

Regulating Groundwater Abstraction & Climate Change: British Columbia, Canada and England

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Climate Change & Groundwater

- More extreme events – droughts and floods at more frequent level
- Hydrological Cycle - change the timing and nature of the hydrological cycle, affecting groundwater recharge.
- Groundwater recharge impacts - this will lead to a scarcity of water met with an increase in demand of water as seasons are warmer
- However, many of precise details of impacts are still uncertain

Meanwhile....

- Higher Populations
- More Energy demand
- New Technologies – both beneficial and detrimental

British Columbia, Canada & England

What's similar?

- Both are trying to tackle unsustainable groundwater abstraction – In England this is a recognised problem. In British Columbia, this is a new area of licensing and regulation
- 'wetter' countries
- Fracking – climate change considerations
- Similar legal systems



British Columbia, Canada

- Canada is one of the most water-rich countries on Earth
- British Columbia is one of the wettest provinces in Canada with immense surface water resources, which constitute about one third of Canada's total surface water
- BUT:
 - Geo-spatial variances
 - Despite the abundance of surface water resources, groundwater is an important resource and in some areas the only viable and economic water supply
 - Large % use GW use in agri, industry as well as domestic use.
 - 23% of drinking water use
- Data some-what limited as reporting and regulation only recently brought in



Groundwater Reform in British Columbia

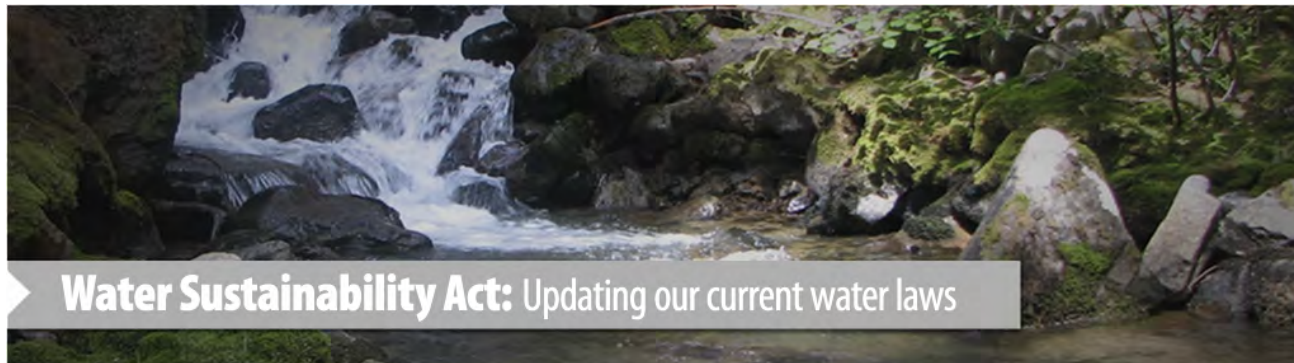
- Canadian legal system:
 - Constitution Act 1867: provincial jurisdiction over public lands - generally including water supply, pollution control, thermal and hydroelectric development, authorisation of water use and flow development. (section 91)
- Despite demand, British Columbia **until 2014**:
 - no licensing mechanism for groundwater abstraction.
 - no active mechanism for clawing back groundwater consumption during periods of water scarcity.
- resulted in :
 - the extraction of groundwater in excess of replenishment rates.
 - Controversies over multinationals

The screenshot shows a news article from CBC. At the top, it says 'May 26, 2015' and 'HUFFPOST BRITISH COLUMBIA CANADA'. Below that, there are navigation links for 'Edition: CA', 'Region: BC', and social media icons for Facebook and Twitter. A green navigation bar contains links for 'FRONT PAGE', 'POLITICS', 'BUSINESS', 'WORLDPOST', 'PARENTS', 'LIVING', 'STYLE', and 'ENTERTAINMENT'. Below the navigation bar, there are two headlines: '24 Free Things To Do In B.C. This Summer' and 'Dismembered B.C. Millionaire Was Killed Over Money: Lawyer'. The main article title is 'Companies Extracting B.C. Groundwater For Free' by CBC. Below the title, it says 'Posted: 08/14/2013 8:11 pm EDT | Updated: 10/14/2013 5:12 am EDT'. The article image shows a hand holding a plastic water bottle. Below the image, there are social media sharing buttons for Facebook (1492 shares), Twitter (0 tweets), and a 'Print' button. There is also a 'Comment' button.

Groundwater Reform in British Columbia

Water Sustainability Act 2014

- 4 years of consultation
- Drivers for change: population growth, increased water demand, changes in land use and climate change
- Generally has received positive reception – but ‘cautious’ positivity – many critical details to be figured out in regulation phase
- Groundwater now regulated, licenses required.



