

Developing a Conservation Policy Research Agenda

Results of a Practitioner Survey

Main Report

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MAIN REPORT

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**Corvus Centre for
Conservation
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Applying Research
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EXECUTIVE SUMMARY

The vision of the Centre for Conservation Policy (CfCP) is a world where *public policy actively supports biodiversity*, and the CfCP's mission is *to work to ensure biodiversity is promoted through evidence-based land use, resource management, and financial decision making*.

As a new organization, the critical question was 'where to begin?' In June of 2021, the Centre for Conservation Policy created a *Research Agenda Survey*, intended as a direction-finding exercise versus an iron-clad assessment to be followed dogmatically. The goals of the *Research Agenda Survey* were to provide guidance as to which projects to pursue first, Introduce the CfCP, and provide a resource to others. The intent was to get a rough picture of the conservation community's priorities, and was not designed to be statistically-valid. This report provides a summary of the survey results.

A survey participant list was created based on existing contacts and known organizations/agencies, eventually pared down to 315 individuals representing multiple perspectives and sectors. Using an online survey software (QuestionPro) resulted in 49 completed surveys and 407 unique views of the survey, a response rate of 15.6% response rate, which exceeded expectations. Questions were framed simply as asking the likelihood that a proposed research project would be useful, and were grouped by the CfCP's four Conservation Themes. To facilitate analysis, a simple synopsis score was developed for each proposed research project. Ranking/prioritization occurred within each Theme, within each Type, and then across all Themes/Types.

Results were processed to show:

- Number of Respondents by Conservation Theme
- Priority Ranking by Conservation Theme
- Priority Ranking by Theme and Project Type
- Priority Ranking Across All Themes (Top 20 / Top 40)
- Ranking by "I Would Definitely Need This" Response

As well, the small amount of open-ended participant feedback was collected, and a stand-alone document was created giving a detailed view of participant responses to each question.

The nature of a survey such as this is that it serves better as a prioritized catalogue than as a precision compass. Its results will need to be combined with several

pragmatic factors such as funding availability, specific demands for projects, and priorities of partners. Nonetheless, it is a tremendous starting point.

As well as having a list of ranked projects, it was possible to identify preliminary impressions and emergent themes that can guide future project development and partner curation. These include:

- It was possible to discern several cross-cutting characteristics that emerged most highly;
- There was an unexpectedly high level of support for all the proposed projects;
- Projects within the *Land Use and Biodiversity* conservation theme consistently ranked highest;
- Projects from the *Guides and Training* type consistently ranked highest;
- Additional project suggestions were all very cogent and applicable; and
- The large number of unique views of the survey indicate success with regard to providing an introduction to the organization.

Moving forward, the survey results suggest that the challenges for the Centre for Conservation Policy will be:

- Identifying when a gap exists (i.e., take on new work), vs. when awareness of existing work is low (i.e., focus on knowledge dissemination), vs. when the issue is implementation (i.e., translating existing information into a form that supports policymakers);
- Being crystal clear regarding both the connotation the organization attaches to the term ‘natural infrastructure’, and the unique policy-making implications the CfCP feels the term implies;
- Working across somewhat polarized elements of the environment community, clarifying where the more media-genic climate change initiatives may be lacking with regard to biodiversity protection, and working to get existing information into the hands of policymakers in a usable form; and
- Being careful not to get too far ahead of the conservation community with regard to Finance and Biodiversity, and to perhaps emphasize education-focused projects over implementation-focused projects.

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Introduction

Conservation of biodiversity is directly and materially affected by the kinds of land use, resource management, planning, and financial decisions we collectively make. 'Public policy' – of many kinds – guides how those decisions are made.

The vision of the Centre for Conservation Policy (CfCP) is a world where *public policy actively supports biodiversity*, and the CfCP's mission is *to work to ensure biodiversity is promoted through evidence-based land use, resource management, and financial decision making*.

the critical question was 'where to begin?' Or perhaps that is better phrased as 'where to pick up?', or 'where to help?'

As a new organization, the critical question was 'where to begin?' Or perhaps that is better phrased as 'where to pick up?', or 'where to help?', as there are numerous efforts already afoot that represent critical parts of various conservation policy initiatives.

Initial scoping for the CfCP had involved several detailed interviews, and the development, review, and revision of a set of [concept documents](#). However, more direction was needed with regard to what the actual work of the organization would be.

In June of 2021, the Centre for Conservation Policy created a *Research Agenda Survey* to help begin to provide that direction. Based on the CfCP's four Conservation Themes (*Land Use and Biodiversity, Nature and Climate Change, Natural Infrastructure, and Finance and Biodiversity*), the survey proposed an extensive list of possible applied research and research-support projects.

The goals of the *Research Agenda Survey* were to:

- Provide guidance to the CfCP as to which potential projects should be pursued first;
- Introduce the CfCP and the kind of work it would do; and
- Provide a resource to others working on different aspects of conservation policy as to where the gaps and needs were perceived by others to be greatest.

This report provides a summary of the survey effort, and the survey results.

As a final introductory point, two elements are important to emphasize.

First, the survey exercise was not intended to be an iron-clad assessment to be followed dogmatically, but rather a direction-finding exercise, to help identify where the CfCP might most effectively apply its efforts.

Second, the *Research Agenda Survey* was intended to serve more players than just the Centre for Conservation Policy. The CfCP's organizational model is intentionally trim, with an intent to partner extensively on all projects, targeting the places in a given policy flow where there are gaps. Thus, as the survey invitation noted, the "CfCP will discharge its mandate through numerous partnerships, so this survey information will also guide collaboration."

Methods

As noted above, the Research Agenda Survey was a direction-finding exercise. As such, there was no effort to develop a statistically-valid survey, as the sample size would be too specific and small, and underlying goal was in a sense to create *leading* questions.

Survey Participants

A participant list was created based on existing contacts and known organizations/agencies. Where a relevant organization was identified but no clear individual was obvious, the organization was contacted and asked if they could offer an appropriate person. This was done to ensure a relevant ‘perspective’ was secured for the survey, not to limit the survey only to those people (for example, requests made by targeted participants to pass on the survey were always granted).

Eventually, the list was pared down to 315 individuals. ‘Individuals’ often came with multiple perspectives, so while not all relevant sectors were reached, the entire list was deemed to provide a good cross-section of the following:

- agriculture,
- conservation NGOs,
- environmental consultancies,
- federal government,
- funding agencies and foundations,
- home building,
- municipal government,
- post-secondary institutions (law, biology, conservation, political science),
- private landownership,
- professional and industry associations,
- provincial government,
- regional governance, and
- research institutes.

Response Rate

With no survey incentives, and no pre-existing service relationship with the CfCP, an original goal was set of a 10% - 30% response rate.

As the survey instrument was developed, it became quite long (requiring an average of ~15 minutes to complete). As well, the breadth of topics was significant, with a very low likelihood that any one person would be actively and professionally engaged in two or more of the four themes. This led to the goal being revised down to 10%.

The online survey software, [QuestionPro](#) was used. The survey was released on June 8, 2021, with a request to complete it by June 22, 2021. A reminder email was sent on June 22, 2021, and the survey was kept open for an additional two weeks.

Actual participation showed:

- 49 full completions
- 52 partial completions (data not included in analysis)
- 407 unique views of the survey

The result was therefore a 15.6% response rate, which exceeded expectations by a small margin; this therefore could be considered a moderately successful response outcome.

Survey Questions

Questions were framed simply as asking the likelihood that a proposed research project would be useful. The 'questions' were intentionally posed as mock research project titles in order to: 1) help differentiate between the underlying issue and an actual project approach, 2) emphasize the applied nature of any proposed project, and 3) make clear the Type of project this would involve (Research Question, Research Application, Guides and Training, Facilitation and Engagement, Evaluation and Recommendations).

Questions were framed simply as asking the likelihood that a proposed research project would be useful

For each item, the options were:

- No opinion
- There is no need for this
- The need for this is low
- Others might need this
- Others would definitely need this
- I might need this
- I would definitely need this

The 116 questions were grouped at a high level by the CfCP's four Conservation Themes, and participants could opt out of any Theme's questions, immediately moving to the next Theme.

