CANADIAN WETLAND ROUNDTABLE

Canadian Wetland Roundtable

Policy Workshop Report

Sponsored by the ***Canadian Federation of Agriculture*** *and* ***Ducks Unlimited Canada****, with financial support from* ***Wildlife Habitat Canada***

Ducks Unlimited Canada

CFA Canadian Federation of Agriculture / FCA Fédération canadienne de l'agriculture

Wildlife Habitat Canada / Habitat faunique

CANADIAN WETLAND ROUNDTABLE

The **Canadian Wetland Roundtable** (CWR) is a national, multi-stakeholder initiative developed to advance through facilitating dialogue to influence, policy, stakeholder and resource industry action, the sustainability, health and responsible management of Canada's wetlands. The CWR will be a national forum dedicated to connecting a network of national leaders in the wetland industry with a common vision and mission. The CWR will provide opportunity for sectoral perspectives at the Roundtable.

Through leadership, science, multi-stakeholder engagement, responsible management through the conservation, restoration and sustainability of Canada's wetlands will be achieved.

Vision

Sustainability through Responsible Management of Canada's Wetlands

Mission

The panel will work collaboratively to identify and communicate wetland policy options to government, industry and stakeholders that balance environmental, societal and economic considerations and results in Canada being a global leader in their responsible management, use and conservation.

Areas of focus

1. Identify knowledge gaps for improved wetland sustainability.
2. Motivate government and the public to conserve wetlands
3. Motivate the adoption of beneficial management practices that enable wetland conservation through responsible management and sustainable use.
4. Inform the development of regulation and policy that support wetland conservation and sustainable use.
5. Support action-oriented wetland conservation initiatives with measurable outcomes.
6. Promote the measurement of and reporting on progress in wetland conservation.
7. Communicate wetland conservation information to industry, policy makers, and other stakeholders.
8. Communicate the value (environmental, social and economic) of wetlands, and the goals and accomplishments of CWR.
9. Work in collaboration with North American Wetlands Conservation Council (NAWCC) (Canada) to advance wetland conservation.

Introduction

Objectives

On June 21-22, 2016, the Canadian Wetlands Roundtable held a workshop for stakeholders in Ottawa, Ontario to focus on Canadian wetland policy. The purpose of the Roundtable was for wetland policy stakeholders to advance two important topics:

- Identification of broadly accepted principles that will inform the development of effective wetland policies in Canada, and;
- How wetlands will play a role in existing and emerging climate change policy.

On the first day, participants learned about the history of wetland policies in Canada and explored current policy models that are in place in multiple Canadian jurisdictions. This provided a forum for discussion of various policies and their relevance within a Canadian context. Participants discussed opportunities and barriers to advance a collective vision for the future of wetlands on Canada's landscape.

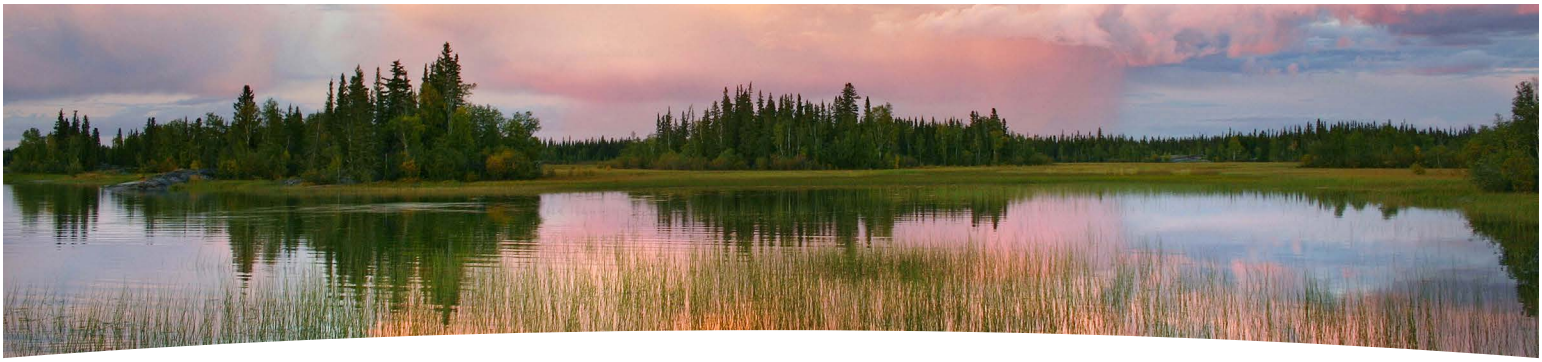
On the second day, participants shifted their focus on how wetlands best fit into current and emerging climate change policy. Information from this will serve to inform the development of federal and provincial climate change policy frameworks under development during the summer of 2016.

