



SER
SOCIETY FOR
ECOLOGICAL
RESTORATION
International

PRESS RELEASE
Ecological Restoration
A Global Strategy for Mitigating Climate Change

FOR IMMEDIATE RELEASE

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On August 6, 2007, the Society for Ecological Restoration International (SER) issued a position statement on global climate change during its joint conference with the Ecological Society of America (ESA) "Ecological Restoration in a Changing World" held last week in San Jose, CA. The SER position statement has been endorsed by the ESA governing board. An estimated 4,500 people participated in the meeting.

The position statement calls attention to the vital role played by terrestrial and aquatic ecosystems in supporting humanity, and the need to protect and restore these habitats in order to mitigate global climate change and its effects. The overwhelming scientific consensus is that climate change is a real threat that requires immediate action. Changes in land use and the subsequent loss of biodiversity are a significant contributing factor to global climate change.

"The loss of vital ecosystem functions and services reduces biological resilience and adaptability, further increasing our vulnerability to the adverse impacts of global climate change," said Keith Bowers, outgoing Chair of SER. "Ecological restoration is a critical tool in addressing global climate change, enhancing the extent and functioning of carbon sinks as well as reducing greenhouse gas emissions."

"SER strongly urges local, regional, and national governments, international development banks and non-governmental organizations as well as private institutions to plan, finance, and coordinate ecological restoration projects and programs as part of a comprehensive global strategy for mitigating climate change and its effects," said the SER statement. Accordingly, "...developed nations should actively support restoration programs throughout the world by providing financial support, sharing technology and committing expertise."

"Unless checked, global climate change will destroy people, places, and life as we know it. Ecological restoration offers hope in two key areas: by reconnecting fragmented ecosystems allowing animals and plants to migrate in response to such change; and, by capturing carbon through the restoration of forests, peat-forming wetlands, and other ecosystems that act as carbon sinks," said George Gann, incoming Chair of SER. "Protecting what we have is still important, but no longer sufficient," added Jim Harris, SER's Science and Policy Working Group Chair.

The Society for Ecological Restoration International (SER) is a non-profit organization of about 2,000 members - individuals and organizations who are actively engaged in ecologically-sensitive repair and management of ecosystems through an unusually broad array of experience, knowledge sets and cultural perspectives. The mission of SER is to promote ecological restoration as a means of sustaining the diversity of life on Earth and reestablishing an ecologically healthy relationship between nature and culture. www.ser.org. The Ecological Society of America (ESA) is a scientific, non-profit, 9,700-member organization founded in 1915.

ECOLOGICAL RESTORATION A GLOBAL STRATEGY FOR MITIGATING CLIMATE CHANGE

Society for Ecological Restoration International Position Statement

The Society for Ecological Restoration International (SER) adopted the following position statement during its joint conference with the Ecological Society of America entitled “Ecological Restoration in a Changing World” held August 4-10, 2007 in San Jose, California.

The overwhelming scientific consensus is that global climate change is a real and immediate threat that requires action. Defined as an intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its functions, integrity, and sustainability, ecological restoration is one of many tools that can help mitigate climate change.

Humanity depends upon the services provided by ecosystems. These services include products such as food and timber, regulating services such as carbon sequestration, disease control, and flood protection, and cultural benefits, such as places to recreate. As an example of a regulating service, forests remove carbon dioxide from the atmosphere and sequester it in their biomass, thereby capturing a gas that contributes to global climate change. In order to continue to obtain ecosystem services, terrestrial and aquatic ecosystems need to be protected and, where possible, restored.

SER strongly urges local, regional, and national governments, international development banks and non-governmental organizations, as well as private institutions to work to maintain ecosystems and to plan, finance and coordinate ecological restoration projects and programs as part of a comprehensive global strategy for mitigating climate change and its effects.

Developed nations should actively support restoration programs throughout the world by providing financial support, sharing technology and committing expertise.

Society for Ecological Restoration International

Background Paper on Ecological Restoration and Global Climate Change

The overwhelming scientific consensus is that global climate change is a real and immediate threat that requires urgent action within all sectors of society. Although climate change is largely attributed to the burning of fossil fuels, changes in land use and the subsequent loss of biodiversity represent a significant contributing factor (i.e. the conversion of forests, grasslands and wetlands to agricultural, industrial and urban uses). As a consequence, many terrestrial and aquatic ecosystems have recently been transformed from carbon sinks to greenhouse gas emitters. In addition, the loss of vital ecosystem functions and services has reduced biological resilience and adaptability, further increasing our vulnerability to the adverse impacts of global climate change.

Ecological restoration is now acknowledged as a critical tool in addressing global climate change, and considered one of the key mitigation practices for enhancing the extent and functioning of carbon sinks and reducing greenhouse gas emissions. Restoration is an intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and sustainability.¹ In fact, many of these proven, low-cost practices are readily available and can be implemented immediately (i.e. the “restoration of organic soils that are drained for crop production and restoration of degraded lands”).² Whenever possible, degraded ecosystems should be restored to a fully functioning, self-sustaining resilient state, whether tall grass prairie or moist tropical forest.

