

International Climate Policy and Negotiations: How does science fit in?

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Outline

- International climate change negotiations: the use of science
- Science and climate change negotiations: a 3-stage 15-year example from Canada
- Dos and don'ts (or, increasing the use of science in policy)
- Key C science questions to inform the negotiations in the next decade



International Climate Change Negotiations

- Aimed at international cooperation to address the objective of the 1992 UN Framework Convention on Climate Change (UNFCCC):
 - “...stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system...” Article 2
- A challenging process: extremely complex and involving 190+ countries agreeing by consensus



How does science enter the negotiations?

- The importance of science is enshrined in the UNFCCC
- The work of the Intergovernmental Panel on Climate Change (IPCC)
- Science-based side-events at negotiation sessions
- Some negotiators have a scientific background
- Some negotiators work very closely with scientists
- Domestic science programs contribute to negotiation positions



How is science used in the negotiations?

- Scientific understanding informs answers to many questions that arise in the negotiations, such as:
 - What global emission reductions are needed?
 - What mitigation may be possible?
 - What are risks associated with particular mitigation approaches?
 - What impacts of climate change are expected?
 - What is the best way to estimate emissions and removals from managed land carbon?
- Science is only one consideration, along with economic, technical, policy and other considerations



Science and climate change negotiations: a 3-stage 15-year example from Canada

The evolution of Canada's negotiating position
on the treatment of forest natural disturbances
(NDs) under the Kyoto Protocol

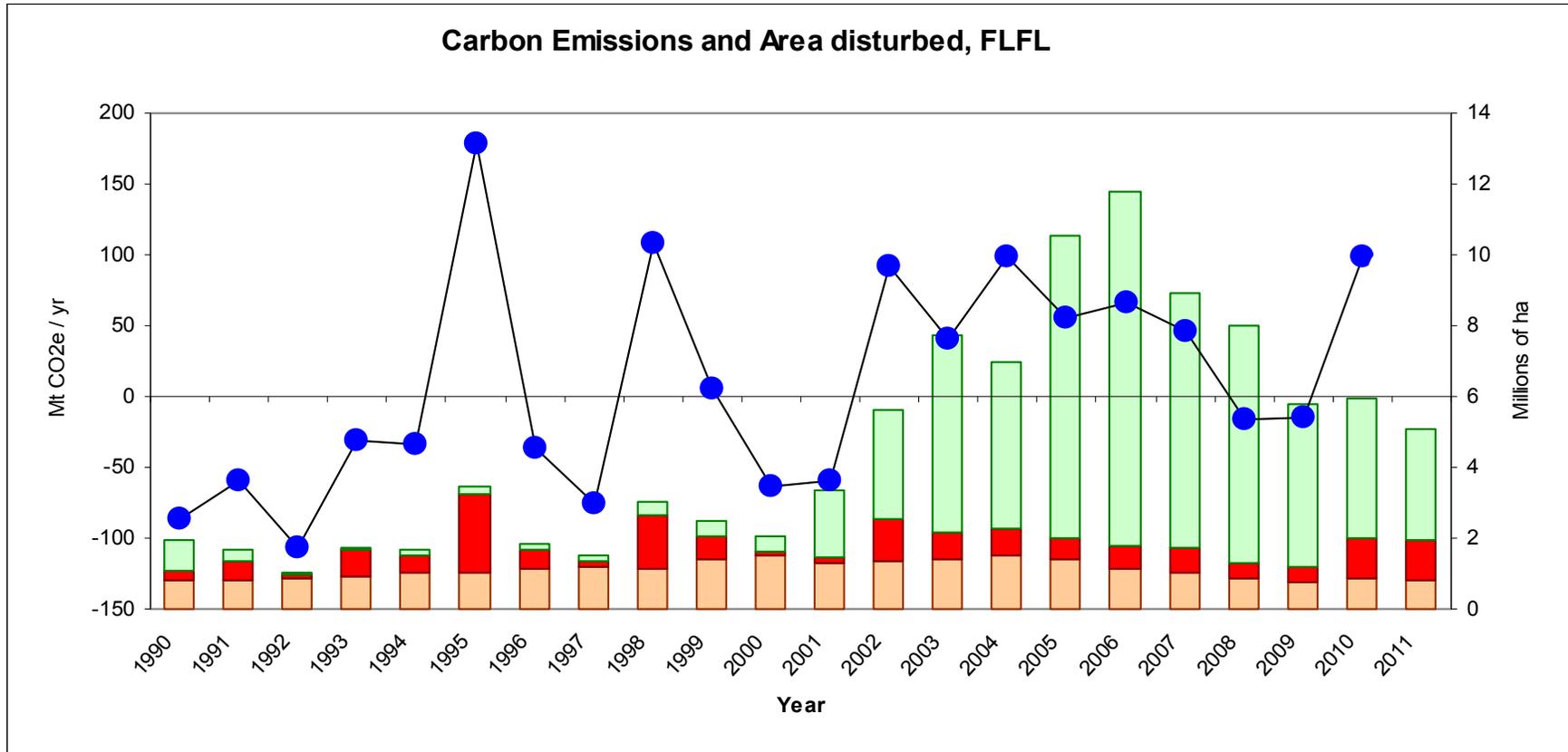


Forest natural disturbances in Canada

- UNFCCC requires reporting on anthropogenic GHG emissions and removals, and uses “managed” lands as a proxy for anthropogenic
- But... natural disturbances (fire, insects) affect large areas in Canada’s managed forest
- And...they result in very large GHG emissions and removals



