

Cumulative Effects Framework for BC

Discussion Paper
June 30, 2016

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1. Overview of the CEF

In Canada, Cumulative Effects assessment (CEA) is a requirement under the Canadian Environmental Assessment Act 1995, section 16(1) – which requires consideration of “ *any cumulative effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out*”¹. Currently in BC cumulative effects assessments are mostly carried out on large projects, but generally not for smaller ones.

There are some challenges identified with the current CE protocol²:

- BC’s Environmental Assessment Act allows, but does not require, assessment of cumulative effects in the context of project specific Environmental Assessments – s11 (2)(b), and
- Gives the Minister the discretionary power to direct that an inquiry or strategic assessment occur – s.49
- CEA is largely proponent driven though the EA process and is limited to project footprint, although effects may occur outside the immediate area of the project.
- CE protocol is primarily associated with environmental change and valued ecosystem components – it does not consider cultural, social, or human health indicators.
- The ‘Baseline’ from which measurements are taken or changes assessed against may already be affected by current or historic developments.
- There is a lack of clarity around enforcement and requirement for long term monitoring.

As the demand for natural resources and new development continues to grow, there is an acute need to effectively and consistently assess the cumulative impact of resource development and land-use projects, regardless of project size. In addition, recent court decisions have determined that there is obligation to consider cumulative impacts to Aboriginal and treaty rights, as found within the William and West Moberly Decisions.

Consequently, in 2011 the BC Ministry of Forests, Lands and Natural Resource Operations (FLNRO) and BC Ministry of Environment (MoE) proposed the Cumulative Effects Assessment Framework. A pilot project to develop the Framework was endorsed by the BC Government in 2013, followed by an

¹ <https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=1DA9E048-1>

² Clogg & Carlson, 2013; FLNRO, 2012; Bellringer, 2015

endorsement for phased implementation of the framework across the province by 2021³

1.1 What Should the Framework Achieve?

The Province of BC sets out the following objectives for the Cumulative Effects Assessment Framework⁴:

- Provide eco-region wide legal and policy objectives that are respected by all sectors that lead to management actions, which will maintain/restore the condition of natural resources/ecosystems;
- Support assessment of impact to FN rights and interest;
- Open access tools and information about cumulative effects that enable resource managers to take decisions that meet the needs of the many different users;
- Provide organizational structures to ensure interagency collaboration on management action; and
- Support efficient, transparent and streamlined decisions.

1.2 Proposed Approach

The proposed approach to establishing the Framework includes:

1. Define values

- Identify values by assessing current legislation, policy and government-led land-use plans and consultation of First Nation
 - o This should be done via a broad public engagement process and government-to-government consultation with First Nations in order to address both local and regional values (Clogg & Carlson, 2013)
- Establish Objectives for the valued component (i.e. the desired condition of the value) based on current legislation and regulations
- Define the geographic scale/assessment area (to guide scope of assessment and issues and risks associated with value per different regional locations)
- Determine value stewards (agency sectors that are in charge of developing and updated information about each value)
- Confirming assessment methods and monitoring to assess current conditions and risk to values

³ (FLNRO, 2012)(Bellringer, 2015)

⁴ (The Province of British Columbia, 2014)

2. Assessment

- Collect data to assess current conditions of the values;
 - o Identify emerging risks based on past, present and foreseeable future activities
- Build data-base banks (larger regional scale, vs. project/site specific)
 - o *NB: Currently, data management in BC is dependent upon an architecture known as the BC Geographic Warehouse (BCGW).*

3. Monitoring

- Existing (Natural Resource Sector) monitoring programs will be leveraged to monitor compliance and effectiveness to support CEF implementation.
- CEF will ensure the quality and currency requirements of data are met

