (ESI), University of Central England in Birmingham, School of Landscape (UCE), Comett Li.Sa., Genoa (COMETTLI.SA.), Geographical Research Institute, Hungarian Academy of Sciences, Budapest (GRI HAS), Municipality of the City of Budapest, Mayor's Office, Environmental Department (BUCC), Budapest Urban Planning Ltd. (BFVT), Municipality of the City of Birmingham (BCC), Administration of the Region of Liguria (RL), Municipality of the City of Leipzig (LCC)

Valentin, A. and J. H. Spangenberg (2000). “A guide to community sustainability indicators.” Environmental Impact Assessment Review 20(3): 381--392.

Sustainability as defined by the Brundtland Commission, is a composite and thus ambitious policy target. It comprises environmental, economic, social, and institutional criteria with equal importance. Because of this complexity the first step of a (Local) Agenda 21 process should be to develop a vision of a sustainable society--a leitbild--useful as a compass, not a road map (or, even worse, a blueprint), attached by indicators that help to measure progress, distance to target, and

failures of plans or their implementations. In the following article a model is proposed how local sustainability indicators can be developed and how they can help to reduce the complexity of sustainability and to concretize a program for the Local Agenda 21. To get a practical impression of the theoretical presentation an example is given in the last part of the article. It shows the experiences made while developing sustainability indicators in the City of Iserlohn.

van Roon, M. and S. Knight (2001). "Towards integrated catchment management, Whaingaroa, New Zealand." *Water Science and Technology* 43: 197-202.

Review: Discusses interaction between social and political history and the geological and biophysical history of a catchment area in New Zealand. As part of a re-examination of sustainable development, New Zealand needs to reconcile the earning of the bulk of its foreign income from primary production, with the accelerating ecological deficit that it creates. Authors suggest a sustainability strategy is required linking consumer demand, property rights and responsibilities.

Vaux, Jr., Henry J. "The Role of Science in Solving the World's Emerging Water Problems, Lessons for Alberta." *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association. <http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

Victor, I. (2003). "Meridian Township 'Open Space' Program First in State to Use Systematic Ecological Criteria." *Michigan State University Extension* 1: 1-4.

Review: The Meridian Township Land Preservation Program is the first community-sponsored, open-preservation program in Michigan, and utilizes systematic criteria for land use planning.

Wadhwa, N. M., C. A. Brebbia, et al. (2004). *The Sustainable City III: Urban Regeneration and Sustainability*, WIT Press.

Review: The book contains a compilation of articles covering a diversity of the latest projects and state-of-the-art practices and methodologies dealing with sustainable cities. There are 3 articles of primary concern to the context of regional planning (pp. 335, 393, & 401). The articles deal with the benefits of nature in the city and the city/countryside relationship (rural/urban).

Walmsley, A. (2006). "Greenways: multiplying and diversifying in the 21st century." *Landscape and Urban Planning* 76: 252-290.

Review: Provides several good examples of USA regional development plans focusing on green infrastructure (best one on New Jersey). Looks at theoretical paradigm shift from historical view of green space as something "nice to have" to it being a necessary component of settlements and the establishment of green infrastructure as the first step in land use planning in order to set the boundaries for all other development. Good definition of "green infrastructure", also establishes difference between green or ecological infrastructure and greenways, the latter being possibly inter-connected recreational spaces and the former are infrastructure in the true sense of the word in providing necessary services in a holistic system laid out strategically to provide a framework for growth and development.

Ward, N., P. Lowe, et al. (2003). "Rural and Regional Development: The Role of the Regional Development Agencies in England." *Regional Studies* 37(2): 201--214.

