

Riparian Adaptation to Climate Change— Loss and Renewal

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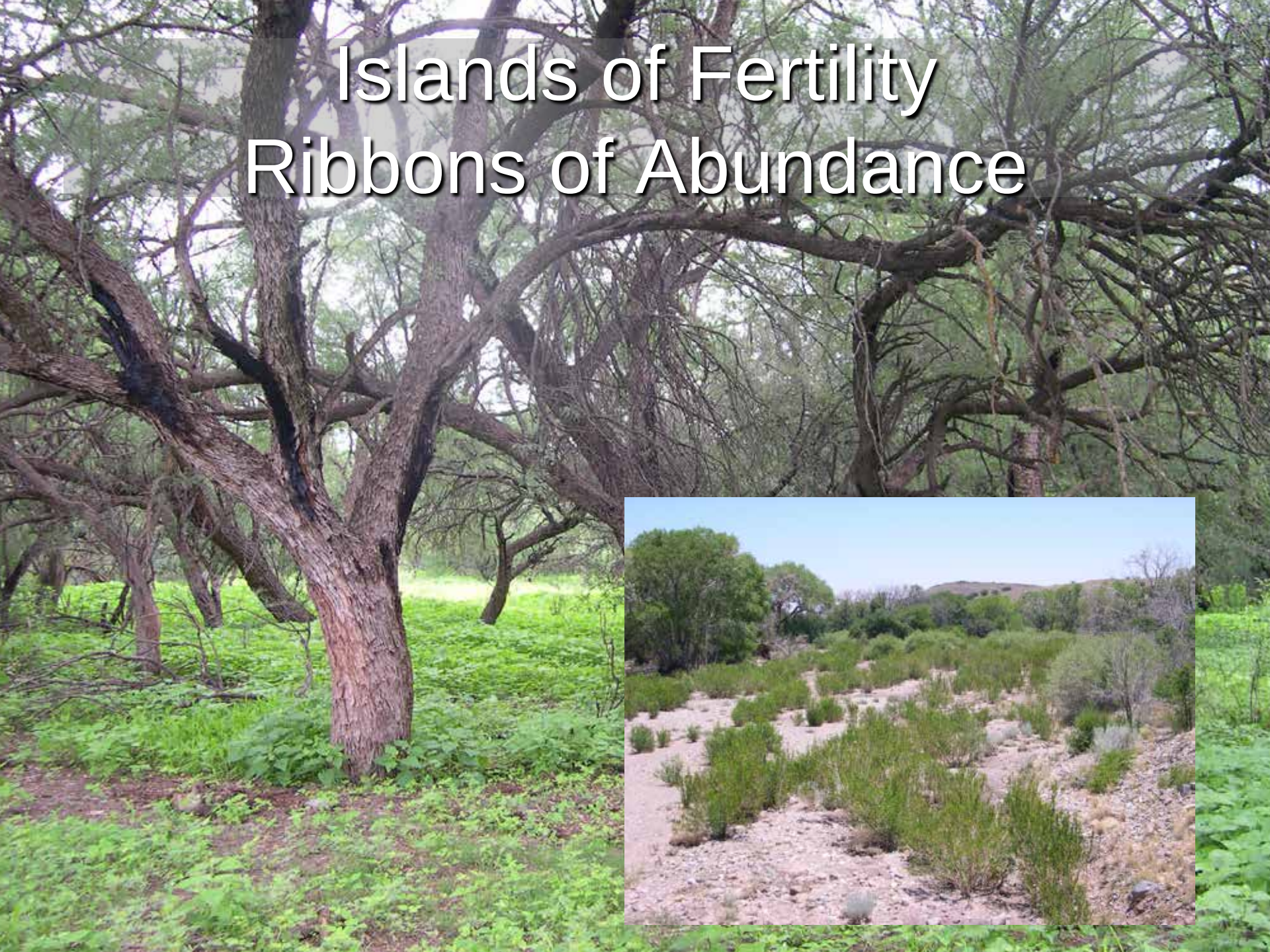
Pima County Office of Sustainability
and Conservation

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Lower Cienega Creek, J. Fonseca

Islands of Fertility Ribbons of Abundance



Conservation Gap Analysis

- 39,000 acre-feet lost
- 3000 acres bosque lost or degraded in Pima Co.
- 32% in protected status
- 3373 ac bosque acquired since 2001
- 200 ac. restored (1000 ac restoration goal)



Threats Analysis (climate only)