4. Supporting Decision

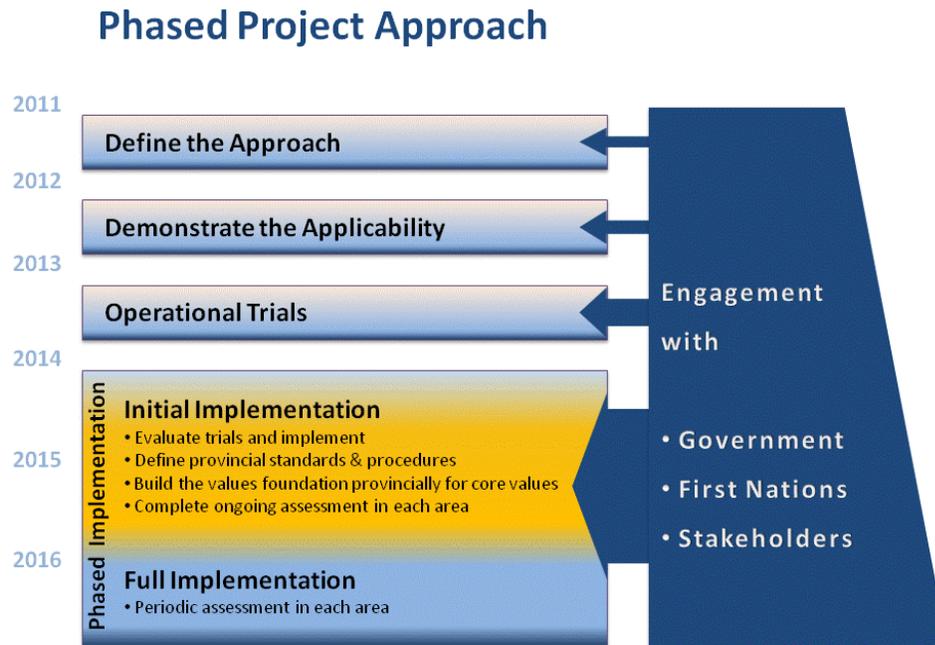
- Develop accessible/understandable information sharing tools, e.g. Maps and reports that synthesize results and findings from CE assessment
 - o These should be able to support decision makers to evaluate levels of risk, mitigation options and trade-offs

NB: (BC Government is in the process of identifying the appropriate tools and platforms that will be used to provide this information)

5. CE Management

- Establish a regional interagency committee review CEA reports and maps to develop:
 - o Resource plans and allocations (e.g. timber, wildlife)
 - o Priorities for monitoring, research and inventory
 - o Develop recommendation for mitigating risk at operational land strategic level (that will eventually be provided to the statutory decision makers and proponents)
 - o Operational decision for major projects, authorizations and permits
- Engage with First Nations and community stakeholders on CEA report, recommendations and proposed actions.

1.3 Proposed Timeline for Phased Implementation Approach



- Currently completing and evaluating CEF operational trials
 - o Trial CEA under implementation are in Merritt, Cariboo, and South Peace Regions
- Exploring further CEA implementation projects in other high priority areas
- Engaging with First Nations and stakeholders for the evaluation of existing trials and the implementation of the provincial framework.
- Based on trials and consultation the BC Government is continuing to develop provincial and regional standards and procedures for assessment;
- Establishing organizational capacity, roles and responsibilities;
- Confirming tools for data management, access and analysis, as part of Natural Resource Sector transformation;
- Completing policy analysis and recommendations for regulatory amendment.

From April 2016 onwards, it is expected that the framework will be expanded to all regions of the province. Periodic CE assessments will keep the information updated. It is expected that with capacity, tools and resourcing in place, CE assessment information will be a regular element of decision-making in the Natural Resource Sector.

