

Coast Information Team: an Ecosystem Spatial Analysis for Haida Gwaii, Central Coast, and North Coast of British Columbia. Draft 22 September 2003

- p. 6. The “Background” does not include management practices that can be used in the matrix (i.e., areas between reserves) as a basic approach to conservation planning.
- p. 12. In the Executive Summary, rationales are given for other focal species but no rationale is given for selecting black bear as a focal species. It is given on p. 71, but to be consistent with the other species that rationale should be repeated here.
- p. 19. second paragraph, starts with “Generally”. The report states that 40-60% of the land base needs some degree of protection. Then it goes on to state, the “entire landscape needs to be managed”. These two statements seem at odds with one another. Perhaps some of this inconsistency arises from my understanding of “protection”, but I think this paragraph needs to be rewritten.
- p. 24. see Spatial Analysis Results, second paragraph. Even though this is the Executive Summary some details are critical and should not be lost in summarization. Most policy and decision makers are going to read the Executive Summary and not the full body of the report. The analysis does not seem to account for the contributions to “conservation targets” given by the areas in between reserves. As well on p. 24, “to achieve 50% goals for most conservation targets” implies that some targets are not met to the 50% level, so there is imbedded here some implicit decision to allow loss of some species or at least put them at great risk. If this is so, then the summary should state which ones are lost and which ones are met. If this is not so, then the paragraph needs rewriting.
- p. 27. second paragraph. Why isn’t Report 5 of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound cited? Surely that report has as much or more relevance than the other publications that are cited.
- p. 28. First paragraph. In this paragraph and throughout most of the report, conservation planning focuses on reserves. This section does not include the benefits accrued from good management practices in the areas between reserves (i.e., the matrix). This is a critical point and jeopardizes the validity of the “Ecosystem Spatial Analysis”.
- p. 28 second paragraph. The report states, “regional conservation planning is precautionary”. Is this a tenant of planning in general? Is this a statement of how regional conservation planning was approached in this report? The report goes on to say that “superfluous actions” such as “protecting more land than is necessary” are avoided. Then the report states that the precautionary principle says it is best to protect too much now if there are uncertainties. This is may be true if the only goal is conservation values but ecosystem based management includes other values and, as well there are much more quantitative and objective ways of dealing with risk.

- p. 38. Last paragraph. See “rigorous analysis”. Choose a different word than rigorous. Quite frankly I do not regard the analysis present in this report as rigorous. Just because there is a lot of data does not mean it is the right kind of data nor that the assumptions are valid.
- p. 48. second paragraph. The authors state that they “developed two independent methods to identify and represent different coarse filter components of terrestrial ecosystems”. They used two methods but the methods are not independent at any stretch of the imagination. BEC and “overstory species composition” are highly associated. The BEC system is founded on the principal tree species. As well the first method uses “seral stage” and the second “range of structural characteristics”. Structural characteristics are highly associated with seral stage. There are not two independent methods here. There is essentially one method, for which slightly different indices are used to identify terrestrial ecosystems.
- p. 60-61. Yes, old growth forests are important as winter range for black-tailed deer but throughout a good portion of the coastal study area their populations could be increased by logging (in appropriate areas) and provision of early seral stages. In fact spring and summer ranges could be more limiting than winter ranges in parts of the coast. I question the choice of black-tailed deer as a focal species.

A minor point, but one that illustrates some lack of scientific accuracy, is that the focal species is specified as *Odocoileus hemionus sitkensis*. However because the southern boundary of the Central Coast study area extends as far south as Bute Inlet then this include the range of *Odocoileus hemionus columbianus*.

*Odocoileus hemionus* is not used as a focal species on QCI because they are introduced and “destroying plant communities and ecosystems”. This human value decision demonstrates a lack of objectivity and understanding of what a focal species is intended to achieve. A focal species is intended to be a species whose presence represents particular ecological values and ecosystem processes. If deer do that on the central/north coast then they should do that on QCI. Deer are now part of the ecosystem and ignoring them does not help to achieve goals of ecological integrity and human well being. As well, perhaps black bears were introduced to QCI by First Nations; should black bears be ignored?