The Regional Development Agencies (RDAs) were established in 1999 to promote economic development in the English regions and inherited staff and programmes from the former Rural Development Commission. The paper analyses the evolving role of the RDAs in rural development. It argues that the changing treatment of rural issues in regional development

reflects a shift from a national to more regionalized and differentiated conceptions of rurality, and suggests that the 2001 foot and mouth crisis prompted a rethink of the “rural” in the “regional” among RDAs. The paper concludes by reflecting on the future evolution of the RDAs’ rural development work. Review: Discussion of European regional economic development policy as it relates to rural and agricultural areas, specifically those in the UK. Good discussion of institutional challenges such as: lack of clear role as many regional issues are also national, such as the foot and mouth crisis, changing responsibilities as rural development agencies are rolled into broader regional agencies, and the changing nature of rural economies, the shift from agriculture to a tourism-based economy.

Water Sensitive Urban Design in the Sydney Region (2004). Sustainable Water Challenge 2004 Project. Review: Summaries of water management projects. Provides good info on internal analysis of project effectiveness. Example of efforts to encourage sustainable development via a sustainable water challenge held each year, with councils from around NSW entering projects they have been involved with that deal with more sustainable water management in some way. Regional projects are seen to provide the following benefits; ¥ Significantly reduced costs for policy development and increased efficiencies through utilising the Stormwater Extension Officer. ¥ Align councils to a more common standard. ¥ The process has developed knowledge, skills and networks amongst council staff. See organization website for excellent examples of water management projects.

Weber, T. and J. Wolf (2000). “Maryland’s Green Infrastructure - Using Landscape Assessment Tools to Identify a Regional Conservation Strategy.” Environmental Monitoring and Assessment 63(1): 265--277. Maryland is growing at a very rapid pace. Compounding the problems associated with rapid growth is the scattered pattern of development that consumes an excessive amount of land and fragments the landscape. As land use changes, wildlife habitat and migration corridors are lost and normal ecosystem functions are disturbed or destroyed. While land use planners and developers are attempting to minimize such impacts, they do not always know where key natural lands and corridors are situated. The Green Infrastructure Assessment (GIA) provides this information and can be used to identify a greenway network that will protect the most critical lands in the state before they are gone forever. Using GIS and principles of landscape ecology, the Maryland Department of Natural Resources is identifying an interconnected network of “hubs” and “corridors” that are now the focus of state and local agency deliberations and revisions. Elements of the network are being prioritized for conservation and restoration activities based on ecological parameters (e.g., sensitive species, important wetlands or riparian zones, etc.) and threat parameters (e.g., protection status, development pressure, etc.). The goal of GIA is to help identify an ecologically sound open space network, and ultimately, to incorporate the agreed upon network into state and local land conservation planning. Review: Discusses impact of urban development on ecosystem functions such as nutrient absorption, recharge of water supplies and replenishment of soil. Case study of Maryland, providing info on the scale and types of green infrastructure being inventoried (list of data used), prioritization done based on relative ecological importance and risk of loss to different types of development, and methodology used to develop infrastructure map of “hubs” and “corridors”.

Wheeler, S. M. (2002). “The New Regionalism: Key Characteristics of an Emerging Movement.” Journal of the American Planning Association 68(3): 267--.

Analyzes the emergence of regionalism in the U.S. Historical background of regional planning; Characteristics of regionalism; Key elements of regionalism. Review: Wheeler is a lecturer at the University of California, Berkley in City and Regional Planning. In this Article the author discusses the key characteristics of new regionalism. He also gives a good quick historical overview of regionalism from early 20th century ecological regionalism to today’s new

regionalism. This is an excellent article giving a broad understanding of new regionalism along with its historical context.

Whitehead, M. (2003). "From Moral Space to the Morality of Scale: the Case of the Sustainable Region." Ethics, Place & Environment 6(3): 235--257.

Contemporary work on the links between geography and morality tends to focus on the spatial aspects of moral conduct. This paper argues that in addition to geographical space, geographical scale also plays a crucial role in the construction and maintenance of moral frameworks. Focusing on the emergence of the sustainable region in the UK, this paper argues that purportedly sustainable spaces, like the region, contain distinctive moral codes of socio-ecological conduct which are designed to guide actions and locational decisions within regional space. Drawing on the case of regional development in the West Midlands, however, analysis shows that sustainable regions are characterised by not only a moral geography of space, but also a morality of scale. Combining recent work on moral geography with analyses of the political construction of geographical scale, this paper uses the case of post-war regional development in the West Midlands to show how the construction of moral landscapes is intimately tied to the production of particular moralities of scale and scales of morality.

