

WORLDVIEW

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Costa Rica Biodiversity Restoration

Costa Rica is one of the most biologically diverse countries in the world; it is on a line close to the Equator, where plant life and birds, butterflies and amphibians flourish. The weather is warm, there is sufficient rainfall and the soils are good.

It is a land where you can drive from mangrove swamps by the ocean side, up into the wet humid rainforest and higher still into cloud forests all in one day, seeing an amazing range of species along your journey.

Costa Rica is a world leader in *environmental conservation*. Throughout the years and many experiences, Costa Rica has harnessed the tourism industry through the preservation of its diversity rich forests. Tourism is the primary economic driver within the country. People come to enjoy the various ecological regions, to be on the beaches, to enjoy rainforest canopy walks and overall to savour the rich landscape and friendly, peaceful people who inhabit this country.

As in other Central and South American countries, in the 1970s and 80s much of Costa Rica's forest land was cleared for cattle ranching, causing the rich soil to erode and rendering the land dry and infertile within a few years. When cattle ranching failed to be economically viable, plantations of teak were grown to supply the growing foreign trade in exotic wood. Teak is a desirable type of wood for outdoor furniture because of its durable qualities. It is a type of hardwood,

or deciduous tree (an example of a deciduous tree in Canada is the maple.) In recent years, the Costa Rican government and people have realized that it is better to keep their forests intact, preserving the full range of species that exist in their forest rather than planting only one or two desirable species.

Miguel Soto Cruz

forest restoration

Miguel Soto Cruz is one of the pioneers in promoting this *restoration* of forest lands in Costa Rica. He is a tall man with a wide smile and a gentle personality. He has had a dream of restoring the corridor between the rainforest and the cloud forest the area of Costa Rica where he lives near the Carrera forest reserve, returning it to an area of diverse flora and fauna. By restoring forest cover between the two ecosystems, large mammals such as jaguars, monkeys, toucans and many other species can migrate more easily and not get locked up in small patches of forest where there would be less to feed upon and smaller ranges to roam in.

Since Miguel's organization began working in partnership with Falls Brook Centre, many people in New Brunswick have contributed small sums of money to his cause. Occasionally Miguel's organization receives some support from international donors and even from the Canadian International Development Agency to share his



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expertise with people from around the world who also want to restore their lands using Analog Forestry. In Costa Rica, the donations are used to buy up degraded land, or land that was previously mismanaged in his region. Miguel, his colleagues and small farmers then begin restoring the land, using a restoration technique known as Analog Forestry.

Analog Forestry is a method of *biodiversity* restoration that restores degraded land to a forest site, renewing animal habitats and ecosystems, and also providing many products that can be sold or consumed, a source of income while doing the restoration work. Non-timber forest products are different goods that can be found within a forest. Their use or harvest does not involve the removal of trees. Some examples of non-timber forest

products that can be found in Canadian forests include: maple syrup, mushrooms, and medicinal plants. Non-timber forest products are an important aspect of Analog forestry as this type of restoration celebrates diversity instead of *monoculture* cropping, like on plantations.

In Costa Rica, non-timber forest products include vanilla, cinnamon, pepper, tea, coffee, oils, mangos, bananas and many other fruits. Each of these products can be extracted from the forest without harming the forest and ecosystem. This allows a farmer to collect income from various products instead of relying upon one type of crop. You can read more about Analog Forestry on the website maintained by people who use this method of forestry around the world.

Key Terms

1. **Environmental Conservation:** the careful utilization and protection of natural resources.
2. **Forest Restoration:** the act of returning the land to its original condition or regenerating the forest systems and biodiversity.
3. **Biodiversity:** a variety of plant and animal species found within an environment.
4. **Monoculture:** use of land to be planted with only one type of crop.
5. **Sustainable Forest Management:** managing a forest for viable economic future use, without exhausting the resource and capital.
6. **Deforestation:** permanent loss of forest cover by cutting or burning trees.

WORKING TOGETHER

International Trainings in Analog Forestry

Analog Forestry Workshop

People gather from all over the world to participate in these workshops, learning forest restoration and the value in non-timber forest products like fruits, spices, coffee, tea and oils.



www.analogforestrynetwork.org

Miguel Soto Cruz has been doing training events in Analog Forestry for many years; he is currently assisting with the training for different model forests across Central America. The goal of the training is to share the technique of Analog Forestry with students, farmers, and small landowners in three countries: Costa Rica, Honduras and Dominican Republic. In each of these

countries, five degraded sites will be restored and transformed into examples of *sustainable forest management* that others can follow. These countries were chosen because each one has suffered from *deforestation* and subsequent reduction in livelihoods for local people. Learning how to restore the land to meet the needs of people and the ecosystem is one of the keys for a sustainable future.

Whenever people come from far away to visit his training centre in Costa Rica, Miguel encourages a day or two of tree planting. Many past visitors from New Brunswick have enjoyed planting trees in the hot sunshine, digging in the red soil high up on the steep slopes. Now when those visitors return they can find cashews trees, other nuts and fruit trees they planted in the Analog Forest, all bearing fruit and standing proudly, offering shade to another canopy layer of trees below.

Tree planting is also used as a technique to compensate for the carbon dioxide emissions from air travel. Since people come from long distances and burn considerable quantities of fossil fuels, Miguel calculates approximately how much carbon dioxide is emitted into the Earth's atmosphere. Eventually, these trees will be part of a forest that acts as a carbon sink, absorbing and storing carbon dioxide from the atmosphere.

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Discussion Questions

Curriculum Connection Environmental Science 122/123 (Grades 11/12). Introduction Unit: Ecosystem Sustainability, Lifestyles and Sustainability. Resources Unit: Endangered resources. World Issues 120. Issues facing the global community Unit.

1. What is the specific restoration technique mentioned in the text? How can forest conservation and restoration help to ease the problem of endangered species? What is the difference between conservation and restoration?
2. Do you think we do have a personal responsibility in the maintenance and preservation of ecosystems? Explain in detail. What about the restoration of an already degraded area? Why?
3. How can biodiversity restoration aid in economic stability? Which of the main economic drivers of Costa Rica are mentioned in the text?
4. What values do you think Miguel is demonstrating with his restoration actions? What actions can you take in your own community to conserve and restore the ecosystem in your region?
5. What are the non-timber forest products [NTFP's] present in the case? What is their role in creating sustainability in this particular ecosystem? Can you think of any Canadian non-forest timber products that can aid in sustainable forest management?
6. Why would Miguel encourage a day or two of tree planting at his international training sessions? Is tree planting an effective means of carbon offsetting? Can you suggest another means of offsetting?