Within each Theme, questions were further grouped by the Type of applied research support they represented:

- Research Questions
- Research Applications
- Guides and Training
- Facilitation and Engagement
- Evaluation and Recommendations

Participants were given the opportunity to provide open-ended suggestions after each section.

(see the survey instrument in the stand-alone document, *Developing a Conservation Policy Research Agenda: Appendix 1 - Survey Instrument*)

Scoring

A simple synopsis score was developed for each proposed research project. This was calculated as a function of the number of respondents indicating the proposal had some positive value, and a weighted multiplier for each 'positive' answer.

The number of respondents providing these responses would be multiplied as follows:

Question Response	Multiplier
Others might need this	x 1
Others would definitely need this	x 3
I might need this	x 2
I would definitely need this	x 4

The weighting reflects that clear expressions of individual need would rank highest (i.e., "I need this"), and that "might need" superseded "definitely need".

Because the survey was intended to identify a collective expression of desired need, less emphasis was given to the ‘negative’ assessments (i.e., “There is no need for this”, and “The need for this is low”). However, a strong collective expression of something being of low or no value would need to be considered, so the intent was to discount scores in cases where at least 25% of the responses were negative (x -2 for ‘no need’, and x -1 for ‘low need’). When the results were analyzed, no proposed research topic hit the 25% threshold, so this discount calculation was never employed.

Analysis

The basis of the analysis was a simple ranking of scores with an eye to prioritizing which proposed research projects would rank highest. Ranking/prioritization occurred within each Theme, within each Type, and then across all Themes/Types.

It is important to note that although it provides a valuable overall picture, caution should be used with the all-Themes or all-Types numbers. Recall that participants were able to choose which of the four Themes they wanted to provide answers for, so the total number of respondents is *different* in each theme. Regardless, this ‘Overall’ information was still included because while there is a bit of ‘apples and oranges’ effect here, it can be argued that if more people chose to reply within one Theme, it represents a greater degree of interest, concern, or need.

The basis of the analysis was a simple ranking of scores with an eye to prioritizing which proposed research projects would rank highest

The *Results* and *Discussion* sections below take a step further by sorting the information into informative groupings (Results), and then identifying trends and attempting to make connections (Discussion).

Again, the limitations must be emphasized. The intent of the survey was to test possible research project ideas, and get a slightly-more-than-superficial picture of the conservation community's priorities. However, this is not a statistically-valid survey, and the low volume of suggestions and comments would make any advanced text analysis inappropriate.

In many ways the 'conclusions' in the discussion will simply represent a set of informed hypotheses to be tested over the life of the Centre for Conservation Policy.

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Results

Number of Respondents by Conservation Theme

Participants were able to choose for which Conservation Themes they wanted to answer specific questions. Of the participants completing the whole survey, the proportion choosing to answer questions regarding each of the four Conservation Themes were as follows:

- Land Use and Biodiversity: 87.7%
- Natural Infrastructure: 81.1%
- Nature and Climate change: 80.9%
- Finance and Biodiversity: 68.8%

Priority Ranking by Conservation Theme

To help identify which proposed projects should be a priority within each Conservation Theme, the projects were scored (see *Methods* and *Scoring*, above) then ranked in order within each Theme.

Table 1: Priority Ranking – Land Use and Biodiversity

Proposed Research Project	Score
Municipal Approaches to Identifying Environmentally Significant Areas – A Comparison	121
Considering Local Environmentally Significant Areas at the Regional Scale - Why and How	120
Conservation and Area Structure Plans / Land Use Bylaws / Municipal Development Plans – Cases, Opportunities, and Recommendations	114
Using Land Cover Data to Inform Local and Regional Conservation Planning – Cases, Methods and Strategies	113
Best Practices for Evaluating a Program’s Conservation Impact	109
Nature-based Solutions (NBS) Data for Private Land Conservation – Making the Connection Between Information and Ecological Outcomes	108
When is a Change in Land Use Ecologically Damaging? – A Guide for Policy Makers	106

Monitoring Biodiversity at the Program Level – Balancing Ecology and Politics	105
Conservation Easements and Municipalities - Training for Planners and Ag Fieldmen	104
Municipal School for Conservation Leaders – What You Need to Know About Municipalities in Order to Work Effectively with Municipalities	103
Conservation of Public Lands – Threats and Opportunities	101
Municipalities and Conservation – A One-day Symposium Showcasing Tools and Approaches	100
Data Accessibility – A Comparison of Conservation Data Availability in Alberta, British Columbia, and Montana	98
Conservation Easements and Sub-surface Rights – An Analysis of Issues and Opportunities	95
‘Fostering Well-being of the Environment’ – A Guide for Converting the New Purpose of Municipalities into Local Government Policy	95
Measuring Biodiversity for Program Applications – A Review of Cases and Practices	94
Creating a Municipal Planning Overlay for Wildlife Movement – A Science-based Guide for Planners	92
Amending Conservation Easements – A Guide for Private Land Conservation Practitioners	91
Red Tape Removal for Conservation in Alberta – Recommendations for Improving the Efficiency of Conservation Programs	90
Framework for Developing a Municipal Conservation Plan – A Proposed Approach	89
Tracking Biodiversity Offsets in Alberta – Issues and Recommendations	89
Conservation Easements as Biodiversity Banks – Pluses and Pitfalls	85
Towards a Conservation Data Strategy for Alberta – Challenges, Opportunities, and Recommendations	84
Setting Provincial Targets for Private Land Conservation – A Proposed Approach	79
A Private Land Conservation Policy Repository – A Clearing House of Relevant Policy	75

Measuring Producer Tolerance for Wildlife – A Review of Methodologies	72
Abuse of Conservation Easements – Current Status, Best Practices, and Recommendations	72
Conservation and Stewardship Strategy for ALSA – An NGO-driven Vision	70
Placing Mineral Rights into a Trust for Conservation – Barriers and Opportunities	65
Layering Conservation Easements – Additionality or Double Dipping?	65
Cows and Panels – The Potential for ‘Solar Grazing’ in Alberta	59
Communal Legal Defence for Land Trusts – An Exploration of Cases and Options	57

Table 2: Priority Ranking – Natural Infrastructure

Proposed Research Project	Score
Engaging Private Landowners in Protecting Natural Infrastructure – Cases and Strategies	88
Riparian Conservation – Tools, Policies and Best Practices for Planners, Conservation Groups, and Landowners	86
A Guide to Explaining the Natural Infrastructure Approach to Municipal Councillors	85
How to ‘Value’ Natural Infrastructure – A Primer on Economics, Ecosystems, Values, and Valuation	85
Integrating Groundwater into Source Water Protection – A Policy-makers Guide to Identifying and Demarcating Recharge Areas	84
Wetlands and Floodplains as Blue Natural Infrastructure – Methods for Identification and Calculation	83
Incorporating Natural Infrastructure at the Municipal Level - A Review of Accounting and Asset Management Approaches	82
Funding the Maintenance and Protection of Natural Infrastructure – Cases and Strategies	82

Integrating Natural Infrastructure into Watershed Management – An Overview of Issues and Opportunities	82
Best Management Practices for Protecting Source Water’s Natural Infrastructure – A Review of Cases and Strategies	81
Local Government Strategies for Maintaining Healthy Riparian Areas – A Review of Approaches	81
A Guide to Explaining Natural Infrastructure to Citizens, Ratepayers, or Constituents /	81
Natural Infrastructure and Cost Savings – Workshop for Decision Makers	80
Undertaking Wetland Restoration and Replacement – A Guide for Municipal Decision Makers	78
Using Conservation Easements to Protect Natural Infrastructure – A Guide For Municipalities	78
Using Local Government Zoning and Bylaws to Maintain Natural Infrastructure – A Guide for Municipal planners	77
Inventorying Municipal Natural Infrastructure in Alberta – A Guide for Municipal Decision Makers	76
Natural Infrastructure in Municipalities – Workshop for Planners / Workshop for Political Leaders	76
Regional Natural Infrastructure - Strategies for Identification and Maintenance	75
A Guide to Identifying Natural Infrastructure in the Calgary/Edmonton Metro Region	75
A Guide to Municipal Wetland Policy – Cases, Templates, and Best Practices	75
Policy barriers to Implementing ‘Room for the River’ Approaches in Alberta – An Assessment	73
Land Trusts and Source Water Protection – Private Land Conservation Options for Maintaining Natural Infrastructure	72
Land Securement in Support of Natural Infrastructure – Cases and Strategies	71
Modelling Natural Infrastructure – A Review of Current Approaches	71
Wetlands Conservation Policy – A Clearing House of What’s Available and What’s New	71