Wiewel, W., J. Persky, et al. (1999). "Private Benefits and Public Costs: Policies to Address Suburban Sprawl." Policy Studies Journal 27(1): 96--114.

The uneven development and disparities that exist in most metropolitan regions are the consequence of a combination of private decisions and public policies. Public policy can also redress some of these inequities and redirect the pattern of growth. The article discusses individual policies ranging from congestion pricing to regional governance. Each policy is assessed in terms of its contribution to slowing metropolitan de-concentration, its feasibility of implementation, and its power to redress inequities. Four policies appear most promising: the utilization of impact fees, especially on a supra-local level; reverse commuting program; special taxing districts for region-wide amenities; and continued revitalization efforts in the central city.

Wolf, J. F. (2005). "Metropolitan Governance: Conflict, Competition, and Cooperation." American Planning Association. Journal of the American Planning Association 71(4): 463--.

Metropolitan Governance: Conflict, Competition, and Cooperation, edited by Richard C. Feiock, is reviewed. Review: Book Review. Focus on metropolitan government and costs/benefits to decentralized informal governance vs. more structured institutional/government approaches. A good counterbalance to new regionalism's focus on collaborative governance (informal partnerships between governments and business, self-organizing networks without centralized government direction). Reviews the benefits of regional government arrangements such as public-private partnerships, partnerships, agreements, networks led by metropolitan professional administrators and planners.

Wolff, G. (2004). Economies of Scale & Scope in River Basin Management, online.

Lists several USA and international examples of water resource management focused on integrating efforts. Discussion of concern over management fragmentation - multiple agencies and levels of government managing water resources. But also notes that integrated management will not solve all problems or may create new challenges: "the greater complexity of trying to solve numerous problems at once creates 'transaction costs' that can be larger than the benefits that are sought." Compares Functional Specialization agencies (fragmented) to more integrated management agencies, discusses what is managed by each organization. Discussion of River Basin Management efforts - attempts to bring together functional agencies/stakeholders under (usually) voluntary association - and the driving force behind integrated efforts being the benefits

of achieving economies of scale/scope. Notes possibility of diseconomies of scale, depending on the situation (e.g. large area of flat terrain is harder to service with water because of lack of gravity force, so it is cheaper to have multiple smaller systems. On sloping terrain a single system would be more cost effective). “An economy of scope exists when a facility or program that produces more than one kind of product or service is less expensive than two separate facilities or programs that produce the same quantity of these products or services.” - economies of scope argument example: decision to build wastewater discharge site upstream from a water supply intake has major negative costs that would've been avoided. “If a solution exists that provides additional water supply while also enhancing another type of service (e.g., ecosystem services or local economic development), that solution captures an economy of scope.” Review: Provides evidence of achieving economies of scale and scope in several case studies in the USA (and some international examples). Only article to provide economic argument for seeking to reduce fragmentation in resource management, but also recognizes that each case must be analyzed individually to understand how economies can be best achieved, based on specific management goals. Notes that fragmentation can be overcome by cooperation without formal structures - legal authority is not a necessary requirement. Also lists some examples of methods/facilities/tools to achieve economies of scope in the management of utilities (eg. cisterns, swales, etc). http://www.pacinst.org/reports/scope_and_scale/econ_scale_scope_in_rbm.pdf

Wolff, G., S. Gaur, et al. (2004). User Manual - For the Pacific Institute Water to air Models, Pacific Institute.

Review: Tool to understand impacts of urban and agricultural water use decisions on air quality and energy use. Provides insight into ways decisions can have different impacts based on the type of facility/infrastructure and the energy resources used. Model can also show the variations in impact for using the same amount of water for different purposes such as local irrigation vs. exporting for residential consumption.