What follows here is a report from this Roundtable, including a synthesis of key points of discussions and next steps. During the event, several presentations were made to provide a starting point for the discussions; these presentations are summarized briefly here as they are available under separate cover. A list of participants can be found in Appendix A.

Welcome

Jim Brennan (Ducks Unlimited Canada) and Drew Black (Canadian Federation of Agriculture) welcomed participants to the event. Jim Brennan presented the objectives of the meeting. The purpose of the first day is to inform the development of wetlands policy in Canada while the second day will focus on how wetlands play a role in climate change policy.

Participants introduced themselves and the facilitator, Kathleen Connelly of the Intersol Group, provided an overview of the agenda and approach for the two-day Roundtable.



National Wetland Protection Framework

Introduction to the Canadian Wetlands Roundtable and Canadian Wetland Policy History

Introduction to Canadian Wetlands Roundtable

Pat Kehoe (Ducks Unlimited Canada) provided an introduction to the CWR: history of wetland policy discussions, international drivers, 2014 conference findings and emergence of CWR and current mandate. From the 1930s to the 1980s reactive approaches were implemented; it is in the 1990s that more proactive approaches to wetlands management began to emerge. Key events along the timeline were presented. The Canadian Wetlands Roundtable was created in 2014; its vision is to create sustainability through responsible management of Canada's wetlands. A summary of the May 31 and June 1, 2016 inventory workshop was presented as well as a summary next steps to pursue this work.

Canadian National Policy in Context and Jurisdictional Approach in Canada

Al Hanson (Environment and Climate Change Canada) provided additional context for the Canadian Federal Policy. He outlined the history and factors playing a role in the development of the federal policy, its application, as well as the objectives and goals of the policy. The policy applies to federal crown lands and any projects with wetlands impacts that receive federal funding. The policy objective is to promote conservation of Canada's wetlands to sustain their ecological and socio-economic functions now and in the future. A key element of the policy is the no net loss of wetland function; this is achieved through the mitigation hierarchy and compensatory mitigation. It is worth noting that Canada was among the first countries to publish a federal wetland conservation policy. A number of strategies are in place to support the achievement of the policy goals. While compensatory mitigation has much potential, it also faces challenges. Principles for wetland compensation were developed.

Effective wetland conservation policy can guide the development and consideration decisions in a coherent strategic way, and minimize risks of various government departments working in opposing directions. To be effective, wetland conservation policies should indicate the complementary contribution of stewardship and regulation toward conservation objectives and a balance between private rights and the common good; policy objectives need to be based on ecosystem, social and economic goods and services; a transparent and predictable process for the mitigation hierarchy including compensation must be developed; and the policy must be supported by education, technical guidance and assistance.

Current Wetland Conservation Policy Implementation Strategies across Canada

To set the stage for the following facilitated conversation, policy overviews were presented.

Context Relative to Provincial Policies in Canada

Jim Brennan (Ducks Unlimited Canada) presented the current status of provincial policies in Canada relative to critical policy elements and within the context of a policy cycle.

An assessment conducted in the 1990s revealed that the DUC direct program approach was not keeping pace with the rate of loss in the country and led to a changed approach in the years 2000. A self-evaluation tool was developed to evaluate wetland protection policies in every federal/provincial/territorial jurisdiction (except Nunavut). While the tool has some limitations, the DUC scorecard evaluates seven elements that are core to wetland policies: three policy design criteria and four implementation and support criteria. In addition to the Federal Wetland Policy, some provinces have policies and the status for other provinces was presented. A map showing

lagging and leading jurisdictions along the seven indicators was shown.

A comparative contrast between Prairie Canada (Manitoba and Saskatchewan) and Atlantic Canada was presented to showcase what happens over time in areas with limited or no protection of wetlands in place vs. areas where good measures are in place.

Policy Implementation Challenges – A Panel

Cameron Mack (Wildlife Habitat Canada) moderated a panel discussion on policy implementation challenges and introduced the panel members.

Paul Short (Canadian Sphagnum Peat Association) outlined challenges experienced by this industry, which currently faces approximately 60 pieces of legislation, programs and policy related to wetlands. Peatland makes up a large percentage of the wetlands in Canada, and the implications of legislation, programs and policies that affect peatland need to be examined. In legislation, peat is mainly dealt with as a mineral. The economic value of wetland and peatland need to be considered. Buy-in from municipalities on federal or provincial/territorial legislation or approaches is also needed.

Drew Black (Canadian Federation of Agriculture) provided an agriculture perspective on the issues. Diversity and complexity are the main overall themes from an agriculture perspective, as it relates to wetlands. There is much diversity among farming operations, commodities grown, and practices to ensure good stewardship of the land. In addition, what may be a wet area one year to the next can also vary. The diversity in terms of land ownership brings in added complexity. Generally speaking, one challenge is how to communicate with landowners wary of restrictions on private land.

