

Setting Regional Wetland Management Objectives in Alberta

Phase 2:

Workshop Proceedings and Expert Recommendations

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1.0 Introduction

The initial interest in the topic of setting regional wetland management objectives originated when the Government of Alberta (GoA) identified the topic as important as it proceeded with initiatives such as the Wetland Policy and regional planning under the Land Use Framework (LUF). The term 'wetland management objective' had been used in documents, such as the terms of reference for LUF Regional Plans, but had not been defined. There was also recognition that wetlands management needed to evolve from a case-by-case wetlands approvals context, to one that was able to plan for and manage wetland functions on the landscape. It was acknowledged that setting regional wetland management objectives could play a role in the planning process to help accomplish this.

Phase 1 of the Setting Regional Wetland Management Objectives project was commissioned by NAWMP in order to inform, what was at the time, a vague topic. This was accomplished through a report by Liliium Consulting, entitled Setting Regional Wetland Management Objectives, Phase 1: Alberta Context, Knowledge Leader Opinions and Jurisdictional Review, that included:

- a scan of pertinent Alberta policies and planning initiatives that referenced or had the potential to include wetland objectives,
- a jurisdictional review of North American examples employing wetland objectives, and
- a summary of interviews with individuals known to possess knowledge pertinent to the topic of regional wetland management objectives (referred to as Knowledge Leaders in the report).

When the results of the report were presented in Edmonton on May 27, 2015, it became apparent that there was broad interest in continuing the project by informing the details and utility of setting regional wetland management objectives in Alberta. One of the key recommendations was to assess the utility of wetland objectives in relation to three key areas: regional (LUF) planning, watershed (Watershed Planning and Advisory Councils [WPAC]) planning and municipal planning in Alberta.

The North American Waterfowl Management Plan (NAWMP) partnership has continued to bring the work on regional wetland management objectives to the forefront by organizing a workshop for various stakeholder groups interested in pursuing the topic. Liliium Consulting was commissioned to assist with organizing the workshop and to write this proceedings report to document the discussions at the workshop and subsequent discussions with experts following the workshop.

This report provides a summary of these discussions, and the content represents the opinions of the workshop participants and experts, and not those of Liliium Consulting.

2.0 Workshop Details

On February 23, 2016, the Alberta NAWMP partnership, in conjunction with Liliium Consulting, hosted a workshop in Leduc, Alberta, for the second phase of the Setting Regional Wetland Management Objectives in Alberta project. There were 36 people in attendance for the event, which was three hours in length. Those in attendance included representatives from the Government of Alberta, municipalities, Watershed Planning and Advisory Councils, Non-governmental Organizations, the Agricultural Sector, and Academia.

3.0 Workshop Objectives

In order to assess the utility of setting regional wetland management objectives in Alberta, a workshop was created to gather knowledgeable individuals from regional (LUF), watershed (WPAC) and municipal backgrounds in order to gain their expertise and guidance around setting wetland objectives. This workshop was to strengthen the case for setting regional wetland management objectives by identifying specific opportunities for regional wetland management objectives within Alberta's LUF Regional Plans and Environmental Frameworks, Municipal Plans and WPAC Plans, all while allowing key relationships across sectors to form in a collaborative atmosphere. The workshop also examined the ability of models to support wetland planning needs through the establishment of regional wetland management objectives.

4.0 Workshop Discussion Summaries

All workshop participants were given an overview presentation on the findings of the phase 1 project in order to understand the background of the project, and understand what benefits and challenges for setting regional wetland management objectives had already been discussed by Knowledge Leaders in prior interviews.

Phase 1 Knowledge Leader interviews had identified that it was difficult to answer questions surrounding details for implementing regional wetland management objectives, when the term itself had not yet been defined.

In order to be able to proceed with detailed discussions, the workshop hosts chose to create a working definition of the term 'wetland objective' in order to allow

participants to have a better sense of what was being discussed. The working definition of wetland objective was presented as:

'A specific and measurable target to identify wetland quantity, quality and distribution necessary to achieve ecosystem service outcomes.'

There were no recommendations by participants of the workshop to change this working definition.