Wolff, G. and E. Hallstein (2005). Beyond Privatization: Restructuring Water Systems to Improve Performance, online.

Water managers face significant challenges meeting the water supply, wastewater collection and treatment, and stormwater management needs of the communities they serve. Numerous solutions have been proposed, including the controversial action of significantly increased private sector involvement, known generally as privatization. The debate over privatization has overshadowed discussion of the determinants of performance. This document is unique in that it argues that ‘public versus private’ is not the bright line that separates success from failure. Instead, performance depends on effective staffing, consistent public support for sufficient funding, better asset management systems, performance measurements and rewards, and more stakeholder involvement and transparency. This report provides a framework for urban and rural municipal-level public decision-makers to assess problems, identify possible solutions, and choose among these solutions. It provides practical information and examples about improving the effectiveness of water, wastewater, and stormwater systems, whether public or private. To illustrate critical points, the report offers numerous examples from the upper Midwest: the US states of Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin, and the Canadian province of Ontario. However, the manual’s lessons extrapolate to other regions of the United States, and beyond. Review: Provides suggestions for improving management of water service systems, focusing on the aspects which have been found to improve operational efficiency instead of solely focusing on the public vs. privatization debate. Provides several North American examples and discusses positive and negative aspects of their operations.

Wood, A. and D. Valler (2004). Governing Local and Regional Economies: Institutions, Politics and Economic Development, Ashgate.

Review: Focus on regional economic development, but also good references to globalization's impacts on local government and metropolitan areas. Contributors discuss need for collaborative governance, building on existing institutions (institutional capacity) to develop “associative democracy”. Authors suggest that central government is needed to build capacity as it holds the power to create or amalgamate existing institutions. Other contributor discusses historical precedent dictating regional development, contrasting localism in USA with centralism in Britain

World Planners Congress (2006). Reinventing Planning: A New Governance Paradigm for Managing Human Settlements.

The draft of the Vancouver Declaration commits planning professionals around the world to work together to tackle the challenges of rapid urbanisation, the urbanisation of poverty and the hazards posed by climate change and natural disasters. This paper supplements the draft Declaration. The paper outlines key principles of a new paradigm for managing human settlements that we call New Urban Planning. The purpose of the paper is to provoke and focus debate during the lead-up to the World Planning Congress and the World Urban Forum III in June 2006. The paper reflects the outcome of a series of discussions amongst planners with experience from different countries. It is not intended to be a statement of the views of the planning institutes or other organisations in which the signatories hold office.

Worbets, Barry. “Fitting Water Into the Natural Capital Equation, Integrated Thinking Into Integrated Management and Action.” *Proceedings of Every Drop Counts: Watershed Management Realities, Calgary, AB, 4-6 March 2007*. Calgary, AB: Alberta Irrigation Projects Association. < http://www.aipa.org/Conference_2007/Conference_Proceedings_2007.html>.

Yang, X., J. Dong, et al. (2006). “The Key Role of Water Resources Management in Ecological Restoration in Western China.” Geographical Research 44(2): 146-154.

Abstract The interactions of nature and society are intimately reflected in the degradation of the vast, yet diverse, landscapes and ecosystems of arid western China. The development of agriculture, especially irrigation, has altered rivers, soils and ecosystems so much that major ecological rehabilitation and restoration efforts have been needed since 1950. The catchments of the Tarim River in southern Xinjiang (the Tarim Basin) and of the Black River (Hei He) in Gansu Province and western Inner Mongolia provide examples of the benefits, difficulties and conflicts involved in dryland water management. In the early stages of the human development of these catchments, agriculture depending on irrigation using water from these inland rivers was encouraged. The over-exploitation of these water resources led to such ecological problems as desiccation of lakes, drying out of rivers, degradation of soils and vegetation and lowering of groundwater levels, with consequent environmental and economic impacts. Since 1990 several high-cost, national projects to re-establish ecosystems have been initiated. Water is now released from dams in the headwaters of the rivers in order to restore water flows to the dried out lake basins. Such schemes have inevitably led to social problems and difficulties for the people who depended on the water from the dams for local irrigation. The contrasts in adjustments and attitudes over the use of water for agriculture and other economic activities, as opposed to schemes of restoration of ecosystems and ecological engineering, stem largely from two issues; inconsistent provision of information from the scientific community, and differing ideologies, namely environmental protection versus economic development. Review: Discussion of an example of intensive resource use - Chinese water resources - due to the accelerated growth rate of China's population and economy. Notes the key causes of conflicts are a lack of scientific information and an emphasis on economic development over environmental quality.

