

Summary of Biological Control of Saltcedar Along the International Reach of the Rio Grande

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Eggs



Larva



Adult

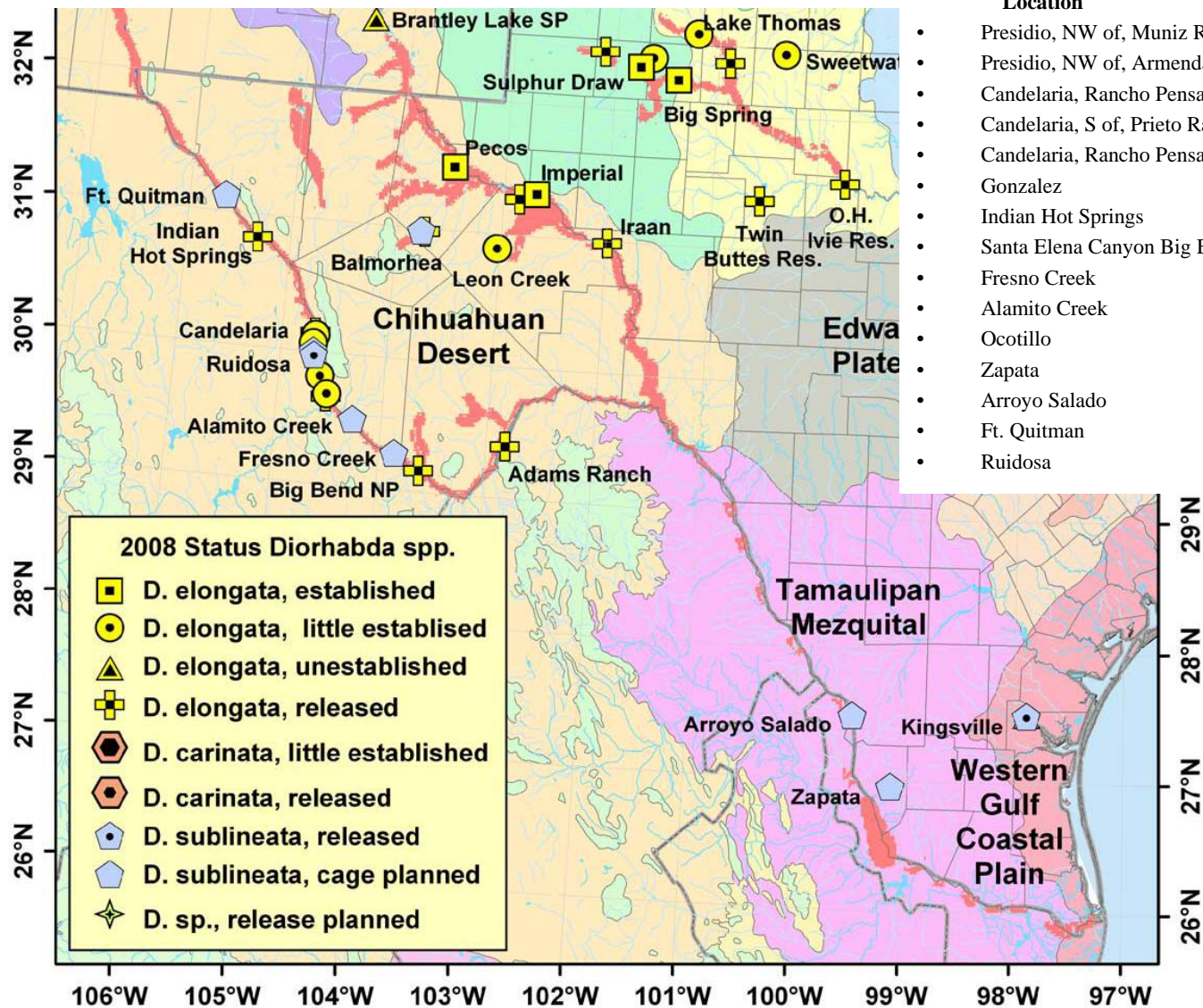
Saltcedar Leaf Beetle (*Diorhabda elongata*). Courtesy Dr. Jack DeLoach, USDA

