



Water in North America

MICHAEL A. REUTER
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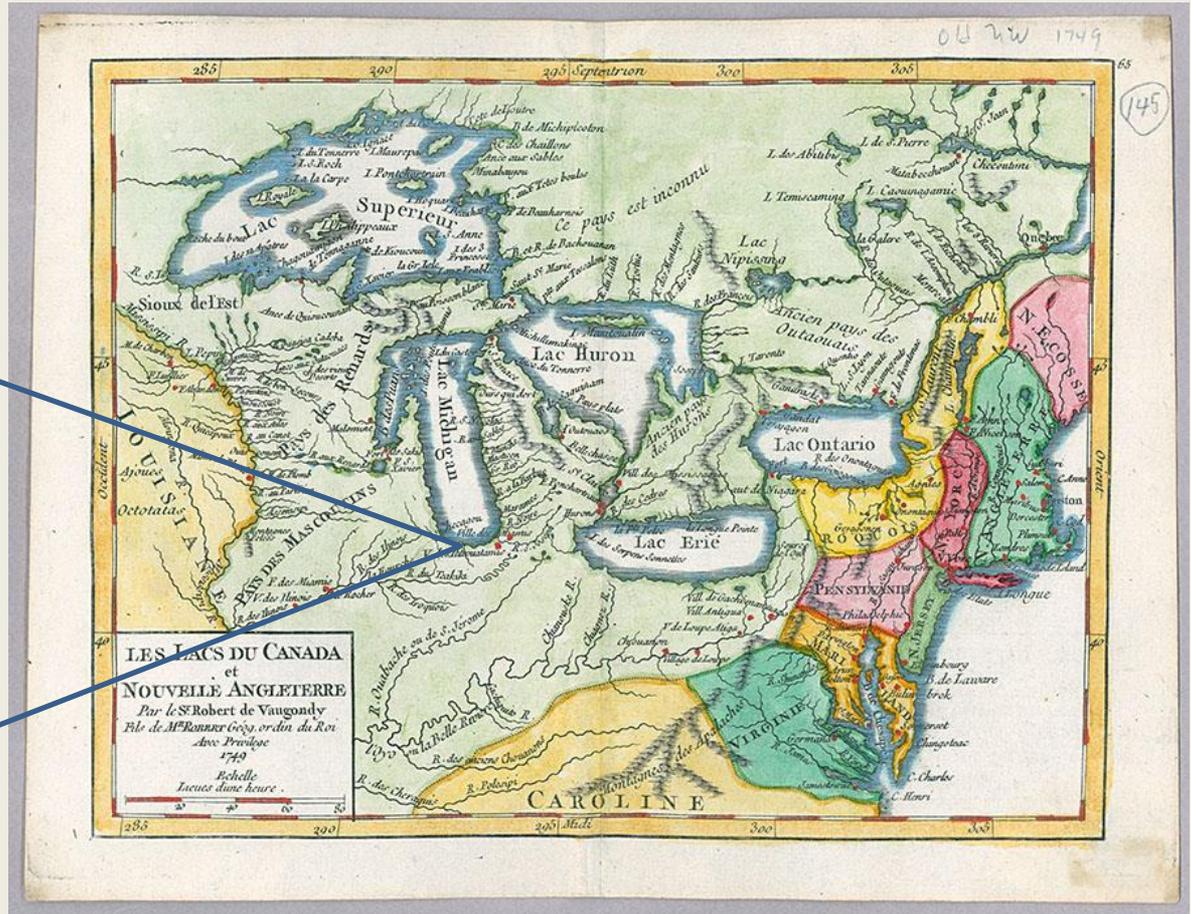


Chicago

...blissfully wet



© Huffington Post



US: A Global Hotspot for Freshwater Biodiversity

Hidden Treasures



American Paddlefish

Global Significance of US Freshwater Species

<i>Taxonomic Group</i>	<i>U.S. Ranking Worldwide in Species Diversity</i>
Fishes	7
Crayfishes	1
Freshwater Mussels	1
Freshwater Snails	1
Stoneflies	1
Mayflies	1
Caddisflies	1
Dragonflies & Damselflies	uncertain
Stygobites	1