2. Key themes identified in the current literature on CE

The following list outlines a range of key themes identified in current literature:

- Need for eco-region integrated assessment framework based on science and management
- Direct engagement with First Nations and local stakeholders to define values and review decision making
 - o Values need to be defined and prioritized collaboratively
- Provincial (and/or Federal?) Government needs to establish legislation and policy to enable Ministries to better coordinate the management of CEF/CEA
- Provincial Government needs to build the capacity of staff to implement CEF and sustain CEAs. This includes:
 - o Identifying the roles and responsibilities of the Natural Resource Sector agency departments that will be responsible for implementing the CEF
 - o Establish clear governance framework for assessing and managing CE (Bellringer, 2015)
- Develop (eco)region specific CEF plans
- Coordinate and support the implementation of regional warehouses across the province to support cumulative effects assessment implementation – as identified in the Northwest Pilot Project – 2013 recommendations.
- Establish and resource community advisory bodies (such as watershed roundtables) per region or sub-region to monitor CE, manage database warehouses, facilitate data sharing etc.
- Collaborative data sharing that is easily accessible to all stakeholders
- Need for common set of measurable objectives for all sectors

Terminology	Definition
Values	The things that the people and government of British Columbia care about and see as important for assuring the integrity and well being of the province’s people and communities, economies, and ecological systems, as identified in existing legislation, policy and/or land use plans, and other agreements.
Objectives	Desired condition of values obtained from existing legislation, policy and/or land use plans, and other agreements. Objectives may be described in a qualitative or quantitative manner.
Components	Attributes of the natural resource system that should be measured, managed, and maintained to ensure the integrity of values.
Indicators	The metrics used to measure and report on the condition and trend of a component and / or the process(es) impacting a component.
Management Targets	Measurable levels of an indicator that reflect a legal or policy objective.
Management Triggers	Measurable levels of an indicator that trigger a management action.

Terminology and definitions used within BC Government CEF

The Northwest CE Demonstration project (FLNRO & MOE, 2013)-
Recommended process for establishing values and associated objectives

- Divide the region into assessment areas to guide the scope of assessment, identifying resource management issues and risk to values in different parts of the Region.
- Construct a Sub-regional Value Overview for each assessment unit in the region, including documentation of the key valued services, and related objectives and management direction. This will be used to identify priority values for decision-making.
- Assign value stewards to each of the values. The responsibility for maintaining the data, knowledge and status for each value needs to be assigned to an appropriate business unit. A statutory decision maker also needs to be assigned to each value to provide accountability for the values for decision-making.

The regional inter-agency management committee, in conjunction with value steward specialists and First Nations, would make the final determination of what values should be considered for assessment, based on specific criteria, including:

- Values that already face risk.
- Values that are likely to be affected (i.e., risk or benefit), by emerging issues such as pipelines or mountain pine beetle, based on preliminary assessments.
- Values that influence several other values (e.g., fish habitat influences grizzly bears).
- Values that serve as coarse filter indicators of ecosystem function (e.g., biodiversity) and hence influence other values (e.g., timber supply).
- Values that have low recovery potential if affected.
- Values identified in Strategic Agreements with First Nations, or otherwise identified as key to supporting an aboriginal or treaty right (e.g. hunting, fishing or trapping).
- Values for which there are existing objectives (legal or policy).

After values are identified, each should have a:

- *Knowledge Summary*, which synthesizes best available information, containing scientific and traditional knowledge including the legal and policy context.
- *Knowledge maps* – depicting factors currently or potentially influencing valued services (e.g. human activities, CC...)
- *Risk Curves*: value specific (response variable) graphs that depict the probability of failing to achieve an objective for a valued service. Curves can be broken down into risk categories to help guide management trigger points. Appropriate management actions can then be assigned to each

risk category. This depiction facilitates a clear linkage between knowledge, risk and decision-making.

Expert workshops are a recommended way of identification of best available information, data, and or methods. The assessment team and value experts should participate in workshops; decision-makers and interested stakeholders should also participate in workshops addressing areas of possible disagreement and controversy⁵.

⁵ (Daust & Morgan, 2013)

3. Recommendations

The following section summarizes recommendations for submission to the Province of BC regarding the BC Cumulative Effects Framework (CEF). It is based on a review of literature as well as observations, insights and lessons learned from attending meetings and workshops on cumulative effects, discussions with practitioners from across the province of BC and a review of the phase 2 engagement documents available at:

<http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework>.

