

***Peer Review of
Robert Prescott-Allan's Wellbeing Assessment
of North Central Coastal British Columbia
Draft, 27 January 2004
Report Prepared for the Coast Information Team***

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1. Introduction

In undertaking a review of this sort I take the following steps:

1. review the original project Terms of Reference (provided by CIT),
2. review the table of Contents to grasp a sense of the structure and elements;
3. read the Introduction to identify the purpose of the work and how the author intends to communicate his/her way of achieving that purpose (road map for the report);
4. read the Conclusion to see if in fact the purpose articulated at the beginning was successfully addressed and to gain an understanding of the author's overall insights;
5. review the intervening pages to see if a logical development has been followed in support of the conclusions that have been drawn;
6. throughout this process, spot-check references to confirm their inclusion and accuracy;
7. list detailed comments; and
8. synthesize general comments.

The peer review process is an important part of the evolution of ideas and it is a responsibility I take seriously. It is also a task that brings with it a fair amount of trepidation on my part because great effort is put to people's written works and I am anxious for any of my comments to be taken in the constructive and positive spirit with which they are offered.

I am aware enough of the CIT process to know that time and financial resources have been limited. However, under such circumstances success depends on clearly bounding tasks and ensuring that expectations match deliverables. In this case, the Terms of Reference are ambitious and may create expectations higher than the project can deliver.

Prescott-Allen's wellbeing assessment methodology is complex and the learning process is ongoing. It should be seen as a step in a continuing process, not an end point in itself. In this context the work should be seen as a successful and needed contribution to the continuing process of learning how to best understand and manage human activities within a sensitive enveloping ecosystem.

The review that follows takes the above perspective. I have tried to identify strengths and limitations and make suggestions for improvement where they seem justified. In so doing, I hope to contribute to the ongoing learning process at work in coastal B.C.

2. Gaps in the Review Draft

The review was incomplete because the following elements were not included in the review draft:

- Appendix 1 Coastal Landscapes and Seascapes
- Appendix 2 Ecosystem Indicator Ratings
- Appendix 3 Human Indicator Ratings
- Data Table 20 Gender Equality
- Data Table 21 Societal Equity
- List of References
- In-text elements:
 - Land Ecosystem Indicator check against “a version using SSP-EM units” (Section 3.25, p. 3.7).
 - Marine data and analysis component of the Water Index (Section 3.3.1, p. 3.8)
 - Data for the fisheries and timber indicators (Section 4.3.4, p. 4.11)
 - Data on the cultural places indicator (Section 4.4.1, p. 4.14)
 - Data on seafood catch data caught by nonlocal boats and landed outside the subregion (Section 5.3.1, p. 5.6)

3. Wellbeing Assessment Terms of Reference

The Project Terms of Reference identify the following three purposes:

1. to provide a context for decisions by planning tables and governments;
2. to provide a means for testing and analyzing the environmental and socioeconomic outcomes of options and scenarios; and
3. to provide a baseline for monitoring implementation of sub regional land and resource management plans and First Nations' land use plans.

In addition, four outputs are offered – clear pictures of:

1. how close the region and sub regions are to sustainability;
2. human and environmental conditions;
3. major strengths and weaknesses; and
4. an estimate of the contribution of ecosystem services to human wellbeing.

4. General Comments

This work sets out to provide a foundation to planning tables and government to improve decision-making in coastal British Columbia. To be successful in this quest, two ingredients are essential: (1) substantive completeness/integrity, and (2) effective communication of the results.

On Substance

The power of the wellbeing assessment approach lies in its capacity to identify and process a complex mix of human and ecosystem elements. In this sense, it is analogous to techniques of multi-variable decision analysis that attempt to decompose complex decisions for bit-by-bit analysis prior to re-aggregating to achieve an overall sense of the best decision. In both cases, the dominant benefit to decision-makers may be more the systemic identification of contributing elements than the actual final aggregated result which often must be brought together with insights from outside the formal numerical assessment to achieve the best result. If the application is undertaken through a multi-interest collaborative process, much can be contributed in terms of finding common ground for moving forward.

