

Views

EDITORIAL OPINION

Profiting from biodiversity

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Thomas E. Lovejoy

Last year the nations of the world gathered in Copenhagen in hopes of advancing the global agenda for climate change. Similarly — with much less fanfare yet no less importance — they are now gathered in Nagoya, Japan, to improve the prospects for the living planet and its biodiversity.

Many people live under the illusion that the Earth's biology is largely irrelevant to us. That was manifest in the way the Millennium Development Goals were discussed at the recent United Nations General Assembly completely independent from the discussions related to the International Year of Biodiversity.

Ironically, almost everyone present during the General Assembly talks probably was unaware that the water they were drinking was purified by the biodiversity of the nearby Catskill watershed. Back in the 1990s the quality of New York water — once rated as some of the best of any city — had declined so badly that the Environmental Protection Agency was about to require the city to build an \$8 billion water treatment plant. Instead, for a fraction of

that cost, the city restored the watershed's ecosystems and biodiversity so that they once again could provide high quality drinking water. In doing so, one of the wealthiest cities in the world was recognizing explicitly the value of an ecosystem service.

A major reason the biology of the planet is largely ignored in human affairs, is that its critical contributions to human wellbeing are not taken into account in the formal economy. The world's poor, for example, derive 40 to 89 percent of their annual "income" from nature, both directly through the goods it provides (e.g., food and fiber) and indirectly through its services.

A project initiated by the Group of 8 leading industrialized nations known as The Economics of Ecosystems and Biodiversity, or TEEB, being released in Nagoya makes the case for bringing these factors into the economic calculus as much as possible.

For example, conventional economics would always support the removal of mangrove ecosystems to make way for shrimp aquaculture. However, if economic subsidies are subtracted, the choice to develop rather than leave untouched becomes pretty marginal.

Furthermore, if the service function of mangroves as nurseries for local

fisheries is added to the value of the intact ecosystems, the numbers very clearly argue for maintenance of the mangrove ecosystem.

A classic study in Costa Rica shows that coffee plantations close to forest areas have 20 percent greater yield because of pollination services from wild pollinators. That translates to an additional \$60,000 in income for a farmer with an adjacent forest. Costa Rica has a pioneering ecosystem services law that, among other things, rewards landholders financially for maintaining forests and thus reliable water flow for downstream hydroelectric generation.

On a larger scale, the TEEB project reckons the annual value contributed by global wetlands at \$3.4 billion. On land the project calculates the annual loss of natural capital from natural ecosystems like forests at \$2 trillion to \$4.5 trillion.

All these benefits are in jeopardy. Disturbing trends documented in the Third Biodiversity Outlook tell us this is not a normal time on the planet. Despite many laudatory efforts, the Earth's vital signs are very disturbing and its biological infrastructure is degrading rapidly. Almost all indicators are negative and many are in decline exponentially. Fifteen tipping points, like dieback of the southern and south-

eastern Amazon forest, loom.

We can see plainly in Haiti what happens when the biology of a nation is largely destroyed; indeed it is clear that for the country to have any hope in its future Haiti needs substantial ecosystem restoration and reforestation.

It is simply not acceptable for us to bequeath a world like this to future generations — one riddled with inequity for humanity, with the poor buffered least and suffering most.

We need to move from thinking of nature as just something set aside in a protected area in the midst of a human dominated landscape, to a vision of humanity and its aspirations embedded in the planet's natural infrastructure.

There is much on the agenda in Nagoya. One item is to create an inter-governmental science structure for ecosystems and biodiversity. Another is to make progress on access and sharing of the benefits we derive from the biology of the living planet.

Above all what is needed is greater recognition of the value of biodiversity and conservation efforts commensurate with the scale of the problem.

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