Groundwater Reform in British Columbia

Water Sustainability Act 2014

- Groundwater user must obtain a license and must pay fees, with the exception of individual household wells, which will not be licensed or charged
- Licensed users must make “beneficial use” of the water (section 30) but if they fail to do so for three years their license may be cancelled
- Does not however amend the ‘First in Time, First in Right’ priority system.
- Fracking – key issue still in mind
 - Earlier bill had an exemption for saline water. This is now removed.
 - Short term approvals can be granted from the Oil and Gas Commission. This is often used by Oil & Gas Industry, criticised as a way to go-around the ministry of environment licensing (which requires more transparency, recording of water use etc).
 - WSA however allows a short-term water use authorization can be issued to the same person in respect to the same water and for the same purpose. Effectively, allowing repeat authorisations. [the issue of repeat authorisation of water use by the fracking industry has been separately challenged by EcoJustice in Canada]

England

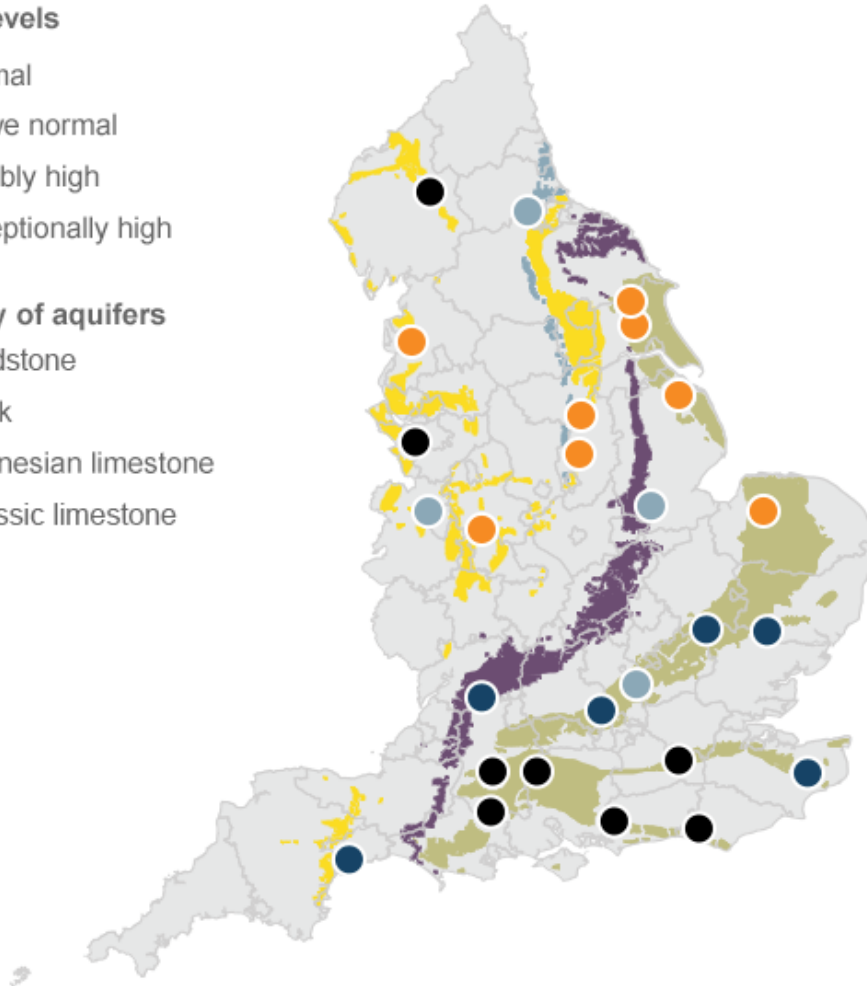
Groundwater levels in England, January 2014

Water levels

- Normal
- Above normal
- Notably high
- Exceptionally high

Geology of aquifers

- Sandstone
- Chalk
- Magnesian limestone
- Jurassic limestone



Source: Environment Agency

- Experiencing water-stress for the past decade.
- Geo-spatial divide, south faces greater risk
- 35% groundwater bodies are at a risk of not achieving EU Water Framework 'good' groundwater quantitative status.
- Demand is high:
 - south-east of England up to 70 per cent of public water supply is derived by pumping groundwater from the Chalk aquifer.
- Climate Change:
 - DEFRA predict - significant impacts on aquifer recharge, less rainfall in summer on average, and significant risk of droughts.
 - 2010-2012 departures from normal rainfall patterns. Droughts and Floods have both been felt in different parts of the country.