Recommendations are provided on the following aspects of the CEF:

1. Engagement and Advisory Processes
2. Selection of Values and Objectives
3. Evaluation, Oversight and Reporting
4. Resourcing
5. Other Comments

3.1 Engagement and Advisory Processes

- Ensure early and ongoing government-to-government engagement and collaboration with First Nations.
- Ensure open and ongoing engagement with stakeholders and practitioners throughout policy development and implementation, as well as the review and refinement of values, objectives, policies and procedures over time.
- Clearly define opportunities for engagement in Cumulative Effects Assessment (CEA) review and identification of management responses.
- Establish scientific and public advisory bodies to act as permanent and ongoing sources for external engagement and review. This recommendation would benefit the CEF in many ways, including:
 - Facilitating input from a variety of technical experts, professionals and practitioners, along with public, private and nonprofit stakeholders regarding values, objectives, indicators, cause-effect relationships, benchmarks, triggers, management responses, etc.
 - Supporting continual improvement to keep pace with evolving scientific knowledge, emerging analytical tools, changing issues and impacts, as well as evolving values and objectives.

3.2 Selection of Values and Objectives

- Consider a wide range of values that relate to environmental, social, economic, and cultural dimensions of sustainability.
- Use a consultative and collaborative process to inform the selection of values and objectives that is inclusive of First Nations governments, other

- communities, and a variety of public, private and nonprofit stakeholders.
- The selection of values, objectives and indicators should be iterative and adaptive.
 - Ensure provincial initiatives that identify and assess values (e.g., Forest and Range Evaluation Program, Multiple Resource Value Assessments, etc.) are aligned and coordinated for consistency with CE values. This will help to improve the alignment of values across different initiatives and policies over time.
 - Draw upon values and objectives that are expressed through existing government-to-government agreements and other initiatives to support the identification of values of First Nations and others.
 - In addition to integrating values and objectives from existing plans, there is a need to develop a process for reviewing, adding or revising values and objectives over time. Past plans such as LRMPs, water use plans, watershed plans, forest stewardship plans, and others can help collate the mix of community and societal values and objectives. However, it must be recognized that for much of BC, existing land use plans are substantially out of date and gaps exist. Ideally these plans would be updated, or at the very least, the values and objectives articulated in those plans should be reviewed, confirmed, or corrected before using these values and objectives as the basis of CE assessment and management in modern times. Much has changed in terms of the natural resource sector pressures on the landscape; the organizational structure and capacity of government; the evolving title, rights and roles of First Nations; the evolving values and objectives of society, and even the climate itself. Therefore, there is a need to review – and potentially add or revise – values and objectives in the near term and include provisions to continue to do so over time.
 - It is key to have measurable indicators to provide early warning signals, as well as thresholds and targets to trigger appropriate management responses to mitigate the identified risks.
 - In *Part 1: Policy for Cumulative Effects Assessment within section 5.3 “The following are primary criteria for the selection of CEF values:*
 - *b. The value can be spatially identified and mapped.*
 - *c. There is data available to support assessment of the value.”*
 - There is recognition that one cannot manage things that are not measured or mapped. However, a lack of data should not prevent the expression of legitimate and significant values. In some cases the lack of data could fundamentally bias the CEF (both assessment and management aspects) by excluding key values of importance. It would be far preferable to develop the means to measure important values, than to disregard important values simply because historically, the relevant data has not been collected.

3.3 Evaluation, Oversight and Reporting

- In addition to issuing the various assessment and management reports as outlined in the CEF, it is recommended to add a function to evaluate and report on the effectiveness of CE assessment and management including the accuracy of assessment, the improvement of data over time, the suitability of management thresholds and triggers, the effectiveness of terms and conditions of permits and approvals (e.g. management responses, mitigation, offsets, etc.) as well as long-term achievement and maintenance of values and objectives.
- Establish a third party, science-based body to oversee monitoring, audits and investigations to ensure effective implementation of the CEF as well as continual improvement. A Natural Resource Practices Board (NRPB) is one model that could be established to provide this function. A NRPB could be based on the Forest Practices Board, but with an extended mandate to include all natural resource sectors. A NRPB would be well suited to provide 3rd party oversight on the CEF.