- p. 61 Table 2.11 implies that deer winter range is all forest of such characteristics below 500 m. More importantly it implies that all of these areas are needed by deer. The amount of technical winter range present in some areas may exceed needs of deer.
- p. 69 All roads were assumed to be open and displace grizzly bears. I suspect that the grizzly model would be highly sensitive to the step down variable. Were sensitivity analyses conducted with different step down values for roads? This analyses for bears also assumes that road access (and implicitly the detrimental activities of human travelling those roads) cannot be controlled by managers.

P. 109 Again, the approach focuses on protected areas and does not acknowledge the importance of habitat management efforts in the matrix. The protection ecological integrity will take more than just a “Cadillac” system of protected areas and reserves. Underlying much of this report is the notion that protected areas are pretty much all that is needed or at least they are the primary mechanism to deliver conservation values. However, what about the rest of than land base? The report needs to include in the text and incorporate into the analyses management activities in the matrix that contribute to conservation values and support the protected areas and reserves. The way it reads now is that protected areas and reserves are the primary (almost only) tool to meet conservation goals.

This focus on protected areas is evident throughout the report. I note that the findings of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound are not cited in the references. One of the key concepts in the work of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound and also in the work of Bunnell et al. (2003) is that management activities in the matrix (i.e., the land between reserves) is critical to retain and support ecological and other values. The work of Bunnell et al. (2003) and the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound is not cited and I think the CIT Ecosystem Analysis is remise in not mentioning that work. It is hard to believe that it did not form any part of the intellectual processes used to develop the approaches used in this ecosystem spatial analysis.

- p. 110 end of third paragraph. Finally, here is a simple statement acknowledging the critical importance of the matrix and its management. This should be a core principle and articulated early in the report and should be part of the spatial analyses.
- p. 111. third paragraph. See “lower responsible limit”. This is a value-laden term and implies a level of risk. Risk management should be more explicitly dealt with in this report.
- p. 112. first few lines. This states the size of areas needed for grizzly bears. Then it states that 1 to 4 times more area is needed to account for edge effects. What are the edge effects? If the edge effects are human caused mortality of bears, then is more habitat required to reduce this mortality? Perhaps just more effective control on the humans causing that mortality would achieve more for the conservation of bears than simply more habitat? The restrictive, un-innovative thinking here stems from the premise throughout this report that protected areas are the primary tools to maintain species and deliver ecological integrity. Management of resources has developed a long way past this simple approach.
- p. 112 So where are the percentages in Table 3.1? There are too many errors and omissions in this report. On p. 27 paragraph 1, there is a period missing near end. Is not “Regional Conservation Planning” supposed to be a heading? Then: on p. 39 Myers et al. 2000 is not in lit cited; on p. 108 section 3.1.1 many of these references are not in the literature cited. P. 119 several references in text are not in literature

cited section. P. 121 Table 4.1, Forman 1995 is not in literature cited. P. 123, Noss et al. 1999 is not in lit cited. I did not do a complete check of citations in text compared to the literature cited. Instead I just cross-checked the odd one here and there. There is a substantial number missing. Then in the lit cited itself there are fragments of references here and there. The report should have been much tidier before sending it out for review.

- p. 113 section 3.2 The “percentage goals were applied uniformly across all ecosystems and focal species targets”. This statement implicitly assumes that are ecosystems and focal species are equal in value to conservation objectives and as well that the benefit to conservation is equal at different spatial scales. Surely science can guide not only the magnitude of goal settings but also the choice of focal species and choice of ecosystems.
- p. 119 last sentence of the second paragraph. The authors issue a point blank statement of belief. They state, “conservation of a full range of intact watersheds containing terrestrial salmon habitat is necessary for long-term coastal temperate rainforest conservation. There is no reference given. There is no cogent rationale given to support this statement. This statement assumes that some human activity (e.g., logging) in a watershed would compromise rainforest conservation. I do not think this is true. Again I think a severe bias exists involving an unstated premise that only protected areas and reserves can contribute and support conservation values. Theory supports the notion that ecosystems have some amount of resilience. The evidence is all around us that ecosystems can withstand some amount of alteration and still maintain ecosystem processes and support ecosystem function.