Source: Rivers of Life, NatureServe

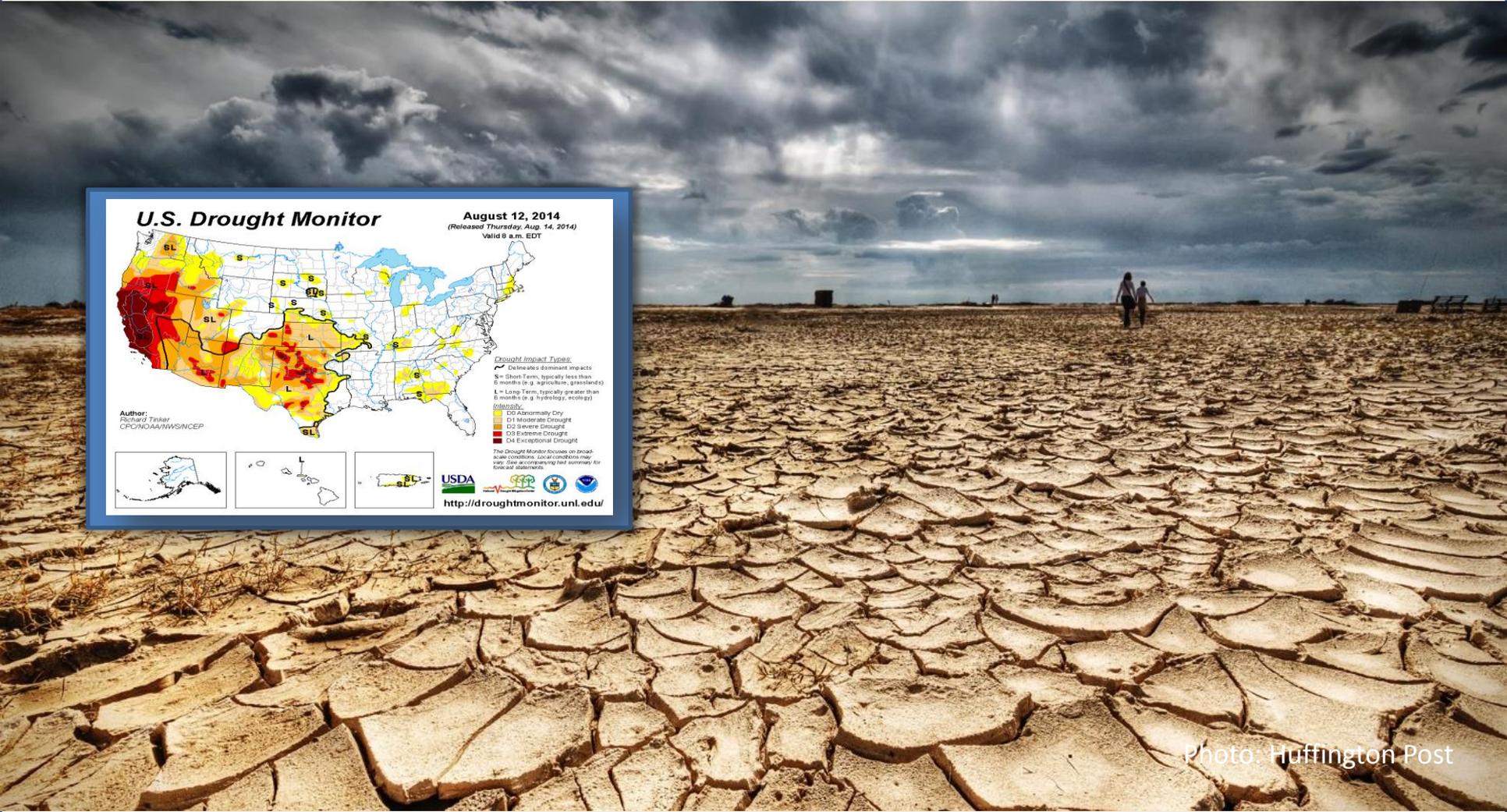
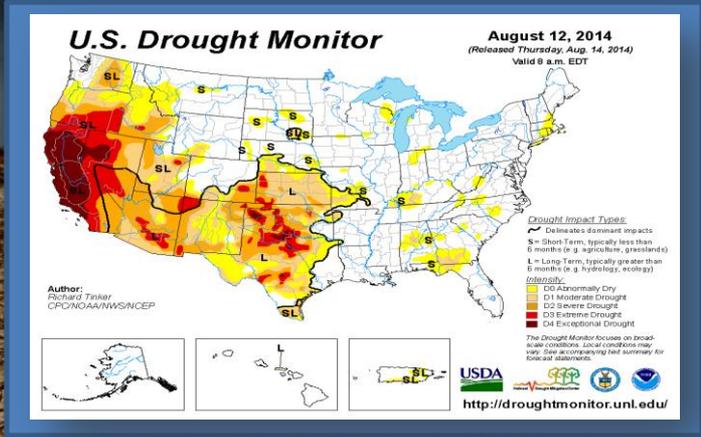


