New study ranks countries on environment impact

May 4 2010

(PhysOrg.com) -- A new study led by the University of Adelaide's Environment Institute has ranked most of the world's countries for their environmental impact.

The research uses seven indicators of environmental degradation to form two rankings - a proportional environmental impact index, where impact is measured against total resource availability, and an absolute environmental impact index measuring total environmental degradation at a global scale.

Led by the Environment Institute's Director of Ecological Modelling Professor Corey Bradshaw, the study has been published in the on-line, peer-reviewed science journal PLoS ONE.

The world's 10 worst environmental performers according to the proportional environmental impact index (relative to resource availability) are: Singapore, Korea, Qatar, Kuwait, Japan, Thailand, Bahrain, Malaysia, Philippines and Netherlands.

In absolute global terms, the 10 countries with the worst environmental impact are (in order, worst first): Brazil, USA, China, Indonesia, Japan, Mexico, India, Russia, Australia and Peru.

The indicators used were natural forest loss, habitat conversion, fisheries and other marine captures, fertiliser use, water pollution, carbon emissions from land use and species threat.

“The environmental crises currently gripping the planet are the corollary of excessive human consumption of natural resources,” said Professor Bradshaw. “There is considerable and mounting evidence that elevated degradation and loss of habitats and species are compromising ecosystems that sustain the quality of life for billions of people worldwide.”

Professor Bradshaw said these indices were robust and comprehensive and, unlike existing rankings, deliberately avoided including human health and economic data - measuring environmental impact only.

The study, in collaboration with the National University of Singapore and Princeton University, found that the total wealth of a country (measured by gross national income) was the most important driver of environmental impact.

“We correlated rankings against three socio-economic variables (human population size, gross national income and governance quality) and found that total wealth was the most important explanatory variable - the richer a country, the greater its average environmental impact,” Professor Bradshaw said.

There was no evidence to support the popular idea that environmental degradation plateaus or declines past a certain threshold of per capital wealth (known as the Kuznets curve hypothesis).

“There is a theory that as wealth increases, nations have more access to clean technology and become more environmentally aware so that the environmental impact starts to decline. This wasn’t supported,” he said.

More information: The paper can be found at www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010440

Provided by University of Adelaide