4.1 Break-out Group Summaries

Once the workshop participants were briefed on the findings of the first phase of the Setting Regional Wetland Management Objectives in Alberta project, they were asked to split into their break-out groups. Most individuals were placed into the regional (LUF), municipal or watershed (WPAC) planning break-out groups according to their current work's relevancy to each category, while a few other individuals were placed in each group to allow for synergistic opportunities between planning areas.

Each break-out group was asked the same set of questions. The first three questions were asked to each group as a means of focusing in on opportunities in their specific realm (regional, municipal or watershed planning). These questions were:

- 1. Why would setting regional wetland management objectives be important to your group and what could it accomplish?*
- 2. Where would regional wetland management objectives best fit into to your group's planning or policy initiatives (specific plans/ processes)? Where would it not fit in?*
- 3. Who would the key players in your group be for setting regional wetland management objectives (roles and individuals)?*

The final two questions were asked in order to identify potential collaborations between the three realms. These questions were:

- 4. Are there connections between setting wetland management objectives for provincial/regional, municipal and watershed plans? Are there potential overlaps and/or opportunities for complementary approaches?*
- 5. If connections exist between wetland management objectives for provincial/regional, municipal and watershed plans, how do we facilitate complementary approaches and avoid potential overlap?*

Once the groups were asked the collaborative questions, it became apparent that the two questions should have been combined into one question, as each group

answered both questions within the same discussion. The summaries below reflect that questions 4 and 5 were answered together.

The following sections are summaries of what was discussed in each of the break-out groups.

4.1.1 Regional Planning (LUF) Break-out Group Summary

1. *Why would setting regional wetland management objectives be important to your group and what could it accomplish?*

The regional planning group came up with a host of ideas as to why setting regional wetland management objectives would be important for planning within a regional context, particularly that of the provincial LUF. Participants in this break-out group felt that setting regional wetland management objectives could serve to help address objectives and outcomes already outlined in other parts of the regional planning process, as well as objectives and mandates in other provincial policies and initiatives. It was also brought forward that regional wetland management objectives could allow the GoA to better use existing management tools such as the *Alberta Land Stewardship Act*, conservation offsets, wetland auctions, etc.

Additionally, the group felt that regional wetland management objectives could fill in the gaps that other plans, policies and initiatives have left with regards to wetland management and planning. Participants of the regional planning group recognized that setting regional wetland management objectives could fill the following gaps:

- up-front planning for wetland conservation,
- planning for wetlands that are not part of the wetland approvals process, and
- retaining specific values and ecosystem services provided by wetlands that are not addressed in the Wetland Policy or other initiatives.

Setting regional wetland management objectives was recognized as an opportunity to create the certainty needed for wetland planning, and could place the current status of wetlands in Alberta on a continuum. It was also mentioned as a potential means to communicate wetland thresholds within the cumulative effects assessment process. Setting regional wetland management objectives was noted as having the ability to assist in the choice of wetland planning and conservation strategies going forward, and a means of choosing best actors to put those strategies in place.

Lastly, participants brought up that setting regional wetland management objectives could lead to better integration between various governmental jurisdictions in Alberta.

2. *Where would regional wetland management objectives best fit into to your group's planning or policy initiatives (specific plans/ processes)? Where would it not fit in?*

The regional planning group had a clear preference for a nested approach to incorporating regional wetland management objectives. This nested approach entailed the following options:

- broader objectives could be written into the Regional Plans with more specific objectives in the Environmental Management Frameworks,
- the process for creating wetland objectives could be clearly outlined in the Regional Plans and the objectives could be clearly stated in the Environmental Management Frameworks, or
- the regional wetland management objectives could be written into the Regional Plans, and the tools to action the objectives could be incorporated into the Environmental Management Frameworks.

The concept of having a Wetland Management Framework was also mentioned. There were differences of opinion amongst participants as to whether or not this would be a viable idea. Some participants felt that this was a great idea, particularly in regions where wetland management is of particular concern (e.g. where wetland retention or restoration could be used as a tool for flood mitigation). A Wetland Management Framework was noted as a means of attempting to ensure all ecosystem services provided by wetlands would be accounted for (even if those particular ecosystem services do not fall under the other existing Environmental Management Frameworks). Others were not keen on the idea of Wetland Management Frameworks, stating that it would be inefficient to have too many Environmental Management Frameworks, particularly when the ecosystem services provided by wetlands could easily fit under existing frameworks.