In this project, advancing the conceptual underpinnings of the approach through expression in the overall analytic template, identification of the constituent elements, and demonstrating the re-aggregation process together represents a significant contribution. From the report I cannot assess the full nature and degree of success of the collaborative process used in developing and applying the template.

In terms of the internal details of the assessment approach, there are many built-in (and often hidden) assumptions that have not been tested through any kind of sensitivity analysis. Completing such an analysis would greatly strengthen the results. However, it is probable that doing so would have been beyond the budget available for the work. Here is a point where it is essential to recognize this work as part of a continuing learning process. As such it is rightfully seen as very useful – even though there are many significant methodological and knowledge-base limitations along with its strengths and insights. These limitations and strengths need to be identified to facilitate learning, not to stop the process that this project has started. Further detailed comments on the substance of the work follow in Section 6.

On Effective Expression of the Ideas

It is here where the Wellbeing Assessment is most vulnerable. Details follow in Section 5. However, in summary, the report is dense and inaccessible in its current form. Members of planning tables and public servants alike will have great difficulty translating this material to useful application.

5. Writing Style and Presentation

Referencing. Referencing in both the written report and data tables is inconsistent and inadequate. For the most part in the text there is no referencing. In contrast, paragraph 2 in Section 5.5 includes six references. References in the data tables are often to secondary sources (e.g. CIT Ecosystem Spatial Analysis). Most references are incomplete in their current form. The generalized listing of data sources found in Section 2.3.4 is helpful provided details are provided in the text – which they are not. Lack of full and complete referencing seriously undermines report credibility.

Executive Summary. An “Executive Summary” is not included but is essential to improve the effectiveness of communicating the insights coming from this work.

Introduction. The report does not include an “Introduction” that describes its origins and purpose and sets out a roadmap for the reader. No link is given to the overarching CIT process let alone other relevant activities in British Columbia that might serve to demonstrate its usefulness beyond the boundaries of the CIT project. The three purposes of the project are listed at the beginning of Section 2 which leaves the reader reading Section 1 with no idea why the material it contains is being presented. The “roadmap” is presented in Section 2.3.6 which means that the reader has no idea what’s ahead until the end of the second of five chapters. This is not effective writing.

Conclusion. The short 5-paragraph conclusion (Section 5.6, pp. 5.9 – 5.10) is not effectively tied to the purposes set out in Section 2 (p. 2.1). The conclusion as it stands is a significant let-down for the reader after putting in the effort to plough through the report to get to it.

Overall Organization. With the addition of an Introduction and Executive Summary, the overall organization generally works well. The only other structural issue is the discussion of ecosystem services (Section 5.3) that is plunked in after the presentation of the summary barometer indices. The result is a break in the flow and the result is somewhat jarring for the reader.

Sub-section Organization. The organizational structure used in each report sub-section is as follows: (1) objective is presented; (2) index is presented and interpreted; (3) elements of the index (indicators) are described in detail. Presenting and interpreting the indices before the constituent parts means that the judgment is offered prior to the evidence being presented. This approach complicates the presentation more than is necessary. A more effective approach would include four elements: (1) objective; (2) define and explain the elements of the index; (3) present the elements (indicators); and (4) interpret the results. Much of the detailed plotting of indicators should be relegated to technical appendices with an emphasis in the main report on interpretation and results.

Writing Style and Overall Presentational Format. The writing style is not easily accessible for those unfamiliar with “indicators” literature. As an example, consider the clarity/complexity of the following sentence.

Data are absent on the latter (condition of converted land) so the land conversion score is the lower of two indicators of the latter (amount of conversion): converted % of land area and the average road density in each landscape (Section 3.2.1, p. 3.3).

Much of the prose relates to identifying trends but the link to the story behind these trends is weak at best, often absent. The overall presentational format of this report is not effective for easily supporting the planning tables and government.

