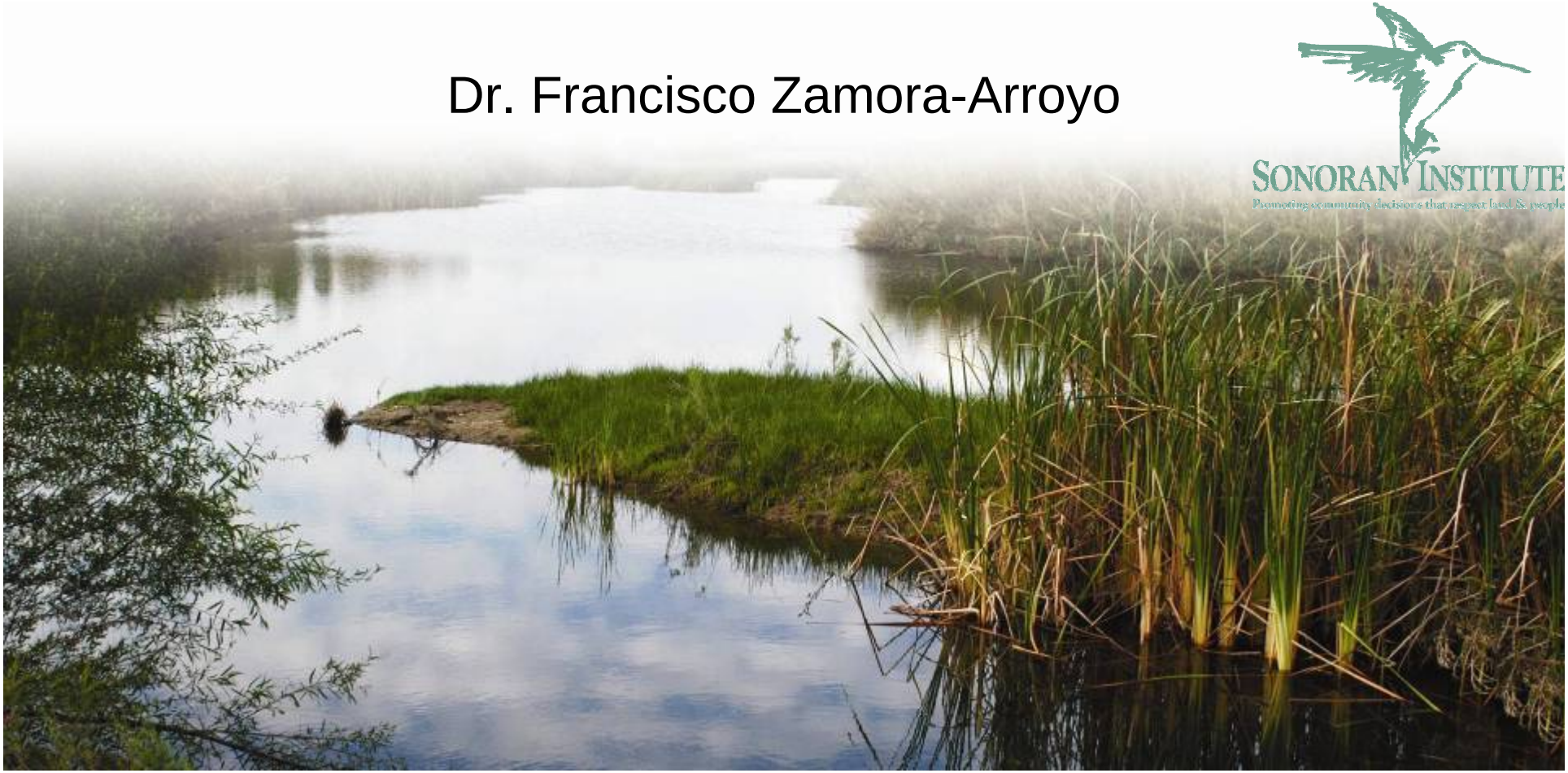
Ongoing Restoration Efforts in the **Colorado River Delta in Mexico**

