

METLAKATLA CUMULATIVE EFFECTS MANAGEMENT

PHASE 1 EXECUTIVE SUMMARY



In response to recent and proposed development activity within Metlakatla Territory, the Metlakatla First Nation initiated a cumulative effects management (CEM) project for the Metlakatla Territory. Cumulative effects in simplest terms are changes to Metlakatla values due to past, present and future human actions. Cumulative effects management attempts to track and manage the condition of priority values in the context of an evolving landscape of individual projects and activities.

The Metlakatla's approach to CEM is intended to inform decisions at two levels: 1) the individual project scale via the environmental assessment (EA) process and 2) at a Territory-wide scale to guide broader land, marine, and community planning and establish parameters and key considerations for future development. The Metlakatla are aware of other CEM efforts underway on the North Coast and so have adopted methods that are consistent with best practices and compatible with other processes. The steps followed in phase 1 and proposed for phase 2 are summarized in the illustration below.

Steps of Metlakatla Approach to CEM

<ol style="list-style-type: none">1. Clarify the decision context (i.e. how will CEM results be utilized?)2. Identify candidate values (i.e., "the things that matter")3. Examine current and future development scenarios (i.e. projects and activities).4. Clarify how development may affect priority values using pathway diagrams.5. Select indicators for priority values.6. Identify interim management triggers or benchmarks for each indicator	Metlakatla CEM Phase 1 July 2014 - March 2015
<ol style="list-style-type: none">7. Assess the condition and trend of each indicator. Re-assess whether a priority.8. Determine management triggers, zones and responses.9. Implement monitoring program, as required.10. Re-assess priority values (return to Step 1).	Subsequent Phase(s) April 2015 onwards

Phase 1: Develop CEM Values Foundation

The focus of phase 1 was the identification of priority values and associated indicators, comparison benchmarks and in some cases, preliminary management triggers. Ten priority values and 12 indicators spanning a range of environmental, socio-economic, cultural and governance values were prioritized for a phase 2 pilot implementation project. The priority values (indicators in parentheses) include:

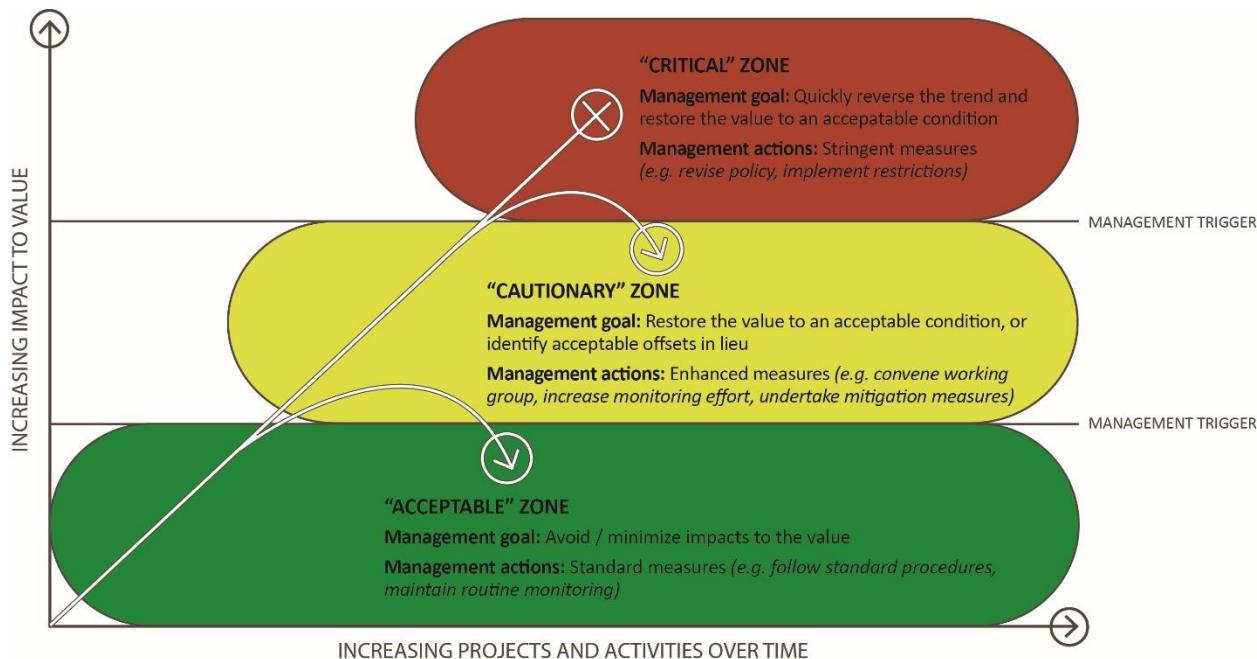
- Chinook (abundance and critical juvenile habitat)
- Butter Clams (population density)
- Adequate housing (# of households in core housing need)
- Access to health services (Ambulatory Care Sensitive Conditions rates)
- Chronic health conditions (diabetes and hypertension prevalence)
- Wealth distribution (income equality)
- Economic self-sufficiency (high school completion rate)
- Personal safety (crime severity)
- Governance of Metlakatla lands (stewardship ability)
- FSC activity (FSC participation rates)