Neil Fletcher (British Columbia Wildlife Federation) shared this province's experience. B.C. currently does not have a wetland policy and spending on natural resources management has remained stable since the 1980s in spite of growing needs. Challenges include how to communicate the value of wetlands and guide decision-makers through the process. A multi-agency approach to preserving wetlands has been valuable. Several working documents (e.g. tool kits, guidelines, etc.) have been developed to support decision-makers. Collaborating and working with industry partners is key, as highlighted by examples such as the City of Kelowna, Tech Coal and B.C. Hydro.

Thorsten Hebben (Alberta Environment and Parks) indicated that Alberta has been working on policy development in this area for over 20 years. Recognizing the importance of relationships have been a key success factor to move forward in wetlands management. The policy was approved in 2013; implementation includes developing tools and ensuring alignment with other regulations. While awareness is important to ensure that the policy can be effective, there is a diversity of understanding, appreciation and willingness to engage at the municipal level; this also translates into challenges in agriculture. The ability to convey the importance of the value of wetlands to land owners is a challenge.

Randy Milton (Nova Scotia Department of Natural Resources) presented his province's experience. Work in this area began in the 1970s, however progress was made when the Environment Act was updated in 1990. More significant progress was accomplished when wetlands were defined in the 2006 Environment Act, thus allowing wetlands considerations to be included in activity development and impacts. A wetlands policy was implemented in 2011; the policy considers wetlands of special significance (no loss, except for social good or social need) and other wetlands (no net loss). Challenges include the fact that "social need" is not defined. Other challenges include how to deal with coastal wetlands and conducting functional assessment.

Discussion

Participants engaged in a facilitated discussion, focussing on the following two questions:

1. What is working well?
2. What are the key issues and how can they be addressed?

The following key points emerged in response to these questions.

What is working well

- How to implement on the ground is now better understood.
- Provinces are gaining momentum and experience in addressing challenges, are willing to learn and practically implementing; limitations are understood.
- Several wetland policies are in effect.
- Key aspects of wetland policy with no net loss and mitigation hierarchies have been defined.

- There is increasing recognition of the economic values of wetlands, particularly with private landowners – wetlands are an asset on the ledger.
- Wetland values in general changing for positive, and getting traction; corporations are recognizing green capital, the power of green markets and social licence.
- Knowledge and understanding (wetland science) is increasing, which helps support policy efforts – broader scope and scale – more investment in science.
- Practicality – society will impact wetlands – planned, mitigated – recognizing the importance of other values requiring mitigation, but some loss in certain areas will happen.
- Value proposition overall around conserving wetlands is increasing.
- No net loss – longer time scales relative to changing climate considerations.
- An overarching wetlands policy is important, without that it may be difficult to move forward.
- Clarity in policy objectives support effective implementation.
- Governments have recognized that there are costs to wetland loss.
- Industry and government have better idea of the benefits and costs of projects.
- Policies and mitigation (and clarity in policy objective) helped reduced observed loss.
- Public lands and federal lands – beneficial management practices (BMPs) working well.
- Progress in integrated shed management (conservation authorities).
- The Species at Risk Act (SARA) has made progress to protect boreal habitat system (e.g. caribou habitat).
- Larger role of non-governmental organizations (NGOs) and industry in taking ownership on implementation.
- Increased role of Indigenous management has led to better control, management and protection of wetlands.

Key issues and how to address them

Issues	*How issues could be addressed*
Cumulative losses of wetlands; reluctance to identify particular sources and addressing them.	Creating incentive programs, innovation and programs to acquire land. Addressing gaps in funding.
Lack of a good scientific basis for existing wetlands and wetland loss – what are they, where are they? Need an inventory to set policy.	Complete the inventory; requires funding and leadership – need a CWI funding, leader. System in place to monitor trends.
Need practical functional approach to evaluate the values of wetlands – generate economic values to support policy.	More funding applied to research to better understand values. More science to emphasize values. Mobilize industry better – industry needs certainty and solutions. There are industry bodies that could be involved in creating solutions.
Leadership is needed over wetland conservation, implementing a productive path forward.	Expanding role of Canadian Wetlands Roundtable. Integrated with leader on inventory. Workshops to move key issues and solutions forward. Confine to demonstrate value of CWR – keep outside of government.
Joint messaging is needed, as well as collaboration on issues.	Effective, organized communication/collaboration on strategies.
Completing policies – caribou vs. wetland.	Taking a comprehensive look at policies and addressing them holistically vs. looking at one policy at a time.