Photo: Huffington Post

Drought not just a California problem

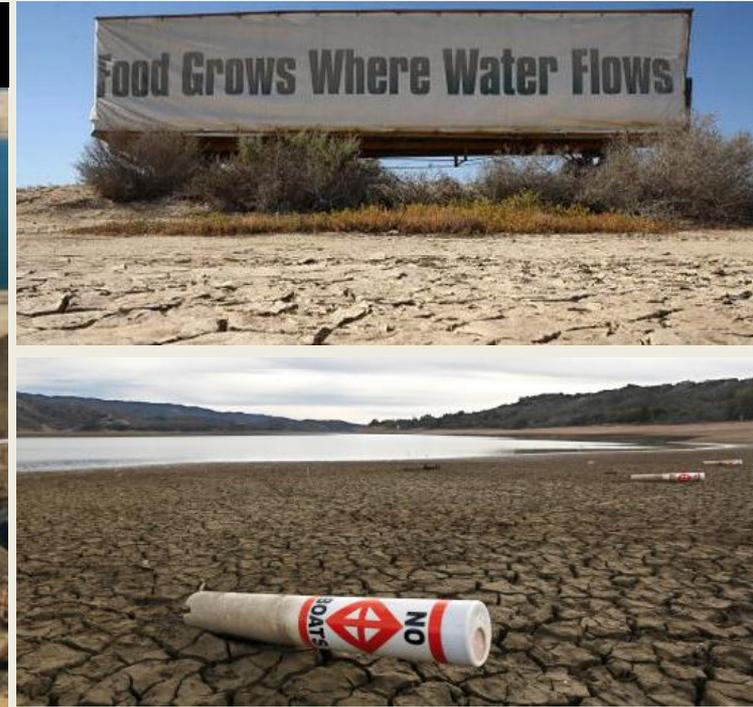
Extreme dry spell threatens food supply, shows need for spending on public works

March 2011

January 2014



Folsom Lake (Courtesy: State of California)