Then on p. 120, in the last paragraph, the authors state, “larger contiguous intact areas and characteristics present only in larger river systems are necessary to conserve viable populations of vertebrate species”. Where is the scientific evidence supporting this statement?

- p. 119 second paragraph, first sentence. The authors state they used watersheds as the unit of analysis. However, one of the major focal species is grizzly bears. Watersheds are 1000-50000 ha (defined in the Ecosystem-Based Management Planning Framework). But some activities of grizzly bears extend over several watersheds.

In the third paragraph, the authors attempt to justify the choice of watersheds as the scale of analysis by citing 6 studies. None of these are in the literature cited. Perhaps these studies deal with terrestrial vertebrate species (similar to those used here as focal species). Perhaps they don't. Maybe these studies deal mainly with water oriented processes and water oriented indicators. If these studies are water oriented then state that watersheds level of analysis was chosen because water processes are important. The scientific justification is simply not there and if it is then the authors have done a poor job of presenting it.

Alton Harestad review of CIT Ecosystem Spatial Analysis

- p. 120 These larger watersheds are 2 to 20 times larger than the definition of a watershed given on p. 15 of the Ecosystem-Based Management Planning Framework report. There must be consistency between these reports. It appears that different groups were working independently to produce these various reports.
- p. 120 second paragraph. Human altered areas are listed as “clearcut, urban”, and “agriculture”. These land uses are lumped together. However they have different “footprints” and they sure have different long-term outcomes. In most cases the clearcuts are going to regenerate.
- p. 126. It seems to me that this cost index depends highly on the assumption that clearcuts remain low quality habitat forever. Clearcut will eventually regenerate. As well, clearcuts do provide substantial life requisites to 3 of the 6 focal species black-tailed deer, grizzly bears and black bears.
- p. 123 section 5.1 last sentence. A “comprehensive approach to conservation planning” must surely be more than simply 1) protect special elements, 2) make sure there is representation of various habitats, and 3) protect critical habitat of focal species. I do not accept this as a comprehensive approach.
- P. 127 The “species penalty factor” is the same for all species. If so then it is a constant and so take it out of the analysis. Including it makes the formula on p. 124 more complex than it really is. Surely the cost failure to not meet the goal on black-tailed deer could be minor compared to that for say grizzly bears or marbled murrelets.
- p. 139. Table 5.2. Why have this table? It makes the process appear more quantitative than it is. The table essentially says some areas have more conservation value than others and that conservation value can be diminished by the amount (and I presume types) of human activities.
- p. 141, p. 139. The results in Table 6.1 and the tiers in Table 5.2, assume that modified areas cannot in the future become ‘intact’ or at least resemble ‘intact’ in function.

Related to this analysis are the definitions of intact on p. 121 Table 4.2. These definitions are given as 6 categories here but in Table 5.2 they are reduced to 3 categories in Tables 5.2 and 6.1. Why give the resemblance of many categories when the analyses are simply based on 3 broad categories.

Is there a solid well-supported scientific basis for selecting, for example, 10% as a value to define the difference between intact and modified? Perhaps this is given in one of the other reports if so then refer to it here.

- p. 158. There are no conclusions. Hence, I cannot judge whether the authors are exhibiting appropriate understanding and prudence in the interpretation of their results. Again this report should not have been sent out for review until it was complete.

General Comment

Pervasive throughout this report is the assumption that protected areas and reserves are the only way to meet conservation values. The values contributed by the rest of the land base is virtually ignored, or if is included in the analysis, then it is hidden. The report needs to be expanded to include management and contribution of the matrix along with the protected areas and reserves. The way it reads now is that protected areas and reserves are the primary (almost only) tool to meet conservation goals. As well, it follows that a substantially different approach to the spatial analysis needs to be conducted. If the conservation planning is centered on only the protected areas and even if it is focused primarily on the protected areas, then I do not think conservation goals can be met over the long term and they surely can not be met with accommodation for reasonable amount of human well being achieved in the study area. Without this more comprehensive approach to the “Ecosystem spatial analysis” then the results of the study are flawed and can offer little credible guidance to managers.