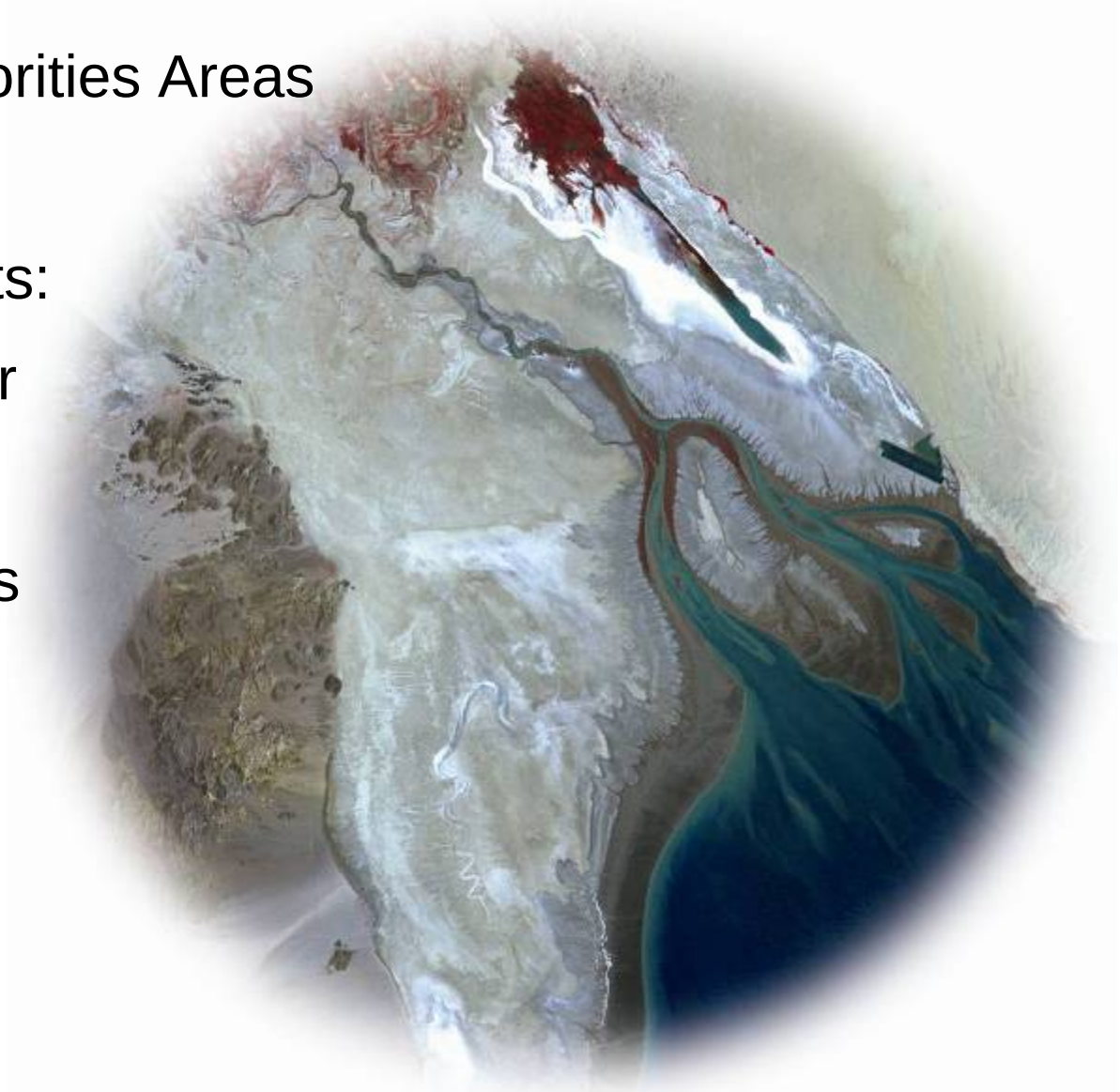
Dr. Francisco Zamora-Arroyo

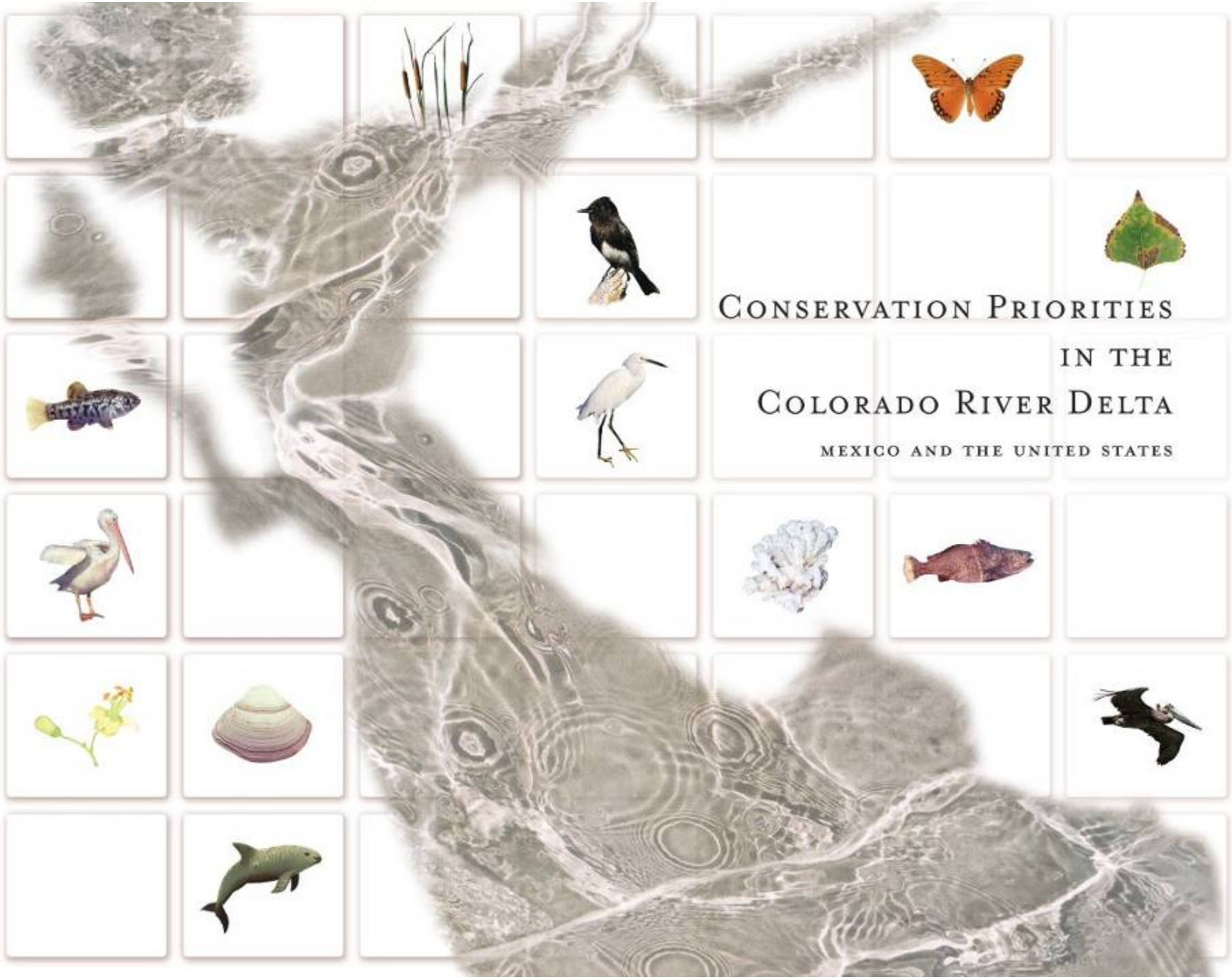


SONORAN INSTITUTE

Outline

- Conservation Priorities Areas
- Restoration Efforts:
  - ✓Colorado River
  - ✓Hardy River
  - ✓Other wetlands
- Conclusions





Conservation Priorities in the Colorado River Delta

Mexico and the United States

these and many more organizations and funders are working in several ongoing efforts and initiatives to restore the Delta