© Huffington Post

1.5 Billion | 5 Times | 4 inches | ½ Inch

Securing Water Through Transactions

Unsticking a Static, Over-Allocated System



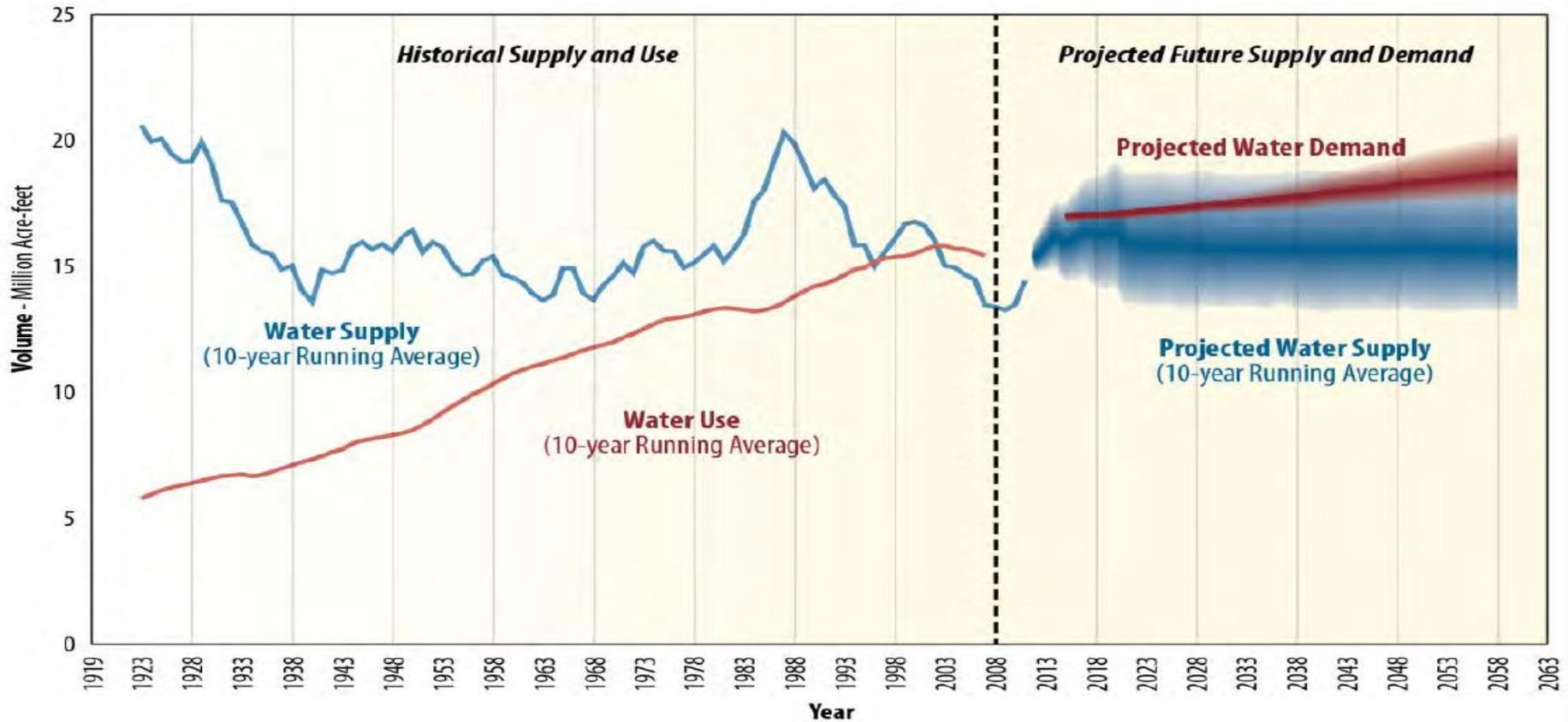
Shasta River

Photo: Carson Jeffres

Shasta River
Mill Creek
Sacramento River
Colorado River
Verde River
Klamath River
Columbia River
John Day River
Long Creek
Carson River
Stillwater
Wetlands
...and negotiating



Colorado River: Water Supply and Demand



Scaling Water Transactions

Can We Reduce System Risk with Nature?

1



Bureau of Reclamation, states (AZ, NV, CO, CA) and municipal water providers **pay...**

