

01 THE PROBLEM Why Restoration Hydro?

Globally, countless watershed, river and wetland ecosystems have become degraded. The restoration of these ecosystems is not only possible, but economically justifiable. Watershed restoration has been proven to enhance the adaptive capacity of watershed ecosystems and surrounding communities to more effectively absorb and rebound from the acute climatic shocks and longer-term climate shifts that will accompany climate change.



of U.S. water ways are degraded



of rivers are degraded in the Northeast and deep South of the U.S.



of rivers were newly classified as deteriorated between 2004 and 2009

02 THE SOLUTION What is Restoration Hydro?

Watershed restoration efforts often employ low-head structures that emulate - or biomimic - the naturally occurring structural elements of water-based ecosystems such as log jams, riffle-pool geomorphology and beaver dams. **Low-head structures are strategically sited to slow and redirect water flows, trapping and redistributing sediment in a manner that gradually resuscitates riparian habitats, as well as related ecosystem services.**

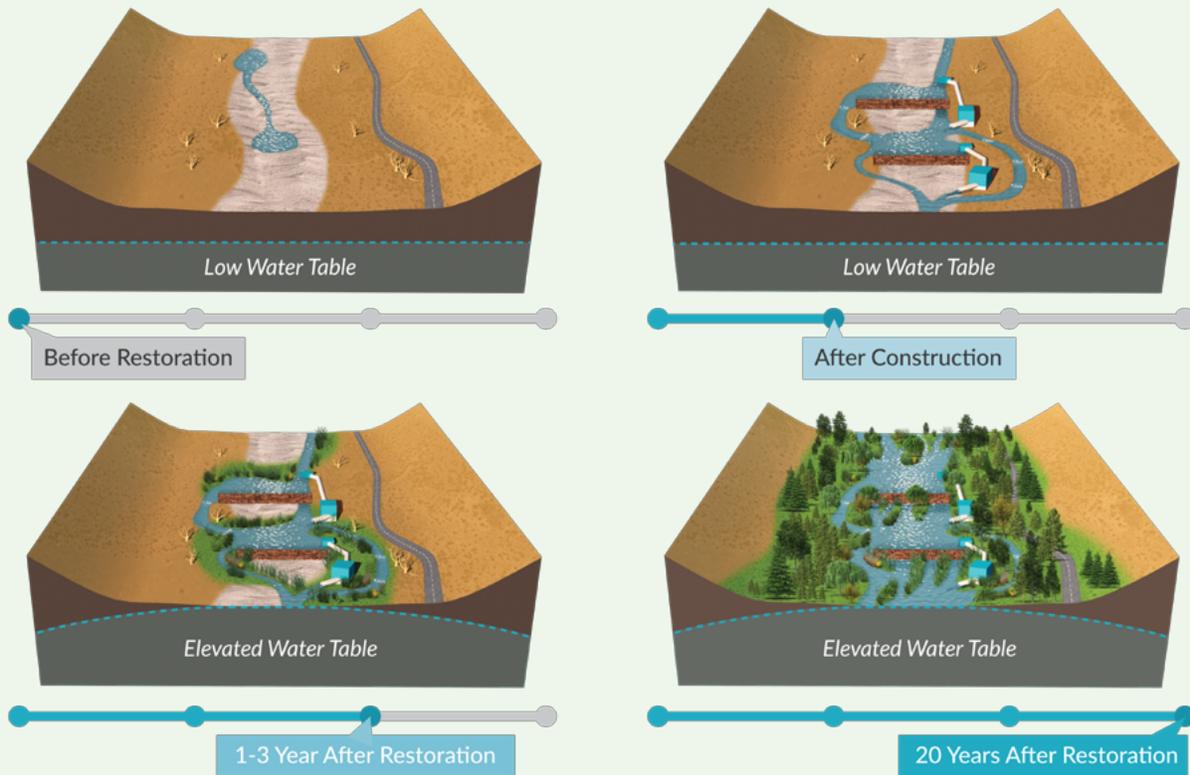
Restoration Hydro takes watershed restoration one step further. Using our cost-saving civil works innovations, **Natel Energy integrates hydroEngine turbines into these low-head structures in a manner that maintains watershed function and related restoration benefits**, while minimizing negative environmental and social impacts. By doing so, Natel Energy introduces a foundation of easily monetizable economic value under the high-value water, environmental and social benefits of ecosystem restoration in the form of flexible, reliable and renewable energy.

Biomimicry

"An approach to innovation that seeks sustainable solutions to human challenges by emulating nature's time-tested patterns and strategies."

- **Biomimicry Institute** -

Restoration Hydro therefore creates a virtuous cycle - an environment-energy multiplier effect - through which **watershed restoration activities can be financially leveraged to support the scaling of renewable energy projects and vice versa.**



03 THE CONTEXT **Developed and Developing Countries**

The design of Restoration Hydro projects and associated environmental, social and economic co-benefits vary considerably depending on the development context of the project area. **In developed countries, Restoration Hydro projects generally focus on generating environmental co-benefits** that include water quality improvements, sustained increases in groundwater and aquifer recharge rates and enhanced river, wetland and watershed connectivity. **In developing countries, Restoration Hydro projects often incorporate dual-use infrastructure that directly enhances the livelihoods and wellbeing of project area communities** through linked irrigation and water-supply systems.



Supports ecosystems



Improves water quality



Drives investment in water infrastructure



Grows local economies and communities



Provides low-cost renewable power

04 THE APPROACH **Beyond Conventional Sustainability**

Natel's Restoration Hydro framework transcends conventional interpretations of social and environmental sustainability. As opposed to merely minimizing a project's negative impacts, Restoration Hydro **seeks to restore degraded ecosystems, preserve the ecological integrity of healthy ones, and enhance the wellbeing of the communities around them.**