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**Embargoed for Release:  
Thursday, Jan. 3, 2008; 2 p.m. EST**

## **Smithsonian Scientists Highlight Environmental Impacts of Biofuels**

Biofuels reduce greenhouse-gas emissions in comparison to fossil fuels. In the Jan. 4 issue of the journal *Science*, Smithsonian researchers highlight a new study that factors in environmental costs of biofuel production. Corn, soy and sugarcane come up short. The authors urge governments to be far more selective about which biofuels they support, as not all are more environmentally friendly than fossil fuels.

Because fossil fuels contribute to global warming and supplies are dwindling, more eco-friendly alternatives are required. However, biofuels may not be superior if their production results in environmental destruction, pollution and damage to human health, argue postdoctoral fellow Jörn Scharlemann and William Laurance, staff scientist at the Smithsonian Tropical Research Institute.

A new study by Zah et al., commissioned by the Swiss government, calculates the relative merits of 26 biofuels based on relative reduction of greenhouse-gas emissions and an environmental-impact index, which includes damages to human health and ecosystems and natural resource depletion.

The Swiss study identifies striking differences in the environmental costs of different biofuels. Fuels made from U.S. corn, Brazilian soy and Malaysian palm oil may be worse overall than fossil fuels. The best alternatives include biofuels from residual products, such as recycled cooking oil and ethanol from grass or wood.

The Zah et al. study falls short in that it fails to consider secondary consequences of biofuels, such as rising food costs, but it is a big step forward in providing a way to compare the environmental benefits and costs of dozens of different biofuels.

“Different biofuels vary enormously in how eco-friendly they are,” said Laurance. “We need to be smart and promote the right biofuels, or we won’t be helping the environment much at all.”

The Smithsonian Tropical Research Institute, headquartered in Panama City, Panama, is a unit of the Smithsonian Institution. The Institute furthers the understanding of tropical nature and its importance to human welfare, trains students to conduct research in the tropics and promotes conservation by increasing public awareness of the beauty and importance of tropical ecosystems.

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Scharlemann, JPW and Laurance, WF (2008); “How Green are Biofuels?” *Science* **319**: 52-53  
Copies of the *Science* paper may be received from the AAAS Office of Public Programs. Tel.: +1-202-326-6440; E-mail: [scipak@aaas.org](mailto:scipak@aaas.org)