Yaro, R. (1997). *The Benefits of Open Space*. L. W. Hamilton, Great Swamp Watershed Association.

Review: Outlines importance of regional green infrastructure, especially with respect to quality of life and water resources. Defines resources that require protection & suggests strategies to do so via government policy (“zoning for natural areas protection or regional land use regulatory commissions, to ensure consistency between municipal plans and regulations”). Also suggests strategies to address regional economic inequities, such as equalization payments to ensure equal funding of urban and suburban schools being done via court order in New Jersey.

Young, J. (2006). “Challenges and benefits of total water management.” *American Water Works Association Journal* 98(6): 32--.

With many water supplies stressed by growing demand, regulatory requirements, quality concerns, and other challenges, today's utility managers can't depend on yesterday's staid, narrow approach to water management. Review: Provides industry perspective on water management (American private utility sector). Supportive of sustainable development of water resources in order to address multiple challenges of higher water demand, inadequate water resource supplies, aging infrastructure, and climate change.

Glossary

Adverse effect: any impairment, disruption, destruction or harmful alteration.

Allocation permit: the document issued by Alberta Environment to a person, granting that person the privilege, so long as the person complies with the conditions of the permit, to divert water for any purpose other than agricultural or horticultural use.

Ambient: Surrounding

Aquifer: a saturated permeable geologic unit that can transmit significant quantities of water under ordinary hydraulic gradients. Aquifers can be a few hectares to thousands of square kilometers in size.

Assimilative Capacity: Assimilative capacity establishes the maximum loading of a pollutant that a water body can receive without causing impairment.

Baseline: An initial set of observations or data used for comparison or as a control

Calibration; Testing and tuning of a model to a set of field data not used in developing the model.

Combined Sewer Outfall/Overflow: Overflow sewer systems designed to collect runoff, domestic sewage, and industrial wastewater in the same system

Confined aquifer: an aquifer that is overlain by a relatively impermeable or significantly less permeable material so that its water is under pressure. If a well were to be installed, water would rise above the top of the aquifer.

Confining Unit: means a body of relatively impermeable material that is above or below one or more aquifers, restricting the flow of water to or from the aquifer(s)

Consumptive water use: means the use of water in such a way that a portion of the water used is lost to evaporation, transpiration, incorporation in product, etc., and not discharged to any location.

Cumulative impact: any changes to hydrologic and hydrogeologic features and functions that are influenced by multiple or successive land use, site alteration or contamination activities over the long term.

Dam3: a metric measure of a volume of water equivalent to 1 000 cubic meters or about 200 000 gallons.

Dependable yield of combined surface/ground water sources: is the yield of water by a water system that is available continuously throughout a repetition of the most severe drought of record, without causing undesirable effects.

Depletive water use: means the withdrawal of water from a water supply resource (ground or surface water) where the water, once used, is not discharged to the same water supply resource in such a manner as to be useable within the same watershed.

Discharge: in a stream, the volume of water passing through a channel in a given time; in the groundwater context, the term refers to water, which exits an aquifer to become surface water.

Drinking Water Source: any surface or ground water body that does or could be used as a source of water for human consumption subsequent to reasonable water treatment

Drought: a condition of dryness due to lower than normal precipitation, resulting in reduced stream flows, reduced soil moisture and/or lowering of the potentiometric surface in wells.

