

# Pecos River Ecosystem Project

## Application Technology



## Arsenal™ Herbicide

- Extremely active on saltcedar
- Precision application technology needed to minimize damage to non-target plants
- Rate used per acre:
  - 4 pints Arsenal™
  - 2 pints surfactant



# Application Technology

- Concerns:
  - Limiting herbicide contact with off-target vegetation.
  - Complete spray coverage on target plant
- Traditional application methods presented several problems.



# Aircraft Comparison

## Helicopter

- Spray at 30 mph
- Flat turns
- 15+ GPA
- Varied spray width
- 1000 micron droplet
- Drift less than 1%
- Heliport near application

## Airplane

- Spray at 110-140 mph
- Banked turns
- 10 GPA Max.
- Fixed spray width
- 100-300 micron w/fines
- Drift harder to control
- Must ferry to air strip

## Equipment Used

- Bell Helicopters
- Support Trucks carrying water, fuel, and herbicide mixture



## Mobile Heliport

- Eliminates ferry time
- Specially designed trucks:
  - Load from on top
  - DOT Spec 406 Certified Tanks
  - Section Tank
    - 800 Gal. Jet Fuel
    - 3000 Gal. Clean Water
    - 1000 Gal. Chemical Mix



Capable of batch loading helicopter  
in 45 seconds



Certified meters used to maintain  
accurate mixing rates



250 Gal. Batch Tank

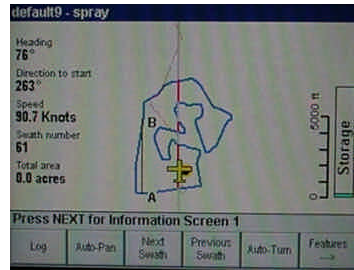


Triple Rinse  
Containers

Spraying at 20-40 mph allows  
making turns in river



## GPS guidance system used in all helicopters



## Trimble GPS Guidance

- Logs spray area for display on moving map
- Allows for flying irregular lines with less "skips"
- Produce computer generated application spray maps

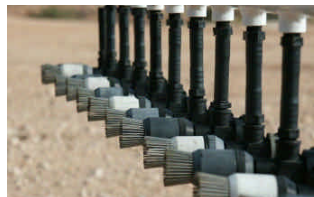
## Variable rate flow meter to ensure accurate delivery of herbicide

- Calibrate to ground speed
- Maintain constant 15 GPA rate
- Linked to GPS receiver



## Spray Boom Technology

- Developed for variable swath width
  - 15 – 30 – 45 ft. swaths
- Can adjust spray swath to width of saltcedar stand
- 4 inch nozzle spacing



## Nozzle technology

- .028 Accuflo Nozzle
- 1000 Micron Droplet
- 15 g/acre TSV
- Minimizes spray drift to less than 1%



15 gallons per acre used for  
adequate spray coverage on plant





Application has resulted in >90% mortality of saltcedar on the Pecos River in Texas