3.4 Resourcing

- Ensure that adequate resources are dedicated to staffing, training, and capacity building to support effective CEF development and implementation.
- Ensure that adequate resources are dedicated to improving data and information to fill gaps, monitor trends, improve provincial coverage, etc. Good information is fundamental to a technically sound CE assessment and management process and the need to adequately resource improved information cannot be over-emphasized. In many cases, we do not currently have adequate data to accurately assess and effectively manage cumulative effects. In addition, there is a need to improve the accuracy of risk functions, understanding of cause-effect relations, modeling of future scenarios and projected effects, etc.
- In the short term, a couple of key data gaps that need to be addressed relate to good baseline information (i.e. the conditions of values prior to significant resource development) as well as the influence of a changing climate on future conditions of identified values.

3.5 Other Comments

- One of the benefits expressed from the Cumulative Effects Framework is that proponents will know expectations “up front”. In addition to understanding the expectations of statutory decision-makers, there is also a need for proponents to consider the expectations of several other parties, including First Nations, along with community and stakeholder interests. This can be

expressed within the values and objectives if these values and objectives are developed in collaboration with these entities.

- In regards to First Nations, there are numerous treaties, legal decisions, and existing government-to-government agreements that may provide helpful guidance in expressing the values and objectives of First Nations. Additional thought is required to enhance existing engagement processes with First Nations and to clarify how the values and objectives of other communities and stakeholders can be integrated.
- In *Part 1: Policy for Cumulative Effects Assessment and Part 2: Policy for Cumulative Effects Management within the section on “Key Roles and Responsibilities”* it is recommended to add the following:
 - 3rd party oversight and audit function such as a Natural Resource Practices Board
 - Formal government-to-government processes with First Nations
 - Formal advisory processes for local governments, and other public, private and nonprofit stakeholders.
- In *Part 1: Policy for Cumulative Effects Assessment within Appendix A: Initial List of CEF Values*, it is recommended to add the following:
 - Environmental flows as a specific, critical aspect of the broad value “*Water Quantity and Quality*”. This should consider both the volume and timing of flows throughout the year to ensure healthy ecosystem functions.
 - Wetlands as a value in addition to riparian within the broad value of “*Aquatic Ecosystem*”.

Appendix A: References

- Bellringer, C. (2015). *Managing the cumulative effects of natural resource development in B.C.* Victoria.
- Clogg, J., & Carlson, D. (2013). *Regional Cumulative Effects Management in British Columbia : A Legal Discussion Paper.*
- Daust, D., & Morgan, D. (2013). *Guide to preparing information for cumulative effects assessment.*
- FLNRO. (2012). *Cumulative Effects Assessment Framework for Natural Resource Decision Making - Project Charter.*
- FLNRO & MOE. (2013). Northwest Cumulative Effects Demonstration Project : Final Report, (April), 34.
- The Province of British Columbia. (2014). *Addressing Cumulative Effects in Natural Resource Decision-Making: A Framework for Success.*

Appendix B: Additional Literature Review

BC Government (2015) - *Addressing Cumulative Effects in Natural Resource Decision-Making: A Framework for Success*

Most current summary of the Cumulative Effect Framework (CEF) structure and implementation procedures

FLNRO and MoE (2012) *Cumulative Effects Assessment Framework for Natural Resource Decision Making - Project Charter*

Report summarizes the rationale, purpose and objectives of developing CEF for BC, as well as proposed demonstration/pilot projects

Managing the Cumulative Effects of Natural Resources development in BC – Carol Bellinger, Auditor General Review

