

What is Resilience and why 2:1?

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Resilience has to do with the capacity of an organism, individual, community, ecosystem or indeed the entire biosphere to recover from shocks and continue with viable life. Thinking of this in human terms means thinking of how individuals, families, communities, cities, regions and nations deal with shifts, shocks, catastrophes, disasters, and long-term changes in ways that enable the whole to survive and then to prosper again.

Think of a community that experiences severe flooding. The initial response is a disaster response – house and feed people, provide medical care. Then comes recovery of goods, shelter and perhaps even infrastructure along with rebuilding. But for long term survival the community now needs to sit down and think deeply about what caused the flood – extreme and unusual precipitation, erosion upstream, loss of forests on hillsides, and any other causes.

There can be any number of reasons but resilience demands that the factors that caused or contributed to the shock be addressed. What if poor planning caused the problem? What if homes were allowed to be built on a floodplain? Resilience means addressing that issue and perhaps removing homes from the floodplain and rehabilitating the ecosystem there to protect against future flooding. Resilience requires thought and planning especially in the age of climate change.

Climate change is well underway and with it comes many more challenges for communities of all sizes. Climate change affects all of us and everything we are and do. All of us will have to think deeply, together and separately about resilience and the future.

Resilience 2:1 is special because?

Beyond the usual focus of resilience planning – infrastructure, flood management, preparation for heat waves – we think about biocapacity. Biocapacity is the ability of a place or region to regenerate itself through renewable resources and manage wastes to maintain a healthy state.

Biocapacity is often connected to biodiversity. Since biocapacity generates renewable resources (trees and forests for example) and deals with the waste it creates it is essential for resilience.

For us to survive we need healthy and functioning ecosystems that are diverse and can generate renewable resources while managing wastes. Seen that way humans themselves are still struggling with their own biocapacity. We tend to focus on nonrenewable resources or over use them to the point of collapse and certainly have not figured out how to manage all the waste we produce. We depend upon the biocapacity of the rest of the planet to generate our resources and manage our wastes.

2:1 refers to the ratio of biocapacity to eco-carbon-footprint that is current in Canada. As measured

RESILIENCE 2:1

by the Global Footprint Network, Canada has a ratio of 2:1 more or less for a per person comparison of biocapacity to ecofootprint. This measures the biocapacity of Canada against our own ecofootprint of consumption and waste. 2:1 sounds pretty good. We should celebrate. Many other countries are in far worse shape. Isn't that right? No, no cause for celebration here.

A couple of trends are apparent in the data. First as our population increases so too does our carbon output (the waste) per person. Our overall ecofootprint as a country is nearly 5 earths. That means Canadians are living large, larger than we can afford to live. At the same time, bio capacity overall has decreased. We are using our resources at an ever-increasing rate. The end result of loss of biocapacity, overuse of resources, and failure to deal with our waste (especially CO₂) will be a dramatic loss of resilience. 2:1 is a good thing, a nice thing to be right now. 3:1 would be better. 4:1 even better.

Why is this an issue for Canada right now?

Canada is changing climate?

It is happening twice as much and twice as fast as most of the rest of the planet. In other words, while Canadians often appear to think that global warming is not really affecting them, we are more affected than the rest of the world. This is especially true in the Arctic and subarctic regions. When climate changes ecosystems shift quickly.

That affects all species dependent upon that ecosystem. Some species will move. Some will adapt. Many will die off. That affects our ability to harvest resources from the land and sea. This may directly affect our ability to feed ourselves and will surely affect our economy.

Biocapacity enhancement is critical for Canadians to be resilient in the future. Hence Resilience 2:1. But note, we long for the day when it will have to be changed to Resilience 3:1 or better. Our proposal is simple, for every measure of consumption and waste we humans produce we need to commit to producing twice as much biocapacity. That means planting trees, many more of them and faster, rehabilitating lost habitats, renaturalizing, rewilding, and renewing ecosystems that have already shifted and changed to enhance their capacities. It is a lot of work but the end result will be a Canada that can better weather the storms and deal with a changed planet.

It involves new ways of thinking, new design work, different ways of producing food, different ways of eating, building and maintaining shelter and getting around from one place to another. In the end, increased biocapacity leads to increased resilience to shocks and changes which leads to a more sustainable life for all of us.

Resilience 2:1 – a simple way to remember what we owe ourselves and the rest of the planet as we seek a quality of life for all.