A Values Foundation Implementation Guide and ten detailed Indicator Guide Sheets were prepared as companion documents to this report. Each CEM indicator guide sheet includes a description of the indicator and rationale for its selection; associated stressor indicators to support project-level assessments; indicator limitations, calculations and data sources; comparison benchmarks (socio-economic values) or preliminary management triggers (biophysical values); and

implementation considerations. Due to a lack of baseline data, a Community Survey Guide Sheet was prepared to support socio-economic data collection and an Assessment and Monitoring Guide Sheet was developed to inform the development of a biophysical value data collection program.

Managing the condition of priority values necessitates the identification of management triggers, zones, actions and goals. A tiered management trigger is proposed for the Metlakatla CEM system, illustrated in the figure below.

Metlakatla CEM Concept



Maintaining the condition of priority values in the green zone is preferred. Values in acceptable condition may warrant standard procedures and routine monitoring. A value in the middle zone is characterized as cautionary and triggers restorative action, or, in cases where the costs of restorative measures outweigh the benefits (from a societal perspective) offsets that benefit other priority values or are acceptable to stakeholders can be implemented in lieu. The red tier is a no-go zone that triggers stringent measures intended to quickly restore a value's condition. In a well-designed CEM system, a value's condition would never reach the red zone due to increased and effective management responses in the yellow zone.

Several themes emerged in phase 1 that may be instructive for phase 2:

- *CEM is a program not a project.* There are many Metlakatla values. The purpose of a CEM system is to track and manage those values most likely to be impacted by current and future development and requiring management attention. Because projects and activities are constantly changing, priority values and/or indicators can change over time. CEM is inherently iterative and therefore ongoing.
- *CEM must be culturally relevant.* Many departmental mandates and activities are organized around strengthening an understanding and practice of Tsimshian culture. A culturally relevant CEM will identify values, indicators and management triggers that incorporate cultural perspectives.
- *There is a need for current condition data (e.g. baseline data).* Data is required in many cases to accurately assess the current condition of priority values. In cases where the value is in poor or deteriorating condition, partners may collaborate to implement management responses (e.g. ongoing monitoring program, mitigation measures, etc.).
- *Metlakatla values can benefit from partnerships.* Partnerships among the Metlakatla, other Tsimshian First Nations, and government can help increase management effectiveness. For example, improving health care services for

- members living in Prince Rupert would be challenging without the participation of Northern Health; addressing impacts to marine species would be easier with support from Environment Canada and/or Department of Fisheries and Oceans; and reducing crime-related impacts requires involvement of the RCMP. Collaboration with other Tsimshian First Nations will help motivate government and agency action on issues that are relevant to the Prince Rupert area Aboriginal population (e.g. adequate housing). Further, pooling resources among all partners can reduce the capacity burden (financial and human resources) of long-term monitoring programs.
- *Tiered management triggers (i.e. red, yellow, green zones).* The emerging consensus among cumulative effects practitioners suggests the use of tiered triggers is required to address uncertainty and incorporate a precautionary approach. Triggers should be developed deliberatively, incorporating science, traditional and local knowledge, stakeholder values and a consideration of implementation considerations. The Metlakatla have adopted a tiered trigger approach to CEM, identifying a number of strategies during phase 1 to aid with CEM implementation.