- Audit to determine whether the developments approved by BC Government - including FLNRO were established on a sound basis for managing cumulative effects of BC's natural resources and environment. Overall conclusions of this report:
 - o BC Government has not provided the ministry (FLNRO) with clear direction of the powers necessary to manage CE when deciding on NR use
 - o How the CEF will be implemented remains unclear
 - o There is a lack of legislation directing the management of CE
 - o Fragmented decision making remains an issue as each agency operates under its own mandate without considering the impacts on other sectors or values
 - o FLNRO staff lack guidance and training for managing and decision making in relation to CE

L A Greig and P N Dunkier (2006) *Importance of cumulative effects assessment (CEA) in Canada: Ailment and ideas for redeployment:*

This article articulates that there are six major problems with CEA, and propose solutions. The six problem areas include

- (1) Application of CEA in project-level environmental impact assessments (EIAs),
- (2) An EIA focus on project approval instead of environmental sustainability,
- (3) A general lack of understanding of ecologic impact thresholds,
- (4) Separation of cumulative effects from project-specific impacts,
- (5) Weak interpretations of cumulative effects by practitioners and analysts, and
- (6) Inappropriate handling of potential future developments.

They advocate improvements not only within project-specific EIAs, but also in region-scale CEAs and regional environmental effects frameworks.

L A Greig and P N Dunkier (2011) *A proposal for further strengthening science in environmental impact assessment in Canada*

- Highlight the ongoing weaknesses that remain in the quality of science of EIA
- EIA should be set into the context of transdisciplinary imaginations
- To best understand and predict impacts on valued ecosystem components, scientist should use the latest/most accurate ecological models
- These are however usually developed by the science practitioners outside of the EIA, as project based EIA monitoring and research tends not to have the time/money
- Strong predictive models rely on monitoring and data collection on the relevant parameters
- It is key that someone (proponents or government) should collect this data to ensure strong predictive models are being use
- They call for a better EIA framework to be developed in which EIA practitioners work alongside other communities and agencies in order to develop a more holistic approach of assessing ecosystems and their impacts as it will increase the scientific rigor

Clogg J. & Carlson D. 2013 Regional Cumulative Effects Management in British Columbia: A Legal Discussion Paper – Discussion Draft, West Coast Environmental Law

Examines about 40 models globally that could be applied to governance and institutional aspects of cumulative effects management in B.C.

Overall, the study found that no one model was the “be all and end all” for effective cumulative effects management, but there were components of success in each that could be applied in B.C. including:

- Define values, with direct First Nations engagement, and based on a strong independent analysis of science and traditional ecological knowledge.
- Foster broader public involvement in the process.
- Establish government-to-government coordination at regional and territorial levels, and ensure decision-makers have co-management and co-jurisdictional capacities.
- Fund an independent monitoring body

Proceedings Report – Grounding Cumulative Effects in the Skeena Estuary Workshop (May 2014 in Prince Rupert) by S. Shaikh and K Casey

The objectives of the workshop were to:

1. Inform people about the opportunity to work with new cumulative effects approaches in the Skeena estuary.
2. Enhance coordination amongst the groups working on the issue of cumulative effects in the Skeena River area, including the estuary.
3. Share information on the current state of understanding about the Skeena estuary and potential stressors.

Workshop's group brainstorming session came up with the following priority areas to move cumulative effects management forward in the Skeena estuary were identified:

- Establish a community advisory body to monitor cumulative effects, share scientific and policy advances, facilitate data sharing, and inform project reviews and authorizations.
- Ensure the advisory body's operations are rooted in First Nations values, knowledge and monitoring.
- Create a collaborative data and information-sharing system.
- Collaboratively define and prioritize values for a cumulative effects assessment.
- Develop a regional cumulative effects assessment.
- Investigate the options available for a Skeena Estuary Management Plan.
- Establish a governance framework for assessing, managing and monitoring cumulative effects.

