

Accommodating Use and Enjoyment with Ecological Function: A Blanco River Restoration Demonstration Site



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Blanco River Watershed

Changing demographics and landscape

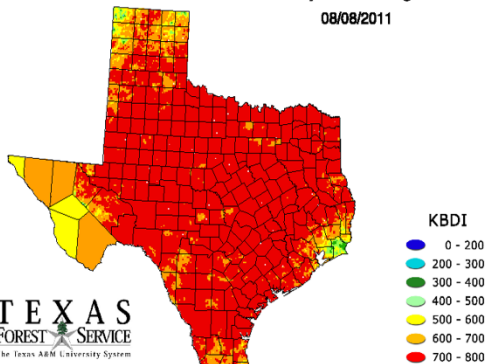
- Area of rapid urbanization and land ownership fragmentation
- Unsustainable ground and surface water use
- Unsound vegetation clearing
- Untenable grazing practices
- Non-native invasive species



Re-establishment of Guadalupe Bass to the Blanco River

- Guadalupe Bass extirpated from the system due to hybridization with non-native Smallmouth Bass
- 2011: Historic drought provided unique opportunity to remove Smallmouth Bass and hybrids from enduring pools above natural fish passage barrier

Keetch-Byram Drought Index
08/08/2011



TEXAS
FOREST SERVICE
The Texas A&M University System

AgriLIFE RESEARCH
Texas A&M System

DATA SOURCES: NEXRAD and NWS



Re-establishment of Guadalupe Bass to the Blanco River

- **2012-2013: 322,000 pure Guadalupe Bass reared by TPWD stocked**
- **2014 – Present: Monitoring revealed sustained presence of wild, naturally-produced Guadalupe Bass**



Blanco River Watershed Restoration

- **SARP grant to TPWD in 2015 leveraged with state invasive species funds**
 - **Implement on-the-ground restoration projects and provide technical guidance to landowners to encourage conservation BMP's**
 - **Address issues and threats that degrade water quality, reduce water quantity, degrade riparian areas, and favor exotic species**

Encourage voluntary collaboration and partnership to reduce stressors affecting overall health of the Blanco River watershed



Blanco River Watershed Restoration

- **Historic flood in May 2015 brought intense public interest in riparian restoration**
 - **River crested at more than 40 feet above its banks**
 - **Estimated 12,000 riparian trees uprooted**





Blanco River Restoration Design Guidelines

- Developed in partnership with the Lady Bird Johnson Wildflower Center
- Encourage land management practices that accommodate recreational uses while also providing ecological functions

http://tpwd.texas.gov/publications/nonpwdpubs/media/blanco_river_design_guidelines_2016.pdf