Strange Bedfellows – How Maintaining Wetlands can Help Agricultural Producers	69
Riparian Conservation Policy – A Clearing House of What’s Available and What’s New	68
Upstream Forest and Riparian Management practices that Support Flood Mitigation – Guidance for Identification and Uptake	68
Wetland Restoration Program Design and Management	68
Natural Infrastructure Accounting and Asset Management Approaches – A Review of Local Government Approaches	67
Threats to Natural Infrastructure – A Guide to Assessing Risk	67
Using Drained Wetland Inventories to Support Municipal Wetland Restoration Programs	67
Policy Barriers to Implementing ‘Room for the River’ Approaches in Alberta – An Assessment	66
Motivating Action for Natural Infrastructure Maintenance and Protection – A Review of Best Practices	65
Tracking Wetland Replacement Projects in Alberta – A Proposed System	65
Perverse Incentive Threats to Natural Infrastructure – A Review of Existing and Potential Policy-based Threats	65
Who is Alberta’s USCAE? – Options for Certifying Wetland Replacement and Restoration in Alberta	64
Who is Alberta’s USCAE? – Options for Certifying Wetland Replacement and Restoration in Alberta	64
Wetland Replacement Activity in Alberta – An Assessment of Effectiveness, Recommendations for Improvement	64
Improving Riparian Conservation Policy – What’s Working, What’s Not	64
Governance Structures for Maintaining Natural Infrastructure in the Bow Basin / NSask Basin / Red Deer Basin / Battle basin – Cases, Principles, and Recommendations	62
Regenerative Agriculture – A Review of Applications in Alberta	61

A Comparative Analysis of Available Wetland Inventory Approaches – What Works Best in Municipal Policy	61
Who's Who in Natural infrastructure in Alberta – A Source Book of Potential Partners	53
Whos Who in Riparian Conservation and Enhancement – A Directory of Conservation Groups, Agencies, and Consultants	53
Tracking Change in Riparian Condition at a Landscape Scale – Balancing Efficiency With Efficacy	52
Outreach for Wetland and Riparian Conservation and Management – A Catalogue of Materials, Programs and Resources	52

Table 3: Priority Ranking – Nature and Climate Change

Proposed Research Project	Score
The Potential Role of Alberta's Natural Lands in a Provincial Climate Strategy – Quantifying the Sequestration Opportunity	78
Comparative Costs of Grassland Restoration vs Grassland Conservation as a Carbon Sequestration Strategy	77
Incorporating Climate Migration Considerations Into Protected Area Designation and Assessment	77
Conservation Easements and Carbon Credits – The Pluses and Pitfalls	77
Carbon Sequestration in Places Where Trees are Weeds – The Existing and Potential Role of Alberta's Grasslands In Carbon Sequestration	75
Drought Resilience Policies – Assessing Effectiveness	75
Adaptation Gap Report – An Assessment of Alberta's Progress Towards Nature-based Climate Change Adaptation	74
Planting for Carbon Sequestration in Alberta – What Works Best	72
Nature-based Solutions for Biodiversity and for Climate Change – Maximizing Synergy, Minimizing Discord	71

Program-specific Policy Design for Implementation of Nature-based Solutions for Climate Change	68
Conservation Easements and Renewable Energy – A Guide for Private Land Conservation Practitioners	67
Establishing Climate Refugia and Evolutionary Pathways in Alberta – Planning and Policy Strategies	59

Table 4: Priority Ranking – Finance and Biodiversity

Proposed Research Project	Score
Total Economic Valuation for Natural Assets – A Review of Methodologies	69
Valuing Ecosystem Services – A Guide for Policy Makers	69
Place-based Ecological-Economic Assessments of Natural Infrastructure / Ecosystem Services	69
Costs of Wetland Restoration – A Comparative Catalogue of Jurisdictions and Programs	64
Policy Barriers to Applying Conservation Offsets in Alberta – A Review	64
Quantifying the Restoration Economy in Alberta – A Financial Picture	64
Establishing Local Conservation Funds in Alberta – Barriers, Opportunities, and Recommendations	64
Measuring Biodiversity for Portfolio Managers – Helping the Science Community Define Appropriate Measures	62
Application of Conservation Banking in Alberta – Legal, Ecological, and Practical Considerations	61
Biodiversity Proofing the Provincial Budget – A Collaborative Assessment and Recommendations for Ensuring Appropriate Spending	61
Hidden Values - 10 Creative Ways to Use A Conservation Easement Tax Receipt	60
Private Land Conservation and Carbon Markets – Promises, Pitfalls and Recommendations	60

Strategic Business Planning for Private Land Conservation Organizations – Conservation Impact Beyond Land Securement	58
Using Nature-Related Financial Disclosures to Attract Investment to Alberta – Options and Opportunities	57
Expanding the Land Trust Business Model – Using Conservation Expertise to Enhance the Sustainability of Landscapes and Land Trusts	56
Avoided Cost Methodologies for Economic Assessments of Natural Infrastructure – A Review	54
Wheat from the Chaff - Identifying Viable PES Program Opportunities in Alberta	52
Policy Design for Implementation of Market-based Instruments (MBIs) for Conservation	52
Building the Restoration Economy – Recommendations for Growth	52
Emerging Opportunities from the Task Force On Biodiversity-related Financial Disclosures – Is the Conservation Community Ready?	50
Measuring Biodiversity for Financial Disclosures – Challenges and Paths Forward	50
Insurance for Natural Infrastructure Assets – Options, Cases and Recommendations	48
Financial Models for Transfer of Development Credits – 5 Scenarios for Making TDC Programs Viable for Developers	44
A Beginner’s Guide to the Task Force on Biodiversity-related Financial Disclosures	41

Priority Ranking by Theme and Type

To further help identify which proposed projects might be a priority *within* each Conservation Theme, the scored projects were also sorted within each Theme by the project type (Research Question, Research Application, Guides and Training, Facilitation and Engagement, Evaluation and recommendations).

Table 5: Priority Ranking by Theme and Type – Land Use and Biodiversity

Research Questions	Score
Municipal Approaches to Identifying Environmentally Significant Areas – A Comparison	121
Data Accessibility – A Comparison of Conservation Data Availability in Alberta, British Columbia, and Montana	98
Conservation Easements and Sub-surface Rights – An Analysis of Issues and Opportunities	95
Measuring Biodiversity for Program Applications – A Review of Cases and Practices	94
Measuring Producer Tolerance for Wildlife – A Review of Methodologies	72
Placing Mineral Rights into a Trust for Conservation – Barriers and Opportunities	65
Cows and Panels – The Potential for ‘Solar Grazing’ in Alberta	59
Communal Legal Defence for Land Trusts – An Exploration of Cases and Options	57
Research Applications	Score
Considering Local Environmentally Significant Areas at the Regional Scale - Why and How	120
Conservation and Area Structure Plans / Land Use Bylaws / Municipal Development Plans – Cases, Opportunities, and Recommendations	114
Using Land Cover Data to Inform Local and Regional Conservation Planning – Cases, Methods and Strategies	113
Nature-based Solutions (NBS) Data for Private Land Conservation – Making the Connection Between Information and Ecological Outcomes	108
Monitoring Biodiversity at the Program Level – Balancing Ecology and Politics	105

