

4 MINUTE READ

Cypress Reforestation



from **Engineering With Nature: An Atlas, Volume 2.**

by US Army Engineer Research and Development Center



Montegut, Louisiana, United States

Increasing coastal resiliency by restoring natural wetland systems and surface flows. The vulnerable coastal region of Louisiana represents about 40% of the wetlands in the continental United States—and approximately 80% of the nation's wetland loss. Sea level rise, increased storm surge, extreme weather events, and subsidence have all contributed to this land loss and habitat vulnerability; and they are projected to increase over the next 50 years. To combat this loss, the Restore the Earth Foundation, along with local stakeholders and funding partners such as Dow, have restored 1,600 hectares of critical bald cypress (*Taxodium distichum*) forest at Pointe-aux-Chenes Wildlife Management Area, east of Montegut, Louisiana. The project team also retrofitted an existing pump to divert 40–50 billion liters of fresh water per year into the wetland planting site. This large-scale wetland ecosystem restoration project will help protect local communities in Louisiana from future storm surges and related damages, which in turn reduces economic recovery costs while increasing resilience along the Gulf Coast. Using its EcoMetrics Tool, Restore the Earth was able to further quantify the environmental, social, and economic value the

project created, translating that into monetary terms to demonstrate the project's return on investment and social return on investment.



Newly planted native bald cypress seedlings.
(Photo by Restore the Earth Foundation)

Producing Efficiencies

Given the complex nature of the site—the wildlife management area is protected by an integrated system that includes a parish levee, water control structures, and a federal Hurricane Protection Levee System—the design of the project required careful and strategic planning. The team sought input from local and national experts and existing risk assessments, projections, and state coastal restoration plans before proceeding with implementation. The end result is a landscape-scale project with proven beneficial outcomes.



Healthy bald cypress seedling.
(Photo by Restore the Earth Foundation)

Using Natural Processes

Once complete, the freshwater diversion will provide 40–50 billion liters per year of freshwater replenishment into the wetland complex. This diversion will reduce salinities in the wetland unit, promoting more vigorous plant production, including submerged aquatic vegetation. The newly planted bald cypress trees will provide habitat needed to support the area's native fish, bird, and wildlife species native to the area. The regular influx of freshwater will also enhance the land-building capacity of the reforestation activities—the Natural Resources Conservation Service estimates the diversion will benefit 800 hectares of marsh.



Above and article cover: Native EKOgrown bald cypress trees, grown from seeds collected in the region.

(Photo by Restore the Earth Foundation)

Broadening Benefits

The cypress reforestation project will reduce exposure to storm surge by creating marshlands and forested wetlands inside the existing levee protection systems. Neighboring communities will see improved water quality, increased storm protection, and reduced flooding. The project team will monitor the site for water, air quality, and other improvements. Restore the Earth, using EcoMetrics, quantifies in monetary terms the value created by these improvements. They will also register carbon emission reductions with the Climate Action Reserve's Climate Forward Program registry, further demonstrating the broad benefits of coastal wetland restoration.



Before freshwater restoration.
(Photo by Restore the Earth Foundation)



After freshwater diversion, the presence of transitional grasses sets the stage for tree planting.

(Photo by Restore the Earth Foundation)

Promoting Collaboration

The collaboration of local, state, and national experts in conjunction with guidance from Louisiana State's Coastal Master Plan and funding through Dow's Carbon Partnership with the International Olympic Committee and other corporate funders made this project possible. The EcoMetrics Tool was crucial in securing stakeholder and funder engagement. It provided a

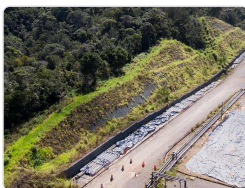
“business case” for investment in ecosystems restoration, demonstrating that every \$1 invested in the restoration project creates \$14 in environmental, social, and economic value. These quantifiable outcomes helped the team communicate the value of the project to a broad spectrum of stakeholders.



Dow volunteers planting over 1,000 native bald cypress trees.
(Photo by Restore the Earth Foundation)



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Matarandiba Island

3min pages 302-305



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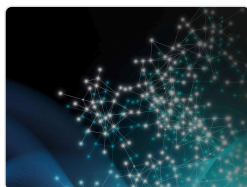
4min pages 294-297

**Introduction**

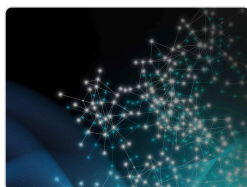
13min pages 19-29

**Conclusion**

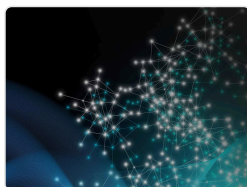
5min pages 320-325

**Coastal Resilience and Natural Solutions Toolkits**

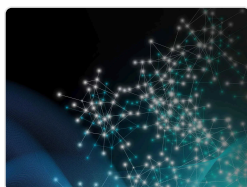
2min pages 310, 318-319

**Coastal Storm Modeling System**

2min pages 310, 316-317

**Natural Infrastructure Opportunities Tool**

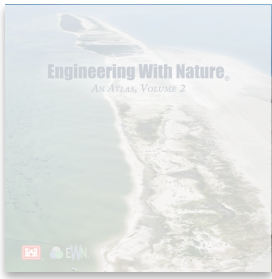
2min pages 310, 314-315

**Ecosystem Services Identification and Inventory**

2min pages 310, 312-313

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