

Hidden casualties of global warming

Martina Habeck

Countries that are primarily responsible for global warming should be responsible for the care and protection of people forced to abandon their homes due to climate change, according to a report published in September by the London, UK-based think tank New Economics Foundation (NEF). According to the report, drought, soil erosion, desertification, and other environmental problems are already driving more people from their homelands than war and political or religious persecution.

By publishing *Environmental refugees: the case for recognition*, NEF is taking the debate over the plight of people affected by global warming into the public arena. Although many in academic circles agree that such people should receive refugee status,

the United Nations High Commission for Refugees and other humanitarian agencies stress that their budgets are already overstrained.

Oxford ecologist Norman Myers estimates that in 1995, there were 25 million “environmental refugees” (*Phil Trans R Soc Lond B* 356: 16.1–16.5). By comparison in 1999, there were an estimated 22 million “traditional” refugees. Like other environmentalists and conflict specialists, Myers believes that global warming will cause a huge upsurge in the number of people forced to migrate. “Global warming, through drought, rising sea levels, hurricanes, etc, could result in as many as 200 million environmental refugees”, he warns. Myers estimates that the flooding of coastal-zone communities may leave 26 million people homeless in Bangladesh, 12 million in Egypt, and 73 million in China.

The report was welcomed by environmentalists, but others are con-

cerned that it could play into the hands of the political far right, which tends to politicize refugee and immigration issues. “The probable public and government reaction to reports like this is to clamp down on migration still further, rather than taking the necessary practical steps to deal with environmental problems”, says migration expert Richard Black (University of Sussex, Brighton, UK).

But for Andrew Simms, Policy Director of the NEF and coauthor of the report, avoiding the debate is not an option. A direct link exists between the fossil fuel-intensive life styles of people in the North and the creation of environmental refugees in the South. Denying them status will leave environmental refugees unprotected and push the cost of their care unfairly onto poor countries” he says. “If we just leave the debate, that is an abstention of responsibility.” ■

Surveying Panama's treetops

Jane Bradbury

A Panamanian rainforest recently became home to 30 entomologists, who are cataloguing the vertical stratification of arthropods “on a scale that has never been done before”, according to principal investigator Yves Basset (Smithsonian Tropical Research Institute, City, Panama). He predicts that the results of the IBISCA (Investigating the Biodiversity of Soil and Canopy Arthropods) project “will have far-ranging implications for the conservation of biodiversity in tropical rainforests”.

IBISCA is using state-of-the-art sampling techniques to examine the vertical stratification of up to 40 taxa of insects at nine sites in the San Lorenzo Forest, a wet evergreen forest on Panama's Caribbean coast. Between September 22 and October 31, researchers used a static canopy crane with a 54 meter boom to sample three 400 m² sites. Over the same period, a canopy raft – a 400 m² platform of PVC pontoons – was lowered onto



Photo by Marcos Guerra, courtesy of STRI

Researcher working on the Sherman canopy crane.

three different sites. Scientists also used a canopy bubble (a seat harness suspended from a helium balloon) and a fixed tree house in their studies. The crane will also be used to gather sea-

sonal replications of insect diversity.

“This study is the first to map insect diversity from the soil to the treetops in a single rainforest study area”, says Vojtech Novotny (Institute of Entomology, České Budejovice, Czech Republic). Fewer than 2 million of the 4–6 million estimated global insect species, most of which probably live in rainforests, have been described. The inability of the scientific community to document tropical species diversity means that it is impossible to show how insect diversity is decreasing with the destruction of tropical rainforests, explains Novotny. He suggests that this damages the credibility of the conservation movement, since it is difficult to concern the public over an unknown species going extinct.

IBISCA should identify some of these mystery at-risk insects. More importantly, says Basset, by knowing more about insect localization within the rainforest, “we will be able to assess how many species will be lost when the canopy habitat is removed, or whether any of them will be able to relocate from the canopy to another habitat.” ■