Pilot projects

FLNRO and MoE have jointly lead three demonstration projects which have been initiated to provide 'learning labs' for the development of a framework and testing of tools to support cumulative effects assessment. Information about these demonstration projects can be found the CEF Project Charter Document: http://media.wix.com/ugd/3ed831_0f72585af7574726a5478ba3bda2c65b.pdf

North-West Demonstration project
North-East Dawson Creek demonstration project
Thompson-Okanagan Pilot Project



(1) North-West demonstration project initiated in 2011 (Cassiar and Nass TSA/ Cassiar-Iskut Stikine – Skeena region)

Northwest Cumulative Effects Demonstration Project: Final Report
 Cumulative Effects Assessment Framework in Support of Integrated Natural Resource Decision Making

http://bvcentre.ca/files/integrated/NW_CE_Phase2_Report_V9_25June2013.pdf

The goal of the Northwest Cumulative Effects Assessment (CEA) Pilot Project was to develop and test methods to improve the consistency and clarity of information provided to authorization staff and statutory decision-makers

- Report identified objectives for 6 topic areas: Policy & Organizational Requirement, Knowledge management, Values, Assessment and Monitoring, Decision Support and engagement.
- Provided series of recommendations on each of the areas above as well as for the implementation and development of the CEF in the Skeena Region

BV Centre website has links to all current assessments and approaches documents for the NW pilot projects

http://bvcentre.ca/integrated/research/cumulative_effects_assessment

Project stages:

Phase 1: COMPLETED - Engaged with stakeholders and First Nations with interests in the pilot area as well as government agencies. Support from

stakeholders and First Nations has been very positive overall. Many are interested to see the results on the ground

Phase 2: COMPLETED - Focused on work-shopping with internal and external value experts, testing the framework, completing scenario analysis and reporting out on overall success and recommendations for provincial implementation

Phase: 3 NEXT Regional implementation (*which was proposed for 2013-2014, though no report is available*)

(2) North East (Dawson Creek – Peace region) project initiated in Spring 2012.

<http://www.ceaa.gc.ca/050/documents/p63919/98185E.pdf>

This report presents indicators, objectives and current conditions and trend for the values identified. Risks to most resource values have been assessed as low, although there are some instances of moderate to high risk for specific assessment units where. Outstanding issues include the need to better characterize near-term development trends and to conduct further analyses to increase the precision of some risk estimates (e.g., riparian habitat, old forest, cultural heritage).

Next Steps for this project:

- The assessment report will be provided to First Nations, communities and stakeholders to solicit feedback on the assessment
- The Northeast Managers' Committee will endorse subsequent actions and will address resourcing needs regarding:
 - a. Needed improvements to the assessment including additional inventory, analysis or monitoring requirements to address knowledge gaps;
 - b. Priority actions to address identified risks; and,
 - c. Addressing other recommendations, as needed.

(3) Elk Valley Cumulative Effects Management Framework (CEMF) - Kootenay-Boundary region

The Elk Valley Cumulative Effects Management Framework (CEMF) was initiated in 2012 by Teck and the Ktunaxa Nation Council (KNC). FLNRO took over leadership role of the CEMF Working Group in 2014, to ensure provincial CE framework are aligned to minimize the duplication of effort and maximize the value of CEMF to decision makers.

Information and summary of project developments made can be found at:

<http://www.elkvalleycemf.com>

Project stages:

Phase 1 – determining geographical boundaries and value components
COMPLETED

Phase 2 – Retrospective assessment to establish indicators, benchmarks and targets WORK IN PROGRESS

Phase 3: Prospective Cumulative Effects Assessment: assessment of the effects of future scenarios TBC

Phase 4: Management Action and Follow-up: regulatory and management decision making and monitoring TBC

Project lead:

FLNRO - Cumulative Effects Coordinator for the Kootenay-Boundary region

Key Stakeholders:

Teck, Ktunaxa Nation Council (KNC), CANFOR, Jemi Fibre Corp., District of Sparwood, CanAus Coal, Ministry of Environment, Ministry of Energy and Mines, Ministry of Transportation and the Elk River Alliance.

Value Components: Riparian habitat, Old Growth/Mature Forest, Grizzly bear, Bighorn Sheep and Westslope cutthroat trout