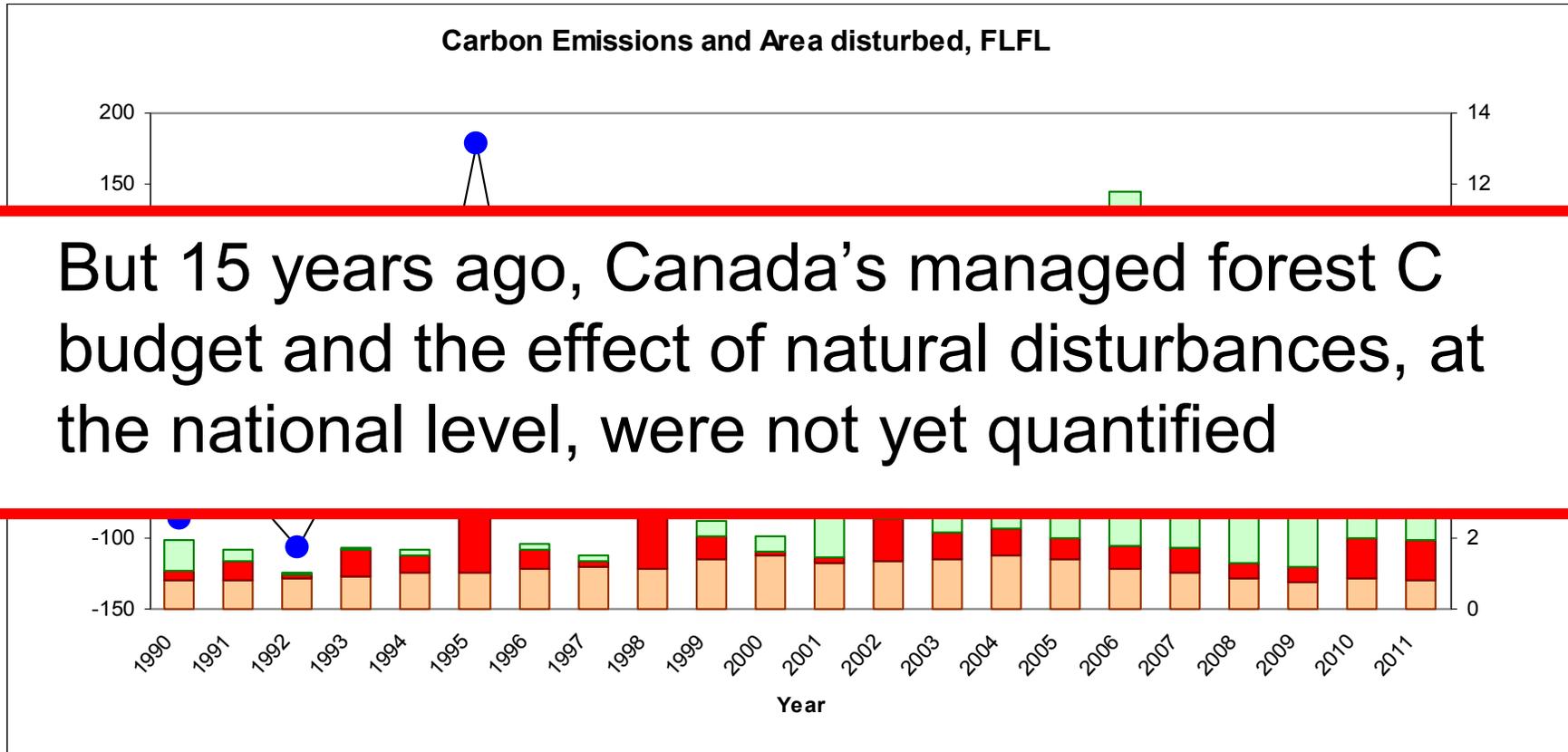
Canada's managed forest emissions



- Insects (Mha, right scale)
- Fire (Mha, right scale)
- Harvest (Mha, right scale)
- Emissions (Mt CO₂e, left scale)

Source: Updated after Stinson et al. 2011, NRCan 2012

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Source: Updated after Stinson et al. 2011, NRCan 2012

Stage 1: 1998-2001

What should the rules be?

- Negotiations on treatment of managed forest C in the 1st commitment period (2008-12) of the Protocol
 - Policy perspective: Managed forests must be included in accounting in line with UNFCCC commitments
 - A scientific caution: Managed forest is at risk of being a source because NDs might cause large uncontrollable emissions in the future

- ➡ **Canada's negotiation position: seek an agreement that**
1. Includes managed forests in the accounting on a voluntary basis
 2. Allows each country some time to make its decision about whether to include the managed forest



Stage 2: 2002-2006

We have the rules, now what?