2

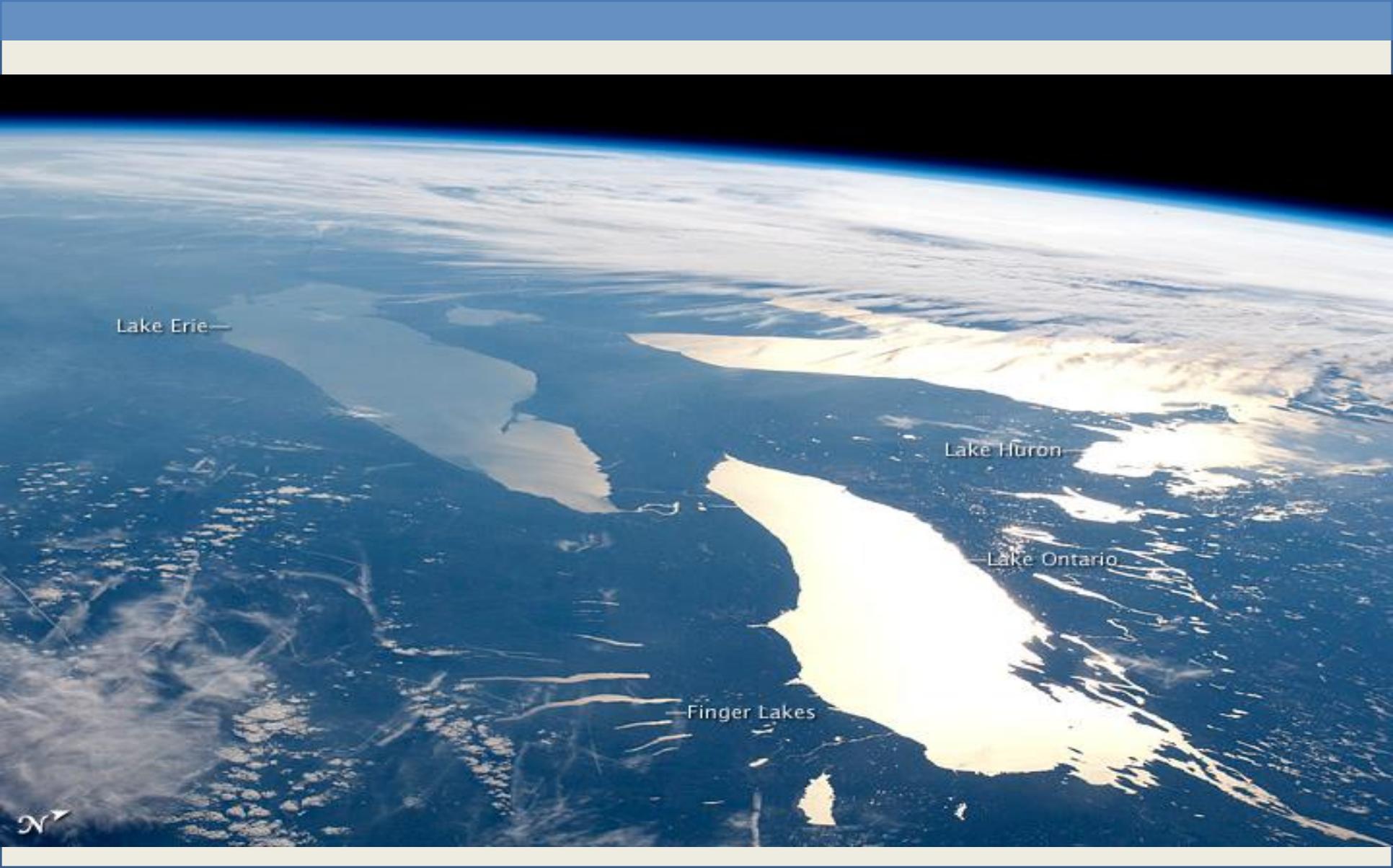


...municipal, industrial, and agricultural water users **to conserve...**

3



...and **conserved “system” water stays in the river** and boosts reservoir storage, benefitting people and nature