CONAGUA

Secretaria de Turismo

David and Lucile Packard Foundation

TCF

SAGARPA

UABC

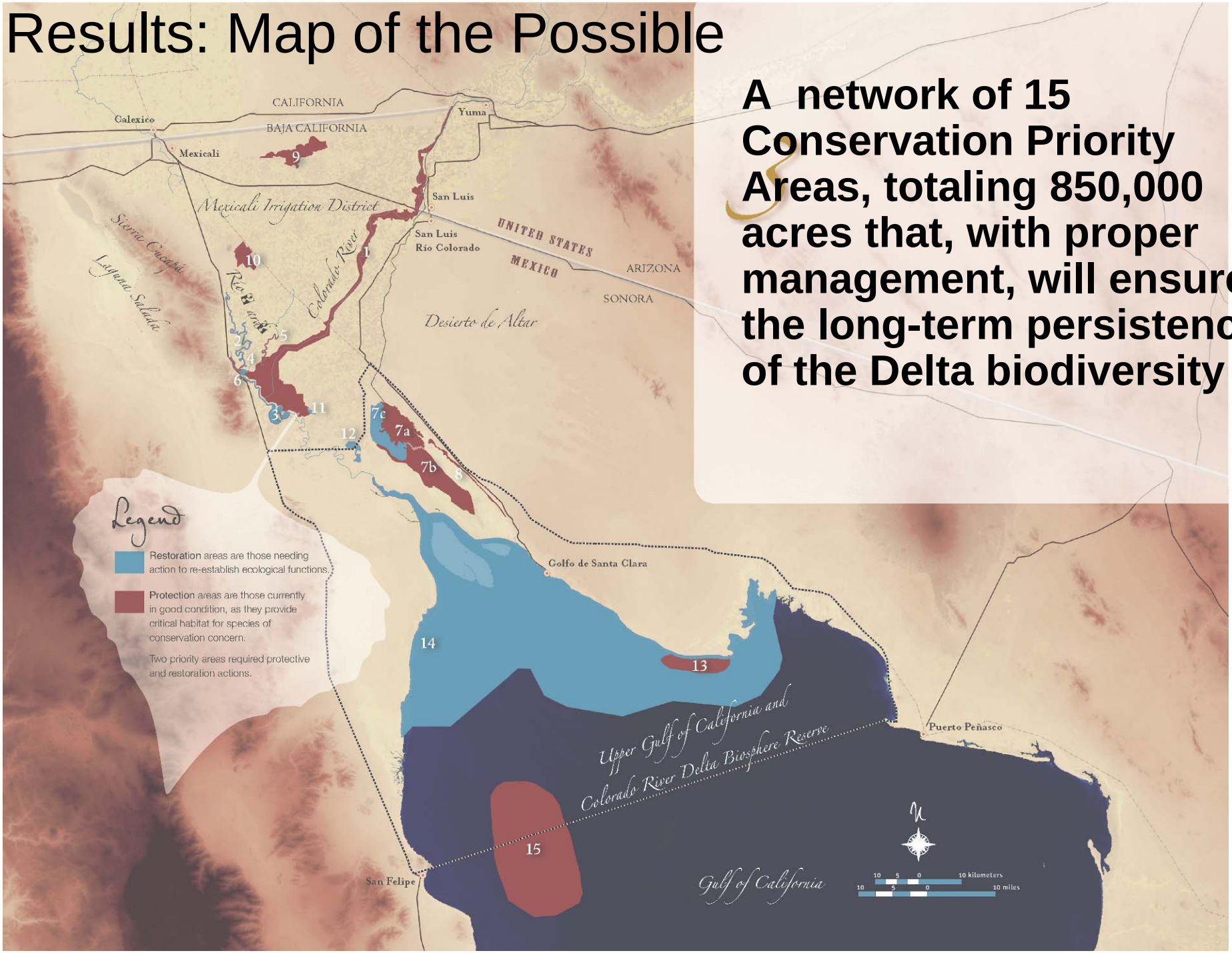
NWF

Club de Leones Cucapa

Water Education Foundation

DHS Rotary Club

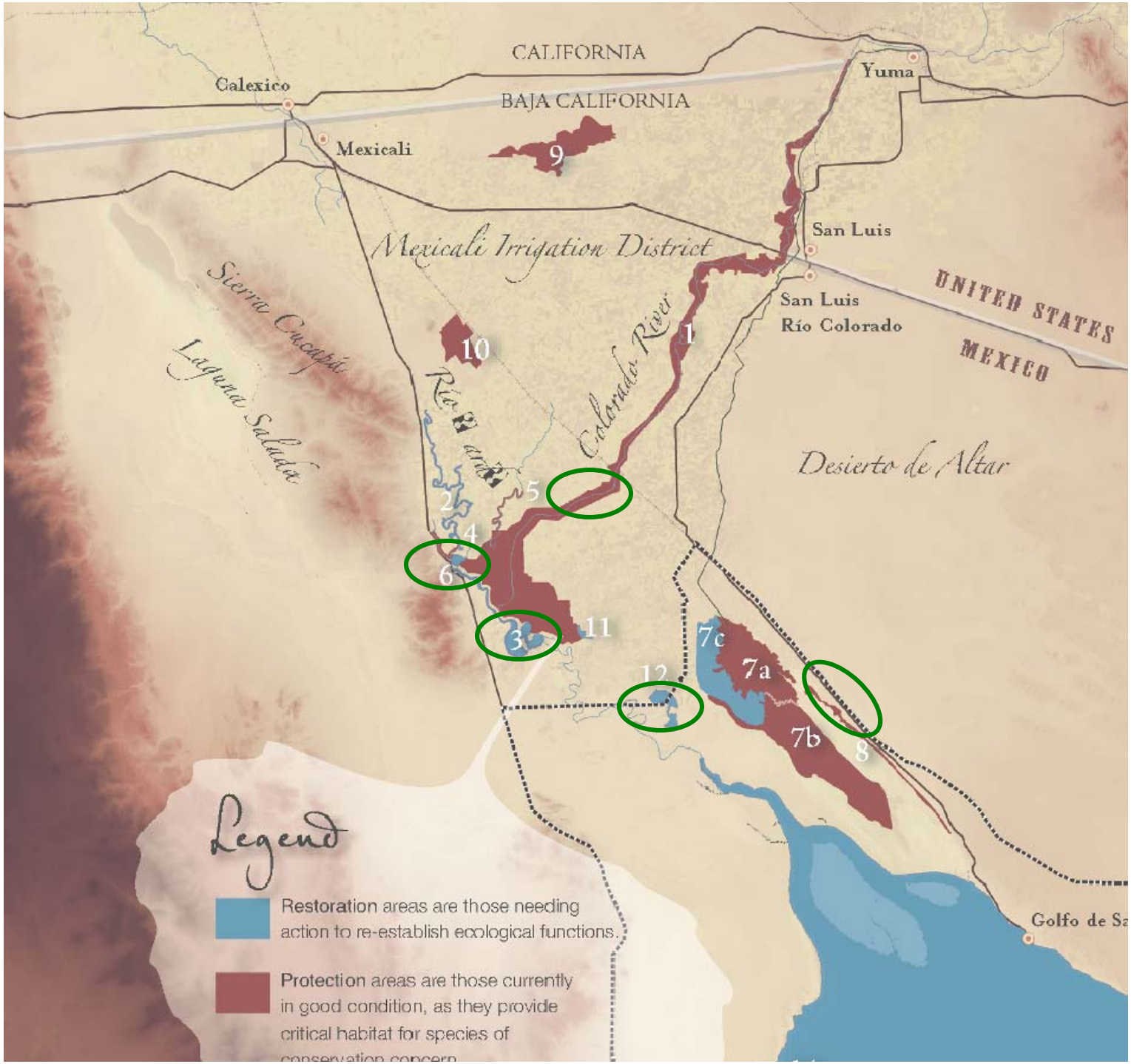
Results: Map of the Possible



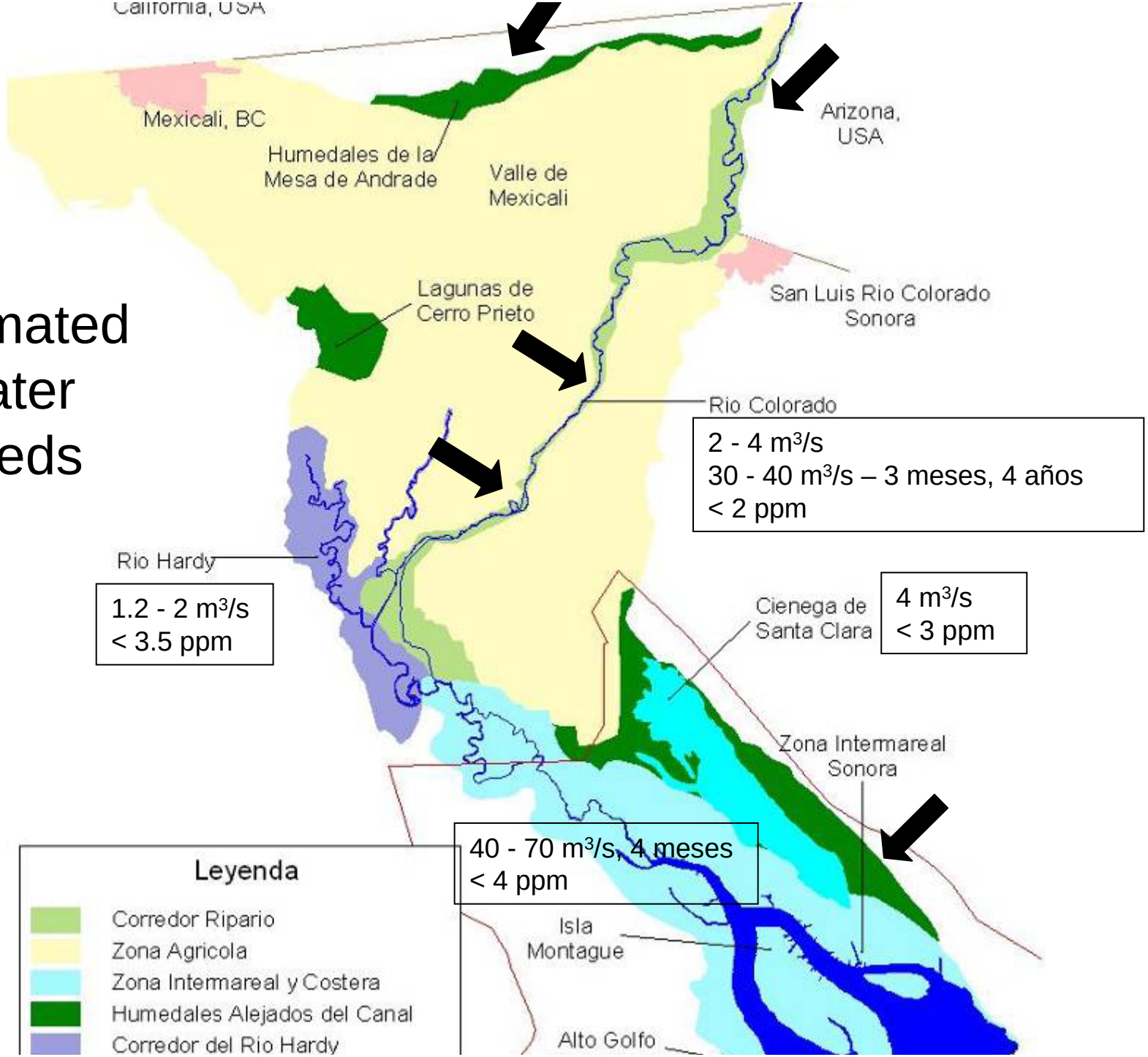
A network of 15 Conservation Priority Areas, totaling 850,000 acres that, with proper management, will ensure the long-term persistence of the Delta biodiversity