- Analysis of whether to include the managed forest in Canada's Kyoto accounting for 2008-12
 - Policy question: should Canada include the managed forest?
 - Science question: what is the probability distribution of Canada's managed forest GHG balance in 2008-12?

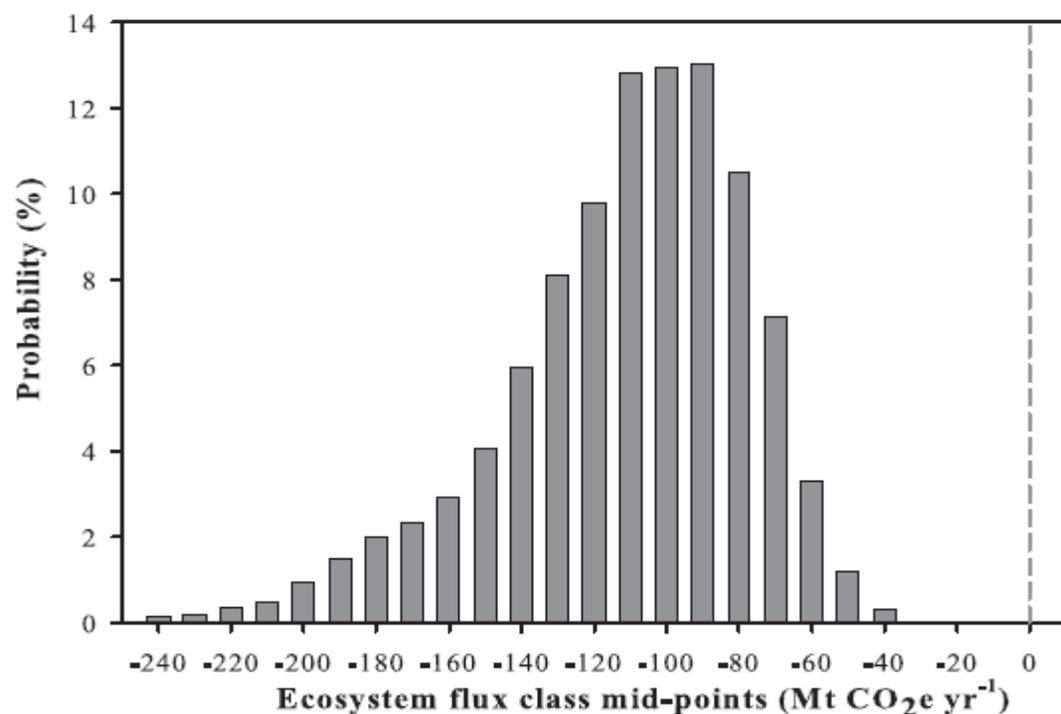
➡ Implemented a major 5-year science-policy process to answer the question



2006

Making a decision

Probability distribution of Canada's projected managed forest ecosystem GHG balance, 2008-12



Source: Kurz et al., PNAS 2008

- The analysis suggested a 100% probability that the managed forest would be a source in 2008-12 due to NDs

⇒ Canada decided to not include the managed forest in its Kyoto accounting

Stage 3: 2008-2011

How should the rules be improved?

- Negotiations on improving the rules for the 2nd commitment period (2013-20) of the Kyoto Protocol
 - Policy perspective: NDs are not anthropogenic or controllable and can completely obscure the C effects of management practices
 - Science question: what is a scientifically valid way to remove ND impacts from accounting?

➡ Canada's negotiation position: seek an agreement that

1. Allows removal of ND impacts from accounting
2. Makes accounting for forest management mandatory



Dos and don'ts

...or, how to increase the (appropriate) use of science by policy analysts and negotiators



Get to know the policy people

- Interpersonal relationships and trust are key
- Seek on-going dialogue – the science-policy conversation has to be constant – but it is not easy!
- Work with them to jointly define the policy-relevant science questions



Actively make science accessible

- Develop integrating / synthesizing frameworks for pulling together and applying scientific understanding
- Communicate the science clearly and in way that helps suggest why it matters for policy
- As experts, be prepared to make scientific judgements even in the face of incomplete understanding and data



Key science questions relevant to climate change negotiations

Some key questions that I think are relevant to the climate change negotiations on terrestrial carbon, over the next decade



Key questions for the next decade

- How will climate change impacts on the global carbon cycle affect the emission reductions required to achieve various targets?
- How can direct anthropogenic influences on the carbon cycle be separated from other effects?
- Which land management practices and uses of carbon offer the highest, most cost-effective and sustainable mitigation potential?
- How does considering biogeophysical effects (e.g. on albedo) change estimates of land mitigation potential, and what are implications for mitigation practices?
- What are the synergies and tradeoffs between land-based adaptation and mitigation responses to climate change?





Thank-you!

Questions and comments

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