

The background of the slide is a photograph of green leaves and branches, likely from a tree or shrub, with sunlight filtering through them, creating a bokeh effect in the background.

# The Binational Effort to Restore the Colorado River Delta

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Gallery forest of  
cottonwood  
trees, Colorado  
River delta,  
January 1905





**RECLAMATION**  
*Managing Water in the West*



**CONAGUA**  
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COMISION NACIONAL DE  
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PROTEGIDAS

 **Universidad Autónoma de Baja California**   
Ensenada Mexicali Tijuana

 **THE UNIVERSITY  
OF ARIZONA**



**El Colegio  
de la Frontera  
Norte**

**ALIANZA  
REVIVE  
EL RÍO  
COLORADO**



**Audubon**



**SONORAN  
INSTITUTE**

**The Nature  
Conservancy**

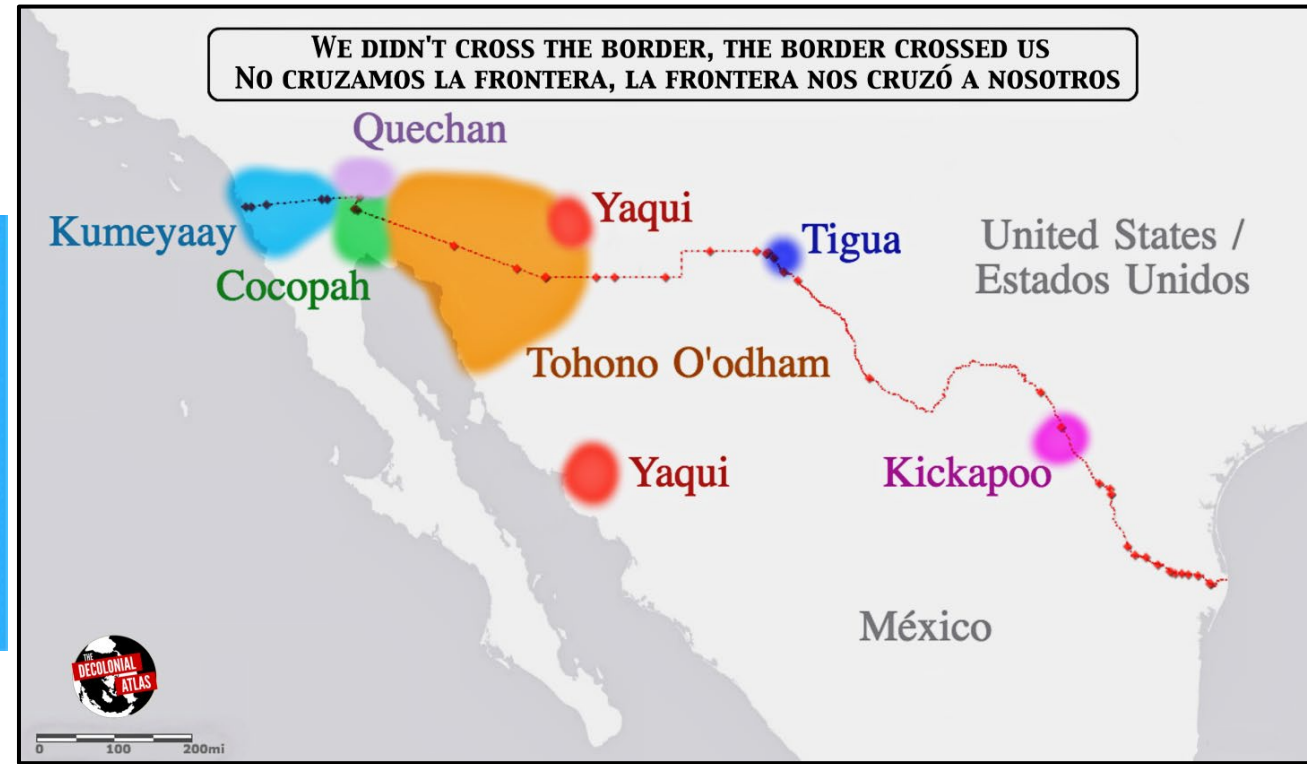


 **RESTAUREMOS  
EL COLORADO**

**pro  
natura**  
noroeste

# Cocopah/Cucupá (Kwapa)

<https://www.cocopah.com/>



## Tohono O'odham

"Following our ancestral heritage, we became scientists of our environment."