6. Detailed Substantive Comments

Section 1. The Place and the People

Section 1.1. North and Central Coastal British Columbia. With the exception of a mention of cultural diversity and a population figure of 90,000, there is no mention of people in this initial section. This turns out to be a precursor of a problem that is further addressed below.

Section 1.2. Land and Inland Waters. This is generally a solid treatment of “Land and Inland Waters” although the extent of variation (topography, temperature, ecosystem conditions) across the region as well as seasonally does not come across.

Section 1.3. Sea Lack of treatment of marine mammals is a serious gap.

Section 1.4. People. This discussion of “People” is a seriously weak element. Its treatment of First Nation diet, language and art comes across as detached and not capturing the spirit and heart of people past and present. The rise and fall of human communities (First Nation and non-First Nation) in the over 250 years since the Russians touched the coast of Alaska in 1741 and the Spanish and English made contact in 1774 and 1778 respectively is not addressed at all. Just a few of the key elements that touch on human and ecosystem wellbeing include:

- the devastation (transmission of disease, substance abuse, loss of cultural integrity) and recovery of First Nations people (in population terms now roughly back to where they were when contact occurred)
- the evolution of the governance system in BC and its implications for First Nations and others;
- the quest for furs and its effect on the marine ecosystem;
- the evolution of the fishing and aquaculture industries and its effect on the marine ecosystem: changing technology over time, the rise and fall of the canneries, changing mix of species harvested, changing corporate structure that has seen a shift away from local ownership and control; changing role of subsistence, commercial, and sport fishing;
- the evolution of forestry practices and its effect on forest ecosystems: from the provision of spars for ships through large-scale de-forestation for lumber and pulp and paper; changing corporate and ownership structure;
- the gold rushes and their effect on coastal BC in particular their role in upsetting traditional First Nation trading patterns (minor rushes in the last part of the 19th century, major rushes at the end, implications for transportation system) while providing a huge stimulus for development as it subsequently evolved; the related evolution of the mining industry in this region;
- the evolution of labour practices along coastal BC (forest workers, fishers, miners, etc.) and the link of this history to labour practices in BC and across Canada;
- the quest for “utopian” communities;
- the overall evolution of communities and the transportation system that connects them;
- the growth of ecotourism; and
- changes in the system of coastal lighthouses and the related implications for the spirit of coastal BC.

In short, the story of people in coastal BC is missing. Some of this insight is essential to understanding the wellbeing of people and ecosystems. I am not calling here for a massive historic treatise, just recognition of the key elements of 250 years of changing human society with the attendant ecosystem implications.

Section 1.5. Subregions. This description of the subregions is not very effective. The individual subregion descriptions include many geographic names that are not plotted anywhere on a map so the reader cannot reference them. While the various administrative systems are listed at the beginning (health, education, forestry, fisheries and oceans, local government – and there are others) only the DFO fishery management areas are identified in the descriptions, with no explanation. A more effective approach would simply be to include in the text (1) a general rationale for why the sub-regional boundaries were chosen; (2) a map; and (3) a general description of each sub-region with the most important features including and in particular, today's communities. Greater detail should be relegated to an appendix where it can serve as a reference.

Section 2. Assessment Method and Process

Section 2.1. Purpose and Scope. The purpose and scope should be put in an Introduction (see comments under Writing Style and Presentation).

Section 2.2. Approach. This short section includes a mix of very important elements that provide the foundation for the whole report. A better title would be “Conceptual Foundations.” This section would benefit from a more complete discussion with references.

Section 2.3. Phases This section lays out the six steps of the methodology in a straight forward way. The description is a bit vague on the details of the process that has been followed which raises a concern for replication of the result. A major benefit of undertaking this kind of analysis is to put in place the foundation for an assessment that can be repeated over time. If the implementation process is not well described, the possibility that it will be subsequently repeated in a way that can generate comparable results is lessened. Many references are made to small teams or groups that undertook some aspect of the work. In each case, this involvement should be specified in detail including lists of participating individuals in an appendix. Those who contributed should be given credit for their contribution.