Ongoing restoration efforts in Mexico

Restoration = Riparian + Off-channel + Estuarine


CALIFORNIA
BAJA CALIFORNIA
Calexico
Mexicali
Yuma
San Luis
San Luis
Río Colorado
UNITED STATES
MEXICO
Mexicali Irrigation District
Sierra Cucapá
Laguna Salada
Río Hardy
Colorado River
Desierto de Altar
Golfo de Sa
1
2
3
4
5
6
7a
7b
7c
8
9
10
11
12
Legend
Restoration areas are those needing action to re-establish ecological functions.
Protection areas are those currently in good condition, as they provide critical habitat for species of

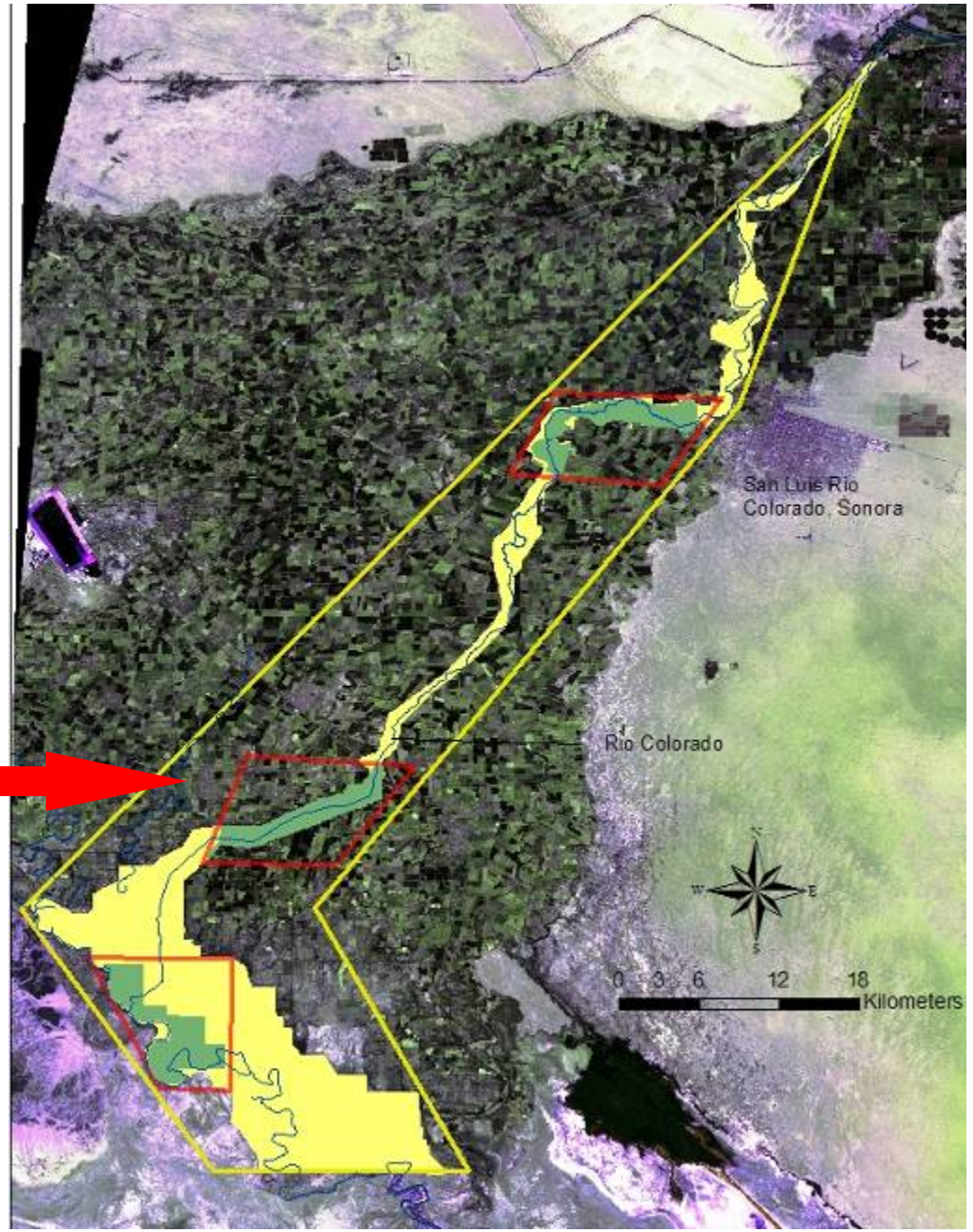
Estimated water needs

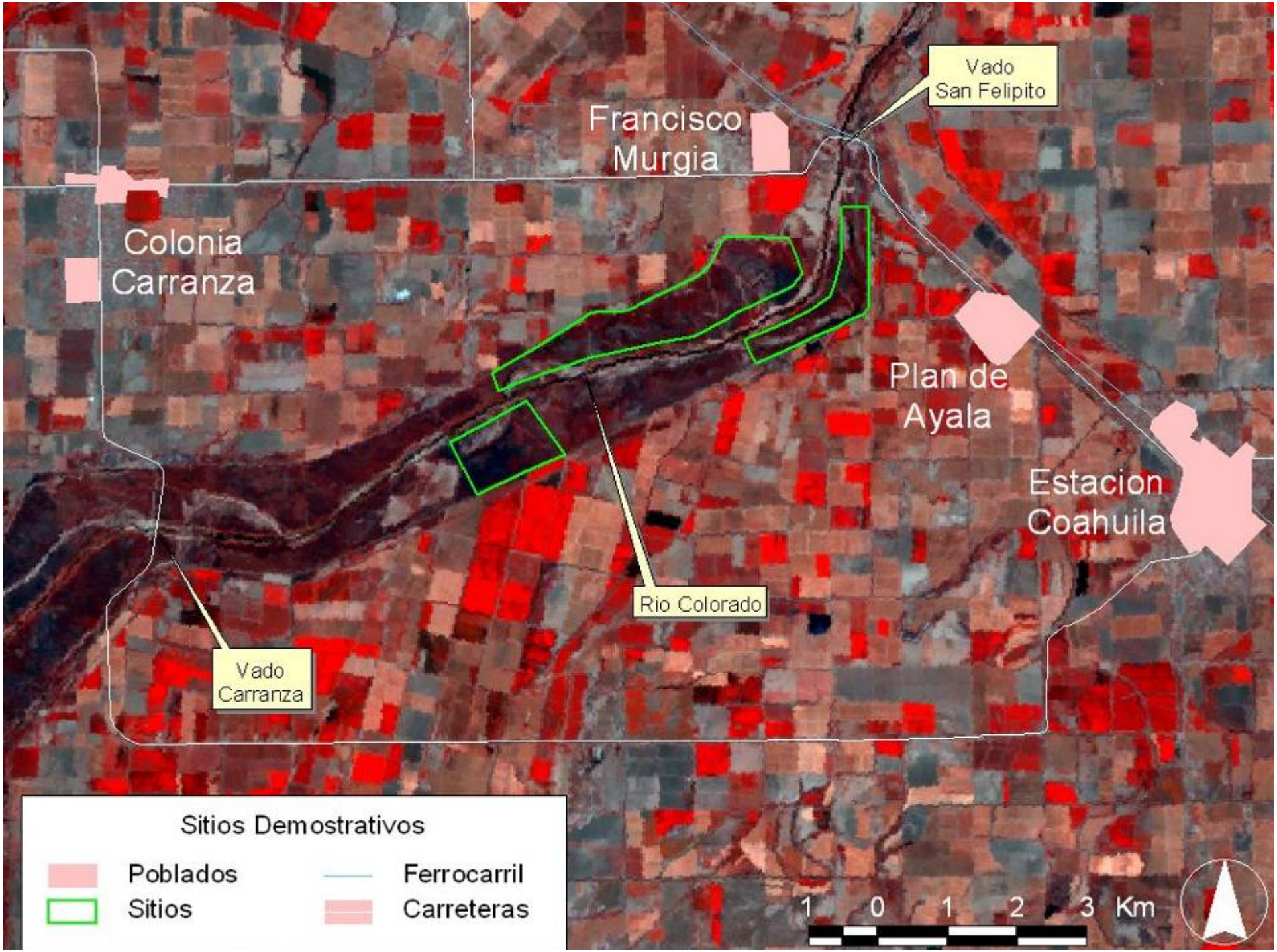


Colorado River Corridor

Overall goal: Develop a 80,000-acre functional ecological area

Restoration Demonstration Project




Vado
San Felipito