<http://www.tonation-nsn.gov/>

*We acknowledge the traditional custodians of the land and waters on which we have done our research and pay respect to their Elders, past, present and emerging. We honor the past, respect the present and look towards a prosperous and reconciled future.*











**Celebrating the 2014 Pulse Flow; Celebrating binational trust**



# U.S. – Mexico Water Treaty - additions

## 2010: Minute 318

Mexico stores water in Lake Mead (U.S.)  
“Earthquake water”



## 2012: Minute 319 A five-year Minute 2012-2016

U.S. and Mexico share future surpluses and shortages

U.S. pays for water-saving infrastructure in Mexico; gets water in return

### Environmental flows to delta

Mexico contributes 52,500 af/ 65 mcm  
U.S. contributes 52,500 af/ 65 mcm } **Spring 2014 Pulse Flow**  
NGOs contribute 52,500 af/ 65 mcm over five years: **Base Flow**

**Scientific evaluation of environmental flows**











**Point 22, 21 March 2014**

**Preparing for restoration: Before the flow**





Point 22, 10 April 2014

During the flow





**Point 22, 29 September 2014**

**5 months after the flow**





**Point 22, 12 September 2016**

**27 months after the flow**



Francisco Zamora, Sonoran Institute,  
with aerial support from Lighthawk

May 15, 2014





# Minute by Minute: Progress in binational water management

**2010: Minute 318**

**2012: Minute 319** A five-year Minute, 2012-2016

**2017 Minute 323** A nine-year Minute: 2017-2026



- Mexico can store water in U.S.
- U.S. and Mexico share future surpluses and shortages
- U.S. pays for water-saving infrastructure in Mexico; gets water in return
- Mexico reduces use in advance of official shortage. i.e., participates in Drought Contingency Plan - DCP

**Environmental flows to delta (but no pulse flow): Mexico/US/NGOs - 70 kaf/86 mcm each**

**Funding for restoration : \$3M each**

**Funding for monitoring & research: \$3M each**



# Restoration sites along the river

NGOs purchase or lease water from farmers in the Mexicali Valley







# Miguel Aleman and Janitzio sites





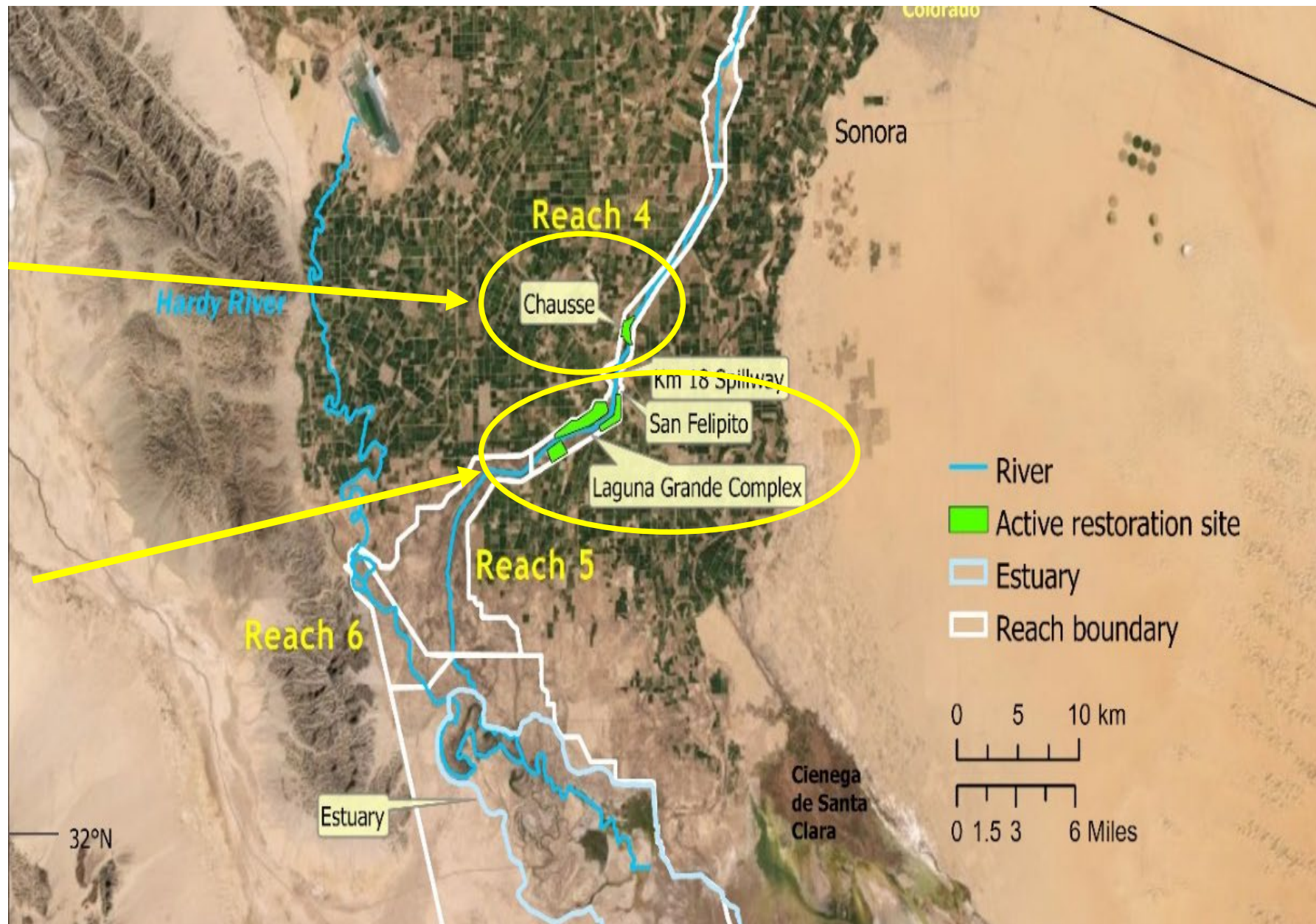
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**Chausse and  
Don Parna sites**