Lake Erie—

Lake Huron—

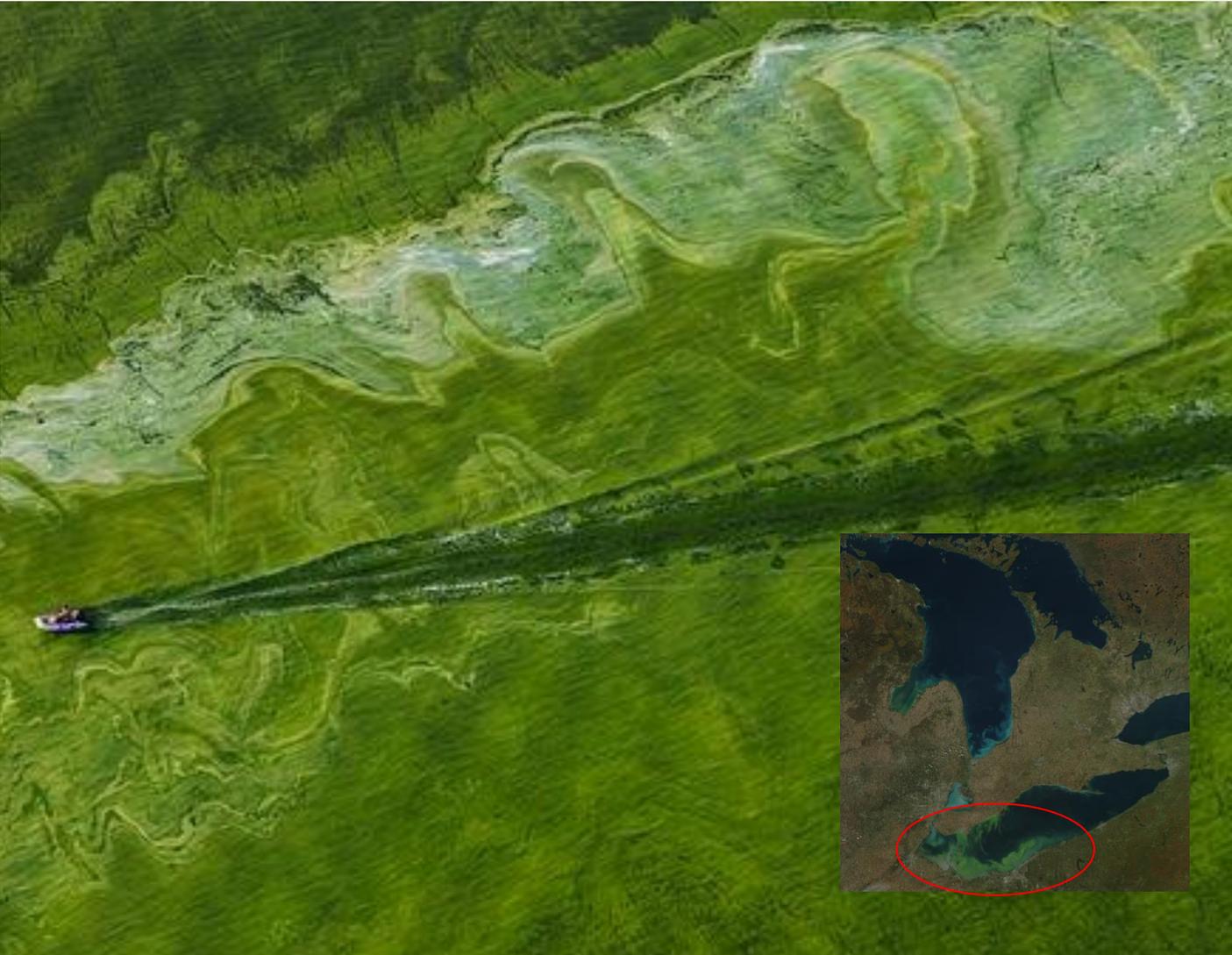
Lake Ontario—

Finger Lakes—



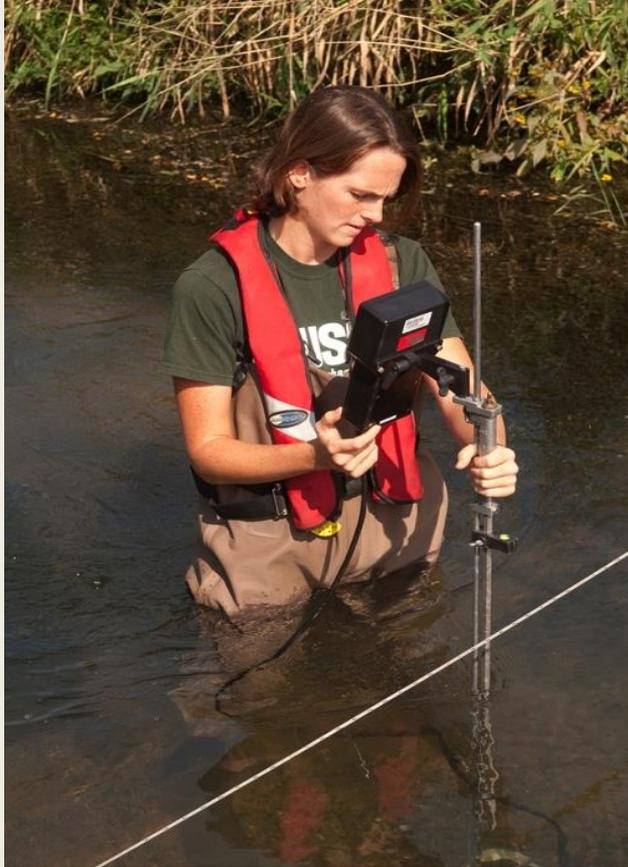
Even in the U.S. Access to Clean Water Can Be Tough

Recent events in Toledo highlighted issues with clean water access in America.



