EIANZ Environment Update: July 2011 Issue 5

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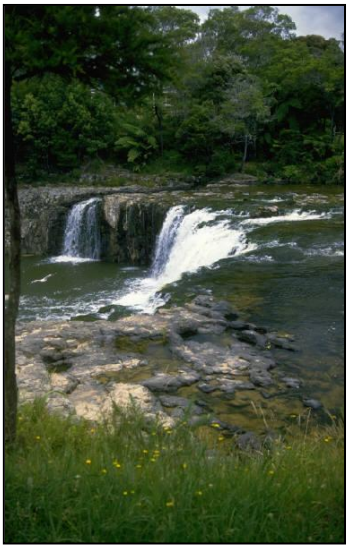
Our special topic for this issue is Water.



Contents

Special topic: Water

Quantifying evapotranspiration rates for New Zealand green roofs. Voyde, Emily et al. *Journal of Hydrologic Engineering*; Jun 2010, Vol. 15 (6), p.395-403
Green roofs are an emerging storm-water management tool that has predominantly been analyzed for runoff volume reduction and peak flow mitigation. Little research has been completed on evapotranspiration (ET) in green roofs. Sedum mexicanum (Mexican stonecrop) and Disphyma australe (New Zealand iceplant) in a New Zealand designed, pumice- and zeolite-based substrate were analyzed to determine daily and hourly ET rates under both water-abundant and drought-stressed conditions. Water loss, and thus storage recovery of the substrate, was greatest in the first 9 days. Transpiration (T) by S. mexicanum contributed up to 48% of total ET (2.19 mm/day) and D. australe contributed up to 47% of total ET (2.21 mm/day). After the initial rate of rapid water loss, plants conserved water and ET was not significantly different from evaporation (E) from unplanted substrate. S. mexicanum had a greater ability to conserve water and thus a greater longevity of life than D. australe under harsh drought conditions.
Code: Env 05/01

Complementary use of tracer and pumping tests to characterize a heterogeneous channelized aquifer system in New Zealand. R. L. Dann et al. *Hydrogeology Journal*; Sep 2008, Vol. 16 (6), p.1177-1191
Code: Env 05/02

Diminishing streamflows on the east coast of the South Island New Zealand and linkage to climate variability and change. McKerchar, A. I. et al. *Journal of Hydrology New Zealand*; 49 (1), 2010, p.1-14
Code: Env 05/03

The long-term reform of the water and wastewater industry: The case of Melbourne in Australia. Malcolm Abbott et al. *Utilities Policy*; Vol. 19, (2), Jun 2011, p.115-122
Since the 1980s, one of the most important parts of Australian microeconomic reform has been the restructuring of the country's government owned utilities - including water supply and wastewater disposal. This process was encouraged by the perception that the state owned authorities performed poorly in the 1970s and 1980s. This paper analyses economic performance of the Melbourne water and wastewater industry from the early 1970s. Over the longer term, the industry has improved its economic performance in terms of productivity and returns to the shareholder, however, consumers have not substantially benefited from this process in terms of lower prices.
Code: Env 05/04

Storm fine sediment flux from catchment to estuary, Waitetuna-Raglan Harbour, New Zealand. McKergow, Lucy A. et al. *New Zealand Journal of Marine & Freshwater Research*; 01/03/2010, Vol. 44 (1), p.53-76
The article presents a study which examines the timing of sediment delivery from the Waitetuna catchment to its estuary, Raglan Harbour, New Zealand for a single large storm. It notes that the storm flows were sampled at five sites on the Waitetuna River, six sites on the main-stem of the stream network, and at two upper estuary sites. It tells that silt was the dominant particle size brought during the flood. It ends that 70% of the sediment was transported to the estuary over a 12-hour period.
Code: Env 05/05

Morphological dynamics of upland headwater streams in the southern North Island of New Zealand. Schwendel, Arved C. et al. *New Zealand Geographer*; 01/04/2010, Vol. 66 (1), p.14-32
Code: Env 05/06

Water: A key resource in energy production. Anna Mercè Rio Carrillo; Christoph Frei. *Energy Policy*; Vol. 37 (11), Nov 2009, p.4303-4312
Water and energy are the key resources required for both economic and population growth, and yet both are increasingly scarce. The distribution of water takes large amounts of energy, while the production of energy requires large amounts of water in processes such as thermal plant cooling systems or raw materials extraction. This study analyzes the water needs for energy production in Spain according to the energy source sector (electricity, transportation or domestic) and process type (extraction and refining of raw materials or thermal plant use). Current and future water needs are quantified according to energy demand and technology mix evolution. Hypothetical scenarios that simulate the risks of promoting specific energy policies are also analyzed. Results show that the combination of energy resources used in Spain is projected to be more than 25% more water consumptive in 2030 than in 2005 under ceteris paribus conditions. Renewable energies are mixed in terms of their consequences on the water supply; wind power can reduce water withdrawal, while the biofuels production is a water-intensive process.
Code: Env 05/07