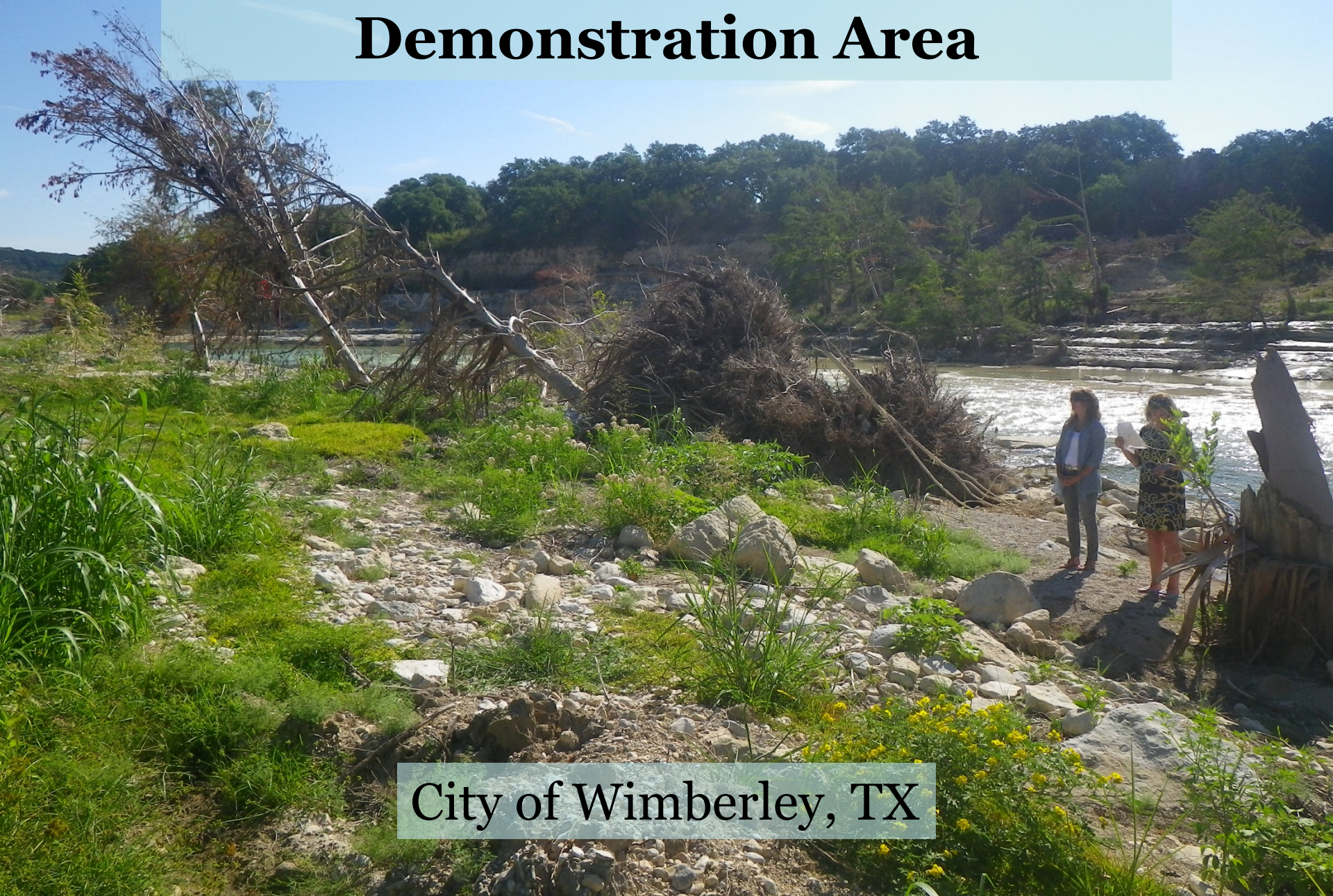
blanco river
design guidelines

Keynote

- | | |
|--|-------------------------------------|
| ① landscape berming | ⑮ limestone check dams |
| ② vegetated swale | ⑯ water flume at dry creek bed |
| ③ wet meadow restoration | ⑰ pedestrian foot bridge |
| ④ upland meadow restoration | ⑱ shortgrass meadow |
| ⑤ understory trees | ⑲ bioinfiltration zone |
| ⑥ cattle guard / water crossing | ⑳ flagstone patio with fire feature |
| ⑦ parking court w/ tube steel stops | ㉑ stone seat walls |
| ⑧ main house | ㉒ limestone retaining walls |
| ⑨ guest house | ㉓ waterfront sunbathing lawn |
| ⑩ residential lawn | ㉔ riparian outflow |
| ⑪ aggregate path | ㉕ riparian buffer restoration |
| ⑫ boardwalk decking | ㉖ existing pecan grove |
| ⑬ residential display garden | |
| ⑭ flagstone paving with planted joints | |