Guides and Training	Score
Best Practices for Evaluating a Program's Conservation Impact	109
When is a Change in Land Use Ecologically Damaging? – A Guide for Policy Makers	106
Conservation Easements and Municipalities - Training for Planners and Ag Fieldmen	104
Municipal School for Conservation Leaders – What You Need to Know About Municipalities in Order to Work Effectively with Municipalities	103
Municipalities and Conservation – A One-day Symposium Showcasing Tools and Approaches	100
'Fostering Well-being of the Environment' – A Guide for Converting the New Purpose of Municipalities into Local Government Policy	95
Creating a Municipal Planning Overlay for Wildlife Movement – A Science-based Guide for Planners	92
Amending Conservation Easements – A Guide for Private Land Conservation Practitioners	91
Facilitation and Engagement	Score
Framework for Developing a Municipal Conservation Plan – A Proposed Approach	89
Setting Provincial Targets for Private Land Conservation – A Proposed Approach	79
A Private Land Conservation Policy Repository – A Clearing House of Relevant Policy	75
Conservation and Stewardship Strategy for ALSA – An NGO-driven Vision	70
Evaluation and Recommendations	Score
Conservation of Public Lands – Threats and Opportunities	101
Red Tape Removal for Conservation in Alberta – Recommendations for Improving the Efficiency of Conservation Programs	90
Tracking Biodiversity Offsets in Alberta – Issues and Recommendations	89
Conservation Easements as Biodiversity Banks – Pluses and Pitfalls	85

Towards a Conservation Data Strategy for Alberta – Challenges, Opportunities, and Recommendations	84
Abuse of Conservation Easements – Current Status, Best Practices, and Recommendations	72
Layering Conservation Easements – Additionality or Double Dipping?	65

Table 6: Priority Ranking by Theme and Type – Natural Infrastructure

Research Questions	Score
Engaging Private Landowners in Protecting Natural Infrastructure – Cases and Strategies	88
Wetlands and Floodplains as Blue Natural Infrastructure – Methods for Identification and Calculation	83
Incorporating Natural Infrastructure at the Municipal Level - A Review of Accounting and Asset Management Approaches	82
Best Management Practices for Protecting Source Water’s Natural Infrastructure – A Review of Cases and Strategies	81
Land Securement in Support of Natural Infrastructure – Cases and Strategies	71
Modelling Natural Infrastructure – A Review of Current Approaches	71
Natural Infrastructure Accounting and Asset Management Approaches – A Review of Local Government Approaches	67
Motivating Action for Natural Infrastructure Maintenance and Protection – A Review of Best Practices	65
Regenerative Agriculture – A Review of Applications in Alberta	61
Research Applications	Score
Funding the Maintenance and Protection of Natural Infrastructure – Cases and Strategies	82
Integrating Natural Infrastructure into Watershed Management – An Overview of Issues and Opportunities	82

Local Government Strategies for Maintaining Healthy Riparian Areas – A Review of Approaches	81
Regional Natural Infrastructure - Strategies for Identification and Maintenance	75
Land Trusts and Source Water Protection – Private Land Conservation Options for Maintaining Natural Infrastructure	72
Wetlands Conservation Policy – A Clearing House of What’s Available and What’s New	71
Riparian Conservation Policy – A Clearing House of What’s Available and What’s New	68
Who is Alberta’s USCAE? – Options for Certifying Wetland Replacement and Restoration in Alberta	64
Who is Alberta’s USCAE? – Options for Certifying Wetland Replacement and Restoration in Alberta	64
Guides and Training	Score
Riparian Conservation – Tools, Policies and Best Practices for Planners, Conservation Groups, and Landowners	86
A Guide to Explaining the Natural Infrastructure Approach to Municipal Councillors	85
How to ‘Value’ Natural Infrastructure – A Primer on Economics, Ecosystems, Values, and Valuation	85
Integrating Groundwater into Source Water Protection – A Policy-makers Guide to Identifying and Demarcating Recharge Areas	84
A Guide to Explaining Natural Infrastructure to Citizens, Ratepayers, or Constituents /	81
Natural Infrastructure and Cost Savings – Workshop for Decision Makers	80
Undertaking Wetland Restoration and Replacement – A Guide for Municipal Decision Makers	78
Using Conservation Easements to Protect Natural Infrastructure – A Guide For Municipalities	78
Using Local Government Zoning and Bylaws to Maintain Natural Infrastructure – A Guide for Municipal planners	77

Inventoring Municipal Natural Infrastructure in Alberta – A Guide for Municipal Decision Makers	76
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A Guide to Identifying Natural Infrastructure in the Calgary/Edmonton Metro Region	75
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Upstream Forest and Riparian Management practices that Support Flood Mitigation – Guidance for Identification and Uptake	68
Threats to Natural Infrastructure – A Guide to Assessing Risk	67
Facilitation and Engagement	Score
Wetland Restoration Program Design and Management	68
Using Drained Wetland Inventories to Support Municipal Wetland Restoration Programs	67
Tracking Wetland Replacement Projects in Alberta – A Proposed System	65
Who's Who in Natural infrastructure in Alberta – A Source Book of Potential Partners	53
Whos Who in Riparian Conservation and Enhancement – A Directory of Conservation Groups, Agencies, and Consultants	53
Tracking Change in Riparian Condition at a Landscape Scale – Balancing Efficiency With Efficacy	52
Outreach for Wetland and Riparian Conservation and Management – A Catalogue of Materials, Programs and Resources	52
Evaluation and Recommendations	Score
Policy barriers to Implementing 'Room for the River' Approaches in Alberta – An Assessment	73

Perverse Incentive Threats to Natural Infrastructure – A Review of Existing and Potential Policy-based Threats	65
Wetland Replacement Activity in Alberta – An Assessment of Effectiveness, Recommendations for Improvement	64
Improving Riparian Conservation Policy – What’s Working, What’s Not	64
Governance Structures for Maintaining Natural Infrastructure in the Bow Basin / NSask Basin / Red Deer Basin / Battle basin – Cases, Principles, and Recommendations	62
A Comparative Analysis of Available Wetland Inventory Approaches – What Works Best in Municipal Policy	61

Table 7: Priority Ranking by Theme and Type – Nature and Climate Change

Research Questions	Score
Comparative Costs of Grassland Restoration vs Grassland Conservation as a Carbon Sequestration Strategy	77
Incorporating Climate Migration Considerations Into Protected Area Designation and Assessment	77
Research Applications	Score
The Potential Role of Alberta’s Natural Lands in a Provincial Climate Strategy – Quantifying the Sequestration Opportunity	78
Nature-based Solutions for Biodiversity and for Climate Change – Maximizing Synergy, Minimizing Discord	71
Establishing Climate Refugia and Evolutionary Pathways in Alberta – Planning and Policy Strategies	59
Guides and Training	Score
Conservation Easements and Renewable Energy – A Guide for Private Land Conservation Practitioners	67
Facilitation and Engagement	Score

Program-specific Policy Design for Implementation of Nature-based Solutions for Climate Change	68
Evaluation and Recommendations	Score
Conservation Easements and Carbon Credits – The Pluses and Pitfalls	77
Carbon Sequestration in Places Where Trees are Weeds – The Existing and Potential Role of Alberta’s Grasslands In Carbon Sequestration	75
Drought Resilience Policies – Assessing Effectiveness	75
Adaptation Gap Report – An Assessment of Alberta’s Progress Towards Nature-based Climate Change Adaptation	74
Planting for Carbon Sequestration in Alberta – What Works Best	72

Table 8: Priority Ranking by Theme and Type – Finance and Biodiversity

Research Questions	Score
Total Economic Valuation for Natural Assets – A Review of Methodologies	69
Costs of Wetland Restoration – A Comparative Catalogue of Jurisdictions and Programs	64
Policy Barriers to Applying Conservation Offsets in Alberta – A Review	64
Quantifying the Restoration Economy in Alberta – A Financial Picture	64
Avoided Cost Methodologies for Economic Assessments of Natural Infrastructure – A Review	54
Insurance for Natural Infrastructure Assets – Options, Cases and Recommendations	48
Research Applications	Score
Application of Conservation Banking in Alberta – Legal, Ecological, and Practical Considerations	61
Expanding the Land Trust Business Model – Using Conservation Expertise to Enhance the Sustainability of Landscapes and Land Trusts	56

