

Resilience 2:1: Research Proposal

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Biocapacity is the measure of biodiversity, natural systems, and ecological services provided by a healthy planet. The Resilience 2:1 model is based on the current ratio of biocapacity to carbon footprint enjoyed by Canada. Canada enjoys this ratio primarily by accident, as a geographically large nation with a relatively small population. While individual carbon footprints tend to be as large as any on the planet, collectively Canadians produce a smaller footprint due to small numbers. The question is how to maintain that capacity especially as the Canadian population grows. This three part proposal means to gather information on the metrics of biocapacity, test it through case studies, and then to produce materials that can be utilized by various sectors from governments to neighbourhoods to increase biocapacity. Enhancing biocapacity is seen as a key to both mitigating climate change and increasing our resilience to the negative outcomes.

• Part One:

To move the heuristic of 2:1 from a way of thinking about ecological capacity versus carbon footprint to a blueprint for meaningful actions requires means of measurement. A variety of metrics exist, often for particular disciplines. The Resilience 2:1 group is intentionally interdisciplinary and includes practicing professionals. Together they bring a broad expertise to the research which allows the group to collect diverse metrics and measures of both biocapacity and ecological footprint. This portion of the larger project is focussed on collecting data and various metrics and then analyzing what can be useful for thinking and acting on the 2:1 ratio.

• Part Two:

This part of the research project seeks to test the viability of the metrics collected and analyzed in Part One through case studies. Two case studies are proposed. The first can use data from new buildings such as the new construction at Seneca and/or Humber College. The ecological footprint of the buildings from construction to use and maintenance can be analyzed for its impacts on biocapacity. Information from Part One can be used to calculate how the buildings can offset their footprint and contribute positively to biocapacity. The second case study will examine buildings under renovation by the Toronto Housing Corporation. In this case study not only will the buildings be examined but the community can be involved as well in such a way to extend the measures from building envelope to include community resilience.

- **Part Three:**

The final part of this project is the production of materials geared towards particular sectors involved in decision making on resilience. This could include government, both provincial and municipal, industry sectors, agriculture, academic and other institutions, as well as local communities and neighbourhoods. The production materials will give the information needed for these different groups and sectors to take action to increase and maintain the 2:1 biocapacity ratio thereby increasing and enhancing their own resilience.