3. *Who would the key players in your group be for setting regional wetland management objectives (roles and individuals)?*

Specific participants in the group self-identified as being ideal candidates to bring the concept of setting regional wetland management objectives to fruition. The regional planning break-out group also brought forward many other important roles and types of stakeholder groups that would be key for setting regional wetland objectives. The idea of having a similar group to those who attended the February 23 workshop convene to formulate regional wetland management objectives was well received by participants. It was felt that the workshop group had an excellent diversity with regard to stakeholder types, and

that these workshop participants were also very knowledgeable in terms of wetlands and wetland management in Alberta.

One particular participant brought forward the concept of using the Multi-Stakeholder Organizations (MSOs) formed under the LUF planning process to either formulate, or refine and integrate regional wetland management objectives into the regional planning process. The concept of MSOs was not well known by many of the participants, as the creation of MSOs has not been released publicly, however many felt that while they could provide input on the objectives, they would not likely have the wetland expertise needed to draft the wetland objectives.

The discussion for the question of who should be responsible for setting regional wetland objectives then split into two categories, key groups internally within the GoA, and external groups stakeholder groups that would also be vital to the process. The participants felt that the following internal GoA roles would be important for setting regional wetland management objectives:

- Biologists,
- Planners,
- Limnologists,
- Policy staff, and
- Technical staff.

Participants noted that these roles would be gathered from three main Ministries within the GoA:

- Alberta Environment and Parks,
- Agriculture and Forestry, and
- Municipal Affairs,

The external stakeholder groups that were also brought up by group participants were:

- academia,
- municipalities, and
- First Nations.

The group finished the discussion by noting the potential for Regional Plans to adopt regional wetland management objectives from WPACs, if they were determined to be of good quality and fit well with the rest of the regional planning process.

4. *Are there connections between setting wetland management objectives for provincial/regional, municipal and watershed plans? Are there potential overlaps and/or opportunities for complementary approaches?*
5. *If connections exist between wetland management objectives for provincial/regional, municipal and watershed plans, how do we facilitate complementary approaches and avoid potential overlap?*

As mentioned above, questions 4 and 5 were combined when discussed with the break-out groups.

The regional planning break-out group recognized that there is currently overlap in provincial and municipal decision-making regarding wetlands. It was noted that there is a need to change this area of overlap from one of conflict, into an area of alignment, and that this would also be where WPAC groups could enter the collaboration.

The participants of the regional planning break-out group felt that municipal and watershed (WPAC) groups were vital to the process of grassroots work for engaging various stakeholders (particularly the public) in order to get them engaged in the regional wetland management objective process. Engaging other stakeholder groups and the public was noted as being important, as it would have the ability to raise the recognition of regional wetland management objectives and encourage buy-in across a wide range of stakeholders and the public.

The concept of having partnerships between the regional, municipal and watershed level planning groups was deemed important for setting regional wetland management objectives, and that having representatives sit down together to formulate the objectives was recognized as a necessary part of the process.

Municipal Area Structure Plans were mentioned as important documents for setting regional wetland management objectives, however there was some uncertainty as to how that would fit in with initiatives formulated through the LUF. However, participants noted that the role of municipalities in the regional planning process as being straightforward, they are to simply align with provincial direction provided through the LUF and Regional Plans.

4.1.2 Municipal Planning Break-out Group Summary

1. *Why would setting regional wetland management objectives be important to your group and what could it accomplish?*

The municipal planning break-out group felt that setting regional wetland management objectives could promote consistency in wetland decision-making across municipalities. The focus on the ‘regional’ aspect of this planning was observed to be of importance, due to its ability to help overcome challenges around lack of consistency, expertise and resources with regard to wetland planning in certain municipalities.

Setting regional wetland management objectives was also noted to be beneficial to landscape-based planning, with the caveat that the objectives would need to be practically based toward ecosystem service outcomes. Regional wetland management objectives were also noted as having the potential to be beneficial to the agriculture community, if again they were tied to ecosystem service outcomes, as well as to existing best management practice programs.