Legislation note: Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010. Brower, Ann. *New Zealand Journal of Environmental Law*; 2010, Vol. 14, p.309-321
The article offers information on the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010, or the "ECan Act 2010," which shows the use of the principle of parliamentary sovereignty in Canterbury, New Zealand. It says that the act plays pragmatism against egalitarianism, and efficiency against democracy in environmental law. It adds that the act covers several works, such as the suspension of the Canterbury regional council's 2010 elections.
Code: Env 05/08

The water footprint of hydroelectricity: A methodological comparison from a case study in New Zealand. I. Herath et al. *Journal of Cleaner Production*; Vol. 19 (14), Sept 2011, p.1582-1589
Code: Env 05/09

Rapid calculation of oxygen in streams: Approximate delta method. McBride, G. B.; Chapra, S. C. *Journal of Environmental Engineering*; Mar 2005, Vol. 131 (3), p.336-342
Worked examples are given for streams in the USA and in New Zealand.
Code: Env 05/10

Institutional arrangements and planning practices to allocate freshwater resources in New Zealand: A way forward. Memon, Ali; Skelton, Peter. *New Zealand Journal of Environmental Law*; 2007 Vol. 11, p.241-277
Code: Env 05/11

WFD indicators and definition of the ecological status of rivers. R. Carballo et al. *Water Resources Management*; Sep 2009, Vol. 23 (11), p.2231-2247
Code: Env 05/12

Overcoming obstacles to collaborative water governance: Moving toward sustainability in New Zealand. Memon, Ali; Weber, Edward P. *Journal of Natural Resources Policy Research*; Apr 2010, Vol. 2 (2), p.103-116
Given that New Zealand has long been known as an innovative, effective leader in natural resource policy, the idea that a major region of the country is facing a water resource crisis will strike many as odd. Yet, much like the many areas of the world experiencing serious water resource management and allocation problems, current water use and development trends in Canterbury (South Island) since 1991 have resulted in the gradual depletion and overuse of key water resources. The regional governing authority, Environment Canterbury (ECAN), and many stakeholders recognize that the current top-down, hierarchical water resource policy and management initiatives are not working and are, in many instances, contributing to the very crisis they seek to avoid. Nor are they making headway toward their desired overarching goal of establishing a network of sustainable communities within the region. The research examines the daunting problem of water resource policy management in the Canterbury area, describes the many obstacles in the way of a collaborative approach to water resource sustainability, and uses lessons learned from the international literature on collaborative approaches to critically appraise the potential for the successful collaborative governance of water resources in the region, specifically for the purpose of engendering sustainable communities.
Code: Env 05/13

Emergency discharge. Owen Poland. *Engineering Insight*; May/Jun 2011, p.41-42
The Avon River in Christchurch is little more than an open sewer after the September and February earthquakes.
Code: Env 05/14

Adaptation of urban water supply infrastructure to impacts from climate and socioeconomic changes: The case of Hamilton, New Zealand. Matthias Ruth et al. *Water Resources Management*; Jun 2007, Vol. 21 (6), p.1031-1045
Code: Env 05/15

Management gaps analysis: A case study of groundwater resource management in New Zealand. Lowry, Thomas S. et al. *International Journal of Water Resources Development*; Dec 2003, Vol. 19 (4), p.579-592
The primary objective of this project is to identify gaps, whether real or perceived, that hinder effective groundwater management in New Zealand. These gaps show as gaps in information, gaps in implementation, gaps in technological and management tools, and gaps in understanding of fundamental processes. The secondary objective is to propose a management strategy to close the identified gaps. Several methods are used to meet these objectives: surveys distributed to selected staff in each regional council; the review of various written reports; the analysis of land-use databases; and private consultation within each regional council. Results show that groundwater management in New Zealand is generally reactionary with the main gaps being in strategic planning and national guidelines. Most gaps appear to be predominantly information and implementation issues. In some cases there are gaps in the understanding of fundamental processes within an aquifer system, including the long-term effects of land-use on groundwater quality. An adaptive management approach is suggested as a means of closing these gaps.
Code: Env 05/16

Governing shared groundwater: The controversy over private regulation. Lopez-Gunn, Elena. *Geographical Journal*; 01/03/2009, Vol. 175 (1), p.39-51
Code: Env 05/17

Four challenges for international water law. Tarlock, A. Dan. *Tulane Environmental Law Journal*; Jun 2010, Vol. 23 (2), p.369-408
Code: Env 05/18

Ecological history vs. social expectations: Managing aquatic ecosystems. Reeves, Gordon H.; Duncan, Sally L. *Ecology & Society*; 2009, Vol. 14 (2), p.1-14
Code: Env 05/19

The special topic in Issue 4 of the EIANZ Environment Update was **Urban planning for sustainable, resilient cities.** If you missed it you can view it here:
www.energylibrary.org.nz/news.asp

Conservation and restoration

Top 40 priorities for science to inform US conservation and management policy. Fleishman, Erica et al. *BioScience*; Apr 2011, Vol. 61 (4), p.290-300
Code: Env 05/20

Forest bird mortality and baiting practices in New Zealand aerial 1080 operations from 1986 to 2009. Clare J. Veltman; Ian M. Westbrooke. *New Zealand Journal of Ecology*; 2011, Vol. 35 (1), p.21-29
Code: Env 05/21