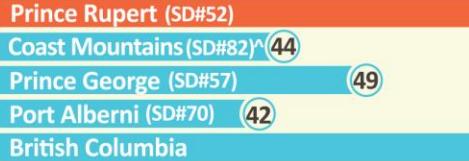
Phase 2: CEM Implementation

The Phase 2 implementation plan is a 9-step process intended to engage internal and external implementation partners in validating/refining phase 1 work, collecting required baseline data, seeking alignment on management goals, triggers and actions for priority values/indicators, and designing and implementing an ongoing monitoring program. Upon completing the phase 2 pilot, the Metlakatla and its partners may elect to revisit values and indicators that were not addressed through the pilot. A mark of success of the Metlakatla's efforts on CEM would be the formation of a multi-party institution tasked with tracking and managing the condition of priority values over time on the North Coast.

See the following pages for:

- A summary of the Phase 1 Values Foundation, and
- Phase 2 Implementation Pathways.

Metlakatla CEM Values Foundation

METLAKATLA VALUE	INDICATOR - METRIC	COMPARATIVE BENCHMARKS (socio-economic values) PRELIMINARY MANAGEMENT TRIGGERS (biophysical values)*	IMPLEMENTATION PATH	POTENTIAL IMPLEMENTATION PARTNERS														
Wealth Distribution	Income equality Ratio of low-income households (<\$40k/yr) to middle-income households (\$50k - \$80k/yr) (Aboriginal population data shown) Directionality: lower is better	 <table border="1"> <thead> <tr> <th>Location</th> <th>Benchmark Value</th> </tr> </thead> <tbody> <tr> <td>Prince Rupert</td> <td>2.4</td> </tr> <tr> <td>Terrace</td> <td>2.8</td> </tr> <tr> <td>Kitimat</td> <td>1.9</td> </tr> <tr> <td>Prince George</td> <td>1.5</td> </tr> <tr> <td>Port Alberni</td> <td>2.6</td> </tr> <tr> <td>British Columbia</td> <td>1.8</td> </tr> </tbody> </table>	Location	Benchmark Value	Prince Rupert	2.4	Terrace	2.8	Kitimat	1.9	Prince George	1.5	Port Alberni	2.6	British Columbia	1.8	Pathway A or B	Metlakatla (Development Corporation) Other Tsimshian First Nations Prince Rupert and Port Edward Economic Development Corporation
Location	Benchmark Value																	
Prince Rupert	2.4																	
Terrace	2.8																	
Kitimat	1.9																	
Prince George	1.5																	
Port Alberni	2.6																	
British Columbia	1.8																	
Economic Self Sufficiency	High School Completion Six Year Completion Rate = (# of graduates) / (total number of grade 8 Metlakatla cohort – Metlakatla attrition factor) (Aboriginal population data shown) Directionality: higher is better	 <table border="1"> <thead> <tr> <th>Location</th> <th>Benchmark Value</th> </tr> </thead> <tbody> <tr> <td>Prince Rupert (SD#52)</td> <td>63</td> </tr> <tr> <td>Coast Mountains (SD#82)</td> <td>44</td> </tr> <tr> <td>Prince George (SD#57)</td> <td>49</td> </tr> <tr> <td>Port Alberni (SD#70)</td> <td>42</td> </tr> <tr> <td>British Columbia</td> <td>62</td> </tr> </tbody> </table> <p><small>^ includes Terrace, Kitimat, Stewart, Hazelton, Kitwanga, New Hazelton</small></p>	Location	Benchmark Value	Prince Rupert (SD#52)	63	Coast Mountains (SD#82)	44	Prince George (SD#57)	49	Port Alberni (SD#70)	42	British Columbia	62	Pathway B	Metlakatla (Governing Council) Other Tsimshian First Nations School District 52 Prince Rupert Friendship House City of Prince Rupert		