Francisco
Murgia
Colonia
Carranza
Plan de
Ayala
Estacion
Coahuila
Rio Colorado
Vado
Carranza
Sitios Demostrativos
Poblados
Sitios
Ferrocarril
Carreteras
1 0 1 2 3 Km

Laguna Grande

- Planted 2,400 native trees in 23 acres in 2006-07:
  - 1,300 mesquite
  - 1,100 CW and willow trees


10 12 2006 08:25

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ZONA DE RESTAURACIÓN ECOLÓGICA
ALTO
ESTA ZONA ES PARA QUE LA DISFRUTES
CUÍDALA NO INGRESES EN VEHICULOS MOTORIZADOS
NO TIRES BASURA
EVITA LA TALA DE ÁRBOLES
NO PROVOQUES INCENDIOS

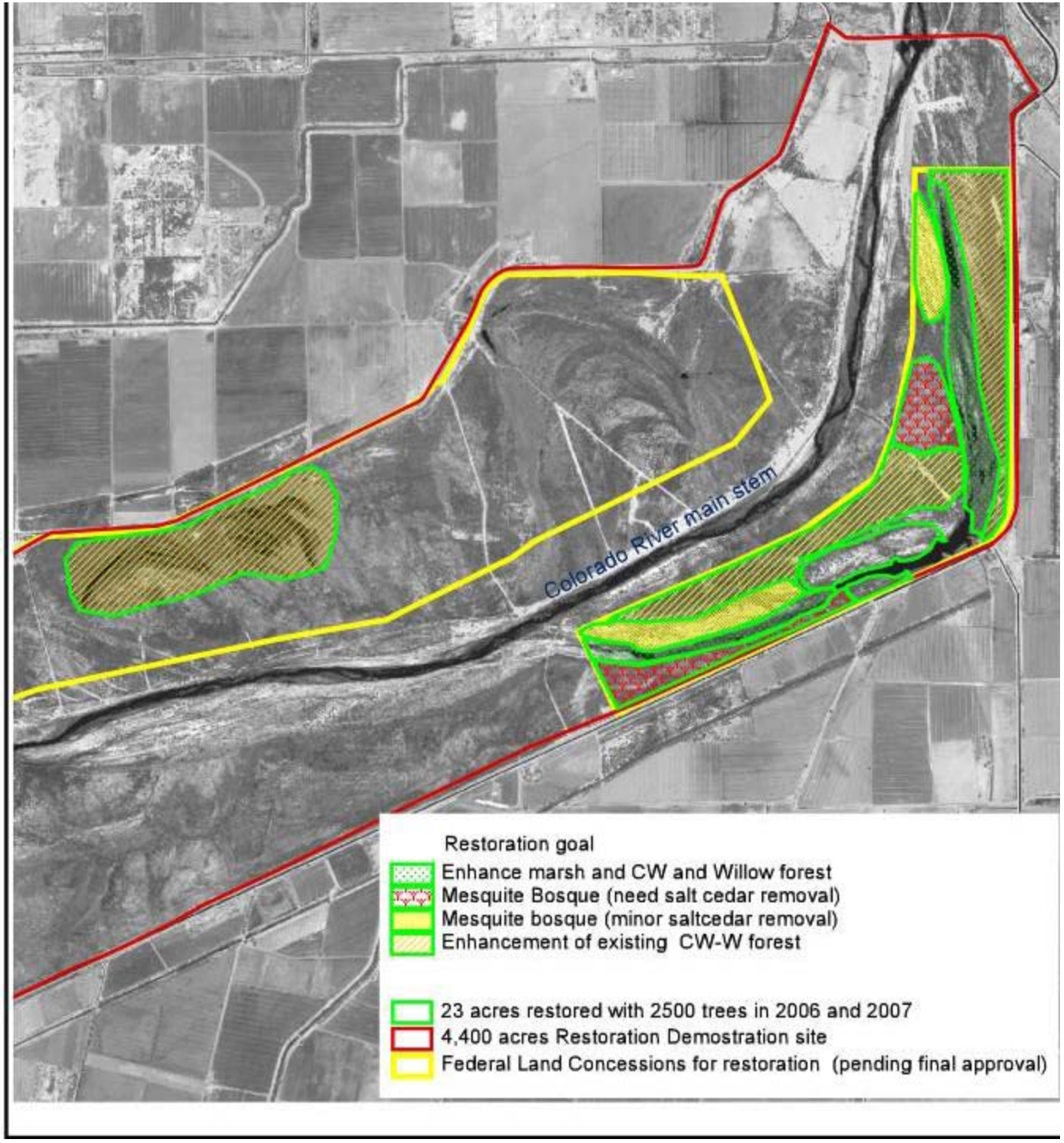
Developed a community vision for restoration

Reached over 1,500 local community members and 60 government officials, 20 percent of which participated in restoration actions.

Created five full-time jobs.