2. *Where would regional wetland management objectives best fit into to your group’s planning or policy initiatives (specific plans/ processes)? Where would it not fit in?*

Participants in the municipal planning break-out group were not convinced that regional wetland objectives belonged in municipal plans or initiatives. Many in this group felt that regional wetland management objectives would be more well suited in the LUF regional plans, or in a larger bioregional plan such as a watershed plan. The scale of municipalities was noted as being an “ill fit”, and due to the nature of wetlands, many participants felt they would be better placed at a watershed scale.

However if regional wetland management objectives were to be included in municipal planning, participants noted that Municipal Development Plans (MDPs) could be considered, as they require public and political support. Participants did however note that there was a need to recognize that MDPs are only required if the municipality meets the threshold of having a population over 3500 people). Other municipal options included:

- Inter-municipal Development Plans,
- Area Structure Plans,
- Municipal and Environmental Reserves,
- Area Redevelopment Plans, and

- Inter-municipal agreements.

By-laws were also mentioned as a place-holder for regional wetland management objectives, however there were concerns from participants relating to unintended consequences of this idea.

In addition, the Beaverhills Initiative was brought forward as an example of a landscape-based bioregional plan, created by municipalities, that serves as a resource for its associated MDPs.

3. Who would the key players in your group be for setting regional wetland management objectives (roles and individuals)?

The municipal planning break-out group strongly favoured partnerships for setting regional wetland objectives. The partnerships mentioned were inter-municipal partnerships as well as municipalities partnering with other types of stakeholder groups in order to set regional wetland management objectives successfully.

From a municipal standpoint, the group felt that the following people would be important to include when developing a team for setting regional wetland management objectives:

- community leaders,
- the general public,
- politicians,
- people championing the concept of regional wetland management objectives,
- municipal operations staff, and
- administrative staff.

This group recognized the need for buy-in at the grassroots level in order to make the concept of implementing regional wetland management objectives viable. It was also noted that it would be important that the process and the objectives themselves align with pertinent policies.

4. *Are there connections between setting wetland management objectives for provincial/regional, municipal and watershed plans? Are there potential overlaps and/or opportunities for complementary approaches?*
5. *If connections exist between wetland management objectives for provincial/regional, municipal and watershed plans, how do we facilitate complementary approaches and avoid potential overlap?*

The municipal planning break-out group also answered question 4 and 5 in one discussion. There was a strong preference within the group for a nested approach to setting regional wetland management objectives, and the need for a planning hierarchy and order was noted. The concept of having a regional role and a municipal role was brought forward, however there was an emphasis put on the fact that these regional and municipal roles would need to be clarified, particularly since there was concern around how to align Municipal and Regional Plans. The municipal planning group mentioned that there was a lot of confusion around how municipalities could take action on wetland planning, since wetlands are perceived as a provincial responsibility under the *Water Act*.

The idea of having a top-down approach to setting regional wetland objectives was brought forward, with the caveat that the process would also need to have a grassroots component as well. One idea was to have the regional wetland management objectives at the LUF level be quite broad, so that details could be incorporated into other plans at a finer scale.

It was important to the municipal planning break-out group that education and awareness programs precede any work on regional wetland management objectives, and to have ecosystem service concepts framed in a way that they could tell the story of wetland management in a practical manner for a municipal audience, (i.e. using terms such as climate resiliency, flood and drought management, infrastructure plans and economics as starting points). It was also noted that leaving room for trade-offs with cost/benefit comparisons would also be important to this particular audience.

4.1.3 Watershed (WPAC) Break-out Group Summary

1. *Why would setting regional wetland management objectives be important to your group and what could it accomplish?*

The watershed planning group was concerned that where scarcity of wetlands already exists, further loss could have “dire consequences”, and they felt that setting regional wetland management objectives could help to address wetland related issues such as scarcity, at a regional scale. Some other examples of wetland related issues brought forward by the group included flood, drought and biodiversity issues. The group felt it was important to examine these types of wetland issues at a watershed scale. Setting regional wetland management objectives was recognized

as a potential means of highlighting wetland functions to help improve decision-making for avoidance of wetland loss, and also recognizing regional differences in order to place higher value on particular wetland functions. Setting regional wetland management objectives was also recognized as a tool for setting benchmarks and baselines for wetlands in the province.