Incomplete data – wetland inventory, type, function, scale.	Complete the current inventory; more funding (current inventory – good start).
Need more information on economic goods and services (EGS) value, e.g. flood, etc. – regional issues.	Government needs to continue national – count of what those features provide.
Emerging threat (invasive species), lack of service management strategies to protect wetlands.	Multiple tool development. Multiple stakeholder involvement and support.
Greenhouse gases emissions – lack of understanding.	Science for a fuller understanding.
Not enough public pressure, economics of policy vs. no policy.	Look at the economics of the policy vs. economics of not having a policy. Through science, awareness, understanding of values.
Budget cuts, challenges in keeping paces with issues and development of solutions.	
Value to farmers, economic dimensions e.g. value from an agriculture production standpoint, but also economics to farmers downstream (i.e. those are the ones that are getting flooded) (e.g. long entrenched issue of providing funding for drainage).	Change social norms. Environmental credit for farmers (e.g. incentives not to drain).
Federal policy lacks clarity (e.g. what is impact? What is impact to function? What constitutes compensation? What is appropriate? Much of discretionary decision making.	Guidelines to support decision-makers. Encourage federal government to improve Environment Impact Assessment (this may represent an opportunity, as this is being renewed). Letter to Minister to request guidance on wetland mitigation guidelines.
Private lands – many individuals, not connected to social licence (e.g. agriculture).	Via diverse partners. Price signals (flood mitigation, carbon sequestration, water quality). Environmental grant.
How do individuals take action – protection within every decision, cumulative losses.	Education – targeting audience based on elements that resonate with them.
Disconnect between policy maker and implementation of policy (e.g. federal vs. province).	
Outdated inventory and monitoring framework. Need to implement no net loss.	

Towards A Policy Framework

Discussion on No Net Loss of Function as a Policy Goal

Pat Kehoe (Ducks Unlimited Canada) introduced the concept of "no net loss of function" as a policy goal and set the stage for the next discussion by outlining the questions for consideration. Participants engaged in a facilitated discussion, focussed on three questions:

1. What would be the implications of "no net loss of wetland function"?
2. What are the challenges that would need to be addressed for its realization?
3. Could we adopt it as a collective goal?

Notes from the participants small group discussions on these three questions can be found in Appendix B.

Participants were divided regarding whether "no net loss of wetland function" could be adopted as a goal. Some felt that the goal could be accepted in principle, as a collective goal to strive for, realizing that challenges would be experienced in the practical application.

In terms of alternatives, a few suggestions were made. Some functions could be prioritized. The bounds of no net loss function have to be defined at the national level, but strategies could be implemented on a regional basis. It was suggested to go back to the problem to solve (significant loss of wetland, associated with loss of wetland function), to recognize and maintain the important functions of wetlands and to identify strategies that various jurisdictions and industries could implement as appropriate within their landscape.

It was suggested to frame the issues under "wise use" of wetlands, however another viewpoint is that the wise use framework is helpful to make project-related decisions, but does not help to manage resources on the landscape.

There were different viewpoints on whether an over-arching goal is needed vs. identifying the need for specific tools, such as: a tool to identify what an impact is to wetland function; best management practices, working on avoidance and mitigation; defining what compensation looks like to address the loss of function where impacts do occur and there is a requirement for compensation (e.g. what science would be required to support this); wetlands inventory; and incentives to support the industry in wetland conservation.

A better understanding of the barriers to adopting this as a goal combined with the identification of the common ground or common threads for support could lead to the development of an alternative.

Exploration of a Policy Framework

Jim Brennan (Ducks Unlimited Canada) presented the current thinking for a basic framework, prior to seeking feedback from the group. Elements of the framework are outlined below.

Policy Design

1. Vision goal statement for wetlands
2. Supporting policy, legislation, regulation
3. Mitigation sequence (avoid, minimize, compensate)

Implementation/Support

1. Inventory/data to support policy
2. Financial incentives
3. Public/stakeholder education
4. Adequate resources

It was suggested to add the following elements to the proposed framework:

- Drivers for change (e.g. international, food security, etc.)
- Functions and benefits of wetlands
- Inventory and data; science, techniques and tools
- Best management practices
- Impact assessment tool

- Tools to evaluate function
- Rapid assessment tools to assess the impact of a particular wetland use rapidly
- Evaluation
- Stakeholder engagement (i.e. broader than education)
- Resource asset considerations – how to consider wetlands on the national agenda as a resource asset
- Enforcement (note: may be related to incentives and to education)
- Distinguishing and taking into account the different levels – federal, provincial/territorial and municipal – legislation and policy, as well as how wetlands fit within the broader landscape, in a more holistic fashion, towards sustainable development

Setting Wetland Policy Agenda for the Next Four Years

Participants reflected on how best to move forward to set the wetlands policy agenda:

1. What must we do to move forward?
2. What are our next steps?
3. Who could best do what?

The following next steps were outlined:

1. The report from this session will be prepared. Meeting organizers will review notes and develop key questions to circulate to the group to obtain input that will serve to refine the framework further.
2. The draft framework will be circulated for further feedback.
3. Further exploration of other themes can be conducted at a future meeting (e.g. February 2017 workshop).