Invasive rats alter woody seedling composition on seabird-dominated islands in New Zealand. Grant-Hoffman, Madeline N. et al. *Oecologia*; May 2010, Vol. 163 (2), p.449-460
Code: Env 05/22

Geological controls on natural ecosystem recovery on mine waste in southern New Zealand. D. Craw et al. *Environmental Geology*; Feb 2007, Vol. 51 (8), p.1389-1400
Code: Env 05/23

Forest conservation and the reciprocal timber trade between New Zealand and New South Wales, 1880s-1920s. Stubbs, Brett J. *Environment & History*; Nov 2008, Vol. 14 (4), p.497-522
Code: Env 05/24

Disruption of an exotic mutualism can improve management of an invasive plant: Varroa mite, honeybees and biological control of Scotch broom Cytisus scoparius in New Zealand. Paynter, Quentin et al. *Journal of Applied Ecology*; Apr 2010, Vol. 47 (2), p.309-317
Code: Env 05/25

Mark-recapture accurately estimates census for tuatara, a burrowing reptile. Moore, Jennifer A. et al. *Journal of Wildlife Management*; May 2010, Vol. 74 (4), p.897-901
Code: Env 05/26

Rethinking conservation practice in light of climate change. Dunwiddie, Peter W. et al. *Ecological Restoration*; Sep 2009, Vol. 27 (3), p.320-329
Code: Env 05/27

'Ecology of Fragmented Landscapes'. Davis, Robert A. *Ecological Management & Restoration*; Apr 2010, Vol. 11 (1), p.76-77
The article reviews the book "Ecology of Fragmented Landscapes," by S. Collinge.
Code: Env 05/28

Biodiversity

Satellite remote sensing for mapping vegetation in New Zealand freshwater environments: A review. Ashraf, Salman et al. *New Zealand Geographer*; 01/04/2010, Vol. 66 (1), p.33-43
Code: Env 05/29

Towards a duty of care for biodiversity. Earl, G. et al. *Environmental Management*; Apr 2010, Vol. 45 (4), p.682-696
The authors put forward the case for a statutory duty of care for biodiversity conservation.
Code: Env 05/30

Biological invasions and biocultural diversity: Linking ecological and cultural systems. J. Pfeiffer; R. Voeks. *Environmental Conservation*; Dec 2008, Vol. 35 (4), p.281-293
Study of the ecological and economic effects of invasive species has paralleled their progressively pervasive influence worldwide, yet their cultural impacts remain largely unexamined and therefore unrecognized. Unlike biological systems, where the ecological consequences of biological invasions are primarily negative, from an ethnoscientific standpoint, invasive species' impacts on cultural systems span a range of effects. Biological invasions affect cultural groups in myriad, often unpredictable and at times contradictory ways. This review groups case studies into a conceptual matrix suggesting three categorically different cultural impacts of invasive species. Culturally impoverishing invasive species precipitate the loss or replacement of culturally important native species and their associated cultural practices. Culturally enriching invasive species augment cultural traditions, through their inclusion in lexicons, narratives, foods, pharmacopoeias and other tangible and intangible ends. Culturally facilitating invasive species can provide continuity and reformulation of traditional ethnobiological practices. An understanding of the processes by which invasive biota become culturally enriching, facilitating, or impoverishing can contribute to articulating interdisciplinary programmes aimed at simultaneously conserving biological and cultural diversity.
Code: Env 05/31

Remotely sensed landscape heterogeneity as a rapid tool for assessing local biodiversity value in a highly modified New Zealand landscape. Robert M. Ewers et al. *Biodiversity & Conservation*; Jun 2005, Vol. 14 (6), p.1469-1485
Code: Env 05/32

How to infer population trends in sparse data: Examples with opportunistic sighting records for great white sharks. McPherson, Jana M.; Myers, Ransom A. *Diversity & Distributions*; Sep 2009, Vol. 15 (5), p.880-890
Code: Env 05/33

Motivations for conserving urban biodiversity. Dearborn, Donald C.; Kark, Salit. *Conservation Biology*; Apr 2010, Vol. 24 (2), p.432-440
Code: Env 05/34

Public environmental reporting and sustainability reporting

Sustainability accounting and accountability in public water companies. Larrinaga-González, C.; Pérez-Chamorro, V. *Public Money & Management*; Dec 2008, Vol. 28 (6), p.337-343
This article analyses the ways that Spanish public water companies communicate sustainability information to their stakeholders and explores whether distinctive and more progressive accountability is possible in the public sector in comparison with private sector organizations. Two distinct activities are identified in sustainable accountability: public organizations are engaged in informal as well as formal reporting activity, and their reporting seems to be coupled with real organizational strategies and operational activities.
Code: Env 05/35