The vital goods and services provided by each and every ecosystem include carbon sequestration, nutrient cycling, water/air filtration and climate regulation (i.e. evapotranspiration) as well as food, fiber, fuel and habitat. The United Nations Environmental Program recognizes that “ecological restoration in support of rational utilization of the biosphere is a critical need and a key element in sustainable development.”³ Restoration must fully take into account the importance of biological complexity and our symbiotic dependence on the diversity of plant and animal life by avoiding poorly adapted monocultures and simple landscapes that are vulnerable to pests, invasives, disease and other climate change effects.

In order for the biosphere to continue functioning and sustain the biodiversity necessary for human survival, a significant proportion of all terrestrial and aquatic ecosystems need to be protected, and wherever possible, restored. The failure to preserve and restore these ecosystems would have destabilizing ramifications for global economic and political security, possibly leading to societal collapse.

Traditional ecological knowledge and the rapidly emerging science of restoration ecology provide a systematic basis for mitigating the harmful effects of global climate change and finding ways for communities to adapt and become more resilient. The Millennium Ecosystem Assessment states that “ecosystems with some features of the ones that were present before conversion can often be established and can provide some of the original ecosystem services (i.e. pollution filtration in wetlands or timber production from forests)”.⁴ Ecological restoration projects and programs must be science-based and initiated at all scales, from the micro-habitat to the connected landscape to the continental. They must be thoughtfully planned and implemented to ensure healthy and sustainable composition, structure, function and connectivity. For example:

- Forest ecosystems drive the global carbon cycle and act as important buffers to climate change, sequestering carbon while alive and releasing it when harvested. “The world’s forests and forest soils currently store more than one trillion tons of carbon – twice the amount found floating free in the atmosphere”.⁵ It is estimated that tropical deforestation is responsible for approximately 20% of the total carbon emissions each year. The restoration of historically forested lands (above all, in the tropics) will contribute significantly to a reduction in global warming trends by storing carbon and increasing surface albedo (reflective capacity). When undertaking reforestation programs, particular attention must be paid to native species composition and structural diversity in order to ensure the restoration of healthy and productive forests that will be most effective in mitigating global climate change. Agroforestry systems, that utilize windbreaks, border plantings, and overstory shade, hold considerable potential for improving carbon sequestration and storage in both the soil and biomass.⁵
- Wetland ecosystems (including peatlands) also represent important natural carbon stores, and their restoration must be an essential component in climate change mitigation strategies. A recent report documents that carbon emissions from disturbed peatlands are equivalent to almost 8% of global emissions from fossil fuel burning. This is the most concentrated source of land-use related carbon emissions, produced on only 0.2% of the earth’s land area.⁶ Based on these findings, the IPCC has subsequently concluded that the “restoration of drained and degraded peatlands is one of the key low-cost greenhouse gases mitigation strategies.”² Due to the rapid rate of vegetative growth and improved hydrology, wetland restoration (particularly in Southeast Asia) is perhaps the most efficient (low-cost) method for sequestering carbon and reducing emissions in the short term. In terms of adaptation, wetlands and other well-functioning coastal ecosystems (i.e. dunes, mangroves and coral reefs) provide a critical bioshield against rising sea levels, the increased frequency and intensity of storms as well as fluctuating sea surface temperatures that result from climate change.

Therefore, the Society for Ecological Restoration International strongly urges local, regional, and national governments, international development banks and non-governmental organizations as well as private institutions to help plan, finance and coordinate ecological restoration projects and programs as part of a comprehensive global strategy for mitigating climate change. Likewise, local, regional and national authorities are encouraged to aggressively enhance incentives to the private sector for restoring ecosystem services and biodiversity in order to combat global climate change and promote sustainable development. Finally, addressing global climate change requires actions based on social and economic equity. Accordingly, developed nations should actively support restoration programs throughout the world by providing financial support, sharing technology and committing human resources.

(1) Society for Ecological Restoration International Primer

http://www.ser.org/content/ecological_restoration_primer.asp

(2) Intergovernmental Panel on Climate Change “Climate Change 2007: Mitigation of Climate Change”

<http://www.mnp.nl/ipcc/index.html>

(3) United Nations Environmental Program

<http://www.unep.or.jp/ietc/Publications/INSIGHT/Spr-95/6.asp>

(4) Millennium Ecosystem Assessment

<http://www.millenniumassessment.org/en/index.aspx>

(5) Food and Agriculture Organization

<http://www.fao.org/newsroom/en/focus/2006/1000247/index.html>

(6) PEAT-CO2: Assessment of CO2 Emissions from Drained Peatlands in Southeast Asia

<http://www.wetlands.org/publication.aspx?ID=51a80e5f-4479-4200-9be0-66f1aa9f9ca9>