Pat Kehoe closed the first day of the Roundtable by acknowledging that the conversation had been valuable to identify key issues that need to be resolved in order to move ahead.

Wetlands and Climate Change

On the second day, participants shifted their focus on how wetlands best fit into current and emerging climate change policy. James Brennan (Ducks Unlimited Canada) welcomed participants to Day 2 of the Roundtable and provided an overview of the objectives of the day. The day was comprised of two sessions, one in the morning and one in the afternoon:

- Session 1: The morning session focused on developing a better understanding of the need to build resilience to climate change in wetland conservation.
- Session 2: The afternoon session focused on developing a better understanding of the need to build resilience to climate change through wetland conservation.

The intended outcome of the day was to obtain input to inform the formulation of a statement on the role of wetlands in climate change mitigation and adaptation.

Session 1: Climate Change Impacts to Wetlands

The first session featured two presentations and a small group discussion on how to overcome barriers to including climate change considerations in conservation planning.

Presentation: Adapting Wetland Conservation Planning to be Resilient to Climate Change

To set the context, Pat Kehoe (Ducks Unlimited Canada) provided an overview of developments in the adaptation of wetland conservation planning to account for climate change since the question arose in a North American Wetlands Conservation Council (NAWCA) (Canada) workshop in 2009.

Joint ventures have had limited progress in including climate change considerations in program planning, and progress is slow in other conservation planning as well. The need to adapt wetland conservation planning to be resilient to climate change is however becoming more critical. There is a need to identify current limitations and develop a strategy to facilitate climate change adaptation in conservation planning.

Quantifying greenhouse gas (GHG) benefits could be a good first step, although this may not be enough when climate change models predict significant impact to conservation infrastructure.

Presentation: Observed and Predicted Climate Change Impacts on Wetlands

Nancy Kingsbury and Lori White (Environment and Climate Change Canada (ECCC)) highlighted the absence of data on the impacts of climate change on wetlands and indicated that climate change has been a central focus of research at ECCC.

Climate change poses a conservation challenge because the highest wetland densities occur where effects of climate change are predicted to be most severe. Lori spoke to work being done at ECCC to map out wetlands and changes in their distribution and quality, work being done in partnership with the Canada Centre for Remote Sensing and the U.S. Fish and Wildlife Service. She discussed project objectives and provided an overview of pilot project sites.

Regional examples of how climate change is impacting various wetlands across Canada were presented. An overview of future research at ECCC was also presented – the department is preparing for the launch of a Canadian satellite that will be used as a tool to monitor wetlands in an operational capacity. Suggestions and comments on what should be included in the coverage are welcome. For information, contact **nancy.kingsbury@canada.ca** or **lori.white2@canada.ca**

In closing, it was noted that collaboration moving forward will be very important.

Small Group Discussions

Following the presentations, participants engaged in small group discussions on how to overcome barriers to including climate change considerations in conservation planning. The following questions guided the discussions:

1. How much progress has been made since 2009?
2. How do we move forward and make progress in this area?

At the end of their discussions, participants drew together the main threads of their discussion for report back in plenary. A summary of the feedback that emerged follows. Workshop participants agreed some progress has been made since 2009 in the following areas:

- There have been advancements in our knowledge base around impacts to wetlands.
- A body of knowledge was developed around carbon storage and regional modeling.
- We've started to correlate wetland types to how much carbon they sequester.
- Remote sensing capabilities have improved and pricing has come down, making the technology more accessible.
- Data collection is happening and studies are still ongoing, but knowledge translation and integration into conservation planning has yet to occur.

The following additional comments were offered:

- There is a lot of interest among the provinces (although the focus is on technological changes rather than habitat conservation).
- Municipalities likely have the strongest focus on conservation from an adaptation perspective.
- From a business risk management perspective, the topic has become a preoccupation for industry.
- The international community has made some progress in terms of recognizing the need for an increased focus on ecosystems.

A number of insights, suggestions and ideas were offered on how to move forward and make progress in this area. From a science perspective, the following suggestions were made:

- Invest in inventory to help better inform our management direction – we don't know what we're losing if we don't have a baseline.
- Develop a better understanding of the economic trade-offs of wetland restoration.
- Conduct more research on how green up affects carbon capture.
- Gather more data on carbon sequestration and wetlands.
- Get the science into a useable format.

From a policy perspective:

- Policies are being outpaced by emerging needs presented by climate change. There is a strong sentiment that existing regulations need to be redeveloped in light of climate change.
- The focus of government needs to expand beyond agriculture, forest and human infrastructure towards green infrastructure and conservation issues.