Incentives for subcontractors to adopt CO2 emission reporting and reduction techniques. B. Scholtens; R. Kleinsmann. *Energy Policy*; Vol. 39 (3), Mar 2011, p.1877-1883
We investigate the incentives for subcontractors (couriers) of a transport and logistics company to report about their CO2 emissions and to implement CO2 reducing technologies. Furthermore, we try to find out whether these incentives differ between British and Dutch couriers. We find that several incentives play a significant role. Subcontractors in the Netherlands predominantly are extrinsically motivated to engage in CO2 reporting and reduction techniques. This is because they are mainly driven by regulatory compliance, energy costs and implementation costs. In contrast, British subcontractors are much more intrinsically motivated to comply. They are predominantly driven by energy costs, environmental awareness, relationship building and reputation building. The contractor will have to account for these differences in making its policies work.
Code: Env 05/36

From carbon disclosure to high performance. Bermudez-Neubauer, M.; Thimmiah, S. *Environmental Finance; Confronting climate risk: Business, investment and the Carbon Disclosure Project*; Oct 2010, p.S18-S19
Reporting carbon emissions and climate risk for the first time can be a daunting prospect. The authors suggest where to start.
Code: Env 05/37

Four tips for writing a winning CSR report. *Business & the Environment with ISO 14000 Updates*; Jan 2011, Vol. 22 (1), p.7-8
Code: Env 05/38

Public participation in environmental decision making

Understanding the role of assigned values in natural resource management. Seymour, E. et al. *Australasian Journal of Environmental Management*;* Sep 2010, Vol. 17 (3), p.142-153
Understanding community values can improve communication and ownership of decisions about the management of natural resources. However, the extent that values predict environmental behaviour is less certain. Most research has focused on held values, those values towards the environment in general. In contrast, assigned values relate to specific natural places, and we hypothesise that they may be a better predictor of behaviour. Drawing on existing theory and our case study findings, we developed a conceptual model of factors that influence assigned values and of the role of assigned values in shaping environmental behaviour. This model builds on the widely accepted value-belief-norm theory with additional components addressing asset characteristics, socialisation processes and externally-imposed factors. An understanding of community-assigned values is likely to assist decisionmaking by regional natural resource management bodies as they move towards a more targeted approach to the investment of public funds and a focus on the most highly valued environmental assets.
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Code: Env 05/39

Effective tourism planning. McGregor, S.; Thompson-Fawcett, M. *Planning Quarterly (New Zealand Planning Institute)*; Mar 2009 (172), p.28-30
How effective tourism planning using a bottom-up approach has worked in Clyde.
Code: Env 05/40

Public engagement in land-related decision issues through the use of Open Source Web mapping tools. Hall, G. Brent. *New Zealand Surveyor*; 01/09/2008, (298), p.3-9
The software discussed in this article is MapChat.
Code: Env 05/41

A typology of collaboration efforts in environmental management. Margerum, Richard. *Environmental Management*; Apr 2008, Vol. 41 (4), p.487-500
Code: Env 05/42

Understanding the diversity of public interests in wildlife conservation. Teel, Tara L.; Manfredo, Michael J. *Conservation Biology*; Feb 2010, Vol. 24 (1), p.128-139
Code: Env 05/43

"We're not NIMBYs!" Contrasting local protest groups with idealised conceptions of sustainable communities. Mcclymont, Katie; O'Hare, Paul. *Local Environment*; Jun 2008, Vol. 13 (4), p.321-335
The term "NIMBY" is used prolifically in both academic literature and general public discourse to describe a locally based action group protesting against a proposed development. It is frequently used to dismiss groups as selfish or ill-informed, as is illustrated both by those who accuse opponents of possessing such characteristics and also by the attempts of many community groups to reject the label. This lies in sharp contrast to the much encouraged notions of public participation in planning and community life as proposed by the UK government's proclaimed vision of a "sustainable community". This paper argues that this dichotomy between "good" and "bad" participation can be misleading, by drawing on research from two case studies where locally based community groups opposed a specific, detailed development. The paper contributes to a burgeoning literature that reappraises conventional understandings of such groups by analysing often overlooked facets of protest groups, concluding that the conventional conceptualisations of them as NIMBY is inadequate and unhelpful in academic debate.
Code: Env 05/44

Securing planning permission for onshore wind farms: The imperativeness of public participation. Leitch, Vikki. *Environmental Law Review*; 2010, Vol. 12 (3), p.182-199
Code: Env 05/45

Rapid issue tracking: A method for taking the pulse of the public discussion of environmental policy. Bengston, David N. et al. *Environmental Communication*; Nov 2009, Vol. 3 (3), p.367-385
Environmental communication professionals and other decision makers need to understand public sentiment toward environmental issues to effectively carry out their stewardship responsibilities. However, it is often difficult to obtain timely and reliable information about public discussion and debate regarding these issues. This paper describes an approach designed to address this dilemma: Rapid Issue Tracking is a method for quickly "taking the pulse" of public and other stakeholder discussion. The data source for Rapid Issue Tracking is online media stories, including traditional news media, social media, and other textual data such as public comments received by an agency. Two US Forest Service cases of Rapid Issue Tracking are presented to explicate the method and its usefulness in environmental communication and decision making.
Code: Env 05/46

Sustainability

Trends in the management of residual municipal solid waste. Rada, E. C. et al. *Environmental Technology*; Jul 2009, Vol. 30 (7), p.651-661
Code: Env 05/47