Groundwater Abstraction Reform in England

- Groundwater Abstraction regulated by the Environment Agency.
- Main aspects of the regulatory system were institutionalised in the 1960s
- Most abstractors were given a licence to take a fixed volume of water, regardless of availability with no assessment of environmental impact.
- Allocated volumes were based on amounts that had previously been abstracted and abstraction equipment capacity.
- FITFIR system – like British Columbia
- Water Act 2003 –
 - “sustainability” brought in
 - Time limitations on abstraction licences,
 - mechanisms to help licence trading (removing the need to specify on a licence where the water will be used),
 - flexibilities in types of licences, and
 - the de-regulation of licensed abstractions of less than 20m³ a day

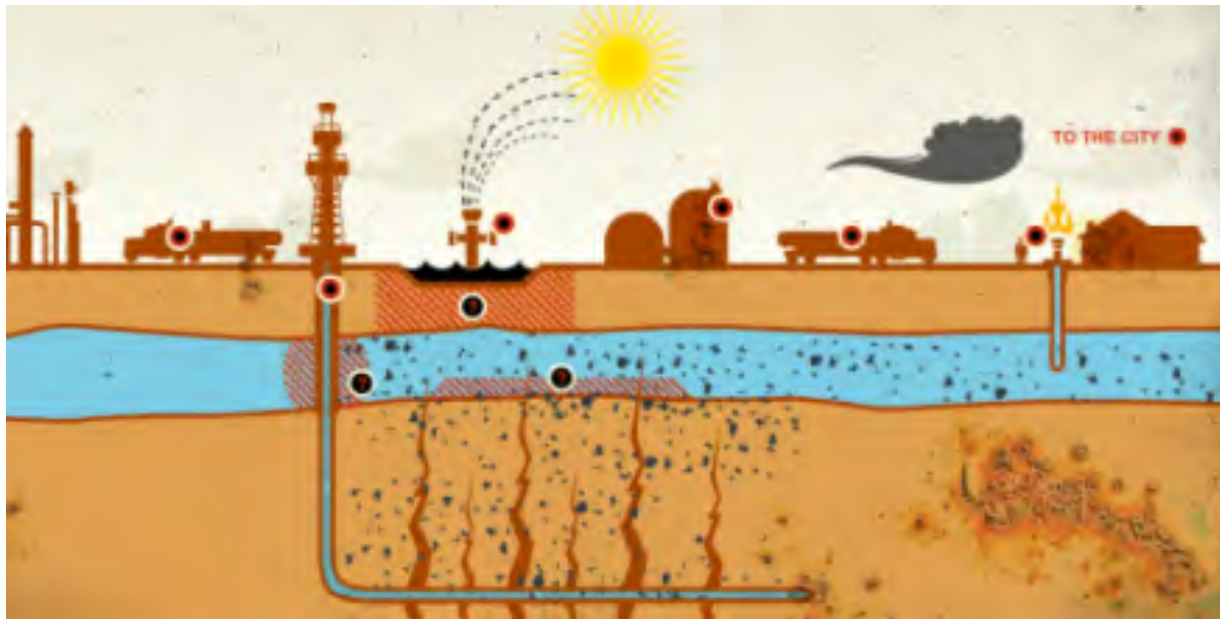
Groundwater Abstraction Reform in England

- *Water for Life* - White paper to parliament on water issues.
- Series of consultations, policy and legislative proposals since then.
- Water Act 2014
 - over-abstraction reform were modest and signalled intent to postpone meaningful reform post 2020.
 - But did install a duty of 'resilience' and efficient water on OFWAT
 - Provisions on bulk water supply trading
 - compensation for water companies whose abstraction licenses are varied or revoked on environmental grounds

Groundwater Abstraction Reform in England

■ Fracking

- Infrastructure Act 2015: environmental safeguard is placed on fracking in preventing fracking from “*protected groundwater source areas*”.
- But this is an unhelpful term
- Liberalisation of bulk water – knock-on effect on fracking



Groundwater Law & Climate Change

■ Moving past the FITFIR model

- Both BC and England have maintained FITFIR model
- Fundamentally – interaction between private property rights and environmental values, how to regulate and reconcile these. England: arguments of water stewardship, and BC arguments of Public Trust being advocated.
- However, climate change brings a number of uncertainties and demands greater flexibility to private property rights.

Groundwater Law & Climate Change

■ Fracking – Political Sensitive Regulatory Space

- Water contamination and water over-exploitation – risks
- Vagueness and uncertainty due to political pressures
- Climate change adaptation requires laws and policies greater openness and participation.
- For climate adaption - the law needs to also balance legal certainty and flexibilities to provide for rules that can deal with change without becoming arbitrary or uncertain.

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■ One step forward, two steps back

- Both jurisdictions have shown an intention to reform unsustainable abstraction with legislative and regulatory reform.
- BUT - reforms have been shown to be moving a lot slower than what is required to keep up to climate change considerations
- fully reforming out-dated policies (such as abstraction licences without limits in England) have proven to be difficult and incomplete (in British Columbia, regulations are still to be put into place).
- Data Collection – important issue in British Columbia

Issues

- Interaction between private property rights and environmental stewardship/sustainability
- Balancing between legislation & regulation, between certainty & flexibility
- Tackling a politically and economically sensitive issue of fracking – protecting groundwater adequately



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