**Laguna Grande  
complex sites**



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**Restoration sites  
are irrigated via  
the canal system**







March, 2019





**March, 2019**



**Miguel  
Aleman site,  
2019**



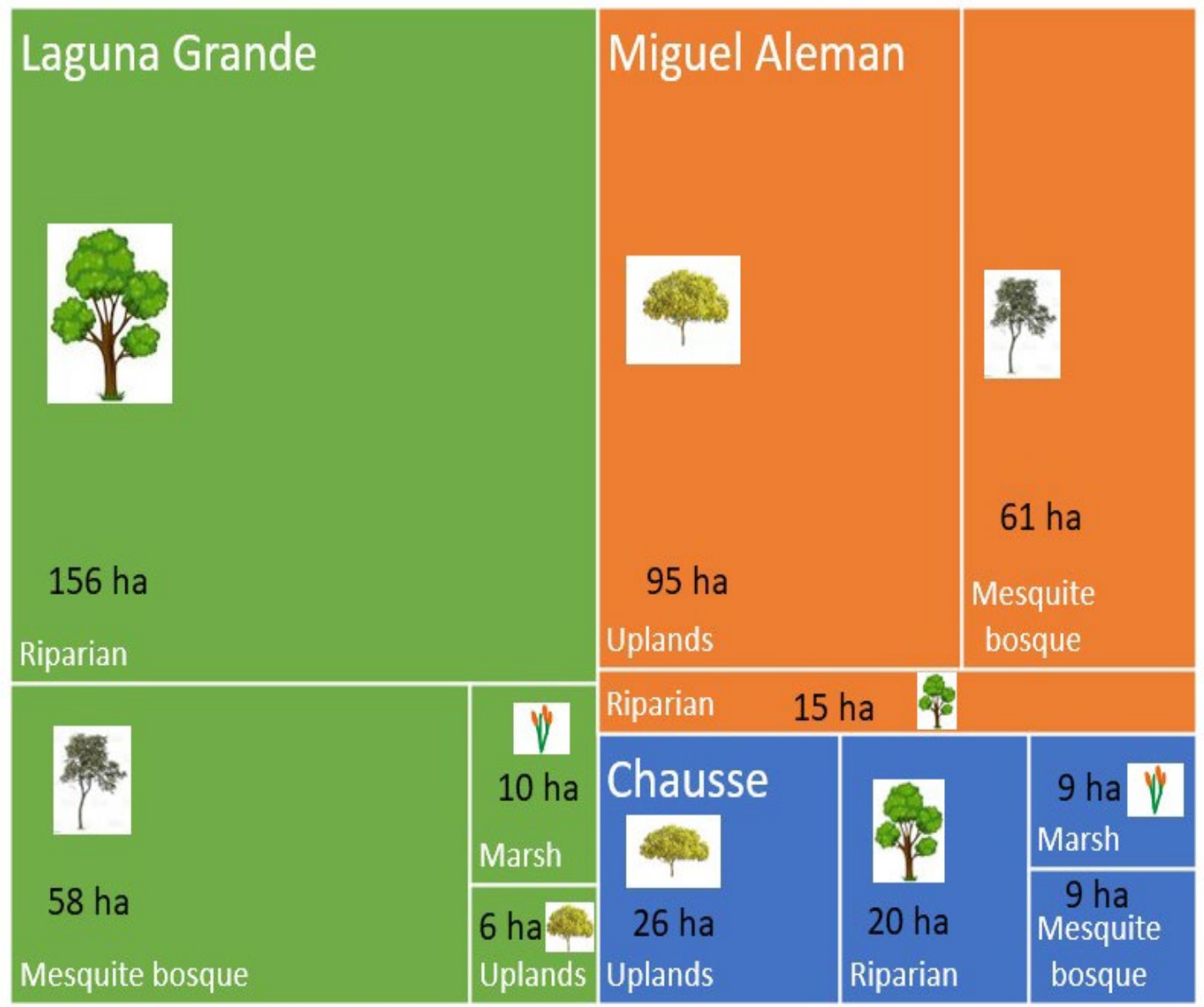


# Restoration by habitat type in each site

572 hectares =  
1,413 acres

So far....