Introduction



- Saltcedar (*Tamarix* spp) an exotic species from Eurasia that grows extensively along riverbanks and floodplains
- Extreme infestation is evident along the Rio Grande
- Both U.S. and Mexico agree that saltcedar should be controlled
- Since 2001, USDA and other entities have released thousands of saltcedar leaf beetles at numerous sites throughout Texas to control saltcedar populations

Locations of Releases



| Location | Species/Status |
|-----------------------------------|---|
| Presidio, NW of, Muniz Ranch | <i>D. elongata</i> (Crete), little establishing |
| Presidio, NW of, Armendariz Ranch | <i>D. elongata</i> (Crete), little establishing |
| Candelaria, Rancho Pensado 2 | <i>D. elongata</i> (Crete), little establishing |
| Candelaria, S of, Prieto Ranch | <i>D. elongata</i> (Crete), little establishing |
| Candelaria, Rancho Pensado 1 | <i>D. elongata</i> (Crete), released |
| Gonzalez | <i>D. elongata</i> (Crete), released |
| Indian Hot Springs | <i>D. elongata</i> (Crete), released |
| Santa Elena Canyon Big Bend | <i>D. elongata</i> (Crete), released |
| Fresno Creek | <i>D. sublineata</i> (Tunisia), cage planned |
| Alamito Creek | <i>D. sublineata</i> (Tunisia), cage planned |
| Ocotillo | <i>D. sublineata</i> (Tunisia), cage planned |
| Zapata | <i>D. sublineata</i> (Tunisia), cage planned |
| Arroyo Salado | <i>D. sublineata</i> (Tunisia), cage planned |
| Ft. Quitman | <i>D. sublineata</i> (Tunisia), cage planned |
| Ruidosa | <i>D. sublineata</i> (Tunisia), caged |

Negative Impacts of Saltcedar

- Implicated in high water usage
- Increases soil salinity
- Low biodiversity/ poor habitat
- Increased fire hazards
- Reduced recreational usage
- Impacts on threatened and endangered species
- Sedimentation and flooding



Eradication Methods

MECHANICAL/CHEMICAL

- Saltcedar returns after being cut down and has thousands of seeds per plant.
- Mexico's park service is using labor-intensive mechanical methods
- Can be killed with arsenal (imazapyr) (Pecos River study)
- Herbicides also kill native vegetation, are expensive, and requires periodic re-application