Ecological/Indigenous Knowledge: is the body of knowledge associated with the long-term occupation of certain places, and refers to traditional norms and social values that regulate a people's way of living. It is a complete knowledge system with its own concepts of epistemology, philosophy, and scientific/logical validity. It has great value in understanding species, ecosystems, sustainable management, and conservation.

Effluent dilution: the dilution of industrial and municipal discharges, which occurs in receiving watercourses.

Erosion: process whereby the materials are loosened, dissolved, or worn away. **Groundwater:** Subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated.

Groundwater recharge: the replenishment of subsurface water, (a) resulting from natural processes, such as the infiltration of rainfall and snowmelt and the seepage of surface water from lakes, streams and wetlands, and (b) resulting from human intervention, such as the use of stormwater management systems that specifically direct water into the subsurface (artificial recharge).

Hydrological cycle: the circulation of water from the atmosphere to the earth and back through precipitation, runoff, infiltration, groundwater flow and evapotranspiration, including the occurrence, circulation, distribution, and chemical and physical properties of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and water's interaction with the environment including its relation to living things.

Hydrological features: such as permanent and intermittent streams,

Piezometer: observation well constructed for the purpose of obtaining measurements of the water table level, that is the level to which water would rise in a groundwater well.

Non-point source: pollution source originating over broad areas, such as areas of fertilizer and pesticide application and leaking sewer systems, rather than from discrete points.

Potability: refers to the level to which water is potable, or safe for human consumption.

Sedimentation: the process of settling and deposition of suspended matter in the bottom of a water body.

Semi-confined aquifer: an aquifer that is overlain by a layer of material with low permeability, which permits water to slowly flow through it to recharge the underlying aquifer.

Single prime source: a single diversion of surface or ground water, including an interconnection, capable of providing the peak water demand of a public community water supply system.

Stakeholder: for the purposes of this report, stakeholder refers to any groups and/or organizations involved in or having an interest in the planning and implementation of source protection plans.

Stipulated surface water withdrawals: these are surface water uses that are not supported by storage, have no associated safe yield, and can be rescinded during droughts.

Stream Morphology: the study of mechanisms that operate as a result of water and sediment movement within a stream channel.

Sustainable: when used with respect to a natural resource, means that the natural resource is able to support a particular use or activity without being adversely affected.

Telemetry: the process of transmitting data electronically, directly from a remote site to a central computing centre. The data may be transmitted by telephone line or by radio or satellite relay systems.

Turbidity: opaque with suspended matter. Water with conspicuous amounts of mud, silt or algae is said to be turbid.

Terrestrial: the application of terrestrial ecology (study of organisms living or growing on land in relation to each other and their environment) and biology, or the study of terrestrial systems and communities within a watershed, and connections to other systems outside the watershed.

Time of travel: means the time that is needed for groundwater to travel a specified horizontal distance in the saturated zone.

Topography: three-dimensional graphic representation of the elevations or inequalities of the Earth's surface.

Waste transfer station: a waste disposal site used for the purpose of transferring waste from one vehicle to another for transportation to another waste disposal site.

Water budget: a water budget reflects the relationship between input and output of water through a region. Requires information on land cover, precipitation, temperature, geology, soils, allocations, etc.

Water table: in an unconfined aquifer it is the level to which water will rise in an open well.

Watershed: means an area that is drained by a river and its tributaries.

Watershed assessment: to use the watershed characterization and description to delineate planning boundaries that encompass land-use, industry, and all other users within that basin.

Watershed Characterization: is the first set of actions in watershed planning, and includes completion of a watershed description, development of water budgets, and “protection area” delineations.

Watershed description: is a compilation of available background information (e.g. physical characteristics, population distribution, land uses) to provide context for management planning.

Wellhead protection area: means the surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are reasonably likely to move so as eventually to reach the water well or well field.

Wetland: means land such as a swamp, marsh, bog or fen (not including land that is being used for agricultural purposes and no longer exhibits wetland characteristics) that, (a) is seasonally or permanently covered by shallow water or has the water table close to or at the surface, and (b) has hydric soils and vegetation dominated by hydrophytic or water-tolerant plants.