■ Chausse ■ Laguna Grande ■ Miguel Aleman





# Pacific Flyway





## Other wildlife:

Turtle

Bobcat

Coyote

Raccoon

Muskrat

Rabbit

Beaver



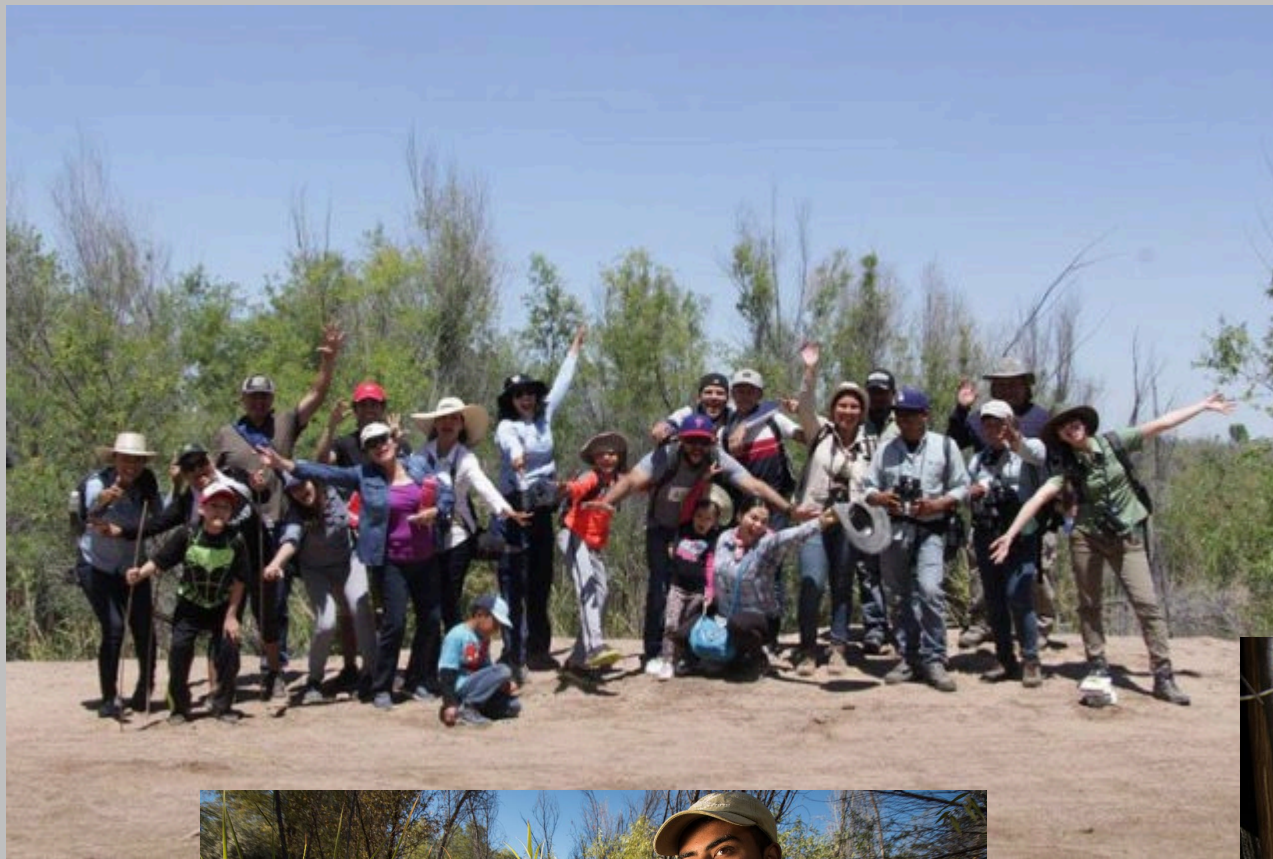


video










All images: Sonoran Institute



video



- 
- Restoring and sustaining riparian habitats in the delta requires ongoing environmental flows.
  - Active management is needed: Nature cannot take care of itself.
  - Restoring and sustaining habitats depends on social and policy sustainability.
  - The next Minute will be negotiated soon.



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 **USGS**  
*science for a changing world*



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