Wheat from the Chaff - Identifying Viable PES Program Opportunities in Alberta	52
Guides and Training	Score
Valuing Ecosystem Services – A Guide for Policy Makers	69
Hidden Values - 10 Creative Ways to Use A Conservation Easement Tax Receipt	60
Financial Models for Transfer of Development Credits – 5 Scenarios for Making TDC Programs Viable for Developers	44
A Beginner’s Guide to the Task Force on Biodiversity-related Financial Disclosures	41
Facilitation and Engagement	Score
Place-based Ecological-Economic Assessments of Natural Infrastructure / Ecosystem Services	69
Measuring Biodiversity for Portfolio Managers – Helping the Science Community Define Appropriate Measures	62
Strategic Business Planning for Private Land Conservation Organizations – Conservation Impact Beyond Land Securement	58
Policy Design for Implementation of Market-based Instruments (MBIs) for Conservation	52
Evaluation and Recommendations	Score
Establishing Local Conservation Funds in Alberta – Barriers, Opportunities, and Recommendations	
Biodiversity Proofing the Provincial Budget – A Collaborative Assessment and Recommendations for Ensuring Appropriate Spending	
Private Land Conservation and Carbon Markets – Promises, Pitfalls and Recommendations	
Using Nature-Related Financial Disclosures to Attract Investment to Alberta – Options and Opportunities	
Building the Restoration Economy – Recommendations for Growth	

Emerging Opportunities from the Task Force On Biodiversity-related Financial Disclosures – Is the Conservation Community Ready?	
Measuring Biodiversity for Financial Disclosures – Challenges and Paths Forward	

Priority Ranking Across All Themes (Top 20 / Top 40)

To facilitate both project prioritization, as well as further analysis (see *Discussion*, below), the scored projects were sorted without regard to Theme or Type (i.e., all 116 options in one list). The 'Top 20' and the 'Top 40' are highlighted, as they were used in additional analyses.

This approach is stretching perilously close to the apples and oranges dilemma: different numbers of participants answered questions within each Theme, different numbers of project proposals were offered up under each Theme and Type, and the expertise and issues vary dramatically between Conservation Themes.

However, with recognition of these limits, it represents a worthwhile overview picture.

Table 9: Priority Ranking Across All Questions

Proposed Research Project	Score
Municipal Approaches to Identifying Environmentally Significant Areas – A Comparison	121
Considering Local Environmentally Significant Areas at the Regional Scale - Why and How	120
Conservation and Area Structure Plans / Land Use Bylaws / Municipal Development Plans – Cases, Opportunities, and Recommendations	114
Using Land Cover Data to Inform Local and Regional Conservation Planning – Cases, Methods and Strategies	113
Best Practices for Evaluating a Program's Conservation Impact	109
Nature-based Solutions (NBS) Data for Private Land Conservation – Making the Connection Between Information and Ecological Outcomes	108
When is a Change in Land Use Ecologically Damaging? – A Guide for Policy Makers	106
Monitoring Biodiversity at the Program Level – Balancing Ecology and Politics	105
Conservation Easements and Municipalities - Training for Planners and Ag Fieldmen	104
Municipal School for Conservation Leaders – What You Need to Know About Municipalities in Order to Work Effectively with Municipalities	103

Conservation of Public Lands – Threats and Opportunities	101
Municipalities and Conservation – A One-day Symposium Showcasing Tools and Approaches	100
Data Accessibility – A Comparison of Conservation Data Availability in Alberta, British Columbia, and Montana	98
Conservation Easements and Sub-surface Rights – An Analysis of Issues and Opportunities	95
‘Fostering Well-being of the Environment’ – A Guide for Converting the New Purpose of Municipalities into Local Government Policy	95
Measuring Biodiversity for Program Applications – A Review of Cases and Practices	94
Creating a Municipal Planning Overlay for Wildlife Movement – A Science-based Guide for Planners	92
Amending Conservation Easements – A Guide for Private Land Conservation Practitioners	91
Red Tape Removal for Conservation in Alberta – Recommendations for Improving the Efficiency of Conservation Programs	90
Framework for Developing a Municipal Conservation Plan – A Proposed Approach	89
Tracking Biodiversity Offsets in Alberta – Issues and Recommendations	89
Engaging Private Landowners in Protecting Natural Infrastructure – Cases and Strategies	88
Riparian Conservation – Tools, Policies and Best Practices for Planners, Conservation Groups, and Landowners	86
A Guide to Explaining the Natural Infrastructure Approach to Municipal Councillors	85
How to ‘Value’ Natural Infrastructure – A Primer on Economics, Ecosystems, Values, and Valuation	85
Conservation Easements as Biodiversity Banks – Pluses and Pitfalls	85

Integrating Groundwater into Source Water Protection – A Policy-makers Guide to Identifying and Demarcating Recharge Areas	84
Towards a Conservation Data Strategy for Alberta – Challenges, Opportunities, and Recommendations	84
Wetlands and Floodplains as Blue Natural Infrastructure – Methods for Identification and Calculation	83
Incorporating Natural Infrastructure at the Municipal Level - A Review of Accounting and Asset Management Approaches	82
Funding the Maintenance and Protection of Natural Infrastructure – Cases and Strategies	82
Integrating Natural Infrastructure into Watershed Management – An Overview of Issues and Opportunities	82
Best Management Practices for Protecting Source Water’s Natural Infrastructure – A Review of Cases and Strategies	81
Local Government Strategies for Maintaining Healthy Riparian Areas – A Review of Approaches	81
A Guide to Explaining Natural Infrastructure to Citizens, Ratepayers, or Constituents /	81
Natural Infrastructure and Cost Savings – Workshop for Decision Makers	80
Setting Provincial Targets for Private Land Conservation – A Proposed Approach	79
The Potential Role of Alberta’s Natural Lands in a Provincial Climate Strategy – Quantifying the Sequestration Opportunity	78
Undertaking Wetland Restoration and Replacement – A Guide for Municipal Decision Makers	78
Using Conservation Easements to Protect Natural Infrastructure – A Guide For Municipalities	78
Comparative Costs of Grassland Restoration vs Grassland Conservation as a Carbon Sequestration Strategy	77

Incorporating Climate Migration Considerations Into Protected Area Designation and Assessment	77
Using Local Government Zoning and Bylaws to Maintain Natural Infrastructure – A Guide for Municipal planners	77
Conservation Easements and Carbon Credits – The Pluses and Pitfalls	77
Inventorying Municipal Natural Infrastructure in Alberta – A Guide for Municipal Decision Makers	76
Natural Infrastructure in Municipalities – Workshop for Planners / Workshop for Political Leaders	76
Regional Natural Infrastructure - Strategies for Identification and Maintenance	75
A Guide to Identifying Natural Infrastructure in the Calgary/Edmonton Metro Region	75
A Guide to Municipal Wetland Policy – Cases, Templates, and Best Practices	75
A Private Land Conservation Policy Repository – A Clearing House of Relevant Policy	75
Carbon Sequestration in Places Where Trees are Weeds – The Existing and Potential Role of Alberta’s Grasslands In Carbon Sequestration	75
Drought Resilience Policies – Assessing Effectiveness	75
Adaptation Gap Report – An Assessment of Alberta’s Progress Towards Nature-based Climate Change Adaptation	74
Policy barriers to Implementing ‘Room for the River’ Approaches in Alberta – An Assessment	73
Measuring Producer Tolerance for Wildlife – A Review of Methodologies	72
Land Trusts and Source Water Protection – Private Land Conservation Options for Maintaining Natural Infrastructure	72
Abuse of Conservation Easements – Current Status, Best Practices, and Recommendations	72
Planting for Carbon Sequestration in Alberta – What Works Best	72