Legislative implications of managing disaster waste in New Zealand. Brown, Charlotte et al. *New Zealand Journal of Environmental Law*; 2010, Vol. 14, p.261-307
In the recovery following a disaster, disaster waste managers are restricted by existing legislation. In many cases, emergency legislation is available to waive peacetime1 requirements to reduce threats to life, property and the environment. But disaster waste management sits in a grey area between an immediate hazard and a longer-term threat to the economic, social and environmental recovery of a disaster-struck area. Emergency laws are not often written with disaster recovery in mind. Legal waivers were used effectively and ineffectively during the waste management processes following both Hurricane Katrina, 2005 and the Victorian Bushfires, 2009. In both these examples it was clear that the main driver behind use of the legal waivers was to expedite the clean-up process. New Zealand law applicable to disaster waste is complex, with a plethora of associated legislations and regulatory authorities. In general, current laws have adequate provisions to cope with the likely needs of disaster waste management; however, the complexity of responsibilities, stakeholders and unclear statutory precedence may result in slow or ineffectual decision-making. One potential bottleneck identified is the restrictions on transportation of hazardous goods by road and by sea. Complex licensing and permitting structures may be extremely restrictive. The consultative, effects-based nature of the Resource Management Act 1991 in New Zealand is also a potential hurdle to long-term disaster waste management. While there are effective emergency mechanisms to commence activities quickly, medium- to long-term continuation of activities will be dependent on resource consent approval. The uncertainties associated with consent approvals may disempower the decision-maker. A pre established, regulatory approved assessment process which balances social restoration and environmental protection would be a useful tool to support the decision-maker. In general, disaster waste management laws needs to: allow for flexibility for adaptation to any situation; be bounded enough to provide support and confidence in outcomes for decision-makers; be effectively communicated to the public both preand post-disaster; and provide streamlining of waste management organisational structures including decision-making authority. An addendum to the article addresses the legislative response to the major Canterbury Earthquake on 4 September 2010.
Code: Env 05/48

Canterbury's seismic mix. John Callan. *Engineering Insight*; May/Jun 2011 p.8-9
Code: Env 05/49

Business networks and the uptake of sustainability practices: The case of New Zealand. Collins, Eva et al. *Journal of Cleaner Production*; Vol. 15 (8-9), 2007, p.729-740
Code: Env 05/50

Overcoming barriers to sustainability: an explanation of residential builders' reluctance to adopt clean technologies. Pinkse, Jonatan; Dommisse, Marcel. *Business Strategy & the Environment*; Dec 2009, Vol. 18 (8), p.515-527
Code: Env 05/51

The Principle of Sustainability: Transforming Law and Governance – By Klaus Bosselmann. Morgera, Elisa. *Review of European Community & International Environmental Law*; 2009, Vol. 18 (2), p.215-216
Reviews the book "The Principle of Sustainability: Transforming Law and Governance".
Code: Env 05/52

Urban social sustainability themes and assessment methods. *Urban Design and Planning*; Jun 2010, Vol. 163 (2), p.79-88
Code: Env 05/53

Rulings from the courts. Clay, Daniel; Mills, Shannan. *Planning Quarterly (New Zealand Planning Institute)*; Jun 2010 (177), p.7-10
Two recent Environment Court decisions are discussed:
1) Environment Court decision means councils can charge an applicant for processing private plan changes.
2) Environment Court decision on whether plan provisions rendered land incapable of reasonable use.
Code: Env 05/54

Climate change

Impacts of climate change on infrastructure planning and design: Past practices and future needs. Edward G. Means III et al. *American Water Works Association. Journal*; Jun 2010, Vol. 102 (6), p.56, (10 p.)
Code: Env 05/55

Safe return to the underground? The role of international law in subsurface storage of carbon dioxide. Langlet, David. *Review of European Community & International Environmental Law*; 2009, Vol. 18 (3), p.286-303
Code: Env 05/56

Impacts of EU ETS: Climate change and European emissions trading: Lessons from theory and practice. Convery, Frank J. *Climate Policy*; 2010, Vol. 10 (3), p.322-323
A review of the book "Climate Change and European Emissions Trading: Lessons from Theory and Practice," edited by Michael Faure and Marjan Peeters.
Code: Env 05/57

The potential for reducing the impact of aviation on climate. Green, J. E. *Technology Analysis & Strategic Management*; Jan 2009, Vol. 21 (1), p.39-59
Code: Env 05/58

The new politics of climate change: Why we are failing and how we will succeed. Hale, Stephen. *Environmental Politics*; Mar 2010, Vol. 19 (2), p.255-275
It is difficult for political leaders to take action on climate change at the scale and speed necessary. Neither governments, businesses nor individuals acting alone will be able to secure more decisive action by political leaders. Only the third sector can do this, and a far greater mobilisation will be needed to create the social foundations for action. The four key characteristics of a successful mobilisation by the third sector are outlined: national leadership by a diverse coalition of groups; action at community level; a mass movement 'living differently and demanding more and mobilisation across borders.
Code: Env 05/59