The watershed planning group thought that regional wetland management objectives could help eliminate uncertainty for landowners about what wetlands are and increase their understanding as to why wetland conservation is important, all within a regional context.

The watershed planning break-out group also noted that setting regional wetland management objectives could provide an opportunity to develop better partnerships for wetland planning in the province.

2. *Where would regional wetland management objectives best fit into to your group's planning or policy initiatives (specific plans/ processes)? Where would it not fit in?*

The watershed planning break-out group felt that the following key points should be considered when deciding where to fit regional wetland management objectives:

- where objectives would have the most uptake opportunity and impact,
- where they could be integrated with education and outreach opportunities in order to promote the objectives, and
- where objectives could be set to mediate the highest consequences of wetland loss.

Placing regional wetland management objectives into WPAC Watershed Management Plans was brought forward as an idea, as it was mentioned that these objectives could be very effective if placed within a watershed context.

3. *Who would the key players in your group be for setting regional wetland management objectives (roles and individuals)?*

The watershed planning break-out group, felt that WPACs have a lot of potential to become leaders in the setting of regional wetland management objectives, specifically because they bring various stakeholder groups together. This break-out group had participants that were of the opinion that the GoA needs to play an important leadership role for setting regional wetland management objectives, and that broad-scale GoA wetland objectives could then filter down to the WPACs.

Other stakeholder groups that were brought forward as being important to include in setting regional wetland management objectives were:

- drainage districts,
- individuals involved with agricultural services,
- individuals with grazing leases,
- community land users, and
- developers (in their potential capacity as community builders).

Participants in the watershed planning break-out group mentioned the importance of having early adopters of a program for setting regional wetland management objectives, in order to provide examples and help with potential success.

- 4. Are there connections between setting wetland management objectives for provincial/regional, municipal and watershed plans? Are there potential overlaps and/or opportunities for complementary approaches?*
- 5. If connections exist between wetland management objectives for provincial/regional, municipal and watershed plans, how do we facilitate complementary approaches and avoid potential overlap?*

The discussion that incorporated the answers to both questions 4 and 5 for the watershed planning group emphasized the need for strong partnerships between WPACs, municipalities and the GoA. This was premised however with the need to have the right people at the table, specifically government employees that have decision-making capabilities, and having effective participation from all stakeholder groups involved.

This group felt that the direction for setting regional wetland management objectives should come from the GoA, and that it would be imperative that the needs and roles of the WPACs within the process be clarified so that WPAC groups could be utilized and not set aside.

The use of existing wetland benchmarks to help set regional wetland management objectives was also noted as important within this discussion.

4.2 Modelling Discussion Summary

The second portion of the February 23 workshop was to explore the concept of using models as tools to set or support regional wetland management objectives. This portion of the workshop was introduced by outlining the reasons that we need models when making resource-based decisions. The three reasons outlined by the session facilitator were as follows:

- wetlands are ecologically complex systems, models help us organize information and better understand these complex systems;
- models help us to be explicit about what we want out of our system, consider what we want for outputs and consider desired future conditions; and
- models help us make predictions and decide if we like the potential future conditions or not.

The workshop participants were then asked to answer the following question:

What questions are we trying to answer with models when setting regional wetland management objectives?

The participants came up with a diverse list of uses for models in the context of setting regional wetland management objectives. The following is a list of responses from workshop participants:

- determine where the priority areas are for wetland conservation and restoration,
- identify areas to work in that will allow for objectives to be reached,
- determine the point at which we have achieved ecosystem outcomes,
- examine how wetland loss affects various ecosystem goods and services,
- test assumptions about the objective- setting system,
- account for social and economic implications in the process,
- explore how human responses to particular rules will affect various scenarios,
- identify key policy levers and ascertain if goals can be reached with conservation areas,

- track changes in the landscape over time with regard to water resources and better understand the impact we've had on wetlands through historical loss,
- determine how to invest strategically and identify trade-offs,
- choose the nature of our decision-making responses, be it retention or restoration,
- recognize where the greatest result has occurred and plan where to invest resources accordingly, and
- add rigour to the objectives themselves and use this rigour to lend credibility to the process.

These uses relate to various parts of the objective-setting process, from up-front planning, to information gathering, strategy planning, implementation, evaluation and reporting.