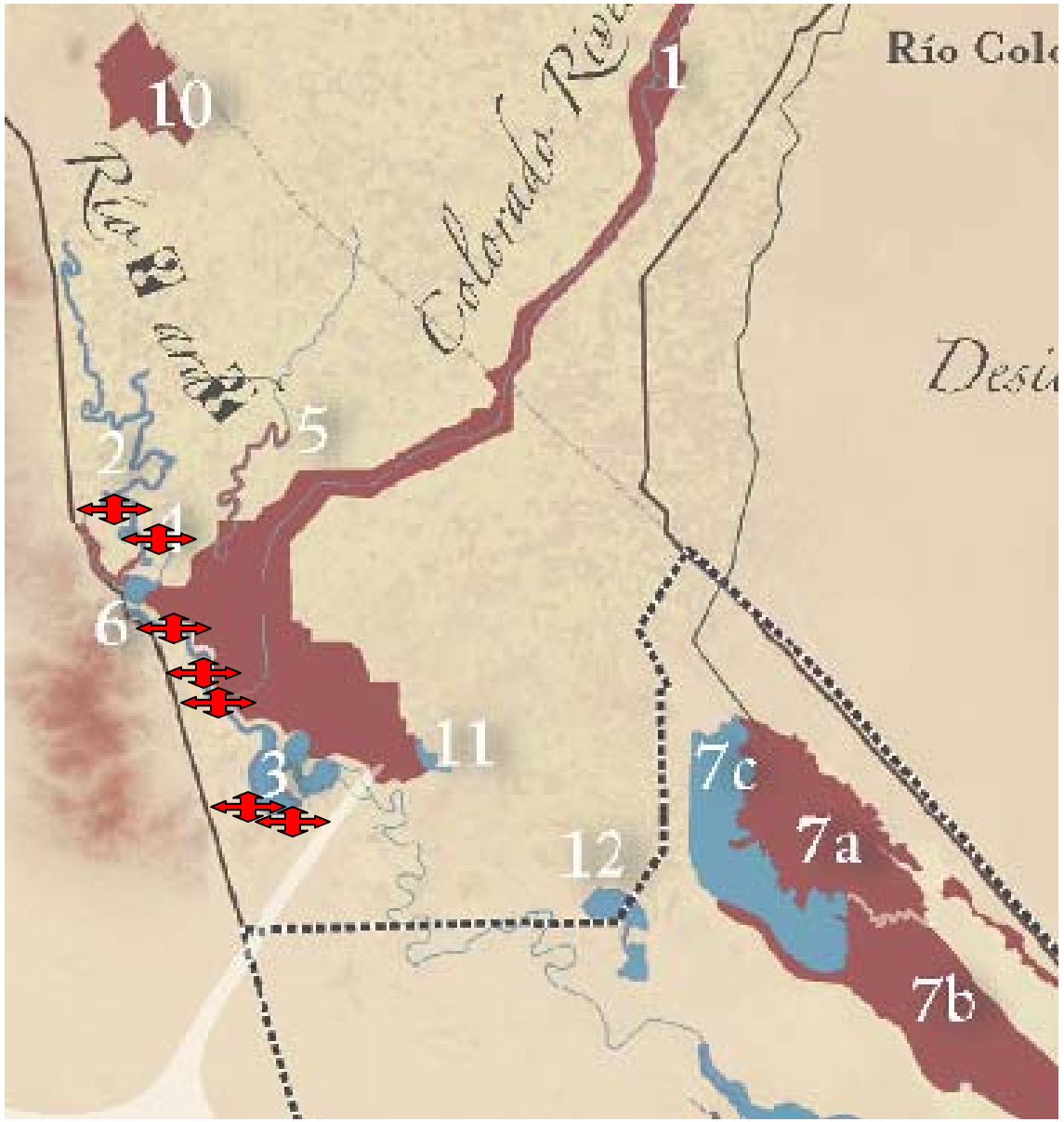
In the Next 2-3 years

Enhance 250 acres and secure 5,000 af of water

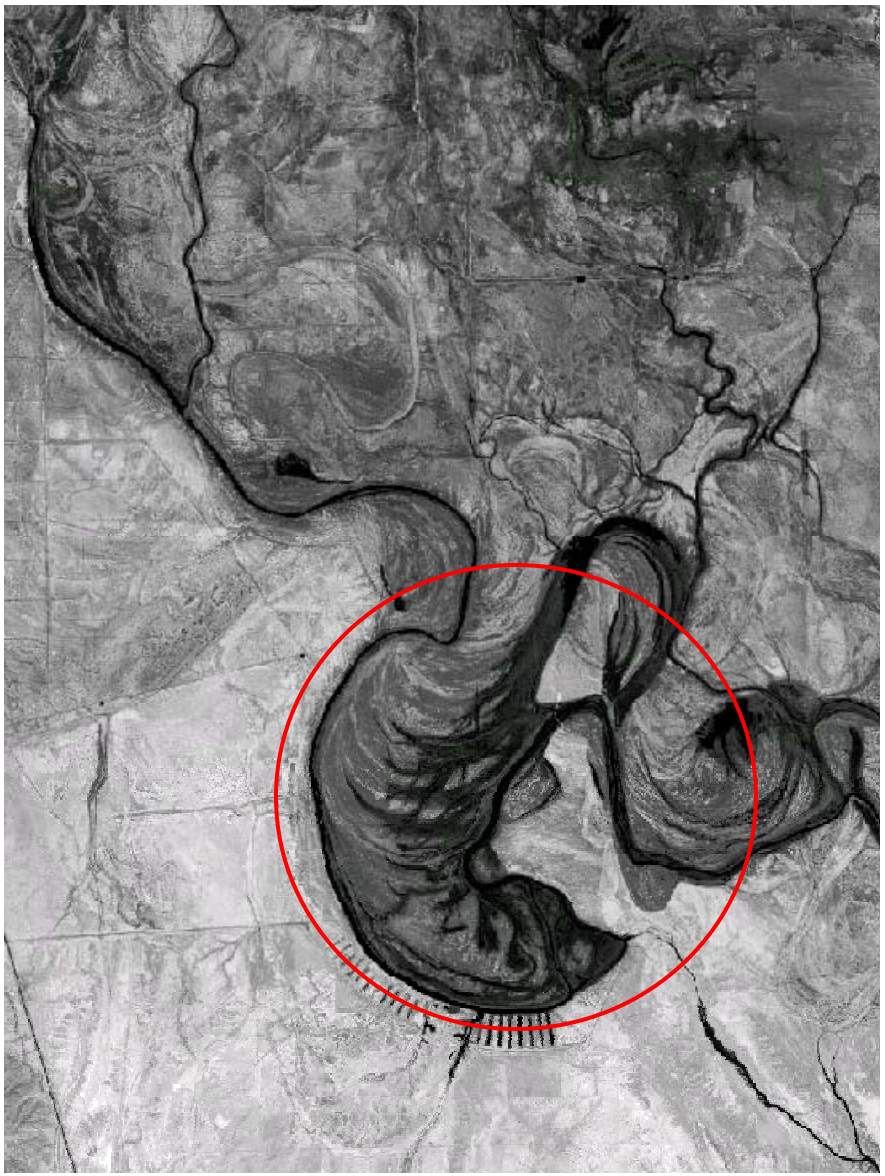


Results to date …. Hardy River

- Planted native trees in a total of 36 acres in 7 sites
- Inundated about 2,500 acres, which are in process of becoming marsh wetlands