From an implementation perspective:

- Available knowledge is not being transferred to those who could use it in land-use planning. There are some good examples of knowledge translation in the oil & gas and forest sectors that we could learn from.
- More sharing of LiDAR and other remote sensing data is needed with those who need to develop adaptation plans.
- Carbon accounting may be a good "hook" to encourage the maintenance of wetlands.
- Need user-friendly tools, data in accessible format, and multi-stakeholder models for adaptation.

Other views that were raised:

- Stronger linkages are needed between science, policy and implementation. One suggestion was to establish an interdisciplinary working group to help drive the path and priorities across the three.
- There is an opportunity to re-frame the question to be more outcome-oriented: Where do we use wetlands to meet our socio economic and biodiversity needs? Flood control is one aspect that could be focused on in the future.
- There is a need to integrate species migration and ecosystem changes into conservation planning.

Session 2: Wetlands for Climate Change Mitigation and Adaptation

The afternoon session featured three context-setting presentations and a group discussion on building resilience to climate change through wetland conservation.

Presentation: The Role of Wetlands in Climate Change Adaptation

Dr. Pascal Badiou, from the Institute for Water and Wetland Research, talked about the potential use of wetland conservation and restoration in mitigating climate change and highlighted research outcomes in this area. In summary:

- Wetlands are important global carbons stores but also important sources of GHGs.
- Studies suggest no natural wetlands older than 250 years can be considered net sources of radiative forcing.
- Wetland restoration can help mitigate climate change but the timelines for doing so vary depending on the action taken and the management applied.
- There is a strong consensus on the negative effects of wetland conversion, particularly for agriculture, on radiative forcing.
- Wetlands conservation and restoration can help society adapt to the effects of climate change by buffering against floods, droughts, and by mitigating against non-point source pollution.

Presentation: Status of Wetland Reporting, Improvement Planning and IPCC Wetlands Supplement

Shari Hayne (Environment and Climate Change Canada) provided an overview of international climate change agreements, Canada's obligation to the UNFCC to maintain a national GHG inventory (the national GHG inventory report can be accessed here) and provided an overview of the most recent IPCC methodology and guidelines for reporting, as well as the IPCC wetlands supplement. Shari can be contacted at **Shari.hayne@canada.ca.** In terms of measuring the impacts of wetland management, she noted the following conclusions:

- Sustainable management of Canadian wetlands is essential to maintaining one of the world's largest carbon stocks.
- Important knowledge gaps exist.
- In terms of developing a Canadian approach, we need to ensure we are consistent with IPCC guidance but that we incorporate the latest science, management practices and activity data.
- The aim is to present a clear story of the state of wetlands and wetland management.

Presentation: Green Infrastructure in Provinces and Municipalities

Roy Brooke, director of municipal, national capital initiative at Brooke and Associates, presented an overview of the Municipal Natural Capital initiative. Key points raised are summarized below:

- Municipalities play a vital role in protecting and preserving natural capital and ecosystem services, and providing citizens with core services at acceptable costs.
- Several municipalities are pioneering strategies to conserve and enhance natural capital by measuring and managing natural capital within existing asset and financial management business processes. In doing so, they reduce risk, capital and operating expenses, and improve positive climate change resilience.
- The goal of the Municipal Natural Capital initiative is to support municipalities in recognizing and acting upon the contributions natural systems make to communities, using municipal asset management business processes.
- A methodology and screening tool tested by a pilot community in Gibsons, B.C., was presented to the group. The initiative has generated a lot of interest amongst other municipalities.

For more information, background documents can be accessed at **tinyurl.com/hbmffc9** and Roy can be contacted at **roy@brookeandassociates.com**. Workshop participants were encouraged to sign up for the mailing list to stay abreast of developments.

Group Discussion

A group discussion took place on building resilience to climate change through wetland conservation. The following questions guided the discussions:

1. What role can wetlands play in climate change mitigation and adaptation?
2. How can we incentivise the use of wetlands as part of green infrastructure investments and a low-carbon economy?
3. Who should provide leadership?
4. What information gaps exist?

The feedback that emerged has been summarized below.

Role of wetlands in climate change mitigation/adaptation

Participants indicated wetlands provide a wealth of ecosystem services and play a role in climate change mitigation and adaptation. They felt messaging around this needs to be communicated to raise awareness around the role wetlands can play, and to encourage municipalities to start thinking of wetlands as green infrastructure and as an affordable way of investing into infrastructure.