Approaching the Watershed

Discovering Shared Solutions



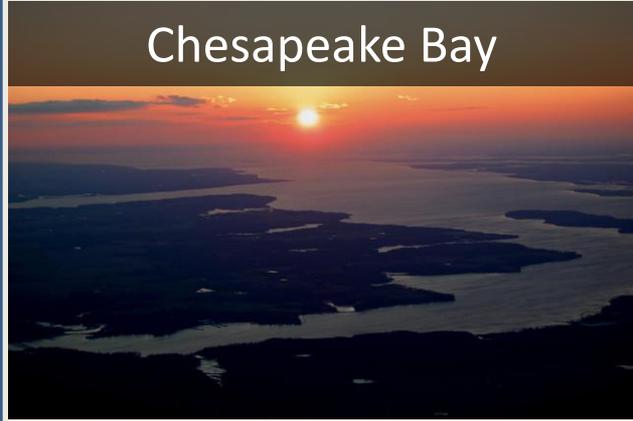
Mackinaw River
Pecatonica River
Boone River
Root River
Meramec River
Mississippi Delta
Maumee River
Wabash River
Paw Paw River
Saginaw Bay
Cheboygan River
Susquehanna River
Cape Fear
Northern Everglades
Pocomoke River
Potomac River
Puget Sound
...and more



Scaling to Whole Systems

Aligning for Greater Impact

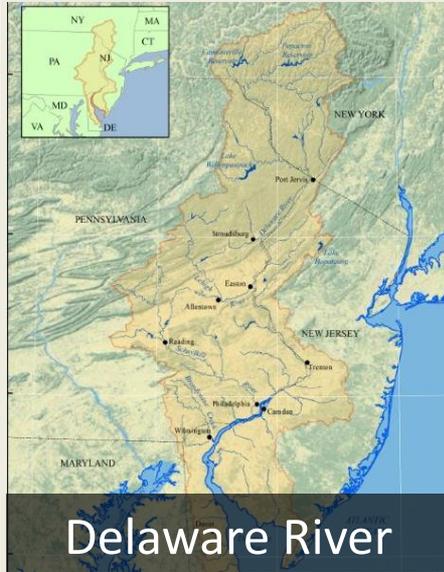
Chesapeake Bay



Gulf of Mexico



Great Lakes



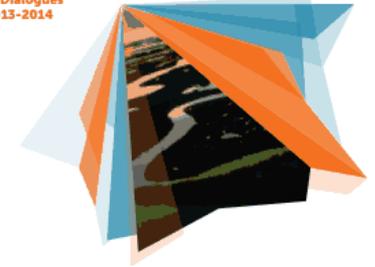
Delaware River



COMING TOGETHER TO PROTECT MISSISSIPPI RIVER WATERSHEDS

AGRICULTURE & WATER SECTOR COLLABORATION FOR NUTRIENT PROGRESS

Report of the Mississippi River Nutrient Dialogues
Convened by the U.S. Water Alliance, 2013-2014



Supported by the McKnight Foundation, The Johnson Foundation at Wingspread, and the Meridian Institute



Uniting People & Policy for "One Water" Sustainability

August 2014

Reinvesting in Sustainable Infrastructure

Moving from Projects to Watersheds...and Water Security

PARTNERING FOR WATER

THE NATURE CONSERVANCY TEAMS WITH LOCAL, STATE, REGIONAL AND FEDERAL AGENCIES ON WATER PROJECTS ALL OVER THE U.S. AND ADVISES IN 35 COUNTRIES