Land Securement in Support of Natural Infrastructure – Cases and Strategies	71
Modelling Natural Infrastructure – A Review of Current Approaches	71
Wetlands Conservation Policy – A Clearing House of What’s Available and What’s New	71
Nature-based Solutions for Biodiversity and for Climate Change – Maximizing Synergy, Minimizing Discord	71
Conservation and Stewardship Strategy for ALSA – An NGO-driven Vision	70
Total Economic Valuation for Natural Assets – A Review of Methodologies	69
Strange Bedfellows – How Maintaining Wetlands can Help Agricultural Producers	69
Valuing Ecosystem Services – A Guide for Policy Makers	69
Place-based Ecological-Economic Assessments of Natural Infrastructure / Ecosystem Services	69
Riparian Conservation Policy – A Clearing House of What’s Available and What’s New	68
Upstream Forest and Riparian Management practices that Support Flood Mitigation – Guidance for Identification and Uptake	68
Wetland Restoration Program Design and Management	68
Program-specific Policy Design for Implementation of Nature-based Solutions for Climate Change	68
Natural Infrastructure Accounting and Asset Management Approaches – A Review of Local Government Approaches	67
Threats to Natural Infrastructure – A Guide to Assessing Risk	67
Conservation Easements and Renewable Energy – A Guide for Private Land Conservation Practitioners	67
Using Drained Wetland Inventories to Support Municipal Wetland Restoration Programs	67

Policy Barriers to Implementing ‘Room for the River’ Approaches in Alberta – An Assessment	66
Placing Mineral Rights into a Trust for Conservation – Barriers and Opportunities	65
Motivating Action for Natural Infrastructure Maintenance and Protection – A Review of Best Practices	65
Tracking Wetland Replacement Projects in Alberta – A Proposed System	65
Layering Conservation Easements – Additionality or Double Dipping?	65
Perverse Incentive Threats to Natural Infrastructure – A Review of Existing and Potential Policy-based Threats	65
Costs of Wetland Restoration – A Comparative Catalogue of Jurisdictions and Programs	64
Policy Barriers to Applying Conservation Offsets in Alberta – A Review	64
Quantifying the Restoration Economy in Alberta – A Financial Picture	64
Who is Alberta’s USCAE? – Options for Certifying Wetland Replacement and Restoration in Alberta	64
Who is Alberta’s USCAE? – Options for Certifying Wetland Replacement and Restoration in Alberta	64
Wetland Replacement Activity in Alberta – An Assessment of Effectiveness, Recommendations for Improvement	64
Improving Riparian Conservation Policy – What’s Working, What’s Not	64
Establishing Local Conservation Funds in Alberta – Barriers, Opportunities, and Recommendations	64
Measuring Biodiversity for Portfolio Managers – Helping the Science Community Define Appropriate Measures	62
Governance Structures for Maintaining Natural Infrastructure in the Bow Basin / NSask Basin / Red Deer Basin / Battle basin – Cases, Principles, and Recommendations	62
Regenerative Agriculture – A Review of Applications in Alberta	61

Application of Conservation Banking in Alberta – Legal, Ecological, and Practical Considerations	61
A Comparative Analysis of Available Wetland Inventory Approaches – What Works Best in Municipal Policy	61
Biodiversity Proofing the Provincial Budget – A Collaborative Assessment and Recommendations for Ensuring Appropriate Spending	61
Hidden Values - 10 Creative Ways to Use A Conservation Easement Tax Receipt	60
Private Land Conservation and Carbon Markets – Promises, Pitfalls and Recommendations	60
Cows and Panels – The Potential for ‘Solar Grazing’ in Alberta	59
Establishing Climate Refugia and Evolutionary Pathways in Alberta – Planning and Policy Strategies	59
Strategic Business Planning for Private Land Conservation Organizations – Conservation Impact Beyond Land Securement	58
Communal Legal Defence for Land Trusts – An Exploration of Cases and Options	57
Using Nature-Related Financial Disclosures to Attract Investment to Alberta – Options and Opportunities	57
Expanding the Land Trust Business Model – Using Conservation Expertise to Enhance the Sustainability of Landscapes and Land Trusts	56
Avoided Cost Methodologies for Economic Assessments of Natural Infrastructure – A Review	54
Who’s Who in Natural infrastructure in Alberta – A Source Book of Potential Partners	53
Whos Who in Riparian Conservation and Enhancement – A Directory of Conservation Groups, Agencies, and Consultants	53
Wheat from the Chaff - Identifying Viable PES Program Opportunities in Alberta	52
Tracking Change in Riparian Condition at a Landscape Scale – Balancing Efficiency With Efficacy	52

Outreach for Wetland and Riparian Conservation and Management – A Catalogue of Materials, Programs and Resources	52
Policy Design for Implementation of Market-based Instruments (MBIs) for Conservation	52
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Emerging Opportunities from the Task Force On Biodiversity-related Financial Disclosures – Is the Conservation Community Ready?	50
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Insurance for Natural Infrastructure Assets – Options, Cases and Recommendations	48
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Ranking by “I Would Definitely Need This”

The option of “I Would Definitely Need This” was intended to represent the highest level of individual interest in a given proposed project. The following are the Top 20 project proposals based on the percent of respondents for an individual question who gave this top-tier answer.

Table 10: Top Proposed Research Projects by “I Would Definitely Need This” Response (percent)

Proposed Research Project	Percent
Municipal Approaches to Identifying Environmentally Significant Areas – A Comparison	31.11%
Conservation and Area Structure Plans / Land Use Bylaws / Municipal Development Plans – Cases, Opportunities, and Recommendations	28.89%
Considering Local Environmentally Significant Areas at the Regional Scale - Why and How	27.27%
Using Land Cover Data to Inform Local and Regional Conservation Planning – Cases, Methods and Strategies	27.27%
How to ‘Value’ Natural Infrastructure – A Primer on Economics, Ecosystems, Values, and Valuation	24.32%
A Comparison of Conservation Data Availability in Alberta, British Columbia, and Montana	22.73%
Monitoring Biodiversity at the Program Level – Balancing Ecology and Politics	22.73%
Nature-based Solutions (NBS) Data for Private Land Conservation – Making the Connection Between Information and Ecological Outcomes	22.22%
Engaging Private Landowners in Protecting Natural Infrastructure – Cases and Strategies	22.22%
Modelling Natural Infrastructure – A Review of Current Approaches	22.22%
Riparian Conservation – Tools, Policies and Best Practices for Planners, Conservation Groups, and Landowners	21.62%
When is a Change in Land Use Ecologically Damaging? – A Guide for Policy Makers	20.93%

Best Practices for Evaluating a Program's Conservation Impact	20.45%
Municipalities and Conservation – A One-day Symposium Showcasing Tools and Approaches	20.00%
Place-based Ecological-Economic Assessments of Natural Infrastructure / Ecosystem Services	20.00%
Incorporating Natural Infrastructure at the Municipal Level - A Review of Accounting and Asset Management Approaches	19.44%
Land Securement in Support of Natural Infrastructure – Cases and Strategies	19.44%
Comparative Costs of Grassland Restoration vs Grassland Conservation as a Carbon Sequestration Strategy	19.44%
Integrating Natural Infrastructure into Watershed Management – An Overview of Issues and Opportunities	18.92%
Using Environmental Reserve to Conserve Natural Infrastructure – Creative Applications of an Existing Municipal Government Act Tool	18.92%

Participant Feedback

Each question set in the survey had an open-ended question at the end: “Do you have additional suggestions?” A total of 16 participants made suggestions as well comments.

To facilitate assessment of the open-ended feedback, participant entries were parsed out, both separating project suggestions from observations/comments, as well as separating multi-part statements to identify distinct suggestions and comments. The number of ‘suggesters’ and ‘commenters’ indicates how many distinct participants provided feedback in each section.

Participant Suggestions

(Unique Suggesters: 10)

Land Use and Biodiversity

(Suggesters: 8)

- A review of land use policies against protection outcomes
- Co-ordinating the disposition process for surface and sub-surface interests
- Research opportunities and methodologies for connectivity and biodiversity, while at the same time providing strategies for dealing with wildlife conflict that these areas might lead to
- An assessment of benefits and constraints of different practices for achieving ecological outcomes (e.g. placing a wildlife crossing structure might be an immediate need, but would be constrained by future planned development in same area)
- Comparison of carbon sequestration under different land uses
- Grassland conservation - the potential for adaptive grazing to improve grassland resilience to climate change
- Term easements - effectiveness and uptake
- Measuring the economic benefits that local ecosystem services provide to municipalities
- An exploration/ review of the legal tools available to non-litigious ENGOs for land conservation
- Development of appropriate tradable stewardship units
- Examining policies around conservation of the grassland
- Amending easements is a good example of a space that likely isn't being worked on, but could be very beneficial
- Maybe some of these 'courses' could be offered in a University 'block week' session, and could accommodate both future professionals and current ones?
- Guides for management of wildlife conflict or varying conflict perspectives (i.e., not all neighbors may agree to same endpoint)

- Understanding landowners, property rights and impacts of public policy
- Developing a rating system for contribution of private land conservation to conservation goals

Natural Infrastructure

(Suggesters: 3)

- How AMP [Adaptive Multi-Paddock] grazing can yield benefits for nature and producers
- Evaluate what is already out there from other organizations and agencies
- Assessment of wetland losses and gains under the Alberta Wetland Policy. Are we meeting policy objectives?