- Water table change
- Soil moisture change
- Erosion and deposition



Riparian scrub becoming bosque, J. Fonseca

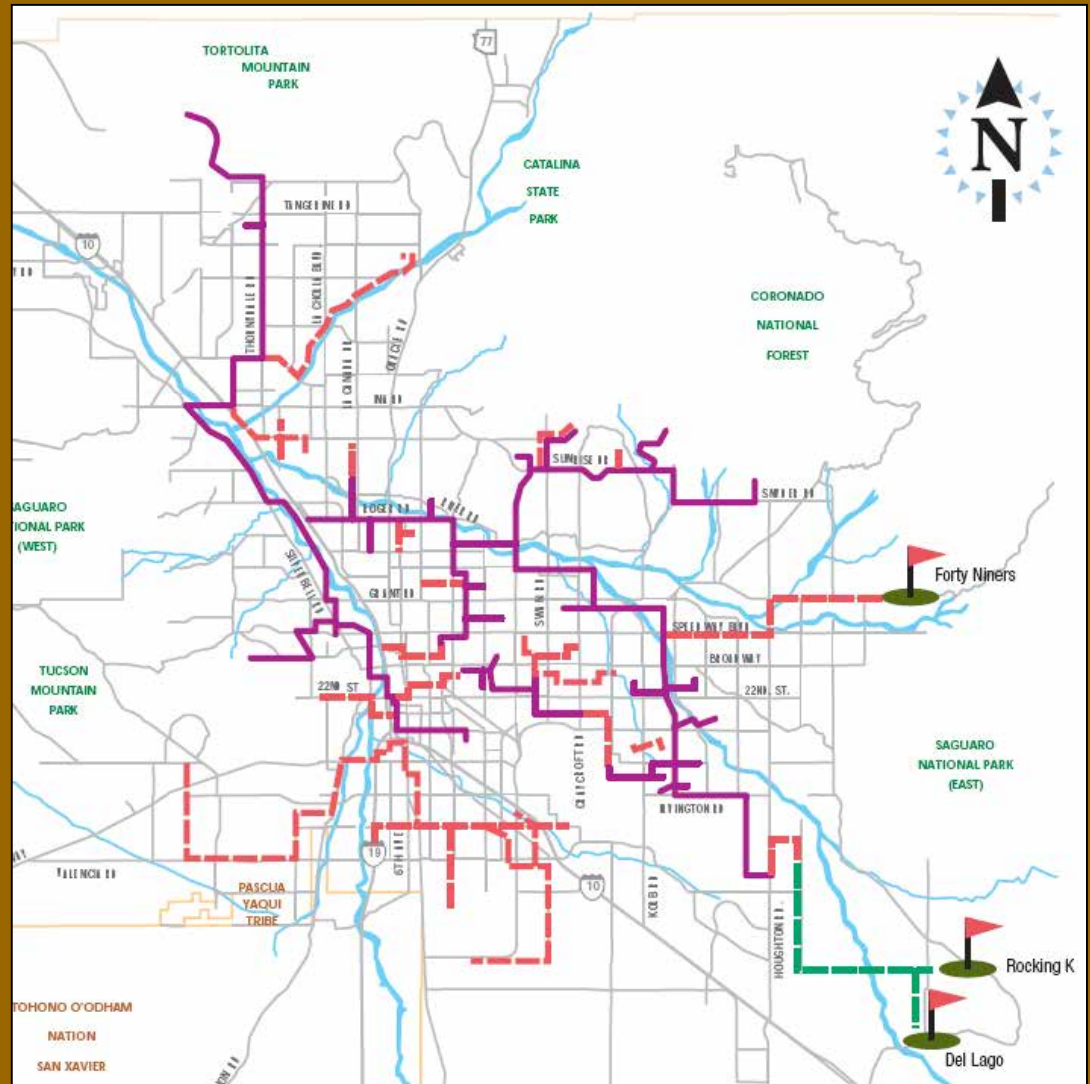


Cienega Creek Natural Preserve, J. Fonseca

Solution: Adjust infrastructure or policies to relieve aquifer stress

- Groundwater pumping restrictions e.g. “last on, first off policy”
- Recharge basins
- In-channel recharge
- CAP substitution
- Reclaimed water extensions