Incentivising the use of wetlands as part of green infrastructure investments and a low-carbon economy

- There are immediate and future opportunities to explore enabling activities.
- It will be important to clearly articulate the business case and demonstrate return on investment of maintaining existing wetlands as green infrastructure. More economic analysis is needed to determine the value of having wetlands from an infrastructure standpoint and to build that business case. A shift in the conversation is also needed to quantify the cost of losing the ecosystem goods and services wetlands provide for the community. A modeling tool to help municipalities figure out where they can get the biggest return on investment would be useful.
- More awareness is needed of government funding available for green infrastructure initiatives through the Federation of Canadian Municipalities' Green Municipal Fund.
- We need to raise awareness among landowners about the potential benefits of wetlands (and impacts of draining them) so they can make informed business decisions. Ultimately, the desired outcome is to get landowners to take action. As such, a better understanding of the drivers and motivations behind their behaviours is needed to design programs and incentives to influence those behaviours.
- Farmers experience a direct cost in the maintenance of wetlands because they lose production value from that agricultural land, yet all Canadians benefit from it. We need to create a market for the ecosystem services wetlands provide and ensure farmers and landowners are not bearing the cost of maintaining them alone. A carbon-trade program could help tilt the cost-benefit ratio in their favour.
- Leading cities across North America are doing economic modeling around green infrastructure to demonstrate that the net benefits of investing in green infrastructure (e.g. job creation, energy savings) far outweigh the costs. One example provided was the City of Philadelphia's leading-edge green stormwater infrastructure. These types of initiatives are great examples to model after. To note, Sustainable Prosperity (SP), a national green economy think tank, is preparing a report on this topic that can eventually be shared with attendees of this workshop.
- Pat Kehoe (Ducks Unlimited Canada) will circulate (for comment) an agriculture framework that helps assess and establish resilience in agricultural landscape. It outlines goals, needs, trade-offs and outcomes, and could easily be adapted for the wetlands agenda.

Leadership

With regard to who should provide leadership in moving this agenda forward, the following was noted:

- Economic market forces will drive some of the leadership.
- There must be more than one source of leadership. There needs to be leadership in ❶ policy and regulations, ❷ science (to strengthen the science community in terms of research needs) and ❸ governance.
- PT governments may be in the best position to lead this – that's where action has continued to take place (e.g. carbon markets).
- The federal government's renewed commitment to addressing climate change is a game-changer, and they will play a key role in influencing the path forward. They have both an international obligation and funding mechanisms that could encourage the provinces to do the work they need to do.
- We'll need to engage municipalities about the value of maintaining wetlands in their communities. They will play a key part in moving this agenda forward.

Information Gaps

A number of gaps were identified in terms of making progress in this area, including:

- Economic modeling to quantify/demonstrate the benefits of wetlands for municipalities and other organizations that have substantial land holdings (e.g. corporations and utilities).
- Need to quantify the carbon sequestration storage capacity of different wetlands throughout Canada, articulate that in specifics and put it out there to support any carbon offset protocol.
- Guidelines around asset management for municipalities, and a framework for how to incorporate wetlands into it (the suggestion was to leverage learnings from Gibsons and other cities in Canada).
- A central location for resources and information for those building infrastructure to inform them on the role of wetlands in climate change mitigation and adaptation (managed by a wetland policy network or association).
- Case studies, examples and models of successful knowledge transfer and dissemination initiatives.

Next Steps and Closing

Next Steps

James Brennan and Pat Kehoe thanked everyone for participating, noted the passion in the room, and offered some closing remarks. The following next steps were identified:

1. A report summarizing the workshop discussions will be prepared and distributed.
2. The steering committee will look at the key elements and priority issues that need further work and frame those discussions between now and the February workshop.

In closing, participants were encouraged to share information on discussion outcomes and progress underway.

Final Thoughts

At the end of the day, workshop participants shared the following final thoughts:

- This was a great learning opportunity and a chance to hear various perspectives on opportunities and challenges related to policy-making and addressing climate change.
- Having clear follow-up and a workshop report will be useful in helping to keep people engage.
- There's a lot of synergy with other groups and work going on out there. Key messages from these discussions need to inform other ongoing work.
- It would be useful to have smaller groups meet to move forward on specific issues (e.g. looking at what data sets might be available).
- Hearing views on where leadership is needed and where it is seen to be coming from was appreciated.
- There is strength in collaboration. If this group could collect key messages and recommendations and put those forth to the federal government, it would carry a lot of weight.
- The need for an inventory or multiple inventories for wetlands was a theme throughout the workshop.
- What's the impetus for change? We need a better story as to why wetlands are important to Canadians. The key is to link wetland conservation with climate change adaptation in a meaningful way.
- It was suggested the Insurance Bureau of Canada be engaged in these discussions moving forward. They are concerned about the impact flooding is having on their business and have assumed some leadership in the area.
- A forum is needed to dialogue with industry on what would incentivize them toward wetland conservation and climate change adaptation.