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Individual Health	Diabetes prevalence % of population with diabetes (Total Population data shown) Directionality: lower is better	 <table border="1"> <thead> <tr> <th>Location</th> <th>Benchmark Value</th> </tr> </thead> <tbody> <tr> <td>Prince Rupert</td> <td>6.3</td> </tr> <tr> <td>Terrace</td> <td>5.8</td> </tr> <tr> <td>Kitimat</td> <td>7.6</td> </tr> <tr> <td>Prince George</td> <td>6.1</td> </tr> <tr> <td>Port Alberni</td> <td>5.8</td> </tr> <tr> <td>British Columbia</td> <td>5.4</td> </tr> </tbody> </table>	Location	Benchmark Value	Prince Rupert	6.3	Terrace	5.8	Kitimat	7.6	Prince George	6.1	Port Alberni	5.8	British Columbia	5.4	Pathway B	Metlakatla (Governing Council) Other Tsimshian First Nations Northern Health First Nations Health Authority
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Hypertension prevalence % of population with heart disease (Total Population data shown) Directionality: lower is better	 <table border="1"> <thead> <tr> <th>Location</th> <th>Benchmark Value</th> </tr> </thead> <tbody> <tr> <td>Prince Rupert</td> <td>21.8</td> </tr> <tr> <td>Terrace</td> <td>21.6</td> </tr> <tr> <td>Kitimat</td> <td>22.0</td> </tr> <tr> <td>Prince George</td> <td>19.8</td> </tr> <tr> <td>Port Alberni</td> <td>18.7</td> </tr> <tr> <td>British Columbia</td> <td>18.0</td> </tr> </tbody> </table>	Location	Benchmark Value	Prince Rupert	21.8	Terrace	21.6	Kitimat	22.0	Prince George	19.8	Port Alberni	18.7	British Columbia	18.0			
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Access to health services	Access to health care Ambulatory care sensitive conditions per 10,000 in Prince Rupert (Total Population data shown) Directionality: lower is better	 <table border="1"> <thead> <tr> <th>Location</th> <th>Benchmark Value</th> </tr> </thead> <tbody> <tr> <td>Northwestern BC</td> <td>516</td> </tr> <tr> <td>North Interior BC</td> <td>503</td> </tr> <tr> <td>Northeast BC</td> <td>384</td> </tr> <tr> <td>Northern Vancouver Isl.</td> <td>269</td> </tr> <tr> <td>British Columbia</td> <td>258</td> </tr> </tbody> </table>	Location	Benchmark Value	Northwestern BC	516	North Interior BC	503	Northeast BC	384	Northern Vancouver Isl.	269	British Columbia	258	Pathway B	Metlakatla (Governing Council) Other Tsimshian First Nations Northern Health First Nations Health Authority		
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*One outcome from CEM will be the identification of management triggers for priority values. Comparison benchmarks are provided in some cases where triggers are yet to be determined. See Management Trigger section in final report for further detail.