Nature and Climate Change

(Suggesters: 2)

- Using natural infrastructure to mitigate impacts from climate change as an adaptation action
- Tradeoffs between biodiversity and ecosystem services and renewable energy. Renewable is not always 'green'
- Setting measurable objectives and baselines and developing metrics to measure progress

Finance and Biodiversity

- [none]

Participant Comments

(Unique Commenters: 10)

Land Use and Biodiversity

(Commenters: 7)

- “... one of the really common, widespread issues with biodiversity conservation is how we measure it and how those measures are collected the same, and are reportable across jurisdictions and geographic scales.
- “[This survey] answers a critical need that exists in Alberta (and elsewhere).”
- “This survey’s] articulation makes it easier for people to understand what policy is, how it is created and applied. The research questions not only provide current examples of how policies can be applied (and helps weight the support of doing so), it encourages the responder to think of other topics/issues to consider.”

- “... the survey could also be used as a technique to encourage facilitate certain respondents (e.g. planners) to consider how effective they feel they are.”
- “Though the provincial land use regional plans are partially based on watershed, I would suggest that working with WPACs would make the work more applicable.”
- “Some of these initiatives are already underway or being considered by existing organizations.”
- “Is there an opportunity at Calgary's EVDS for this 'Conservation and Area Structure Plans / Land Use Bylaws / Municipal Development Plans – Cases, Opportunities, and Recommendations'”
- “Identifying best practices is not an easy task given the diversity of landscapes and species that might be involved.”
- “[B]est practices for what? Carbon sequestration and storage targets might not be best for biodiversity, for example.”
- “Municipal engagement is occurring by existing organizations and although overlap is sure to occur with a new organization, creating a new space initially may be more beneficial than competing for space in a field where progress is ongoing.”
- “As I move through the survey I'm excited to think about the discussions that will be encouraged by these suggestions. Given the current climate in Alberta, these discussions and their application are sorely needed.”
- “Some of these great research / work areas imply a LOT of work, and would make great articles for professionals, so I wonder if your evaluation of this survey will be able to get at the work / breadth of use by others ratio?”
- “Usefulness seems high for many ideas, but how to get eyeballs on the findings / recommendations, and incorporate it into daily practice by others is of course a key question...”

Natural Infrastructure

(Commenters: 3)

- “These just scratch the surface of needs.”
- “‘Wetlands and Floodplains as Blue Natural Infrastructure – Methods for Identification and Calculation’ is a complicated space and there are currently a ton of players. work in this arena would need to be connected with ongoing areas of work or else this space will be cluttered and continue along the lines of complicating things, which seems to be the current trajectory.”
- “I think anything involving private landowners needs to be responsive to any grant opportunities or funding models for instituting change. I can't imagine too many landowners (maybe larger, corporate ones in the right policy context?) shelling out monies to provide enhanced natural infrastructure?”
- “There is a group at U of A looking to create a space for all things water. there is also an initiative out of the Alberta Aquarium Society to try and bring

aspects of water research to the forefront that may overlap with some of these initiatives.”

- “... the guide to valuing natural infrastructure has been worked on in a variety of ways and this may not be a new space. There are a few groups that are working on this currently that have already reached out to our organization.
- “[Riparian conservation] seems similar to the work by Cows and Fish (Stepping back from the Green Zone) or work planned by the City of Calgary.”
- “Strange bedfellows- seems again like work currently supported by Cows and Fish, MultiSAR, DUC, ALUS, etc.”
- “The 'Who's who' likely ties into work completed by the LSC [Land Stewardship Centre] historically, and then attempted by NCC [Nature Conservancy of Canada] a few years ago. both had moderate success.
- “the outreach for wetland and riparian conservation again seems like an overlap with existing programs from Cows and Fish, Miistakis, etc. that are producing materials to support this work.”

Nature and Climate Change

(Commenters: 4)

- “The work highlighted in the first option [Comparative Costs of Grassland Restoration vs Grassland Conservation as a Carbon Sequestration Strategy] is part of a larger grant that was just applied for to the federal government. the idea being how do you standardize what is being measured and what actions (grazing, restoration, other land use/change) are having what results.”
- “Recognize much of this work already exists”
- “Climate Refugia-Take a look at the work by TNC’s [The Nature Conservancy – US] Conserving Nature’s Stage that does outline climate Refugia in grasslands of Alberta.”
- “We do not need renewable energy projects on protected lands. Wind turbines and solar farms should be kept off native prairie grasslands and other ecosystems. We really need to start thinking about 'recycling' the land that has already been cleared of its natural vegetation rather than impacting more land. “
- “Not entirely clear what is meant by 'program specific' but clearly nature-based solutions are important.”
- “This work is also happening at a scale much broader than the province of Alberta currently.”

Finance and Biodiversity

(Commenters: 4)

- “... focus on the client or customer and what the action is that you want to come out of this work? How will it be used or applied to make a difference? Who needs to be in the center to make this happen?”
- “Policy makers will need to actually read these!”
- “Plans exists...action i.e., execution is required.”
- “No mention [of] hunting and fishing and how these users can be leveraged to contributing to biodiversity / EGS!”
- “I am challenged to respond outside the 'others would definitely need this column' because I can see many people within the planning field as well as others who would benefit from reviewing the policies associated with the topic or need.”

Individual Question Counts/Percentages

The stand-alone document, *Developing a Conservation Policy Research Agenda: Appendix 2 - Individual Question Counts/Percentages*, gives a detailed view of how survey participants responded to each question. A separate bar graph for each of the 116 questions shows the proportion that voted for each of the six possible answers.

Discussion

The nature of a survey such as this is that it serves better as a prioritized catalogue than as a precision compass. Its results will need to be combined with several pragmatic factors such as funding availability, specific demands for projects, and priorities of partners.

Nonetheless, it is a tremendous starting point, and does lend itself well to identification of preliminary impressions and emergent themes that can guide the project development and partner curation of the CfCP.

The following observations should be taken in that vein.

a survey such as this ... serves better as a prioritized catalogue than as a precision compass. Its results will need to be combined with several pragmatic factors ...

Emergent impressions

Stepping back from the Top 20 and Top 40 lists, it is possible to discern the following cross-cutting characteristics that emerged most highly (in order):

- Municipally-focused projects
- Evaluation, measurement, monitoring, and method-development projects
- Communications and/or engagement projects
- Municipal and land use planning projects
- Private land conservation projects
- Projects directly aimed at policymakers
- Data organization and coordination projects
- Environmentally Significant Areas projects (though there were only two such projects, they represent 2 of the top-scoring 3)
- Regional or region-wide projects
- Land and biodiversity protection projects
- Projects focused on public lands
- Wildlife management projects
- Riparian, water, and wetlands projects (limited representation in the Top 20, but very high representation in the Top 40)
- Projects focused on funding and costing

High Levels of Support

There was a remarkably high level of support for all the proposed projects.

The potential for various elements of bias to have influenced this are, of course, numerous and include a curated participant list, more positive response categories than negative categories, and ambiguous wording of project titles. The resultant numbers still seemed to outstrip these limitations.

At the low-need end, there were very few indications of a proposed project being of limited value (i.e., an answer of “There is no need for this” or “The need for this is low”). The proportion of respondents in each case giving a low-need response never crested 13.5%. This measure is awkward to represent, but the table below shows how the vast majority of questions had less than 5% of respondents indicating the proposed project was low need.