Appendix A: Participants

The meeting was facilitated by Kathleen Connelly of the Intersol Group, which was assisted by Julie Fillion (Day 1) and Mélanie Valois (Day 2) for note-taking/report writing. The following attended all or part of the meeting:

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Appendix B – No Net Loss Function Implications and Challenges

Participants engaged in a facilitated discussion, focused on three questions:

1. What would be the implications of "no net loss of wetland function"?
2. What are the challenges that would need to be addressed for its realization?
3. Could we adopt it as a collective goal?

A summary conclusion from question 3 is provided in the body of the report. Detailed notes from small group discussions in response to these questions can be found below. Highlights were shared in plenary.

Implications

Group 1

- Permanent vs. non-permanent.
- What functions are being covered?
- Debate on natural capital vs. natural processes.
- To determine implications, need to defined function, which differs between wetlands types and regions.
- Choose three functions based on current pressures from biodiversity, GHG, hydrology (Alberta) – as a starting point.
- Resources required for development of robust indicators and monitoring to ensure "no net loss".
- Restoration projects – when private land changes hand – other places have mitigation banks. Ensuring long term protection of the project.
- Determination of ratios – complexity in different ideas of valuation between regions.

Group 2

- Concern around scale (blanket objective vs. place-based outcomes).
- Function makes more sense than area for the Canadian Association of Petroleum Producers (CAPP) – technical constraints in reclaiming mining landscapes to pre-development percentages of wetlands; relative abundance/historic loss on the landscape should be considered.
- Don't have inventory to make net loss policy – can only do things that are measurable.
- CAPP – prefer flexible compensation options (non-replacement).
- CAPP – Typically 10-15 % of the reclamation surface can hydrologically support constructed wetland; remaining area would be reclaimed as upland habitat.
- Policy – drives science and forces consideration during project planning and implementation. Need to find opportunities – minimal land; need bank – accounting system due to imbalance in areas lost and opportunities to compensate.
- Is national policy appropriate- what other jurisdiction should be considering this policy?
- Difficulty on reporting on area – would be more difficult on function.
- Need legislative.
- Focus on avoidance and mitigation.
- Communication on introduction of process.

Group 3

- Need for data to understand function of each wetland.
- Requires different compensation actions.
- Higher costs for project proponents, however administrates the compensation project.
- More focus on avoidance – mitigation as a result.
- Possible less development.
- Focus on technological solutions – avoidance, mitigation.
- Prioritization and trade-offs in functions.
- More on the ground monitoring and compliance promotion and enforcement.
- Implications will be different based upon scale of not net loss evaluation.
- Need for compensation banking system to know where compensation projects could take place.
- Potential implications for insurance and comp insurance.

Anticipated Challenges

Group 1

- Identification of landscape change and pressures in each region.
- Starting from a point of loss – go to net gain?
- Location of compensation.
- Flexibility – getting bogged down in trying for perfect instead of moving on "good".
- Challenge in quality of project if proponent not responsible for long term – potential for different monitoring method to ease cost of monitoring.
- MB, AB, NB – require bands from industry and achieve objective/function recovery.
- Political will and awareness and education is needed.
- Having the data to know what to replace and housing the structure in place in order to do the proper monitoring.

Group 2

- Temporal scale – peat.
- Costs/investment to restore wetlands is too high with no net loss of area and not practical in areas with high abundance/limited historic loss. CAPP: need region specific.

Group 3

- Need a mitigation agent, conservation banking scheme where lands could be offered up – would this be based on voluntary land offerings and would supply meet demand? Need for ongoing monitoring to ensure provision of function.
- Costs for trained individuals and money.
- Supporting regulations would be required, potentially new legislation to house it.
- Inefficiency and inconsistency across jurisdictions.
- Public support and awareness for this approach.
- Political will.
- Rapid assessment tools to evaluate wetlands to be lost and replacement. Inventory and trend modelling.
- Requirements for different types of wetlands differ, and for different type of project.
- At what point does the net loss start?
- Incentives, awareness and approach need to be addressed upon launch.
- Municipalities' role.
- Clarity for all jurisdictions and industries/government on how to engage the process.

Collective Goal of No Net Loss

Group 1

- Yes but how to implement in practical terms will be a challenge.
- In principle yes – to encourage others to aim for it.

Group 2

- No – goals need to be set regionally – there is a different context (e.g. Boreal, Alberta North and Alberta South – Alberta is accepting loss of function/area; Alberta South no net loss).
- Cannot impact functionality of system. CAPP prefers flexibility in approaches (e.g. culvert remediation, research, education programs).
- Ecological watershed integrity – regional watershed approach.
- Consider economic, social and environmental aspects – no loss.
- Areas where no net loss would be supported.

Group 3

- For selective wetlands/areas of province, in some provinces all land perhaps.
- "Significant wetlands".
- Need to address horizontal inequity.
- Could be defined as wetlands areas of classes.

CANADIAN WETLAND ROUNDTABLE

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