Where: known underground perching structures



Reclaimed infrastructure extended to Tanque Verde at 49ers



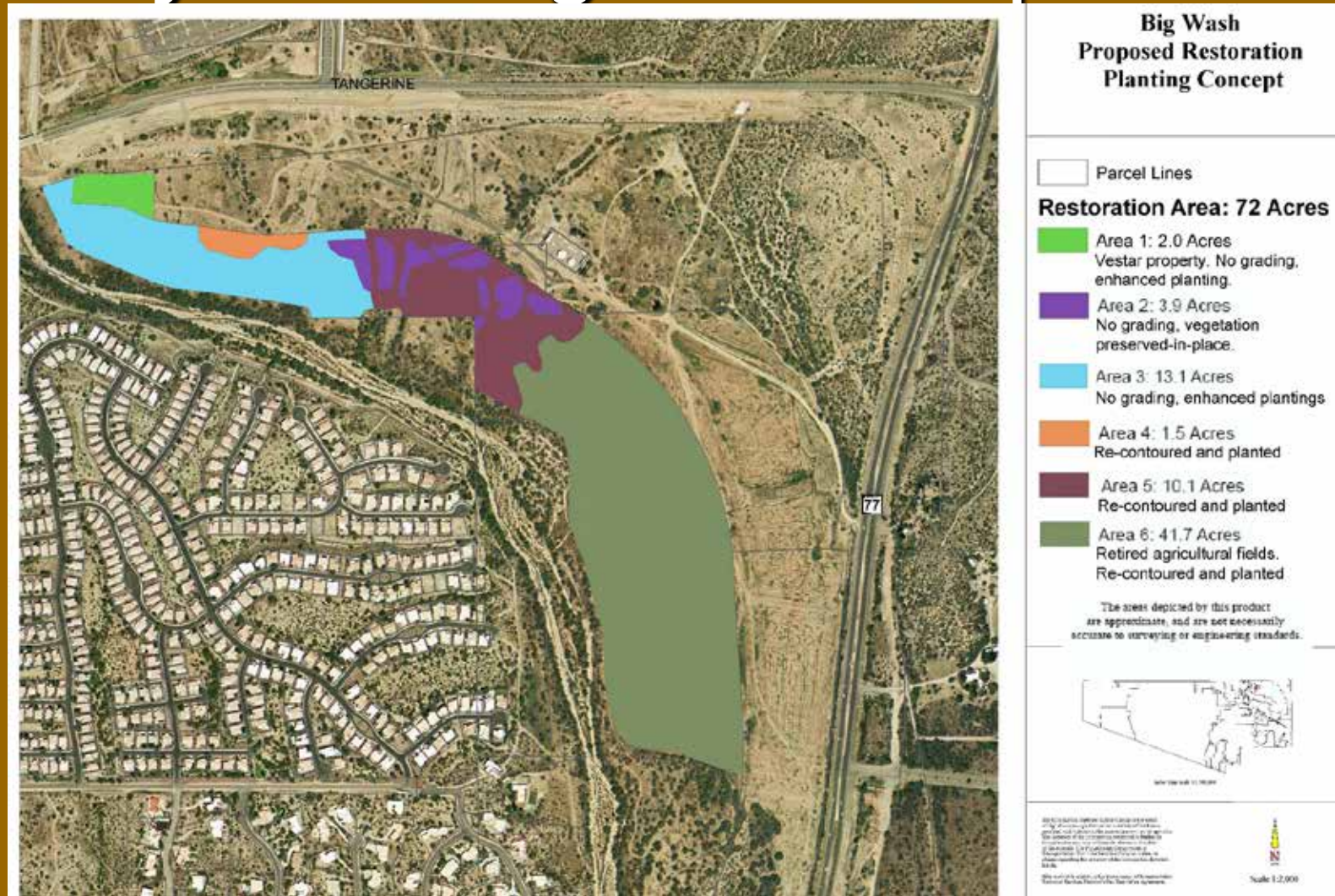
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Policy and infrastructure at San Xavier del Bac

- CAP infrastructure for recharge
- Incidental recharge of CAP
- Limits on groundwater pumping around San Xavier
- Deliberate riparian plantings



Solution: increase soil moisture by lowering the floodplain





1996

Increased soil moisture at
Kino Ecosystem by
concentrating flows and
adding infrastructure and
plantings



2012

Address Erosion and Deposition

- Greater extremes in flood peaks
 - Aggradation and dredging or renewed incisions?
- Continued need for floodplain acquisitions and management to preserve social options
- Management and restoration in upper watershed
 - National Forest, County conservation lands, Saguaro National Park