Mapping the Assessment Hierarchy. A clear map of the overall assessment hierarchy would add significantly to the communication of the method. Listing the number of elements (Table 2.1) is not nearly as relevant as mapping the elements themselves.

Methodological Strengths and Limitations. The credibility of the approach would be greatly aided by a discussion of methodological strengths and limitations. Such a discussion is completely missing but is essential if planning tables and governments are to understand and use this approach. Table 1 provides the start to such an assessment based on this review.

Table 1. Wellbeing Assessment Methodology Strengths and Limitations – Preliminary Observations.

Methodological Aspect	Assessment
1. Description of conceptual underpinnings	Potentially strong but not well described in the report.
2. Capacity to deal with the broad range of data and information required by the concept of sustainability	Strong.
3. Capacity to deal with a range of spatial and time scales	Strong.
4. Effectiveness in tracking trends over time	Strong.
5. Capacity to deal with both qualitative and quantitative insight	Potentially strong but the current version ignores qualitative insights, particularly the “story” of the region.
6. Link to previous and ongoing work by other parties	This is a surprisingly major gap in this work. Reading this report gives no sense that any other work has ever been done that is relevant to the task at hand. In fact there is much that is relevant including the Annual Reports of the Provincial Health Officer, and a large body of work from various provincial and federal ministries as well as academic and corporate sources.
7. Choice of Indicators	I assume that the choice of indicators is dependent on a collaborative effort involving residents and experts. These kinds of choices are the result of a negotiation and may not be “perfect” from all perspectives. However, the current set is reasonable and provides a strong starting point.
8. Addressing Data Limitations	All assessments like these must address the problem of limited data. In this work, when data are insufficient, the relevant element is recognized but then set aside and not included in the analysis. Given that this is the first time this methodology has been applied in this region, an alternative might have been to use clearly marked surrogate data based on expert judgement that would thus allow more complete index development and demonstrate the importance of generating the data in the first place.
9. Scaling Process	Strong but not described very effectively here. Many assumptions are built in during the scaling process. I assume that these assumptions reflect the values and insights of residents and experts.
10. Scoring Process	Not described very effectively here. Many assumptions are built in during the scoring process. I assume that these assumptions reflect the values and insights of residents and experts.
11. Aggregation Process	Not described very effectively here. Many assumptions are built in during the aggregation process. I assume that these assumptions reflect the values and insights of residents and experts.
12. Design of Indices	Many assumptions underlie the design of indices. I assume that these assumptions reflect the values and insights of residents and experts.

13. Definition of Goals and Objectives	Strong, concise, and helpful.
14. Capacity to deal with complex sets of data and information	Strong but in turn, the methodology is complex itself
15. Clarity of underlying assumptions	Weak, many are buried. This is a significant source of difficulty for all methodologies because if all underlying assumptions were described in detail, the resulting work would be encyclopaedic. There is a pragmatic line to be drawn between “enough” and “too much.” In this case, there is not enough.
16. Ease of linking to decision-makers and their decision-making	Potentially strong but the current form of the assessment is not linked to the decision-making process so its capacity to feed into decision-making is limited other than as another data/information set.
17. Comprehensiveness of data and information base.	Appears strong but should be subject to expert review from various fields to confirm. This kind of review will take time and should not be a cause for concern at this time.
18. Sensitivity analysis	Weak, there is none. Could be undertaken over time and would greatly strengthen the result.
19. Communicability of the process and results	Weak. The current report does not communicate well but could be greatly strengthened.
20. Capacity to allow for the application of different values in the process from indicator design through to interpretation of indices.	Strong but where and how to do this is not apparent in the current report
21. Replicability of whole process say at 5 or 10 year intervals	In principle is entirely possible but the current report is inadequate to prove the basis for doing so. Would require computerization of process and a commitment over time to do so.

Section 3. Ecosystem Integrity

Section 3.1 Ecosystem Integrity Index. While this section describes the scores and trends that emerge for each of the eight subregions, I am left wondering “so what?” and “why?” The central discussion that would link human activities, the stresses that they cause, naturally occurring drivers of change, and the state of ecosystem and human conditions is absent throughout. Without this discussion (it needn’t be complete and definitive which is not possible with the current state of knowledge), the ability of the method “to provide a context for decisions by planning tables and governments” (see Terms of Reference, Section 3 above), is severely compromised.