5.0 Recommendations from Wetland Management Experts

Following the February 23 workshop, various experts were consulted to provide additional commentary to some of the specific issues raised at the workshop, and some of the challenges that were realized through the break-out group discussions. Experts were asked to comment on general findings of the break-out group sessions, next steps for incorporating regional wetland management objectives and to tie in how modelling could be incorporated into setting the objectives.

5.1. Recommendations for Setting Regional Wetland Management Objectives

A group of experts were gathered via conference call following the workshop, in order to provide feedback on the insights gained from the workshop participants, and to have a focused conversation on the feasibility of certain ideas and specific next steps. Experts were drawn from the following groups: municipalities, GoA, agricultural interests, WPACs, the Land Use Secretariat and Regional Planners.

These experts were given summaries of the discussions from each of the break-out groups at the workshop and asked to weigh-in as to whether or not they agreed or disagreed with the findings of the break-out groups, and asked for any additions to the topics at hand. Next steps were also discussed.

5.1.1 Leadership and Roles in the Regional Wetland Management Process

One of the key points that came out of the workshop break-out group discussions was a need for clarification of roles in regard to setting regional wetland

management objectives and also for wetland planning in general. This point was reiterated on the call with the experts, as the idea of assigning authority for the regional wetland management objectives was brought up as a means of providing accountability. The idea was then that the group with the authority could clarify roles of other stakeholders involved in the process.

The conference call discussion included an acknowledgement by experts that there is a need for leadership due to the fact that there has been political and cultural inertia around wetland management. The experts expressed that there is a need for leadership on the wetland planning front in order to change the fact that wetlands have not been given priority in the realm of resource decision-making in the past.

It was noted by one expert that someone (individual/group) would need to step up and play the leadership role for the process of setting regional wetland management objectives. The most well positioned group to provide leadership was felt to be the GoA, who would then in turn be accountable for all associated outcomes at the end of the day. A few experts also noted that NAWMP could continue to play a leadership role as the concept of regional wetland management objectives is further explored.

The need for partnerships was echoed across all groups during the workshop, and therefore was brought up as a topic for the follow-up conference call. The idea of partnerships was acknowledged as good by experts, but was tempered with many comments by various experts that partnerships may not be appropriate or feasible in all aspects of the process for setting regional wetland management objectives. It was thought that perhaps 'relationships' might be a better means of collaborating, as they would not be as binding as partnerships.

5.1.2 Approach and Tools for Setting Regional Wetland Management Objectives

Experts on the conference call acknowledged that there are many different potential means of incorporating regional wetland management objectives into frameworks or sub-regional plans. The nested approach that was popular with break-out groups at the workshop, was also preferred by experts. Within the discussion on a nested approach was also the acknowledgement that there is a need for both top-down and bottom-up (grassroots) direction in order for setting regional wetland management objectives to be successful.

Multiple experts felt that engaging stakeholders to ask how they would like to be involved in the process of setting regional wetland management objectives would be a good approach to begin the process of grassroots involvement. Another possible tool for engaging stakeholders brought up by numerous experts, was that of the Priority Areas Mapping process under the Watershed Resiliency and Restoration Program (WRRP) Prioritization Project. This process was identified as an existing tool that could be used for helping to set regional wetland management objectives, and was seen as an exercise that could stimulate conversations about prioritization

and wetland planning with stakeholders. It was also noted that this tool could serve as the middle-ground between top-down and grassroots initiatives.

An expert brought forward the importance of involvement from the agricultural sector in the process of setting regional wetland management objectives. It was noted that the agricultural sector would like to be more involved with wetland issues, and engaging them on the setting of regional wetland management objectives would be an opportunity to deal with some of the wetland management challenges that have been prevalent on private land for many years. The unique agricultural perspective would need to be understood in order to engage private landowners in the initiatives for wetland planning such as setting regional wetland management objectives.

5.1.3 Possible Next Steps

Succinct next steps discussed by experts on the conference call were as follows:

- identify authority and accountability,
- provide high-level objectives in order to allow grassroots work to be brought in,
- decide how a ‘nested approach’ would work,
- scope out tools to create objectives,
- host brainstorming sessions with focused expert groups to determine what a regional wetland management objective could look like, and
- identify areas where GoA, municipalities and WPACs can work with private landowners to restore wetlands.

