

Ecological Mangrove Restoration (EMR)

Six Steps to Successful Mangrove Forest Restoration Emphasizing the Hydrologic Restoration Methodology

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Mangrove Action Project



"Partnering with mangrove forest communities, grassroots NGOs, researchers and local governments to conserve and restore mangrove forests and related coastal ecosystems, while promoting community-based, sustainable management of coastal resources."

Mangrove Action Project

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Six Steps to Successful Mangrove Forest Restoration

Work together with communities, organizations and local government to:

1

Understand both the individual and community species ecology of the naturally occurring mangrove species at the site, paying particular attention to patterns of reproduction, distribution, and successful seedling establishment.

2

Understand the normal hydrology that controls the distribution and successful establishment and growth of targeted mangrove species.

3

Assess the modifications of the mangrove environment that occurred and that currently prevent natural secondary succession.

4

Select appropriate restoration areas through application of Steps 1-3, above, that are both likely to succeed in rehabilitating a forest ecosystem and are cost effective. Consider the available labor to carry out the projects, including adequate monitoring of their progress towards meeting quantitative goals established prior to restoration. This step includes resolving land ownership/use issues necessary for ensuring long-term access to and conservation of the site.

5

Design the restoration program at appropriate sites selected in Step 4, above, to restore the appropriate hydrology and utilize natural volunteer mangrove recruitment for natural plant establishment.

6

Utilize actual planting of propagules or seedlings only after determining through Steps 1-5, above, that natural recruitment will not provide the quantity of successfully established seedlings, rate of stabilization, or rate of growth as required for project success.

Local communities plant propagules and/or seedlings even after having undertaken EMR for a combination of five reasons:

1. Impatience.
2. Planted areas appear to outsiders (not aware of the project) as intentional actions and provide a measure of protection, as it is obvious that there is human activity in the area.
3. Promotion of growth of “preferred” species, such as *Rhizophora* spp., over early colonizers such as *Avicennia* spp. or *Sonneratia* spp.
4. To encourage and ensure local community participation in restoration efforts, as direct involvement may inspire better stewardship and a keener sense of project ownership by local communities.
5. To earn income, as some NGOs and government agencies specifically budget funds for planting mangroves regardless of actual need at given project sites.

COMMON MISCONCEPTIONS ABOUT MANGROVES

1. Mangroves require salt water to develop and grow.
2. Mangroves extend shorelines.
3. Mangroves build up land.
4. *Rhizophora* spp. mangroves are the most valuable species.
5. Some mangrove forest types are more important than others.

THESE STATEMENTS ARE ALL FALSE!!!

Reaching far beyond just planting of seedlings, our program, which restores natural water flows, greatly increases the overall success rate for restoring large areas of degraded mangrove forests. Our method has proven extremely successful in past endeavors, for example in West Lake, Florida, USA.

For more information please visit:
Mangrove Action Project www.mangroveactionproject.org
Lewis Environmental Services, Inc. www.mangroverestoration.com