Response to Nudds et al. on: *Protected Area Networks: Assessment of Ontario's 'Nature's Best' Action Plan and Recommendations*

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Several comments and questions have been raised in articles within these proceedings regarding the gap analysis approach used by the Ontario Ministry of Natural Resources. Some of these focus on the appropriateness of the data layers used at various steps in the analysis, the adequacy of representation achieved using the method, and the relationship between life science and earth science gap analysis. Although some of these questions and comments would require fuller responses than can be provided here, a few points should be reiterated about the methodologies presented above.

We agree philosophically with many of the points made by Nudds et al. However, it should be clear to all who conduct gap analyses that there are nearly as many differences in the details of how such analyses are conducted as there are jurisdictions and practitioners that are conducting them. There are commonalities in the general approach; i.e., coarse and (usually) fine filters of various sorts are applied to a set of natural heritage target features, and those features that are not yet protected are proposed for protection in new areas, according to a set of selection criteria. The variation in approach often is dependent on the features to be protected (targets), as well as the data sets available for analysis.

We state explicitly that the representation targets for life science gap analysis are the landform/vegetation features of each Site District within the province. We also state that the methodology is consistent with existing policies and approaches relating to representation. This is not to say that there are not other legitimate approaches. However, in Ontario, the representation focus has been on landform/vegetation features, rather than on species. The approach that has been described here for use in a GIS environment follows from the earlier work in the province, but makes the earlier approach more explicit, rigorous, and repeatable. Thus, given similar data sets, different practitioners could arrive at similar results.

It must also be recalled that the methodologies described here focus on core representative areas only. Nowhere has it been implied that these core areas are sufficient by themselves to complete a protected areas system. In fact, at a minimum, following identification, the core representative areas must be bounded by ecologically defined boundaries, as noted under the discussion of the Ecological Considerations selection criterion. In addition, where Special Features occur in close proximity to the core representative values, they also should be incorporated into the protected area boundaries. The combination of representative areas with the parks class targets and standards results in an array of protected areas within each Site District, some of which are large and some of which are smaller. This was the approach used in the "Lands for Life" project. Thus, the larger protected areas accomplish many of the goals and

principles expressed by Nudds et al. (perhaps even including representation of vertebrate faunas, although this requires examination of additional Site Regions), in addition to representation of the expressed landform/vegetation targets, while the smaller ones fill in the representation gaps.

It should also be noted that there are two distinct approaches to representation used by the OMNR. These are the life science and earth science approaches. The representation targets for these two approaches are entirely different, as described in the above paper. The results from the two types of analyses are complementary; one does not supercede the other, nor does the earth science analysis form the starting point for the life science analysis. The life science analysis includes a landform component, and when the best example of a given earth science theme element coincides with a landform type that is used in the coarse filter of the life science method, then there is a chance that both earth science and life science targets can be met in the same representative area. Otherwise, the two methods are independent, and sets of areas representing earth science and life science features are put forward for protection. Ontario is one of very few jurisdictions that explicitly protects earth science features in addition, and complementary, to life science features.