# Overview: Floodplain Restoration in the Middle Rio Grande

*Middle Rio Grande Endangered Species Collaborative Program Science Symposium*

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# EARLY RESTORATION PROJECTS

- Albuquerque Overbank Project (1998)
- Bosque del Apache NWR
- Santa Ana Pueblo

1998

1999

2003

2007

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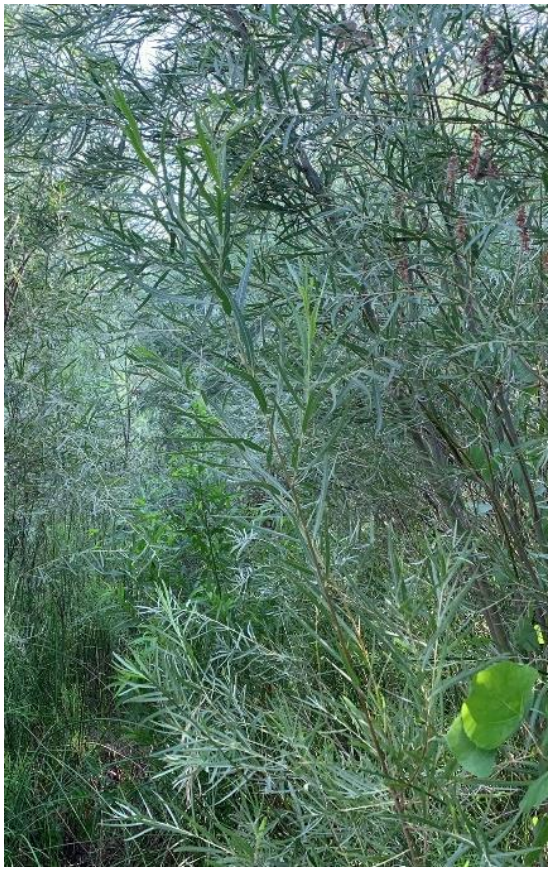

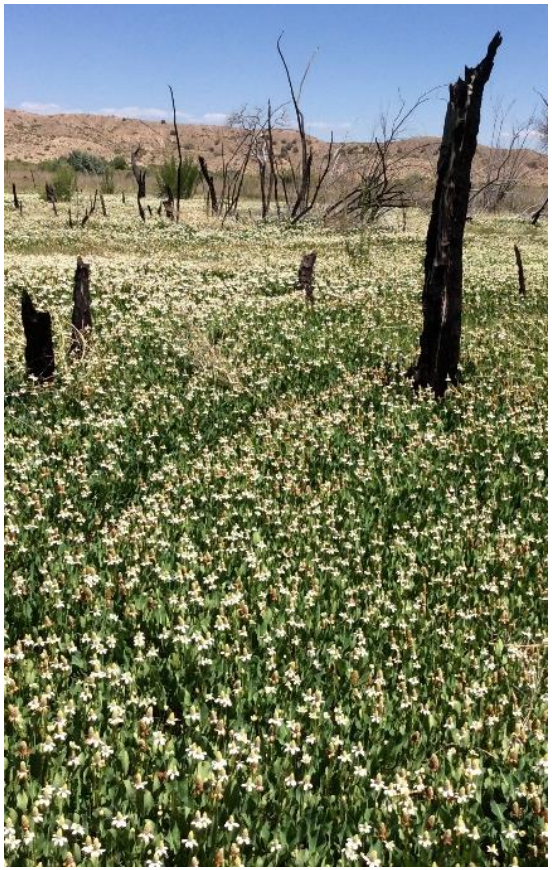

# OVERLAPPING PROJECT GOALS

- Protect and enhance wildlife habitat quality and diversity
- Control exotic plant species
- Reduce wildfire risk
- Restore native vegetation species
- Improve river-floodplain connectivity and promote overbank flooding (shallow, low velocity inundation)
- Restore habitat for endangered species
- Protect flood protection infrastructure
- Maintain channel conveyance and Rio Grande Compact water deliveries
- Self adapting, resilient

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# MAJOR CONSTRUCTION ACTIVITIES

- Fuels reduction/Non-native, invasive tree and shrub removal
- Herbaceous noxious weed treatment
- Excavation
- Revegetation
  - Potted shrub, tree pole, and willow cutting planting
  - Grass/forb seeding
  - Wetland plug planting

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# MOIST SOIL FEATURES

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## BRINGING THE FLOODPLAIN TO THE RIVER

- Backwater channel
- Bankline grading
- Bankline terrace
- High-flow channel
- Willow bankline
- Willow swale

# NOTABLE SUCCESS

- Volume of work
- Scale
- As-built documentation
- Planting survival
- Natural recruitment
- Overbank flooding
- Endangered species benefits

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# "RESTORATION" PROJECT EVOLUTION

- Grown in scale
- Shifted in focus
- Promoting flood inundation
- Targeting lower discharges
- Increased construction precision
- More intensive documentation and monitoring
- Perceptions of habitat value exotic species change
- Formalized monitoring, maintenance, adaptive management practices
- Flow management

# CHALLENGES

- Sedimentation
- Uncertain lifespan
- Runoff timing, volume, predictability
- Recent noxious weed introductions
- Unpredictable vegetation response
- Exotic herbaceous spp more difficult
- Grazing
- Off road vehicles

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# KEY LESSONS LEARNED

- Mimicking natural hydrology
  - Operational flexibility, flow augmentation
- Clearly link project goals to specific, measurable, attainable management actions
- Site selection
- Design to benefit multiple listed (and non-listed) species
- Maintain previous projects
- Fund long-term monitoring
- Learn from previous projects
- Adapt!

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# THANKS!


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