Carlsbad Project Water Operations and Water Supply Conservation EIS
Biology Workgroup Impacts Analysis Summary

Pecos bluntnose shiner (*Notropis simus pecosensis*)

- Small (2-3 inch) minnow
- Short-lived (2-3 years)
- Listed as Federally Threatened in 1987
- Two Reaches of Critical Habitat
- Spawns in response to increased flows associated with monsoon storm events and irrigation block releases

Map of Pecos River and PBNS Critical Habitat (need to insert)

- Distributed between Taiban Creek and inflow to Brantley Reservoir
- Reproducing population in upper critical habitat and river reach between lower boundary of upper critical habitat and the Near Acme gage
- Populations in reach between upper critical habitat and Acme affected by channel drying and flow intermittence

Biology Workgroup Resource Indicators

Terrestrial and floodplain ecosystems
•Potential for overbank flows and erosion of riverbanks
•Potential for inundation of habitats, including those of interior least tern

Riverine aquatic ecosystems
•Frequency, extent, and duration of intermittency at the Near Acme gage
•Frequency of flows less than 3 to 5 cfs at the Near Acme gage
•Frequency, magnitude, and duration of peak flows at the Near Acme gage

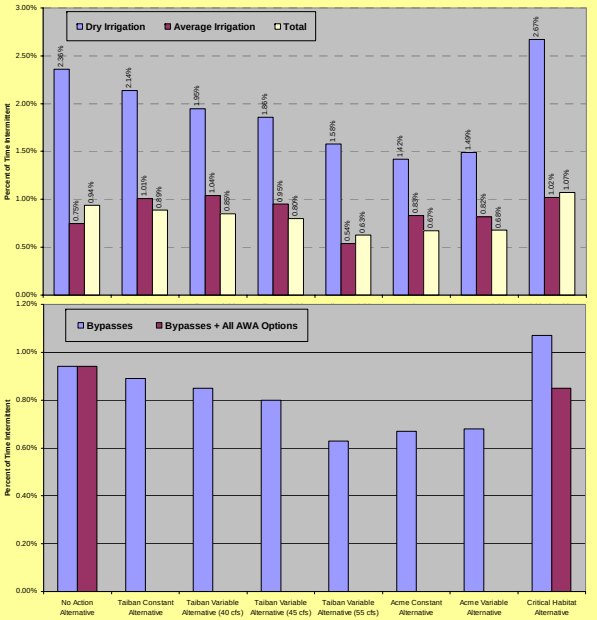
Reservoir aquatic ecosystems
• Changes in availability of sport fish spawning habitat and adult habitat in response to reservoir elevation changes

Special status species
•Two possibly affected:
Pecos bluntnose shiner – same as riverine aquatic ecosystems
Interior least tern – same as terrestrial and floodplain ecosystems

Critical habitat within the study area
• Pecos bluntnose shiner critical habitat sections – no intermittent flows in critical habitat reaches

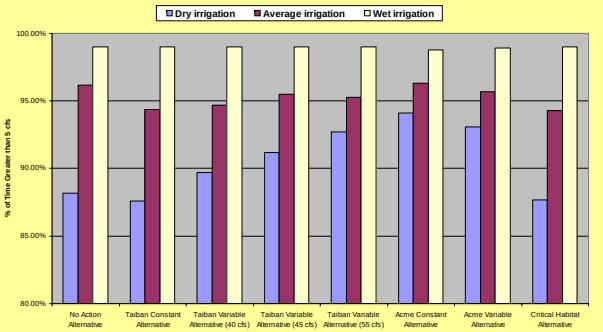
Modeled Intermittent Flow Percentages

•No intermittence during non-irrigation period or wet irrigation periods
•Additional Water Acquisitions could eliminate intermittent flows



Flows Less than 5cfs (bypass flows only)

•Little to no difference during wet and average irrigation conditions
•Moderate differences during dry irrigation conditions



Summary of Impacts to Biological Resources

Terrestrial and floodplain ecosystems
•No expected change in overbank flows
•No change in potential for inundation of habitats

Riverine aquatic ecosystems
•Minor differences in frequency of intermittent flows at Acme during bypass
•Additional water acquisitions could reduce or eliminate intermittent flows for all action alternatives
•Moderate differences during dry irrigation conditions with Taiban Variable, Acme Constant, and Acme Variable having fewest periods with flow <5cfs
•No change expected in the frequency, magnitude, and duration of peak flows for any alternatives

Reservoir aquatic ecosystems
• No change in availability of habitat in reservoirs

Pecos bluntnose shiner:
•With implementation of water acquisitions, all Action Alternatives, with exception of Critical Habitat, have potential to be more protective of the shiner than the No Action
•Without implementation of water acquisitions, little difference would be expected among the alternatives

Interior least tern:
• No Action Alternative would be least protective of the least tern

Critical habitat within the study area
• None of the alternatives would be expected to cause intermittent flows in the critical habitat sections