METLAKATLA VALUE	INDICATOR - METRIC	COMPARATIVE BENCHMARKS (socio-economic values) PRELIMINARY MANAGEMENT TRIGGERS (biophysical.values)*	IMPLEMENTATION PATH	POTENTIAL IMPLEMENTATION PARTNERS												
Adequate Housing	% of Tenants in Core Housing Need Failure on any one of the following: <ul style="list-style-type: none">• Affordability: housing costs > 30% of household income• Adequacy: condition of house• Suitability: # of occupants (Aboriginal population data shown) Directionality: lower is better	<table> <tbody> <tr> <td>Prince Rupert</td> <td>37</td> </tr> <tr> <td>Terrace</td> <td>41</td> </tr> <tr> <td>Prince George</td> <td>45</td> </tr> <tr> <td>Port Alberni</td> <td>47</td> </tr> <tr> <td>British Columbia</td> <td>39</td> </tr> </tbody> </table>	Prince Rupert	37	Terrace	41	Prince George	45	Port Alberni	47	British Columbia	39	Pathway B	Metlakatla (Governing Council) Other Tsimshian First Nations City of Prince Rupert M'akola Housing Society North Coast Transition Society Aboriginal Housing Management Association		
Prince Rupert	37															
Terrace	41															
Prince George	45															
Port Alberni	47															
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Personal Safety	Crime Severity Index Crime rates weighted by seriousness (crimes include violent, property, and petty) (Total Population data shown) Directionality: lower is better	<table> <tbody> <tr> <td>Prince Rupert</td> <td>143</td> </tr> <tr> <td>Terrace</td> <td>153</td> </tr> <tr> <td>Kitimat</td> <td>91</td> </tr> <tr> <td>Prince George</td> <td>137</td> </tr> <tr> <td>Port Alberni</td> <td>135</td> </tr> <tr> <td>British Columbia</td> <td>89</td> </tr> </tbody> </table>	Prince Rupert	143	Terrace	153	Kitimat	91	Prince George	137	Port Alberni	135	British Columbia	89	Pathway B	Metlakatla (Governing Council) Other Tsimshian First Nations North Coast Victim Support Services - RCMP Victim Services, Prince Rupert Community Enrichment Society
Prince Rupert	143															
Terrace	153															
Kitimat	91															
Prince George	137															
Port Alberni	135															
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Chinook Salmon	Spawner abundance # adults returning to spawn in each CU within Metlakatla territory (Lower Skeena CU Snapshot shown for illustration purposes and possible focus of CEM pilot project)	<p>STOCK RECRUITMENT METHOD</p> <p>SPAWNER ABUNDANCE (decreasing spawner #'s)</p> <table> <tbody> <tr> <td>562[†]</td> </tr> <tr> <td>SMSY = 1299</td> </tr> <tr> <td>Sgen1 = 302</td> </tr> </tbody> </table> <p>HISTORIC SPAWNER METHOD</p> <p>SPAWNER ABUNDANCE (decreasing spawner #'s)</p> <table> <tbody> <tr> <td>562[†]</td> </tr> <tr> <td>75% historic spawners = 1890</td> </tr> <tr> <td>25% historic spawners = 1156</td> </tr> </tbody> </table>	562 [†]	SMSY = 1299	Sgen1 = 302	562 [†]	75% historic spawners = 1890	25% historic spawners = 1156	Pathway A or B	Metlakatla (Stewardship Society) Other Tsimshian First Nations Pacific Salmon Foundation Department of Fisheries and Oceans Simon Fraser University researchers Skeena Estuary Research Centre Bulkley Valley Research Centre WWF-Canada						
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Butter Clams	Population density # individuals per m ² (per beach)	<p>POPULATION DENSITY (decreasing density)</p> <table> <tbody> <tr> <td>≥ 25% reduction from stable population levels</td> <td>≥ 50% reduction from stable population levels</td> </tr> </tbody> </table>	≥ 25% reduction from stable population levels	≥ 50% reduction from stable population levels	Pathway A or B	Metlakatla (Stewardship Society) Other Tsimshian First Nations Simon Fraser University researchers Department of Fisheries and Oceans										
≥ 25% reduction from stable population levels	≥ 50% reduction from stable population levels															
FSC Activity	FSC Participation Rate Several options: <ul style="list-style-type: none">• Youth participation rate• Household participation rate• Effort - # of person-days/year	Will be developed further internally	Pathway A or B	Metlakatla (Stewardship Society) Other Tsimshian First Nations												
Ability to Steward	Stewardship of priority lands Constructed scale	Will be developed further internally	Pathway A	Metlakatla (Stewardship Society)												

* estimated number of spawners from 2008 to 2012 in the Lower Skeena CU (source: NuSEDS database).



IMPLEMENTATION PATHWAYS

