Great Rivers That Work for People and Nature: The Great Rivers Partnership (GRP)

• Great Rivers Partnership

• Accomplishments: the First 5 Years 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

Everything is Connected
A partnership to sustain great river systems around the world for people and nature using the Mississippi River as a case study.
Accomplishments: 2005-2010

• Partnerships

• Impact

• Leverage

Everything is Connected
Examples:

- Navigation & Ecosystem Sustainability Program (NESP)
- China Program
- Agriculture & Environment
Partnerships – NESP

WRDA 2007 Authorized Plan
Navigation $2.2 B, Ecosystem $1.8B

• Navigation 7 locks and small scale
• Fish Passage @ Dams 4, 8, 22, and 26
• Changes in Water Level Control @ Dams 25 and 16
• Forest & Cultural Resources Management Plans
• Adaptive Implementation of 225 small projects of less than $25 million each
  – Island Building
  – Water Level Management
  – Backwater/Side Channel Restoration
  – Wing Dam/Dike Alterations
  – Island Shoreline Protection
• 35,000 Acres of Floodplain Restoration
• Adaptive Management and Monitoring

Everything is Connected
Partnerships – China Program

- 2007: Memorandum of Understanding Changjiang Water Resources Commission
- 2008, 2009, 2011 technical exchanges
Agriculture & Environment

Field-to-Market
Keystone Alliance for Sustainable Agriculture

• A collaborative stakeholder group of producers, agribusinesses, food & retail companies, & conservation organizations

• 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
Impact

Examples:

• Mississippi River as a Global Platform
• Yangtze River: Water vs. People
• Magdalena River: Strategies & Priorities
Convene America’s Watershed

A vibrant network that will ...
- Support local, state and national economies
- Supply abundant, clean water to our farms and communities
- Nurture healthy, productive ecosystems
- Serve as the nation’s marine highway
- Provide reliable flood control
- Create world class recreational opportunities
- Enhance national security

“Integrated approaches, cross sector collaboration, leveraging science, engineering, technology and public policy”

41% of the U.S., 1.25 million square miles, over 250 tributaries

Join the dialogue at
Floodplain Management for Multiple Benefits

Focus of Platform Projects

• Systemic
• Inform Larger Efforts
• Partnerships
• Innovative
• Communication

Mollicy Farms
Ouachita National Wildlife Refuge, LA

Emiquon
Illinois River
Proof-of-Concept - Floodplain Wetlands

Emiquon Preserve, Illinois River, IL

1919

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

2003

http://experienceemiquon.com/content/nature-conservancy-emiquon-preserve

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

Moist soil plant growth

Topography

Hydraulics & sedimentation

Moist soil plant seed production

Hydrology

Seedling germination

Solar

Stem

Root

Seed

WD

Biom1

G1

~

GS1

~

GS2

~

GS3

~

GS4

Biom2

Trans1

Grow1

Solar

Root

Seed1

G2

Trans2

Grow2

Solar

Root

Seed2

G3

Trans3

Grow3

Solar

Root

Seed3

G4

Trans4

Grow4

Solar

Death

Frost

H1

H2

H3

H4

Survival?

Se

Se1

Se2

Se3

S Mort

Mort1

Mort2

Mort3

Mort4

Days of F0

Days of F1

Days of F2

Days of F3

Days of F4
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**
  - 专家指定的优先保护区域
- **MARXAN Model Results**
  - MARXAN模型计算得到的优先保护区域
    - **Size 1**
    - **Size 2**
    - **Size 3 & Size 9**
- **Hydropower dam**
  - 大坝
    - Existing 已建
    - Under construction 在建
    - Approved 已批准
    - Proposed 早期规划
- **Province capital**
  - 省会城市
- **Yangtze river main stream**
  - 长江干流
- **Headwater and main tributaries**
  - 源头及主要支流
Hydropower Generation w/o flood storage 51 GW

Three Gorges

Hydropower Sustainable Development Fund

Bond Funding $900m
- For initial capitalization

Risk Coverage $1.5 b
- Catastrophe Bonds
- Flood Insurance

Flood Risk Management
- Early warning, evacuation, refuge and reoccupation $108 m
- Capital costs -- infrastructure improvements $1.3 b

Freshwater Conservation Management Area System
- E-flows
- O&M $45 m/yr

Ecosystem Conservation
- $200 m; $20 m/yr

Extra Revenue $536 m/yr

Premiums for periodic costs --
- Flood insurance $40 m/yr

Capital costs -- infrastructure improvements $1.3 b

Risk Coverage $1.5 b
- Catastrophe Bonds
- Flood Insurance
Leveraging the Mississippi: Yangtze River Monitoring Network

Yangtze

Mississippi

Everything is Connected
Problem:
• Ensuring sufficient clean water
• Financing self-sustaining natural areas

Solution:
Those who benefit from forests and other 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 for the Conservancy
...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. It seems obvious now, but it didn’t when we started the Great Rivers Partnership five years ago.”

- Brenda Shapiro, Trustee, The Nature Conservancy’s Great Rivers Partnership and Illinois Chapter
“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 – Direction advisor for Cormagdalena, a government agency appointed with the management of the Magdalena River watershed in Colombia

http://www.nature.org/ourinitiatives/regions/southamerica/colombia/explore/bringing-balance-to-colombias-magdalena-river.xml
Leverage – Emiquon
Leveraging $$ GRP I – 2005-2010

TNC U.S., China & Brazil programs individuals, foundations, corporations & conservation partners

Launch 2005

$12 M

>$60 M

Public funding for conservation: Mississippi, Parana-Paraguay, Yangtze

>$508 M

Everything is Connected
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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The Charles Stewart Mott Foundation
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Daniel F. & Ada L. Rice Foundation
Searle Family Trust
Brenda & Earl Shapiro
Anton Szabados
TNH Family Foundation
United Capital Investment Group Ltd.
Walton Family Foundation
Wells Fargo Foundation
Nancy Hamill Winter
Kwong Yu Wong
T.Y. Wong Foundation
YSI Foundation

http://www.nature.org/ourinitiatives/habitats/riverslakes/howwework/the-partnership.xml