The experts on the call recognized that with various approaches (top-down and bottom-up), and many different groups to involve, it would be a good idea to retain a small group of experts to determine next steps for setting regional wetland management objectives and retain consistency in the process.

5.1.4 Opinions on Including Modelling for Setting Regional Wetland Management Objectives

The regional wetland management objective experts weighed in on the idea of using modelling to set or support regional wetland management objectives pursuant to the discussion on modelling at the February 23 workshop. The overall opinion from experts was that there is a potential place for modelling in the process of setting

regional wetland management objectives, however it should be more of a support tool rather than a central piece.

Experts felt that if models were used they could help bring awareness to the public on how wetlands on a land base can change over time, could help decide issues of risk management for wetlands, and could be used for prioritization of wetland areas to move forward with setting regional wetland management objectives.

There was concern by experts that if we wait until wetland inventory data and set up for models are ideal, we could miss an opportunity to begin using regional wetland management objectives as a wetland planning tool sooner than later. In other words, there was not a large uptake from the group to have models drive the process of setting regional wetland management objectives from the starting point.

The following are considerations that the experts thought should be taken into account if modelling is used for setting regional wetland management objectives:

- ensure that any modelling processes used could be replicated in all applicable jurisdictions, taking into account resources;
- create very specific questions for the model(s) to answer and ensure that a tight geographic boundary is identified;
- have accurate data and wetland inventory to inform model results;
- ensure that data being collected by model(s) is objective and that limitations of model(s) are recognized; and
- ensure that modelling is part of a bigger process, including ground-truthing, and is not be used as a substitution for monitoring.

So in summary, experts from the conference call were of the opinion that modelling could have a time and place in the process of setting regional wetland management objectives, but should not be used with poor quality data, or if it would impede the start of wetland planning through the use of setting regional wetland management objectives.

5.2 Recommendations by Technical Experts for Utilizing Models when Setting Regional Wetland Management Objectives

In addition to the regional wetland management objective experts consulted via conference call, two technical modelling experts were also consulted. These experts were chosen based on their backgrounds, which involved extensive use of models as well as an understanding of resource decision-making processes, in order to gain a

different type of advice on proceeding with the use of models for setting regional wetland management objectives. These technical experts were consulted individually, by phone, subsequent to the February 23 workshop.

5.2.1 Initial steps for using models

Technical experts were asked their views on an ideal starting point for incorporating models into the process of setting regional wetland management objectives.

Both technical experts mentioned the idea of prioritization as an excellent starting point. The technical experts felt that models could help prioritize wetlands or wetland locations to be the first for planning or conservation through regional wetland management objectives. Current models could provide this type of information, as long as the data input could be verified as being high quality and comprehensive enough to provide the answers. The technical experts noted that this prioritization could be done by ranking or scoring wetlands or wetland areas, thereby providing a starting point for wetland planning based on wetlands or wetland areas with the highest need.

One technical expert mentioned that the task of setting priorities would need to include factors that have a more qualitative focus, such as wetland condition, class, location, endangered species and human value to locals, and felt that most current models had the capacity to do this.

The idea of a Technical Working Group was mentioned as being important if models are to be a key tool to support setting regional wetland management objectives. This working group could be aligned with the planning groups and processes for setting regional wetland management objectives and could ensure that information requirements and capabilities for what can be done with models and current resources would be aligned from the beginning of the process.

It was also noted that WPACs have provided excellent wetland modelling work to support decision-making, and could provide examples of how to proceed with using modelling to support setting regional wetland management objectives.

5.2.2 Models as Management Tools

Technical experts noted that models have the ability to motivate and guide management actions and also have the ability to predict what consequences will follow certain management decisions. According to the technical experts, models have the ability to assess the likely environmental outcomes of specific actions, thereby showing decision-makers how certain wetland conservation and restoration actions could support specific wetland management goals. This

predictive support was mentioned as being of particular importance for any groups being tasked with setting regional wetland management objectives. Modelling could allow those creating regional wetland management objectives the ability to show the likely ways that the environment could improve by realizing the specific objectives.