The Atlas of Climate Change: Mapping the World's Greatest Challenge. O'Brien, Geoff. *International Journal of Environmental Studies*; Dec 2009, Vol. 66 (6), p.807-809
A review of the book "The Atlas of Climate Change: Mapping the World's Greatest Challenge," edited by Kirstin Dow and Thomas E. Downing.
Code: Env 05/60

Elements for a robust climate regime post-2012: Options for mitigation. Aguilar, Soledad. *Review of European Community & International Environmental Law*; 2007, Vol. 16 (3), p.356-367
Code: Env 05/61

The natural environment as a primary stakeholder: The case of climate change. Haigh, Nardia; Griffiths, Andrew. *Business Strategy & the Environment*; Sep 2009, Vol. 18 (6), p.347-359
Code: Env 05/62

Sustaining ecological integrity with respect to climate change: A fuzzy adaptive management approach. Prato, Tony. *Environmental Management*; Jun 2010, Vol. 45 (6), p.1344-1351
Code: Env 05/63

Energy

The status and prospects of renewable energy for combating global warming. Douglas J. Arent et al. *Energy Economics*; Vol. 33 (4), July 2011, p.584-593
Reducing anthropogenic greenhouse gas (GHG) emissions in material quantities, globally, is a critical element in limiting the impacts of global warming. GHG emissions associated with energy extraction and use are a major component of any strategy addressing climate change mitigation. Non-emitting options for electrical power and liquid transportation fuels are increasingly considered key components of an energy system with lower overall environmental impacts. Renewable energy technologies (RETs) as well as biofuels technologies have been

accelerating rapidly during the past decades, both in technology performance and cost-competitiveness -- and they are increasingly gaining market share. These technology options offer many positive attributes, but also have unique cost/benefit trade-offs, such as land-use competition for bioresources and variability for wind and solar electric generation technologies. This paper presents a brief summary of status, recent progress, some technological highlights for RETs and biofuels, and an analysis of critical issues that must be addressed for RETs to meet a greater share of the global energy requirements and lower GHG emissions.
Code: Env 05/64

Can we have our cake and eat it too? Energy and environmental sustainability. Fereidoon P. Sioshansi. *The Electricity Journal*; Vol. 24 (2) March 2011, p.76-85
The key question is not how are we going to get more energy, but rather why do we use so much of it and what for? Viewed in this context through the filter of contributors to a new Elsevier book, the question leads to a number of interesting insights.
Code: Env 05/65

How to accelerate the development of renewable energy. Winskel, Mark et al. *Energy World*; Nov 2010 (387), p.22-23
The rate of technological development is one uncertainty when forecasting growth rates for renewable energy. Here, the authors look at the potential for accelerating the development of renewables, focusing on marine energy and solar PV.
Code: Env 05/66

Reduce energy use and greenhouse gas emissions from global dairy processing facilities. Tengfang Xu; Joris Flapper. *Energy Policy*; Vol. 39 (1), Jan 2011, p.234-247
Code: Env 05/67

The carbon performance of the 100 largest US electricity producers. Timo Busch et al. *Utilities Policy*; Vol. 19 (2), Jun 2011, p.95-103
Code: Env 05/68

Beyond the Age of Oil: The Myths, Realities and Future of Fossil Fuels and Their Alternatives. Crandall, Maureen S. *Energy Journal*; 2011, Vol. 32 (1), p.229-234
The article reviews the book "Beyond the Age of Oil: The Myths, Realities and Future of Fossil Fuels and Their Alternatives," by Leonardo Maugeri.
Code: Env 05/69

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Environmental management systems

ISO 14040 compliance of life cycle inventory compilation methods. Franchetti, M.; Spivak, A. *Journal of Environmental Science & Engineering*; Nov 2010, Vol. 4 (11), p.51-54
How well do various Life Cycle Assessment methodologies meet the requirements of the ISO 14001 standards? The authors provide an analysis.
Code: Env 05/70

Eco-design implemented through a product-based environmental management system. Kathleen Donnelly et al. *Journal of Cleaner Production*; Vol. 14 (15-16), 2006, p.1357-1367
Lucent Technologies (Lucent) has undergone considerable change in business strategy with the outsourcing of manufacturing activities. In order to control the significant environmental aspects of hardware products, Lucent's wireless business unit, Mobility Solutions, determined it would concentrate on the design of products: focusing on eco-design enables product sustainability to be improved, with each product generation providing a 'start of pipe' (front end) solution with attendant efficiencies. Mobility Solutions pioneered a product-based environmental management system (PBEMS) to formally address the impacts of wireless hardware products on the environment throughout the entire product lifecycle, regardless of where products are developed. This management system looks beyond the environmental impacts of manufacturing to include conceptual design, development, use by the customer, and final product disposal. The success of this approach can be attributed to the integration of eco-design with traditional hardware product realization processes. Through the PBEMS, business and environmental processes are simultaneously utilized to manage significant product aspects and to incorporate sustainability principles during product design. Many innovative eco-design tools are applied during the product realization process to identify areas for improvement of future products, and to verify that each generation of existing products is more sustainable than its predecessor. These eco-design tools include eco-roadmapping, design for environment guidelines and checklists, and lifecycle assessments. The Mobility Solutions PBEMS conforms to the requirements of the ISO 14001 international standard and has achieved third-party certification. By implementing environmentally responsible characteristics through eco-design programs, employees, customers, and the world community benefit from a consistent approach to the environmental management of wireless hardware products. Mobility Solutions continues to reap the value of sustainable product design that is both good for the environment and makes sound business sense.
Code: Env 05/71