Table 11: Percent of respondents giving a ‘low-need’ answer

Percent of Respondents giving a ‘low-need’ answer	0% - 5%	>5% - 10%	>10% - 15%	>15% - 20%	>20% - 25%	>85% - 90%	>90% - 95%	>95% - 100%
Number of questions with this proportion	89	21	6	0	0	0	0	0	0

** The mid ranges indicated by (...) all had a value of ‘0’*

At the other end of the spectrum was answer “I Would Definitely Need This.” It was anticipated that a relatively low number of respondents would rank proposed projects this way given:

- Survey participants came from quite varied professional backgrounds,
- The Conservation Themes represent quite different aspects on the conservation policy landscape, and
- It is a more natural instinct in conservation and resource management to identify things that other people might need.

In fact, for two thirds of the proposed project ideas, at least 10% of respondents indicated their strong personal need for the project; a surprisingly high number given the factors listed above.

Table 12: Percentage of respondents indicating “I Would Definitely Need This”

Decile Range	0%	>0% - 10%	10% - 19.9%	20% - 29.9%	30% - 39.9%	Total
Number of projects	3	34	64	14	1	116
Proportion*	3%	29%	55%	12%	1%	100%

*as percentage of all 116 proposed projects

Preference for Certain Conservation Themes

There is little question that proposed research projects under the *Land Use and Biodiversity* theme were viewed as the priority. More participants chose to answer questions in this section than any of the others. When sorting all proposed projects by score, all Top 20 were from the *Land Use and Biodiversity* theme. When sorting by score within each research Type, proposed projects from the *Land Use and Biodiversity* theme consistently ranked at the top, representing either 5 of the top 5 (three times) or 4 of the top 5 (twice). This is particularly interesting as it could be argued that more work has taken place in this realm than any of the other three Conservation Themes.

At the other end of the spectrum was the *Finance and Biodiversity* theme. The fewest number of participants chose to answer questions in this section versus the other. When sorted by Type, *Finance and Biodiversity* project proposals always took last place, and in only one case placed in the top half. The only three project proposals that saw no respondents indicate “I Would Definitely Need This” were all in this category.

Preference for Certain Project Types

When looking at the project Types (the sub-categories within each Conservation Theme), there were some identifiable trends.

As a group, proposed projects of the *Guides and Training* type were consistently the greatest proportion of top-scored projects. Despite representing only 25% of the options, they were 40% of both the top 20 and the top 40, and even 35% of the top 60.

Conversely, projects of the *Evaluation and Recommendations* type, while representing 22% of the options, only scored 10% of the Top 20 spots.

Table 13: Number/proportion of projects appearing in top tiers by project Type

	Research Questions	Research Applications	Guides & Training	Facilitation & Engagement	Evaluation & Recmmndtns
Top 20	4	5	8	1	2
	20%	25%	40%	5%	10%
Top 40	8	9	16	2	5
	20%	23%	40%	5%	13%
Top 60	13	11	21	3	12
	22%	18%	35%	5%	20%
All	25	20	29	16	26
	22%	17%	25%	14%	22%

The caveats to be applied here are almost too numerous to be listed, as – again - this is not a robustly stratified set of options. A project that is critical to one person out of 49 can still be considered critical. However, as a general observation it would seem that guides and training should be an important component of the CfCP's work.

Suggestions and Comments

The feedback regarding additional project suggestions was all very cogent and applicable. In keeping with the trend of the survey in general, they were heavily focused on *Land Use and Biodiversity* topics. Stepping back, the concepts that emerged as priorities were:

- Evaluation of existing programs/initiatives
- Tool development/clarification/improvement
- Policy roadblocks and speed bumps
- Measurement/assessment
- Outreach and education

Although the request was for project suggestions, it was expected that this would become an “Other Comments” section as well, which was valuable. Participation in

suggestions was less varied, with only 10 of 49 participants providing feedback, and two participants accounting for most of the comments. Stepping back, the concepts that emerged as priorities were:

- Building off existing work, and working with others
- Focusing only on new spaces where work on conservation policy is nascent
- Not duplicating existing efforts
- Value of clarity regarding conservation policy process
- Getting work in the hands of / used by policy and decision makers
- Creating purpose-oriented materials and outcomes
- An omission of the hunting / fishing community and their contributions to conservation

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Introducing the Centre for Conservation Policy

Although the primary goal of this survey was to provide guidance to the Centre for Conservation Policy as to which potential projects should be pursued first, a secondary goal was to introduce the CfCP and the kind of work it would do.

While the number of responses was 49 out of 315 invitations, the survey management system indicated there were 407 unique views of the survey. From the perspective of providing a preliminary introduction to the organization, this can be considered a very positive result.

Moving Forward

While the survey results do not, and should not, provide razor sharp direction for the future work of the Centre for Conservation Policy, it does provide direction.

At the simplest level, the prioritized proposed projects will direct the suggestions, proposals, and advice that will come from the CfCP in the coming years. It will also offer a starting point for the discussions of the organization's Research and Project Advisory Committee.

For each Conservation Theme the survey results provide valuable information, and are summarized in the following sections.

At the simplest level, the prioritized proposed projects will direct the suggestions, proposals, and advice that will come from the CfCP in the coming years.

Land Use and Biodiversity

Despite the survey invitation emphasizing the CfCP's mandate needing to be discharged through numerous partnerships, some respondents repeatedly expressed concern that this work was already being done, especially within the Land Use and Biodiversity realm. This is wise advice, and being aware of 'who is doing what' within any project area will need to be a guiding principle of all of the CfCP's work.

Yet interestingly, the large majority of respondents to questions within this conservation theme expressed their perception of a high level of need for the proposed projects. This was perhaps surprising given that this area has arguably seen the most work undertaken over the last couple of decades when compared to the other conservation themes.

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Likely both perspectives ('already done' and 'need it a lot') are valid, which represents the challenge for the CfCP: identifying when a gap exists (i.e., take on new work), vs. when awareness of existing work is low (i.e., focus on knowledge dissemination), vs. when the issue is implementation (i.e., translating existing information into a form that supports policymakers).

Natural Infrastructure

'Natural Infrastructure' is clearly a hardcore piece of jargon, and while the term is relatively clear and distinct to those actively involved in that field, several comments reflected the confusion that this term causes. For some it is a uniquely municipal endeavour, for others, a unifying resource management paradigm, and for others it is something so obvious as to be completely unhelpful.

The challenge for the CfCP is to be crystal clear regarding the connotation the organization attaches to the term, and regarding the unique policy-making implications the CfCP feels the term implies.

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Nature and Climate Change

It is interesting to note that only one project proposal from this conservation theme cracked the Top 40 using either the combined scoring or the "I Would Definitely Need This" ranking. Given the profile and the urgency of climate change, this is perhaps surprising. The structure of the environmental community as a whole may provide clues as to why.

The broad components of the 'environmental movement' have been listed as biodiversity conservation, pollution prevention, and climate change, with climate change work/organizations arguably an offshoot of pollution prevention. As well, strategies for addressing climate change can often be at odds with biodiversity in regard to land use, mining, habitat and species impacts, waste management, etc., especially with regard to renewable energy. This has - unsurprisingly - led to somewhat of a structural divide in the environment sector, with organizations choosing one focus or the other. Feedback on the Nature and Climate Change project proposals may reflect this.

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As well, the issues underlying this conservation theme currently receive considerably more media, funder, government, and public attention than any of the other conservation themes, likely reinforcing the concerns about duplicative work.

The challenge for the CfCP will be working across somewhat polarized elements of the environment community, clarifying where the more media-genic climate change initiatives may be lacking with regard to biodiversity protection, and working to get existing information into the hands of policymakers in a usable form.

Finance and Biodiversity

Although the Finance and Biodiversity section had the lowest participation, still almost 70% of participants chose to answer questions, and all proposed projects consistently saw a high proportion of respondents indicating some value to the idea. In other words, this theme perhaps suffered more by comparison to the other themes than by absolute measure.

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Nevertheless, while the global finance community is increasingly expressing a need for this kind of information, it is possible that the proposed project questions are somewhat out ahead of the community that was consulted. If so, this would indicate a need to be careful not to get too far ahead of the conservation community, and to perhaps emphasize education-focused projects over implementation-focused projects.