Jackaroo Ranch Conservation Demonstration Area



City of Wimberley, TX



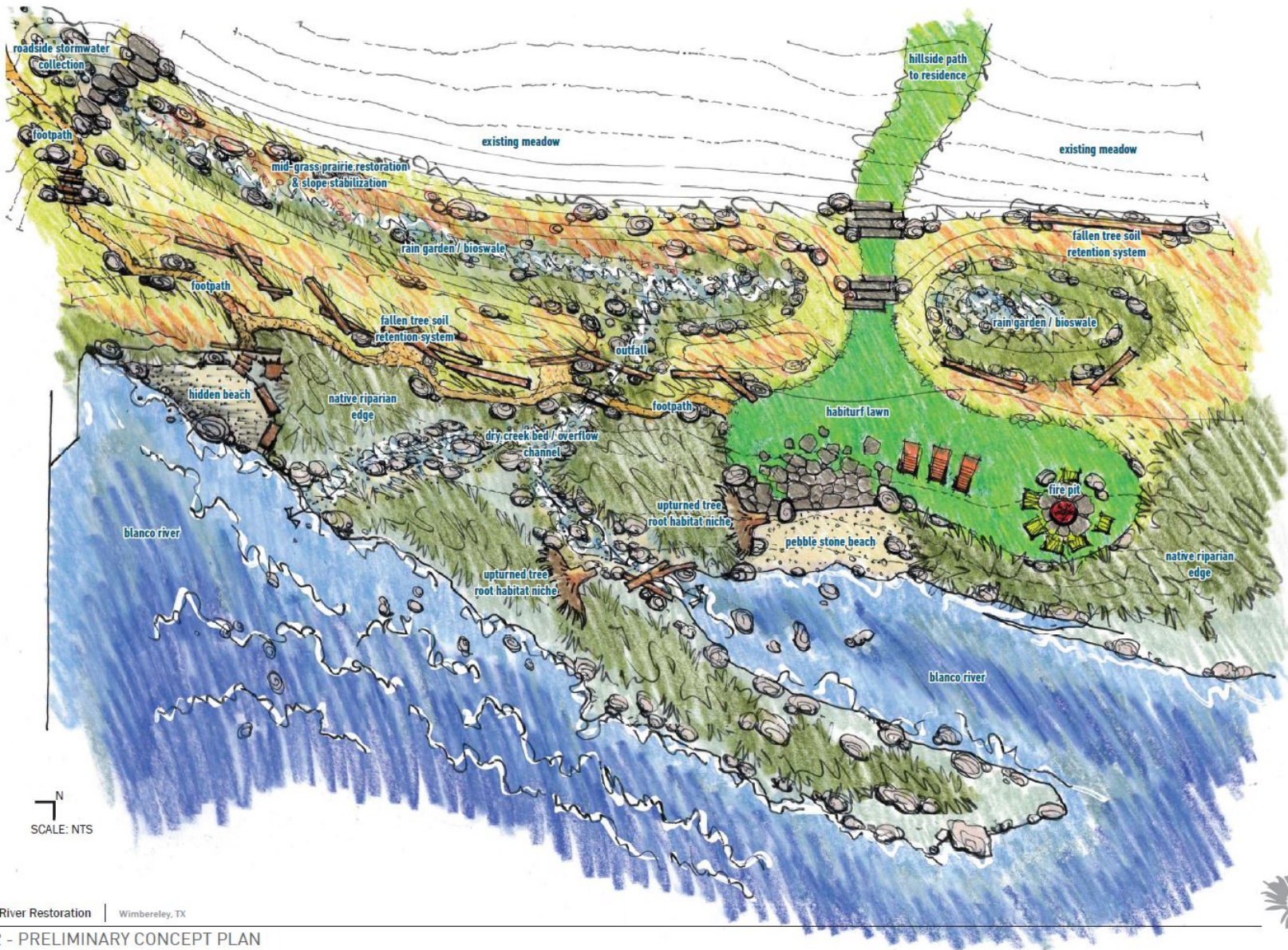




August 2015



December 2016





Establishment of “Grow Zone” and targeted access points



TreeFolks Reforestation Effort



Wetted Perimeter Plantings for Stabilization

August 2015





May 2018

Strategic Retention of Woody Debris

A photograph showing a riverbank with a large pile of woody debris. Two people are standing near the debris, and orange flags are placed on the ground. The background shows a river and a line of trees under a blue sky.

December 2016



January 2017



January 2017

Construction, May 2017











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Plugged live roots:

- Lindheimer muhly (*Muhlenbergia lindheimeri*)
- Florida paspalum (*Paspalum floridanum*)
- Big bluestem (*Andropogon gerardii*)
- Nimblewill (*Muhlenbergia schreberi*)
- Switchgrass (*Panicum virgatum*)

Seed mixes (Native American Seed, Junction TX):

- Drainfield Mix
- Dam Slope mix
- Pollinator Essentials Mix
- Wetland Fringe Mix
- Thunder turf
- Sideoats grama



August 2015



May 2017



August 2017



May 2018





May 2018

6" Rain Event

A landscape photograph showing a river with a dam, a grassy field with a muddy puddle, and a forested hillside in the background. The river is in the middle ground, with a dam structure visible. The foreground is a grassy field with a large, muddy puddle. The background is a forested hillside under a cloudy sky.

August 2017

Saturated Soil Conditions

A landscape photograph showing a stream with a dam in the background, surrounded by dry grass and a forested hillside under a cloudy sky. The stream flows from the dam towards the foreground, where it is bordered by large, light-colored rocks. The surrounding vegetation is sparse and dry, indicating a lack of recent rainfall. The sky is overcast with grey clouds.

February 2019



May 2018



RIPARIAN RESTORATION AREA
this GROW ZONE AREA

- protection for young trees
- erosion control
- cleaner Blanco River
- and many more benefits!

For more info: BlancoTrees.org





August 2015



May 2018

Seep Remediation



April 2017

Seep Remediation



May 2018

Invasives Management and Monitoring

- Arundo
- Johnsongrass
- Bastard cabbage
- Brazilian verbena
- Cocklebur



GROW ZONE

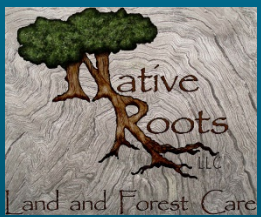
**Ecological
Restoration
In Progress**



Conservation Demonstration Site Tours



April/May 2018





Thank you

**Ryan McGillicuddy
Texas Parks and Wildlife Department**