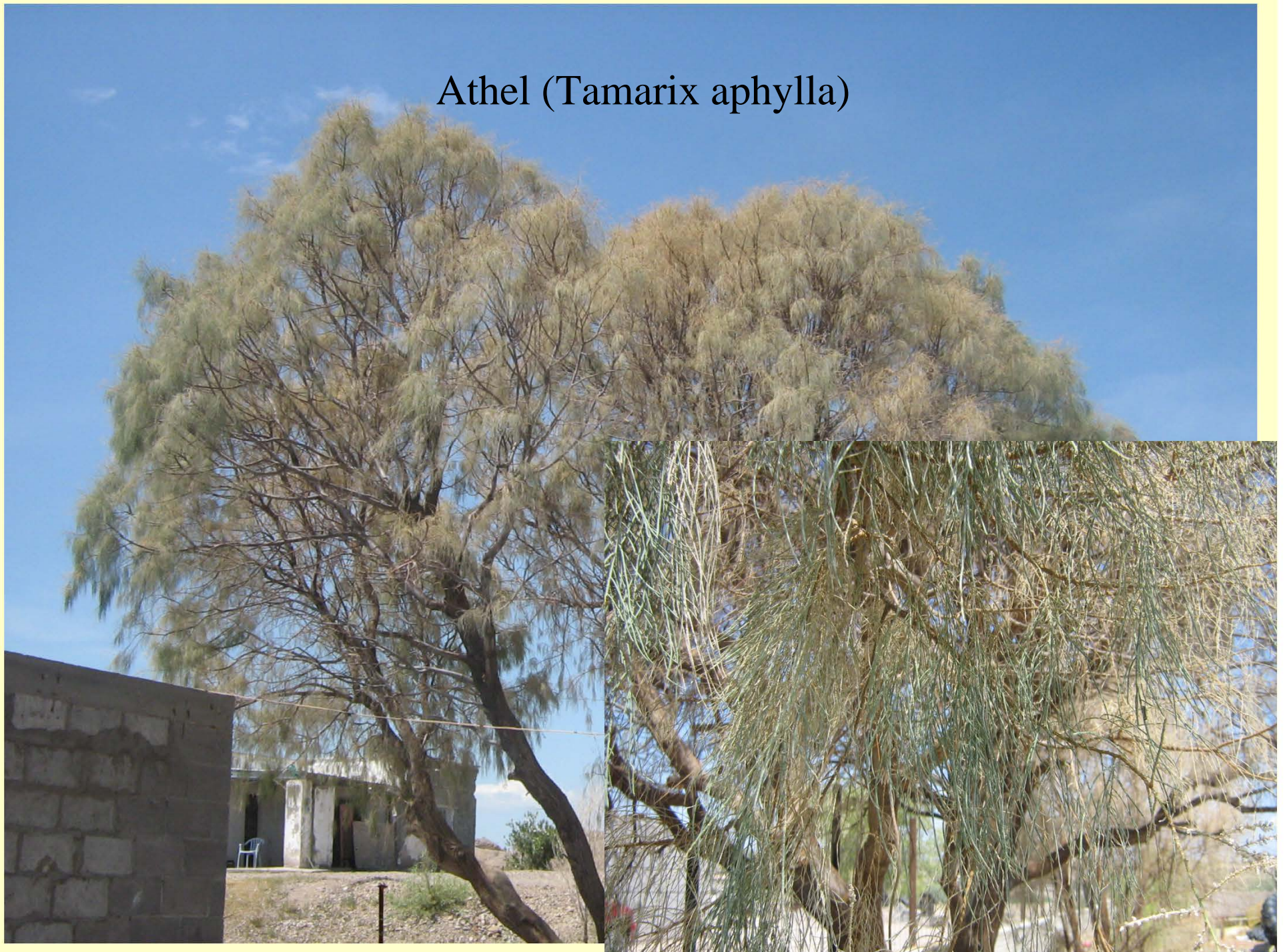
Eradication Methods

BIOLOGICAL

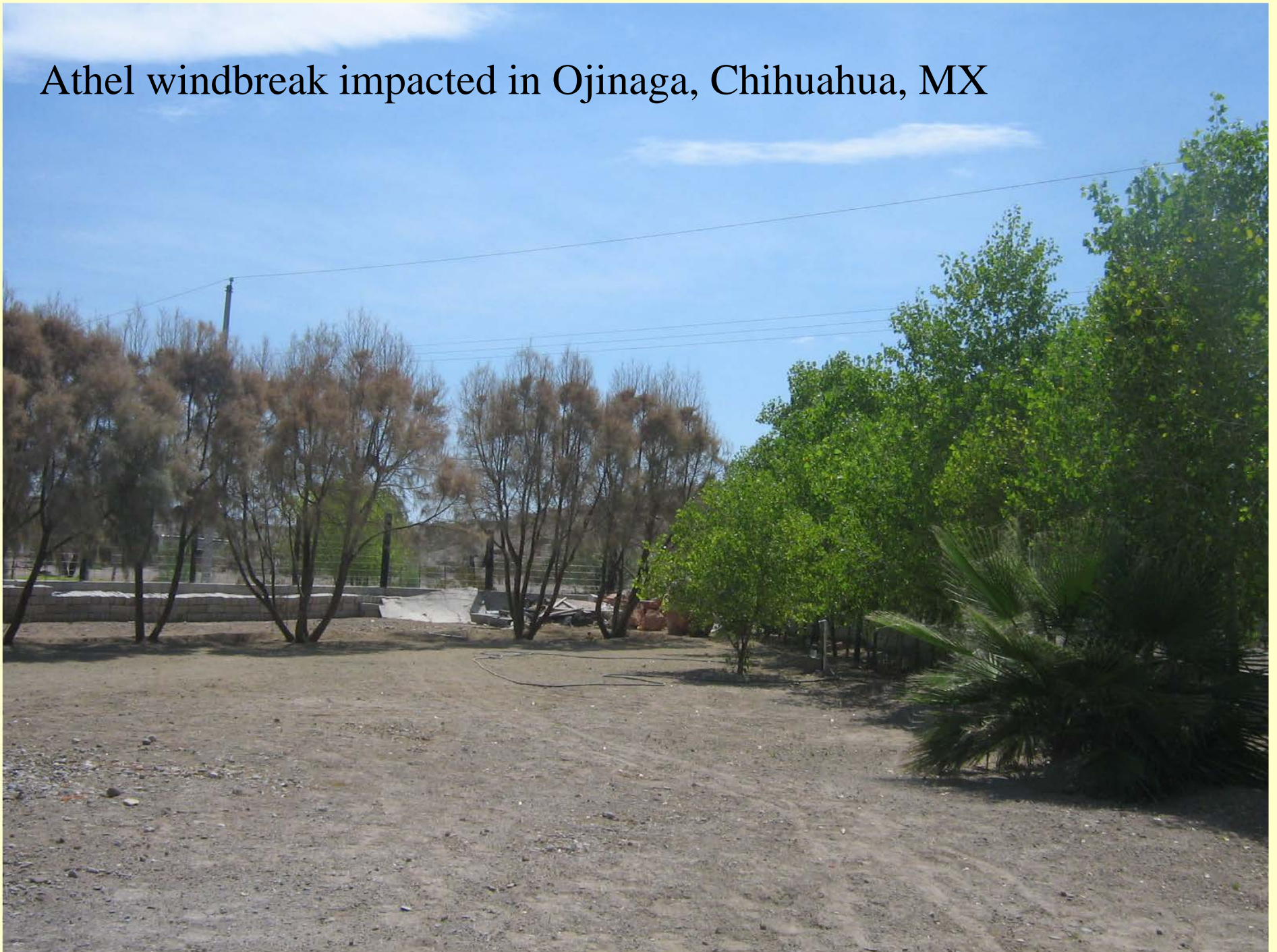
- Breed and introduce a natural predator, the *Diorhabda spp* saltcedar leaf beetle
- Biological control suppresses weak population below threshold of damage, without harm to non-target plants
- USDA and other proponents promoting the beetle as the “silver bullet” for saltcedar control



Athel (*Tamarix aphylla*)



Athel windbreak impacted in Ojinaga, Chihuahua, MX



Rio Grande at Alamito marsh August 2010



Photos Courtesy Anne Marie Hilscher, SRSU

Alamito Creek Presidio, Texas December 2008 (Before)



Photo courtesy USIBWC

Alamito Creek Presidio, Texas
August 2010 (After)



Current Challenges

- Beetles defoliating non-target Tamarix species such as Athel
 - Mexico has raised concerns about Athel defoliation because it is widely used as a shade tree in Mexico
- Salt cedar provides (limited) habitat for the federally endangered Southwestern Willow Flycatcher (WIFL)
 - Defoliation occurs during WIFL breeding season
- Mexico has other issues regarding the beetle release
 - Contingency plan to “pull plug on project”
 - Monitoring protocol and program approved by the two governments
- U.S. and Mexican authorities have not come to an agreement on biological control due to these issues



A photograph of a dirt road winding through a dry, hilly landscape. The road is light-colored and appears to be made of sand or gravel. On either side of the road, there is sparse vegetation, including green shrubs and trees with yellowish-brown foliage. In the background, there are hills and a blue sky with scattered white clouds. The word "QUESTIONS" is overlaid in the center of the image in a large, white, serif font.

QUESTIONS