Ecological Restoration: an evolving agenda

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Ecological Restoration (1990)

The intentional alteration of a site to establish a defined indigenous, historic ecosystem that emulates the structure, functioning, diversity, and dynamics of previous ecosystem.

Society for Ecological Restoration, 1990
Ecological Restoration (2002)

Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

Society for Ecological Restoration, 2002
Replace structure
Repair primary processes
Primary Process Repair

Hydrology
- Site stability, erosion control
- Surface & subsurface flows
- Transpiration (microclimate)

Nutrient cycling
- Depletion or excess
- Reduce losses

Energy capture & transfer
- Soil carbon
- Soil biota
Increased size of restoration efforts
**BEFORE CLEARING NATIVE VEGETATION**

- Rainfall
- Interception accounts for 10% of rainfall
- Low infiltration

**AFTER CLEARING NATIVE VEGETATION**

- Rainfall
- Higher infiltration
- Shallow roots take up less groundwater
- Raised groundwater table
- Salt rises with groundwater

- High evapotranspiration
- Low surface runoff
- Groundwater
- Groundwater table
- Bedrock
RESTAURACION DE BOSQUES
EN PASTIZALES CON MELINA

AREA SIN MANEJO SILVICULTURAL

AEC-SINAG-MINAE
Ecological restoration and conservation biology are increasingly cooperating in joint projects.
Poverty remains high and inequities are growing

An estimated 852 million people were undernourished in 2000–02, up 37 million from the period 1997–99

Per capita food production has declined in sub-Saharan Africa.

Water scarcity affects roughly 1–2 billion people worldwide
We are depleting the Earth’s natural capital.

The future is in our hands.

We can reverse the degradation of many ecosystem services over the next 50 years, but the changes in policy and practice required are substantial and not currently underway.
We have to be the change we want in the world

Mahatma Gandhi