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Our education system has let us down

Neil Dawe, Special to Oceanside Star
Published: Monday, November 03, 2008

Every day political leaders make decisions affecting the health and viability of our farmland, forests, wetlands, and oceans and the life support services these ecosystems provide. Most do so with little understanding of the broader environmental or ecological consequences on present and future generations.

Politicians usually base their decisions on short-term economic grounds. Even when ecological assessments are required and their implications explained by qualified biologists or ecologists, environmental concerns are often trumped by economics and the effects can be devastating.

In the 1930s, the then Soviet Union diverted rivers that fed the Aral Sea, the world's fourth-largest lake, to irrigate new crops, primarily cotton. Not surprisingly, the lake began to dry up and the increased salinity killed a thriving fishing industry, destroying livelihoods. Today, the lake is actually three lakes, each too small to appear on a list of the world's 35 largest lakes.

This reduction in the size of the Aral Sea even changed the local climate. A once massive body of water moderated freezing winter winds from Siberia and hot summer temperatures. Today the growing season has been reduced to 170 days, much less than the 200 days required to grow and harvest the cotton.

Actions such as this are taking place around the world including here in British Columbia.

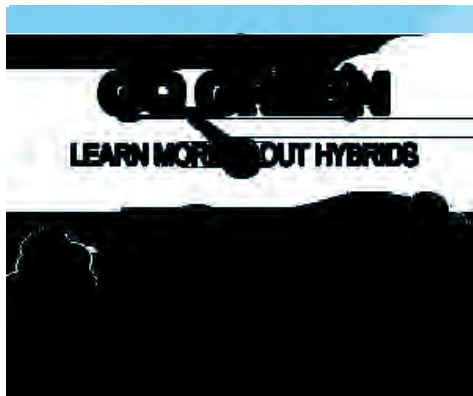
Our conversion of natural forests to tree farm plantations, forestland and farmland conversion to subdivisions, as well as the loss of our salmon populations through overfishing, degraded habitats, and fish farms may not be on the scale of the Aral Sea but collectively could be just as devastating.

Although there seems to be an increased awareness of the impacts of an ever-growing economy and human population on ecosystems, study after study tells us that things are getting worse not better. As ecologist James Speth observes, "An estimated 90 percent of the large predator fish are gone, and 75 percent of marine fisheries are now overfished or fished to capacity. Almost half of the corals are gone or are seriously threatened. Species are disappearing at rates about 1,000 times faster than normal."

Many of the studies warn us of a coming crisis caused by diminishing biodiversity. Biodiversity is critical to the provision of the ecosystem services we need to survive. So why aren't politicians making decisions to stop and reverse this disturbing trend? Two reasons: one, because they lack a basic understanding of ecological principals and two, it would mean a move to a sustainable economy, which would rule out economic growth.

We need leaders who understand that our conventional economic model demands the input of more and more raw resources from a finite source of natural ecosystems to produce and provide consumer goods and services. We need consumers who understand that as well. And the more you take from the economy of nature the more you disrupt biodiversity, ecosystem functioning, and the provision of those life-support services.

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We need leaders who understand that it's impossible for our economy to keep growing exponentially simply to pay down the interest of our global debt. This means we need leaders who understand the exponential growth function.

Physicist Albert Bartlett believes the greatest shortcoming of the human race is our inability to understand the exponential function. This function explains, for example, why it took 17 years for an introduced population of 29 reindeer on St. Matthews Island to reach 3,000 animals but only two more years to add the next 3,000 animals.

Unfortunately, reindeer don't understand the concept of carrying capacity and three years later their population of 6,000 had crashed to only 42 animals. Today there are none on the island. There can be severe consequences to ignoring natural laws.

Ecologists do understand the concept of carrying capacity and have expressed their concerns yet humanity's population continues to grow exponentially. It took over 100,000 years to reach a population of three billion people and only 40 years more to add another three billion. Although our growth rate has dropped considerably, we're still heading towards nine billion, along a similar growth

curve the reindeer followed.

If we hope to make decisions that move us towards a sustainable society, we all need to understand these concepts. For example, do you understand exponential growth, thermodynamics, and the ecological principles of carrying capacity, trophic levels, and competitive exclusion? Few of us do. Our education system has let us down.

Wikipedia defines "ecology" as the scientific study of the distribution and abundance of life and how organisms interact with each other and their natural environment. It comes from the Greek meaning "the study of our house."

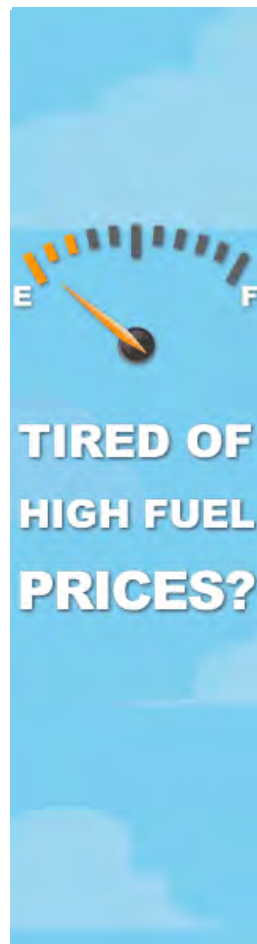
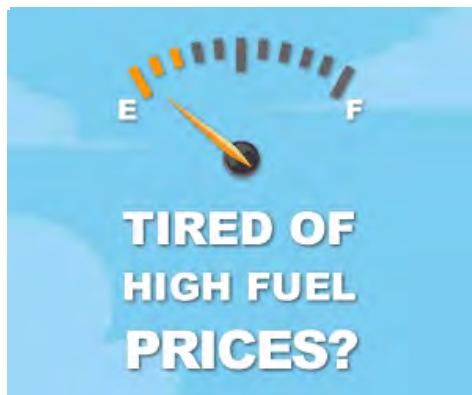
Of all the subjects taught in school, one would think our learning of how we interact with ourselves, other organisms, and our environment would be as important a part of the curriculum as reading, writing, and arithmetic.

Ecology should be taught from kindergarten through Grade 12. An adequate level of ecological understanding can't be achieved through a few outdoor field trips each year. Like learning the multiplication tables or writing prose, ecology has to be taught as a core course so that our ecological understanding becomes second nature.

Then, when politicians, planners, or developers talk about "Smart Growth" for our communities we'll understand what the term really means and why Bartlett says, "Smart growth is like buying a ticket on the Titanic. You can be 'smart' and go first class or you can be 'dumb' and go steerage." The result is the same.

But you don't have to be an ecologist to realize we are destroying the very life-support systems of the planet in our continuous demand for economic growth. Each day the media brings us more bad news about the state of the planet's health. It's sad all the more because it doesn't have to be this way. But our education system let us down.

Neil Dawe is a Registered Professional Biologist living in Parksville. He can be reached at nkdawe@qualicuminstitute.ca



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