

# RECLAMATION

*Managing Water in the West*

## Biological Control of Saltcedar

### Carlsbad New Mexico

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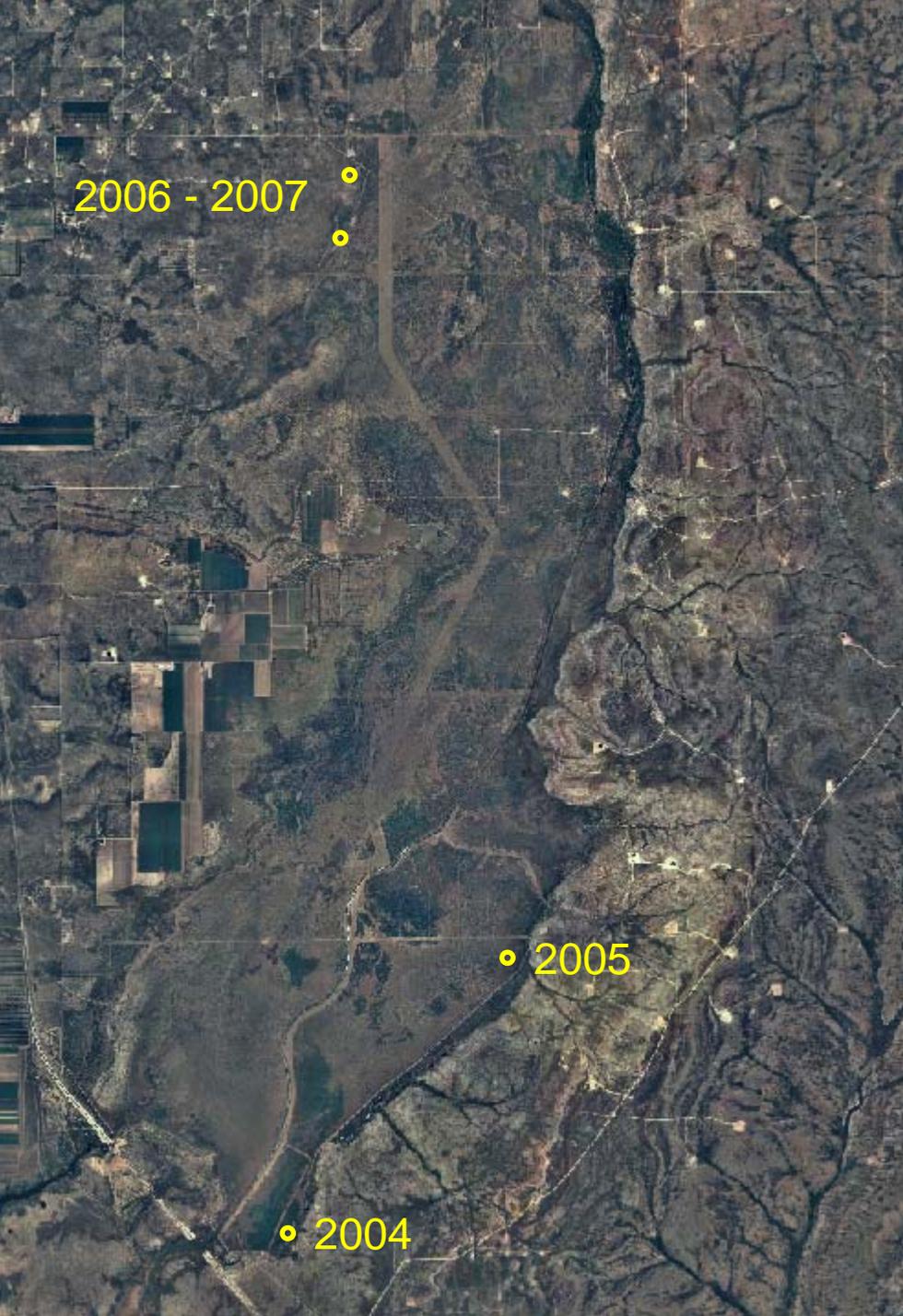
U.S. Department of the Interior  
Bureau of Reclamation

# Project Overview

- Releases initiated in 2004
- Posidi ecotype of saltcedar leaf beetle (*Diorhabda elongata*)
- Beetles released in cages and sleeve-bags



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# Release site locations



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2004 site was in a basin just outside of levy road



Flooding occurred mid April and during over-wintering period



Predation



Yellowing from leafhopper damage



2005 site in lake bed  
Before grasshopper invasion



After grasshopper invasion



# 2006 Site

- Low risk of flooding
- Distanced from kochia/grasshoppers
- Mixed understory
  - Alkalai sacaton
  - Golden crownbeard
  - Mountain peppergrass
  - Desert verbena
  - Others



Plants cut back to encourage regrowth



12' x 12' tent





- Populations of the Posidi beetle crashed at many sites early 2006
- Beetle stock was not available until mid July
- ~200 eggs were put in sleeve bags in the tent on July 18
- Eggs hatched, but NO beetles were found at 1 or 2 weeks after release



- **2006 – 2<sup>nd</sup> beetle release**
  - 50 adult beetles released at the 2006 site on September 12
  - Early reproductive success after release
  - High larval mortality, few adult beetles emerged through November



# 2007

- 5 beetles from 2006 successfully overwintered
- Saltcedar at site slow to foliate in spring
- Down to 1 adult beetle by late May, little evidence of reproduction



# 2007 - Site B

- New release site ~half mile south of original site.
  - Older, larger trees
  - More foliage
  - Trees foliated earlier



# 2007 Releases

- Received 300 beetles from Palisade insectary in May
  - 100 released @ site A
  - 200 released @ site B



- **2 weeks after release:**
  - No adult beetles or egg masses found at either site
  - Single larva found at site B
  - Little if any defoliation
    - Preadation
    - Leafhopper damage
    - Tent effects





# 2008 Plans

- **Fukang beetles?**
  - Still waiting on finalization of permit from APHIS
  - Pueblo Fukang population on a downswing in 2007
- **Sleeve bags?**
  - High maintenance, need a local technician