Designing environmental management systems to create financial value: A benefit-cost estimation methodology. Soyka, Peter A. *Environmental Quality Management*; Winter 2006, Vol. 16 (2), p.7-23
Code: Env 05/72

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Environmental practice

Taming growth and articulating a sustainable future: The way forward for environmental ethics. Cafaro, P. *Ethics & the Environment*; Spring 2011, Vol. 16 (1), p.1-23
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Assessing ethical trade-offs in ecological field studies. Parris, Kirsten M. et al. *Journal of Applied Ecology*; Feb 2010, Vol. 47 (1), p.227-234
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A healthy attitude towards planning. Conland, Catherine. *Planning Quarterly (New Zealand Planning Institute)*; Mar 2010 (176), p.17-19
Planners need to be aware of the impact planning can have on people's health and wellbeing.
Code: Env 05/76

From diffusion to defusion: The roots and effects of environmental innovation in New Zealand. Bührs, Ton. *Environmental Politics*; Autumn 2003, Vol. 12 (3), p.83-101
In recent years, the diffusion of environmental policy innovations has become a topic of considerable interest. Often, studies of diffusion portray it in positive terms, as a process of 'policy learning' or the spread of environmental 'best practice'. Such portrayals, which tend to ignore the political-ideological roots of environmental policy innovation and diffusion, contribute to the depoliticisation of environmental (and sustainable development) decision-making. In particular, the spread of neo-liberal ideology has provided a basis for environmental policy innovations that, under the guise of 'objectivity', tilt the 'playing field' further to the advantage of dominant interests. Thus, the challenging political, economic and social issues generated by the environmental policy and sustainable development debates, which have the potential to re-politicise economic policy (the 'Washington Consensus'), are side-stepped. As environmental decision-making is devolved to 'the market', local government, experts, and the courts, the environmental 'threat' is defused. It is this effect that makes the New Zealand innovations attractive to the governments of other countries, especially those with an adversarial political system. The article analyses the neo-liberal roots, and effects, of New Zealand's New Zealand environmental innovations to demonstrate the argument.
Code: Env 05/77

Developing capacity and information tools for vehicle emissions policy in New Zealand. Penny, Guy. *Journal of Environmental Assessment Policy & Management*; Dec 2005, Vol. 7 (4), p.651-678
Code: Env 05/78

Working with natural processes: The challenge for coastal protection strategies. Cooper, J. A. G.; McKenna, J. *Geographical Journal*; 01/12/2008, Vol. 174 (4), p.315-331
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Time strategies, innovation and environmental policy. Kerr, D. *Australasian Journal of Environmental Management*;* Sep 2009, Vol. 16 (3), p.183-184
The article reviews the book "Time Strategies, Innovation and Environmental Policy, Advances in Ecological Economics" by Christian Sartorius and Stefan Zundel.
**This journal is published by EIANZ*
Code: Env 05/80

A review of: "Fraidenburg, Michael E. Intelligent Courage: Natural Resource Careers That Make a Difference.". de Steiguer, J. E. *Society & Natural Resources*; Apr 2010, Vol. 23 (4), p.383-384
The article reviews the book "Intelligent Courage: Natural Resource Careers That Make a Difference," by Michael E. Fraidenburg and reviewed by J. E. de Steiguer.
Code: Env 05/81

Environmental education and communication

Nature, empire, and paradox in environmental education. Greenwood, David A. *Canadian Journal of Environmental Education*; 2010, Vol. 15, p.9-24
As part of the 2009 North American Association of Environmental Education Research Symposium, this article addresses the cultural and theoretical frameworks that we bring to environmental education, the web of ideas and experiences that define the scope and purpose of the work in its geopolitical context. Originally delivered as a keynote address at the symposium, the paper highlights two necessarily related conversations within environmental education: the first concerns the problem of empire, including its roots in imperialism and colonialism, as well contemporary problems of globalization; the second concerns the problem of nature, including the need to develop intimate connections with the non-human on a planet that everywhere bares the mark of human alteration. Nature and empire are two poles on a continuum that shape the cultural and ecological contexts of life and learning. The author argues for the need to hold empire and nature not in opposition, but in paradox. Holding the tension of paradox complicates simplistic binaries, and can contribute to a stance that appreciates the relationships between seeming polarities in the intersectional work of social and ecological change.
Code: Env 05/82

Can we make environmental citizens? A randomised control trial of the effects of a school-based intervention on the attitudes and knowledge of young people. Goodwin, Matthew J. et al. *Environmental Politics*; May 2010, Vol. 19 (3), p.392-412
Code: Env 05/83

Seeing underground: Visualizing key issues in contamination cases. Rushefsky, Steven. *Environmental Litigation Committee Newsletter*; Spring 2010, Vol. 21 (3), p.14-19
The author discusses the use of visual aids to augment the testimony of expert witnesses.
Code: Env 05/84