The technical experts mentioned that there is an opportunity to decide what type of model would work best for the process of setting regional wetland management objectives. Some of the potential options mentioned included:

- an optimization model to test how changes could be made in the environment to meet pre-determined objectives, and
- a management action model which could test the cause and effect of specific management actions to forecast how close we are to realizing the conditions of a pre-determined outcome after a specific number of years.

Either of these different approaches were noted as having foreseeable merit in the task of realizing the intent of setting regional wetland management objectives. In either example, modelling was mentioned as a means of allowing decision-makers to change the factors in the model (either environmental conditions or management actions) until the best match for outcome in a specified timeline could be reached. One technical expert noted how well this fit with the intent of the Regional Plans under the LUF, in particular reaching desired future states through management actions under the Environmental Frameworks.

Using models for setting regional wetland management objectives was also noted as having the ability to have stakeholders understand what the potential improvement to the environment could be. According to experts, this could allow regional wetland management objectives to become “marketable”, as players could become aware of tangible opportunities and costs associated with the objective outcomes. While stakeholders could benefit from the information derived from models, it was also noted by technical experts that the models themselves could benefit from inputting local knowledge as well, which could assist in leveraging the entire process of setting wetland management objectives in a given region.

5.3.3 Need for Clarification Ahead of the Modelling Process

The technical experts noted that there were some key considerations to take into account in the event that setting regional wetland management objectives utilized modelling. Technical experts felt it would be important to ensure:

- clearly defined questions that could be quantifiable,

- a geographical extent of interest (working scale) that would be large enough that the data available is well resolved and yet would not contain too much variability,
- a clear timeframe for evaluating environmental factors to see if regional wetland management objectives are being achieved,
- a means of including socio-economic considerations,
- direct relationships between the model input and model output, and
- an initial workload that would reflect what the team of chosen modellers can handle within their current capacity and available resources (e.g. a pilot vs. an entire province).

One technical expert framed it well when he said:

“Make sure you are matching the right model(s) to the question you are asking. Do not try to force a simple model to give you a complicated answer and don’t use a complicated model to answer a simple question.”

5.3.5 Outstanding Questions

The main outstanding question that technical experts felt would need to be examined in order to proceed with modelling for setting regional wetland management objectives, was an assessment of the current wetland inventory, in order to evaluate whether or not the data is sufficient to move forward with. If the data was found to be incapable of providing the required information, the first step in any modelling process would be to then create or improve current wetland inventory data.

6.0 Conclusion

Overall, workshop participants seemed pleased with the process and outcomes of the February 23, Phase 2 workshop. Workshop hosts received emails and follow up calls regarding the fact that participants involved in the workshop went away to consider the benefits and challenges of setting regional wetland management objectives in their current work, and how they were contemplating what next steps would be necessary to start incorporating the regional wetland management objectives in their own planning processes.

When the break-out group discussions were compiled and summarized, there were some themes that were noted to be common to all three groups. These common points were as follows:

- a desire for a nested approach to setting regional wetland management objectives, for broader frameworks or initiatives to outline goals and/or processes, and for finer scaled frameworks or initiatives to then fill in detailed action items;
- a strong desire for partnerships to create regional wetland management objectives in order to ensure collaborative decision-making; and
- a need for 'top-down' direction from a leader (potentially the GoA), while at the same time recognizing that the process should be grassroots as well (engaging the public).

A need for clarification of roles became apparent when summarizing group discussions, as municipalities and WPACs noted uncertainty as to their roles in wetland planning as well as for creating and or setting regional wetland management objectives.

Experts contacted subsequent to the workshop provided excellent recommendations for the next steps in setting regional wetland management objectives.

While the experts did not share the same enthusiasm for the concepts of partnerships and the use of modelling as the break-out group participants had, the ideas of having strong relationships with a diverse group of stakeholders remained favourable. The idea of a nested approach for setting regional wetland management objectives was unanimous, and concepts of leadership and accountability were brought forward as essential when next steps were discussed.

Technical experts spoke to the opportunities and challenges of using models for setting regional wetland objectives, and brought forward important considerations to take into account, if models are considered as viable tools in the process.

Overall there is momentum for pursuing setting regional wetland management objectives in the realms of regional, municipal and watershed planning. The consensus from experts was that at this point in the process, the next step is that leadership is required to make the concept a reality.