Great Rivers That Work for People and Nature

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Produced in partnership with The Nature Conservancy.

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Great Rivers That Work for People and Nature

Great Rivers Partnership (GRP)

• Background

• Accomplishments from 2005-2010
**Mission:** bring together diverse partners and best science to expand options for achieving the sustainable management and development of the world’s Great Rivers and their basins.

We seek shared solutions to common land- and water-use dilemmas, recognizing the inescapable linkages that connect our economy, human well-being and ecosystem sustainability.

We view our history and leadership role in the Mississippi River Basin as an important regional asset, and a foundation for promoting the global exchange of knowledge and expertise.
What are Great Rivers?

- Are dominant continental landscape features
- Biota have evolved life history strategies to exploit annual flow pulse
- Are highly productive “working rivers” vital to the cultural heritage & economic prosperity in their regions

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Everything is Connected
Great Rivers Partnership: 2005-2010

- Mississippi River
- Yangtze River
- Paraguay-Parana Rivers
- Zambezi River
- Magdalena River
Partnerships & Impacts

Examples:

- Mississippi River as a Global Platform
- Yangtze River: Water vs. People
- Magdalena River: Strategies & Priorities

Everything is Connected
Convene America’s Watershed

Outcomes:

• **Establish an enduring public-private facilitating entity** to connect stakeholders and best science in service of a shared vision and more integrated river basin management strategy

• **Build recognition** among regional and national leaders and the public and report on how the system functions toward achieving sustainable management

• **Elevate local and regional projects** that demonstrate effective collaboration and strategies

• **Network** with river commissions and similar entities in North America and globally for sharing knowledge and best practices related to the management of large rivers and their watersheds.

Champion solutions for tomorrow’s safe, accessible, and nutritious food, fiber and fuel in thriving ecosystems.

- Defines and measures sustainability of food & fiber production
- Develops outcomes-based metrics
- Measures environmental & socioeconomic impacts of agriculture
- Provides tools to help growers analyze operations & food companies explain how natural resources are being managed

Everything is Connected
Mississippi River – Sustainable Agriculture

Bioreactor Wetland
Root River, Minnesota

Boone River, Iowa

Restored Wetlands
Pecatonica River, WI

Mackinaw River, IL

Everything is Connected
Focus of Platform Projects

- Systemic
- Inform Larger Efforts
- Partnerships
- Innovative
- Communication

Mollicy Farms, 20,000 a
Ouachita National Wildlife Refuge, LA

Emiquon, 7,100 a
Illinois River
Emiquon Preserve, Illinois River, IL

- >200 bird species observed
- Peak waterfowl densities ~200,000
- Public waterfowl hunting
- Over 60 wetland plant species
- Public boating and fishing

Aerial map with overlay showing habitat development and distribution from 2007 to 2009 at the Emiquon Preserve.

http://experienceemiquon.com/content/nature-conservancy-emiquon-preserve
Emiquon computer simulation models

Moist soil plant growth

Moist soil plant seed production

Topography

Hydraulics & sedimentation

Hydrology

Graph 5

Graph 6

Moist soil plant growth

Seed

N of Seeds

N of Plants

WD

H5

S death

Total N of Seed

Graph 5

Graph 6

Moist soil plant seed production
Global Impacts: China (Qiaoyu Guo, Yao Yin)

- Yangtze River Freshwater Ecoregional Assessment
- CAP (Conservation Action Plan) for Reserves
- Environmental Flows
- Hydropower
- Sustainability Fund
- River Health Monitoring Network
Freshwater Ecological Assessment

Legend

- Experts Nominated Area
- MARXAN Model Results
- Hydropower dam
- Province capital
- Yangtze river main stream
- The headwater and main tributaries

Map showing the Yangtze River Basin with various regions marked and labeled.
Hydropower Sustainable Development Fund

Hydropower Generation w/o flood storage 51 GW

Three Gorges

Extra Revenue $536 m/yr

Flood Risk Management
- Early warning, evacuation, refuge and reoccupation
- Capital costs – infrastructure improvements $1.3 b
- Premiums for periodic costs --
  - Flood insurance $40 m/yr

Ecosystem Conservation
- Bond Funding $900m For initial capitalization
- Risk Coverage $1.5 b
  - Catastrophe Bonds
  - Flood Insurance

Freshwater Conservation Management Area System
- E-flows
- Long-term ecological monitoring

O&M $45 m/yr
Global Impact: Magdalena River, Columbia

http://www.nature.org/ourinitiatives/regions/southamerica/colombia/explore/bringing-balance-to-colombias-magdalena-river.xml
Priorities & Strategies

Protected Areas
- Ampliación Corchal
- Corantioquia
- Conserva Colombia corr. 1
- Conserva Colombia corr. 2
- El Ceibal

WATERFUNDS
- Agua Por la Vida
- Bogota
- Cartagena
- Medellin

Development by Design
- Piloto MAVDT Cesar
- Piloto MAVDT Meta
- Piloto MAVDT San Lucas

Communal Lands
- Compra Sierra Nevada
- Resguardos de la Sierra

Working Landscapes
- El Ceibal
- Fundacion Biodiversidad
- Proyecto Ganaderia Sostenible
Impact: Water Funds

Problem:

- Ensuring sufficient clean water
- Financing self-sustaining natural areas

Solution:

- Those who benefit from forests and natural systems that produce clean water should help pay landowners who conserve them

"We're learning to assess water according to a monetary value for the services it provides."

- Alejandro Calvache, water funds specialist, The Nature Conservancy
Impact: Water Funds...

...link downstream water users with the source of their clean regular water supplies.

**TNC Latin America Water Fund Program:**

- 12 Water Funds
- 6 million acres of key watersheds
- Clean water for 17 million people

Quito, São Paulo, Brasilia, Rio de Janeiro
"The central idea behind the Great Rivers Partnership is stunning in its simplicity: as different as great rivers around the world might be in some ways, the problems they face reduce to much the same thing. By sharing information and experience across rivers in many countries, we can accelerate their conservation."

-Brenda Shapiro, Trustee, The Nature Conservancy’s Great Rivers Partnership and Illinois Chapter
Leverage: Mississippi-Yangtze Monitoring Network

Yangtze

Mississippi

1987
FIELD STATIONS
DATA ENTRY

1992
CONTRACTED
DATA ENTRY

2000
DIRECT
DATA ENTRY

2007

UMESC Database Management

~40%
DATA COLLECTION - WARNING FLAGS

2.5%

<1%
“Our priorities for the Magdalena are flood control, navigation, natural resource management and hydropower, but this time around we want environmental impacts to be a guiding force in our design and construction. We wanted to learn from the Mississippi experiences — the successes and also the mistakes.”

Paulino Galindo, strategic advisor for Cormagdalena, a government agency responsible for management of the Magdalena River in Colombia

http://www.nature.org/ourinitiatives/regions/southamerica/colombia/explore/bringing-balance-to-colombias-magdalena-river.xml
Leverage – Emiquon
The Great Rivers Partnership thanks the individuals, foundations and corporations who collectively contributed more than $60 million to our work since 2005. Our success is possible because of their generous support. Below are donors who contributed $10,000 or more to the Great Rivers Partnership and our proof-of-concept project areas in the Mississippi River, Africa, Latin America and Asia Pacific regions.

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Rita Kress
The McKnight Foundation
The Estate of Newell & Ann Meyer
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Monsanto Company
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http://www.nature.org/ourinitiatives/habitats/riverslakes/howwework/the-partnership.xml