Recommendations for Improvements. At the end of this section (p. 3.2), two suggestions are offered for improvement. These recommendations are not well rationalized and are too general to be effective. Further, if a primary purpose of this exercise is to develop a strategy for improving Ecosystem and Human wellbeing in Coastal BC, it should be added to the list of purposes currently listed at the beginning of Section 2 (p. 2.1).

Section 3.2 Land Index. Treatment is strong given data limitations and assuming indicator choice has been vetted through an open process involving residents and experts.

Section 3.3 Water Index. Lack of marine components is a serious limit.

Section 3.4 Air Index. Treatment is strong given data limitations and assuming indicator choice has been vetted through an open process involving residents and experts.

Section 3.5 Species and Genes. Treatment is strong given data limitations and assuming indicator choice has been vetted through an open process involving residents and experts...

Governance and Institutions that Address Ecosystem Wellbeing. This assessment methodology does not deal with this issue. However, it is the key that lies at the interface between the insights offered by this methodology and decision-making that might respond to the lessons learned over time.

Section 4. Human Wellbeing.

Section 4.1 Human Wellbeing Index. Here more than any other part of the report I am reminded of Lewis Mumford's words written in 1934:

The new attitude toward time and space infected the workshop and the counting house, the army and the city. The tempo became faster, the magnitudes became greater; conceptually, modern culture launched itself into space and gave itself over to movement. What Max Weber called the "romanticism of numbers" grew naturally out of this interest. In time-keeping, in trading, in fighting, men counted numbers, and finally, as the habit grew, only numbers counted.

Mumford, Lewis, 1934. "The Monastery and the Clock." Pp. 324 – 332 in D.L. Miller, 1986. *The Lewis Mumford Reader*. New York: Pantheon Books.

Or, as written on a sign than Albert Einstein kept on his office at Princeton University: *not everything that can be counted counts and not everything that counts can be counted.*

That is not to say measurement is unimportant – it is exceedingly important and brings a power all of its own. However, the people of coastal BC have a spirit and heart that is missing from this report. Without both, and even with the power of the analysis, the capacity to contribute to improved decision-making is compromised.

Recommendations for Improvements. At the end of this section (p. 4.2), five suggestions are offered for improvement. These recommendations are not well rationalized and are too general to be effective. Further, if a primary purpose of this exercise is to develop a strategy for improving Ecosystem and Human wellbeing in Coastal BC, it should be added to the list of purposes currently listed at the beginning of Section 2 (p. 2.1).

Section 4.2. Population and Health Index. A link should be made here to the Provincial Health Objectives that were established after extensive public consultation and are entrenched in the law. In general, however, treatment is strong given data limitations and assuming indicator choice has been vetted through an open process involving residents and experts.

Section 4.3. Wealth Index. Treatment is strong given data limitations and assuming indicator choice has been vetted through an open process involving residents and experts.

Section 4.4. Knowledge and Culture Index. Treatment is strong given data limitations and assuming indicator choice has been vetted through an open process involving residents and experts.

Section 4.5. Community Index. Some effort should be put to describing what is meant by “community” for the purposes of this report. Furthermore, a map and listing of communities should be included as basic information. In general, however, treatment is strong given data limitations and assuming indicator choice has been vetted through an open process involving residents and experts.

Governance and Institutions that Address Human Wellbeing. This assessment methodology does not deal with this issue. However, it is the key that lies at the interface between the insights offered by this methodology and decision-making that might respond to the lessons learned over time.

Section 5. Wellbeing, Sustainability, and Ecosystem-based Management.

Section 5.1. How Close to EBM. This section presents the compiled “barometers of sustainability” for each of the eight sub-regions. These are potentially powerful summaries but the supporting discussion (Section 5.2) is limited.

