

Our Ecological Footprint

Real World Ecosystems
Backgrounder
Grade Level: 5-8



About three and a half million years ago, humans walked across a bed of volcanic ash leaving footprints behind to be discovered in recent years by anthropologists. In 1970, Donald Johanson discovered a very old skeleton. The skeleton, which was later named Lucy is an important reminder that humans have been walking on this Earth for a very long time leaving impressions that are possibly billions of years old.

Today we lead very complicated lives that require many materials and much energy every day. We travel great distances by car, wear clothing for a number of different seasons, eat food from places far away, and produce many different types of garbage, use recreational facilities such as swimming pools and soccer fields, and live in various types of housing. Our everyday activities consume natural resources that come from the environment.

Did You Know? Got Four Earths?

If everyone lived like an average Canadian, we would need four Earths.

Green Thumb: Reduce Your Waste Footprint!

Reduce your waste footprint by doing the following:

- Recycle returnables (such as bottles and cans), paper and glass
- Compost
- Buy locally-grown food at markets.
- Car pool, use public transportation (the bus), walk

or bike.

- Turn lights and computers off. Using less energy will help your energy footprint.
- Patch it! Instead of buying new clothing, patch it or trade with your friends.

An **ecological footprint** measures a person's impact on the **environment**. The footprint is the amount of the Earth's surface that is needed to support our lifestyles. The more you consume, the larger your footprint will be. A calculation is used to determine how many hectares of biologically productive land is needed to support your lifestyle. The ecological footprint allows you to figure out what your individual footprint is to and compare it with your country's average. Albertans typically have a footprint that is a bit larger than the Canadian average. Albertans have an average footprint of 9.0 hectares per person, which is 21 per cent higher than that of most Canadians. (Pembina, 2005) When a country's footprint is determined, it can be compared with that of other countries. Canadians have an average footprint of 7.25 hectares per person in comparison to citizens of China who display an average footprint of 2.5 hectares per person. That is quite a difference.

Did You Know? What the Heck's a Hectare?

What is a **hectare** anyway? One hectare = 100 metres x 100 metres. So if you took a hundred steps in one direction, then turned at a right angle and took another hundred steps and so on until a square was paced off, that would be roughly one hectare! Or you

can think of it as five football fields side by side.

The ecological footprint can also tell us what aspects of our lifestyles consume a lot of resources. For example, in Alberta, our energy footprint is large. When you calculate your footprint, you may find out that your transportation footprint is high but your waste footprint is low. Such information may be used to help people decide how to reduce their ecological footprint.

Did You Know? Capacity

There is such a thing as **biological capacity** and **natural capital**. It almost sounds like something you would hear at a bank. But these are important terms for **sustainability**. Biological capacity is the total amount of land that is biologically productive. Biologically productive land is land that supports plants and animals. Land that is used for agriculture is considered to be the most biologically productive land. So mountains and parking lots are not included in determining a country's biological capacity or the amount of biologically productive land. Natural capital is important because it is the total of "natural assets" that a province or country has. Some countries are quite over-populated and have little natural capital. Therefore they have an ecological deficit. Much like a financial deficit, it means that you have taken more out of nature than can be immediately replaced. Bangladesh has a very small footprint (0.8) but it also has an ecological deficit (0.4).

Key Points to Remember

- The ecological footprint measures the amount of biologically productive land it takes to sustain your lifestyle.
- The ecological footprint takes into consideration your housing, water consumption, food, transportation and the garbage you produce.

Think About...

- What are some reasons that Canada's ecological footprint is larger than that for some other countries?
- Does population affect the size of the ecological

footprint of the country?

- Why do countries, provinces and cities have different footprints?
- What are some things that the ecological footprint looks at in calculating the number of hectares needed to support your lifestyle?
- How can walking, biking, carpooling, and turning off electrical appliances help to reduce your ecological footprint?
- Can you think of other ways to reduce your footprint?