"Somethin' tells me it's all happening at the zoo": Discourse, power, and conservationism. Milstein, T. *Environmental Communication*; Mar 2009, Vol. 3 (1), p.25-48
This study examines how certain Western institutional discourses reproduce particular human relationships with nature. The analysis focuses upon the institutional setting of the zoo, examining long-standing multi-voiced debates about zoos and exploring the contemporary zoo's conservation discourses and cultural, lexical, and spatial elements of gaze and power. The author contextualizes zoo discourses within Western ideological environmental dialectics, including those of Mastery-Harmony, Othering-Connection, and Exploitation-Idealism. The author relates these discussions to her empirical observations of how certain discursive themes are reproduced and complicated within a leading American zoo. In the tradition of critical research that advocates for social change, the essay concludes with analysis-driven discussion about possibilities for zoos to transform their core configurations to more progressively work as agents for systemic cultural and environmental change.
Code: Env 05/85

The lack of a critical perspective in environmental management research: Distortion in the scientific discourse. Ählström, Jenny et al. *Business Strategy & the Environment*; Jul 2009, Vol. 18 (5), p.334-346
Code: Env 05/86

Decisions and dilemmas: Using writing to learn activities to increase ecological literacy. Balgopal, Meena M.; Wallace, Alison M. *Journal of Environmental Education*; Spring 2009, Vol. 40 (3), p.13-26
Researchers tested whether writing increases ecological literacy in undergraduate elementary education students. The authors asked students to write 3 guided essays addressing the cognitive, affective, and behavioral domains in response to news articles on hypoxia. Of the 22 students, 64% improved their ecological literacy from the 1st essay to the 3rd essay. The authors conclude that writing can be an effective learning tool for increasing ecological literacy. They also posit that ecological literacy is a continuum and not a discrete state. Authentic learners who can recognize dilemmas and potential decisions (and their ecological consequences) are on one end of this continuum.
Code: Env 05/87

Integrating sustainability in management and business education: A matrix approach. Rusinko, Cathy A. *Academy of Management Learning & Education*; Sep 2010, Vol. 9 (3), p.507-519
Code: Env 05/88

Childhood and Nature: Design Principles for Educators. Schnack, Karsten. *Australian Journal of Environmental Education*; 01/07/2010, Vol. 26, p.107-109
A review of the book "Childhood and Nature: Design Principles for Educators," by David Sobel.
Code: Env 05/89

Into the field: Naturalistic education and the future of conservation. Hayes, Mark A. *Conservation Biology*; Oct 2009, Vol. 23 (5), p.1075-1079
Code: Env 05/90

Business / Management

Do you suffer managing multiple projects? Kortam, Ali Mohamed Farouk. *AACE International Transactions*; 2009, p.PM.10.1-PM.10.15 (15p.)
Code: Env 05/91

On the road to a great future. Swan, Lyndsey. *Employment Today*; Sep/Oct 2010 (150), p.14-16
An article about the sustainable business practices of Urgent Couriers, an Auckland-based courier company which has attained carbon neutral status.
Code: Env 05/92

A strategic approach to corporate social responsibility. McElhaney, Kellie. *Leader to Leader*; Spring 2009, Vol. 2009 (52), p.30-36
Code: Env 05/93

ISO 26000: An emerging guidance on social responsibility. *Business & the Environment with ISO 14000 Updates*; Jan 2011, Vol. 22 (1), p.13-15
Discusses the International Organization for Standardization's technical standard ISO 26000: 2010 (Guidance on social responsibility).
Code: Env 05/94

Macroethics and engineering leadership. Vallero, Daniel A. *Leadership & Management in Engineering*; Oct 2008, Vol. 8 (4), p.287-296
Engineering leadership must consider macroethics; those issues important to society at large. The downstream effects of design decisions must be considered a priori to ensure that future infrastructures are sustainable. Decision-making tools are available to help ensure that designs are ethical and responsible and to support a systematic perspective of the life cycle impacts of infrastructures. This perspective is crucial as the engineering profession continues to hold paramount the safety, health, and welfare of the public. Therefore, social responsibility is at the heart of engineering leadership.
Code: Env 05/95

New directions in strategic management and business ethics. Elms, Heather et al. *Business Ethics Quarterly*; Jul 2010, Vol. 20 (3), p.401-425
Code: Env 05/96

Public policy and corporate environmental behaviour: a broader view. Sarkar, Runa. *Corporate Social Responsibility & Environmental Management*; Sep/Oct 2008, Vol. 15 (5), p.281-297
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Alternative perspectives of responsible leadership. David A. Waldman; Benjamin M. Galvin. *Organizational Dynamics*; Vol. 37 (4), Oct-Dec 2008, p.327-341
Code: Env 05/98

Sustainable Business: An Executives Primer. Jose, P. D. *Academy of Management Learning & Education*; Sep 2010, Vol. 9 (3), p.565-568
This article reviews the book "Sustainable Business: An Executives Primer," by Nancy E. Landrum and Sandra Edwards.
Code: Env 05/99

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