Results to date …. Hardy River

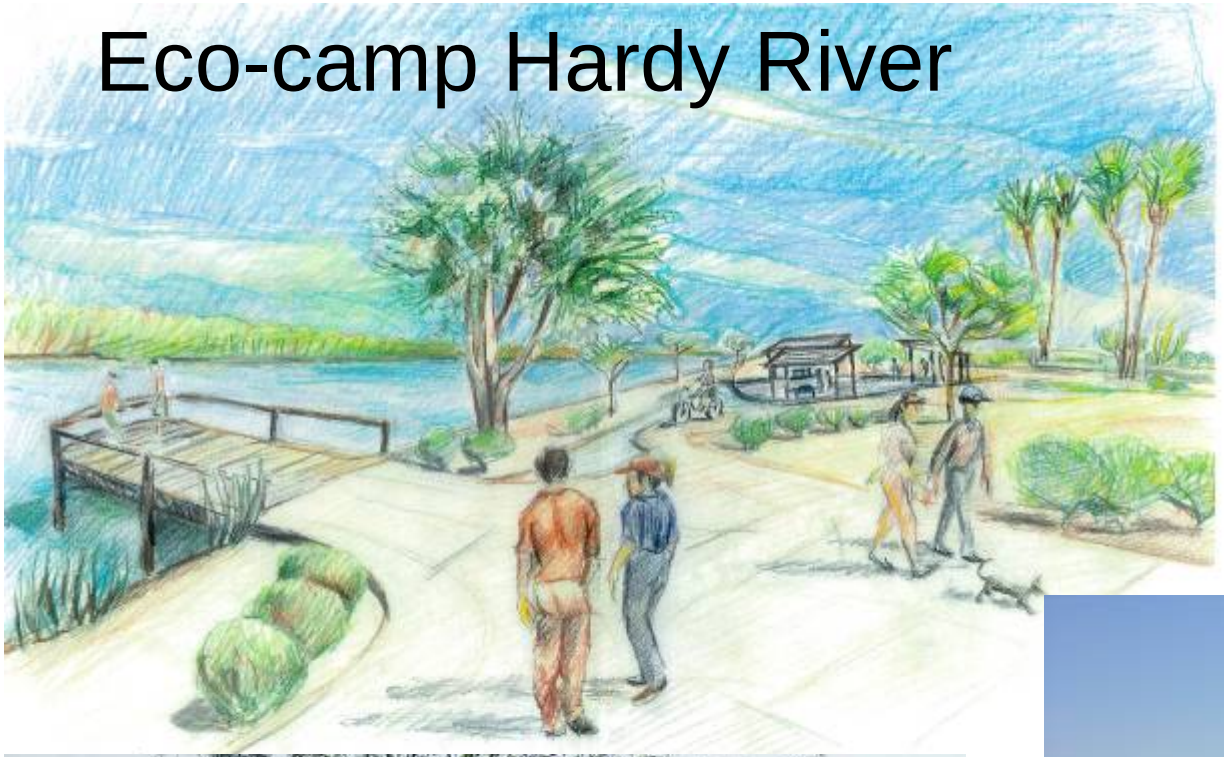


Hardy River is very important for local people

Extremely important for the Cucapá Tribe in Mexico

Campo Munoz

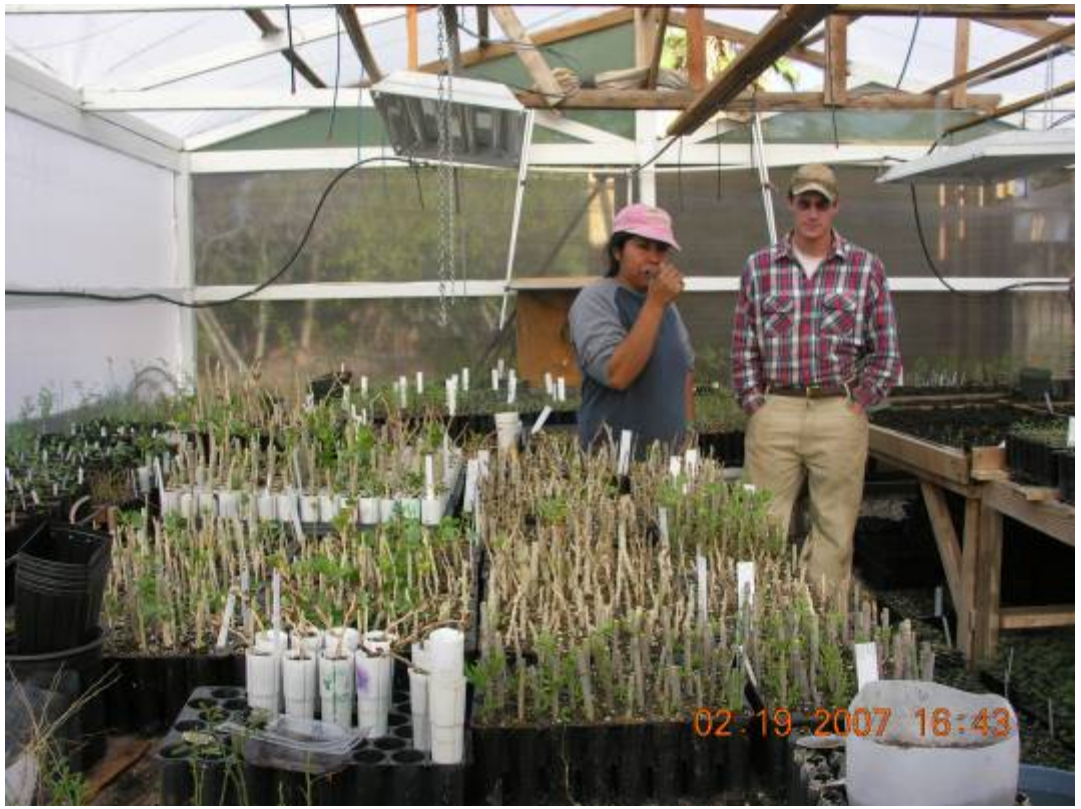
Eco-camp Hardy River



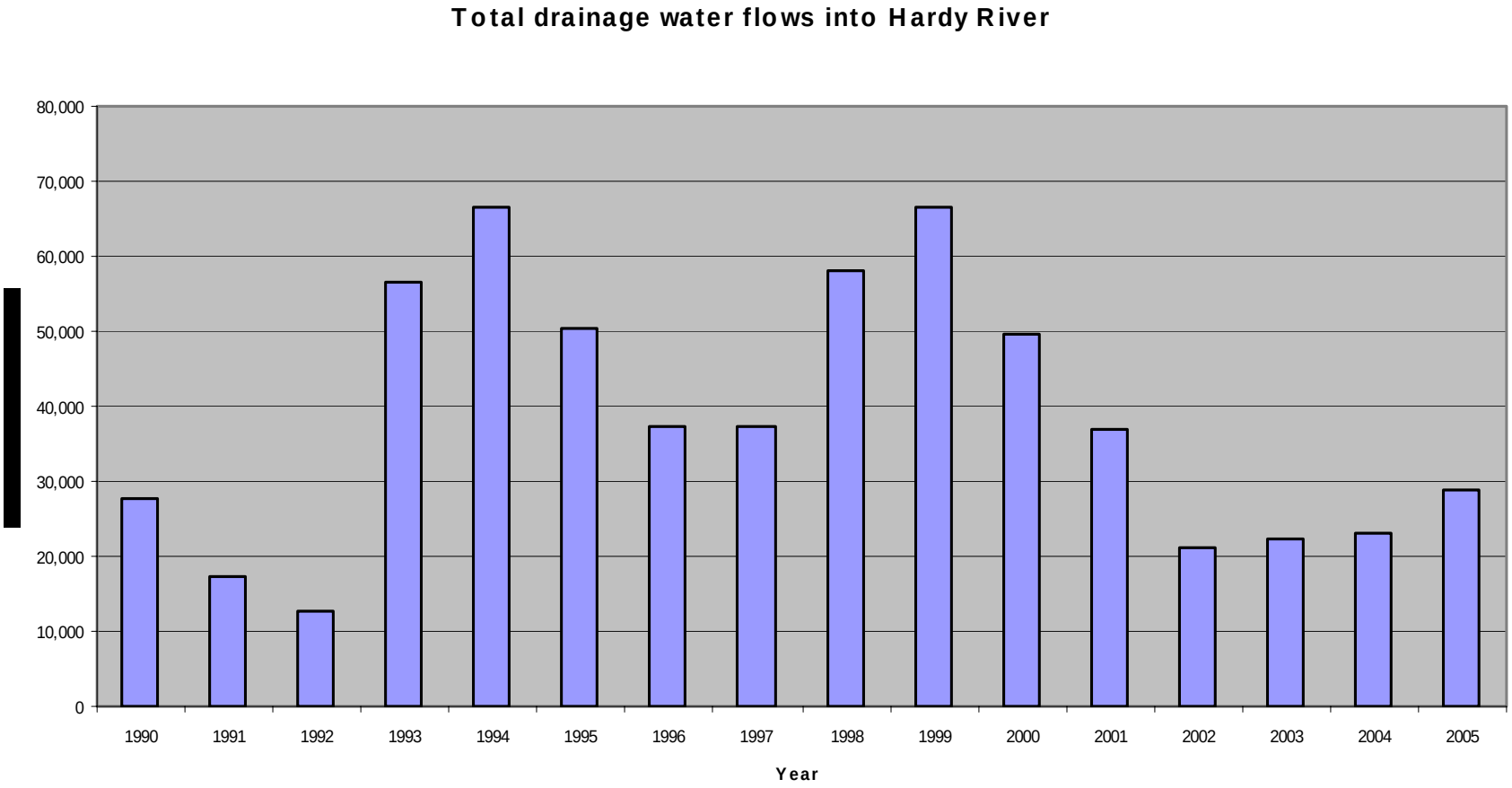
Local students

Law students from New College

Native tree nursery built in 2002, rehabilitated in 2006: produced 5,000+ trees



Water and land policy – Hardy River



Annual average flow of 21,000 acre feet at 0.9 cubic meters/s

Average salinity 3-5 parts per thousand

How to secure a permanent flow to the Hardy River?

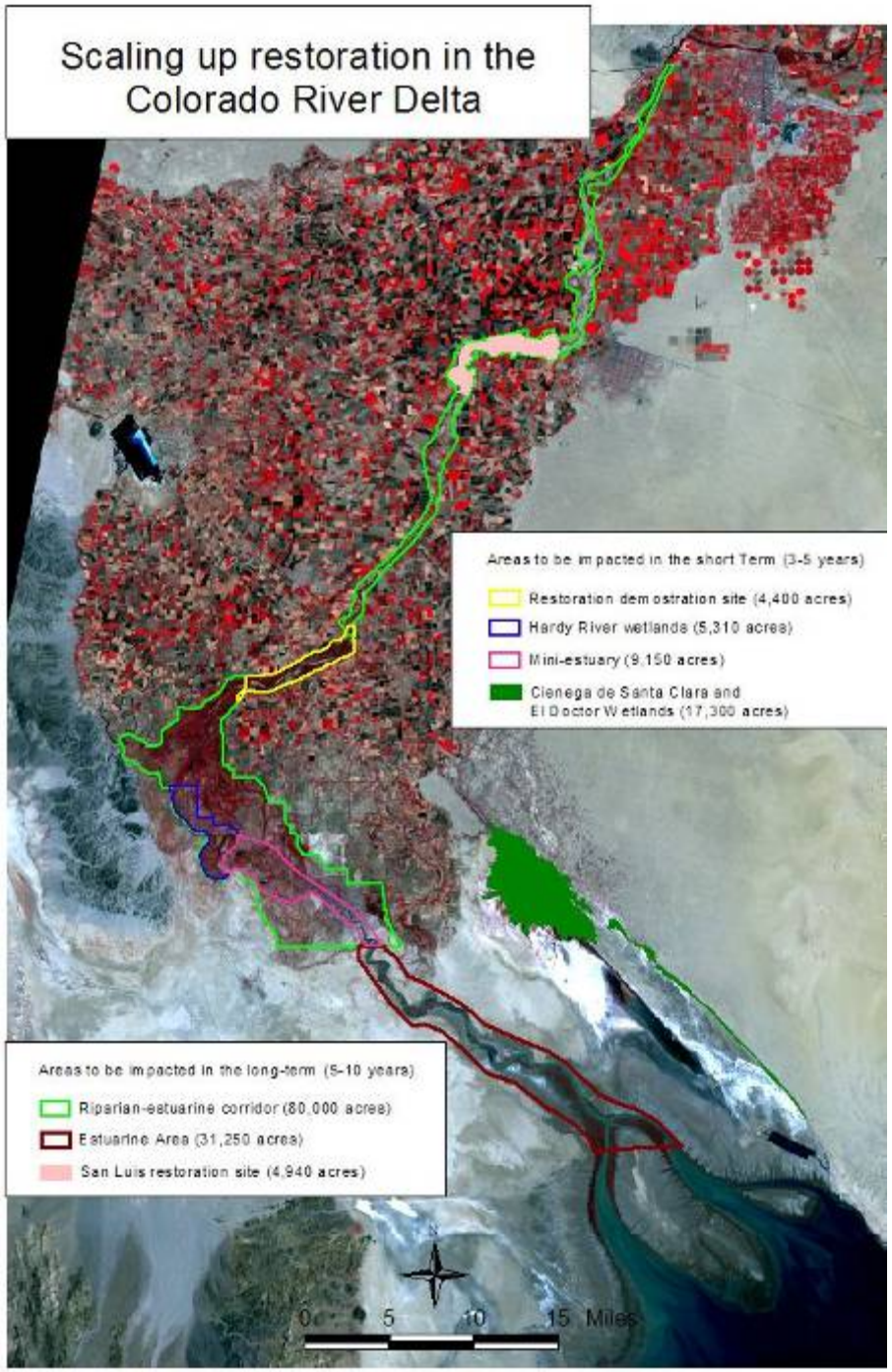
The State of Baja California signed an agreement to dedicate 0.5 cubic meters/second of treated water

Mini-Estuary Experiment

- Dr. Karl Flessa from the University of Arizona is leading the project to explore if a portion of the estuary can be restored with limited water supply.

COLORADO RIVER DELTA
Research Coordination Network
DELTA DEL RÍO COLORADO
Red Coordinadora de Investigaciones

Initial workshop and field trip in may 2007


Scaling up restoration in the Colorado River Delta
Areas to be impacted in the short Term (3-5 years)
Restoration demostration site (4,400 acres)
Hardy River wetlands (5,310 acres)
Mini-estuary (9,150 acres)
Cienega de Santa Clara and El Doctor Wetlands (17,300 acres)
Areas to be impacted in the long-term (5-10 years)
Riparian-estuarine corridor (80,000 acres)
Estuarine Area (31,250 acres)
San Luis restoration site (4,940 acres)
0
5
10
15 Miles

Challenges

- Water quantity
- Water quality
- Funding for research, monitoring, implementation
- Lack of data vs decision making
- Impacts of climate change:
  - Drought
  - Sea level rise

Conclusions

- Restoration allows the environment itself to become more resilient in the face of climate change or human impacts.
- Modest amounts of water from Mexico would produce ecologically significant riparian corridors
- It is feasible and recommendable to implement pilot/demonstration projects while developing a detailed large-scale restoration strategy.

Take –home messages:

- Large-scale restoration of the Delta in Mexico is feasible and cost-effective,

- It requires relatively modest water flows, strong collaboration at different levels, a solid community-based foundation, and proper management

But also heart and passion


Gracias!
Thank you !