Section 5.2. Main Strengths and Weaknesses. This section is mistitled. It deals not with strengths and weaknesses of data/knowledge or methodology but rather describes the trends that can be drawn out of the barometers. Unfortunately, the interpretation of what this all means is limited. For example, do these summaries offer an assessment that is consistent or different from current local or Victoria-based perceptions of how things are? Are there any surprises here that could provide an important insight for decision-makers? In short, “so-what?” What does all this mean within the context of the people and ecosystems of coastal BC?

Section 5.3. Ecosystem Services, Human Wellbeing, and Ecosystem Integrity. This discussion seems disconnected from the earlier discussion in this Chapter. Further, the conceptual base is not provided. Why is this being presented? What are the strengths and weaknesses of doing so? What is its significance within the context of coastal B.C.?

Section 5.4. Drivers of Change. As it stands, this section should be titled “Drivers of Ecosystem Change” and likely matched by another section entitled “Drivers of Human Change.” Much work has been undertaken over the years in other parts of the world identifying drivers of ecosystem change. One well know approach to doing so led to a classification of naturally occurring and human-induced stresses experienced by the ecosystem. The classification includes:

1. extreme natural events;
2. addition or loading of substances, heat, radionuclide, etc.
3. physical restructuring and land use change;
4. harvest or extraction of renewable resources;
5. extraction of non-renewable resources;
6. introduction of non-native species and genetic manipulation

Modified from Rapport David and Anthony Friend, 1979. *Towards a comprehensive framework for environmental statistics: a stress-response approach*. Statistics Canada Catalogue 11-1150. Ottawa: Minister of Supply and Services Canada.

However, in addition to drivers of change within the ecosystem, there are other drivers of change influencing human society that are worthy of a more substantial discussion here. Some of these drivers lie within the study region, many do not. Planning tables and government decision-makers would be greatly aided by a clear discussion of this context.

Section 5.5. Main Uncertainties. This discussion offers a general assessment of the “state of knowledge” related to each of the subelements. This is a helpful analysis but should be supplemented with a discussion of methodological strengths and weaknesses described earlier.

Section 5.6. Conclusions. What is included is fine but overall, the discussion in this short section is disappointing. It should explicitly link back to the three project purposes and four outputs listed in the Terms of Reference. The recommendations for action are so general that they come across as being an afterthought, particularly because developing a strategy or an action plan to address human and ecosystem wellbeing in coastal BC is not listed as an element of the Terms of Reference and the design of the Wellbeing Assessment Project was not therefore tailored to develop such a strategy. What should be here is: (1) a clear summary of insights arising from the wellbeing assessment work; (2) clear links to the project terms of reference; and (3) a convincing statement of the value added of having completed the project. Based on what I have read, all three of these elements are possible.

7. Summary Comment

With completion of this review there remains one final observation to articulate. I am left with the feeling that the overall usefulness of the wellbeing assessment has not been drawn out. It is as if all the work to produce the analysis left the author and supporting team exhausted with no remaining energy to stand back and see the implications of their efforts. To take this step requires another ingredient that seems missing. That ingredient is an understanding of the insight that can be drawn from the many pieces of previously completed relevant work. For example, the following reports (amongst many others) contain much useful insight:

- Annual Reports of the Provincial Health Officer;
- The Annual Economic and Financial Review;
- The BC and Canada State of Environment Reports and follow-up indicators work;
- The periodic regional analysis by Economic Region published by BC Stats; and
- Northwest Environment Watch’s recently published *Cascadia Scorecard: Seven Key Trends Shaping the Northwest* (www.northwestwatch.org) along with a variety of earlier reports they have published.

What has this assessment learned that is new or that goes beyond what others have previously observed? What of this review differs from or re-enforces what has been said before? In short, what has been learned from this assessment – what does it all mean? And most importantly, what is the next step in developing a system of performance measurement and progress assessment to support improved decision-making in coastal BC? These questions are not currently answered in the report but could be. Doing so would greatly strengthen the project’s quest of providing “a context for decisions by planning tables and the government.”