- **BANK STABILIZATION**
 1. Buttatchie River Stabilization Demonstration Project, Miss. O
- **COASTAL RESTORATION**
 2. Bowling Green Preserve Tidal Pond Construction, Fla.
 3. Harris Creek Oyster Restoration, Md. O
 4. Lower Cape May Meadows Restoration, N.J.
 5. Living Shoreline Creation, Va.
- **DAM REMOVAL**
 6. Restoring River Herring in Massachusetts
 7. Penobscot River Dams, Maine
 8. Marvel Slab Low-head Dam Removal, Ala.
 9. Cuddebackville Dam Removal, N.Y. (Completed)
- **FLOODPLAIN MANAGEMENT**
 10. Hamilton City Flood Damage Reduction and Ecosystem Restoration Project, Calif.
 11. Minnesota Flood Storage and Retention Pond, Minn. O
- **SHORELINE RESTORATION**
 12. Candy's Beach Oyster Reef Breakwater Project, N.J.
- **WATER MANAGEMENT**
 13. Verde River, Ariz.
 14. Water Management Plan, N.C. O
 15. Great Dismal Swamp Water Control Structures, Va.
 16. Infrastructure Modernization, Ws. O
- **WATERCOURSE RESTORATION**
 17. Southeast Alaska Stream Restoration, Alaska
 18. Kelley Branch Impoundment Removal, Fla. O
 19. Oxbow Restorations in the Boone River Watershed, Iowa
 20. Pumphrey-Buck Creek Meander Restoration and Riparian Corridor, Ky.
 21. Mitchell Brook Stream Resilience, Mass.
 22. Two Hearted River Watershed Stream Crossing Improvements, Mich.
 23. Lakes Sturgeon Spawning Habitat Improvement Project, Minn.
 24. San Juan River Restoration, N.M.
 25. Willamette River Side-Channel Reconnection, Ore.
 26. Escalante River Invasive Species Removal, Utah



SHARING EXPERTISE AND AID FAR AND WIDE

The Nature Conservancy designs and performs freshwater conservation and ecological restoration projects on its own lands, such as the Enriqueta Preserve in Illinois (34), but far more often it joins teams and contributes scientific expertise, planning assistance and funding support. Federal partners include the Army Corps of Engineers, Bureau of Reclamation, Fish and Wildlife Service, Forest Service and National Park Service, among others.

On the map above, numerous large-scale river and wetlands project areas are shown where a wide range of studies or restoration activities are underway. The Corps of Engineers is the lead agency on most of them. But TNC also is engaged in many smaller projects in remote areas, where the partners include state agencies and local environmental groups, municipalities, school boards, clubs, and private and corporate entities.

SOURCE: THE NATURE CONSERVANCY. USACE MAP CREATED BY TOM SAWYER, DAVID GERSHORN, RO-HVD DEMLER, PALLA DANIELE AND JEFFREY COX

- 27. Fisher Slough Freshwater Tidal Marsh Restoration, Wash.
- 28. Intake Diversion Dam Fish Passage, Mont.
- **WETLANDS**
 29. Bloor, Cedar Iowa
 30. Cedar Iowa
 31. Erie Pa.
 32. Sensa
 33. Middle
 34. Enrick
- **ECOSYSTEMS**
 35. Zumr
 36. Chair Washing
 37. Willag Restorat
- **GENERAL**
 - A. Lake C Manager
 - B. Yellow C. Redw
 - D. Trucks
 - E. Santa
 - F. Clinch
 - G. SLEST
 - H. Bill W
 - I. Big Oyr
 - J. White I
 - K. Green
 - L. Reno
 - M. Savan
 - N. Chesa
 - O. Upper Environ
 - P. Missos Recovery
 - Q. Pugst Restoration
 - R. Louisiana Coastal Area Protection
 - S. Lower Mississippi River System Environmental Management
 - T. South Florida Everglades Ecosystem Restoration
 - U. Florida Keys Water Quality Improvements
 - V. PROJECT PARTNERSHIP WITH USACE

enr.com
An interactive version of this map, with drop-down project details, can be explored with the online version of this story.

ENR Engineering News-Record

THE GREEN SOURCEBOOK

THE TOP 200 ENVIRONMENTAL FIRMS # 20
THE TOP 100 GREEN BUILDINGS DESIGN FIRMS # 10
THE TOP 100 GREEN BUILDING CONTRACTORS # 10

NATURE GUIDE

Leading a donor-funded, \$5-billion group that pushes water-resource projects toward sustainable engineering and construction in every state and 33 countries, Who knew? # 34

MARK TERPICH
President/CEO
The Nature Conservancy

WILLIAM HILL
Senior Vice President

Changing Our Perceptions about What Is Possible

A River Returns to Mexico



Colorado River Delta, Mexico, June 2014

Photo: Cheryl Zook, National Geographic

Photo: Jonathan Waterman