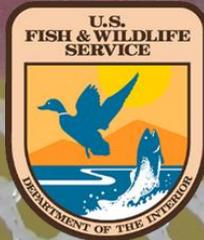


# **Pecos River Commission Meeting U.S. Fish & Wildlife Service Report, 2019**



**September 2020**





# Biological Opinion (or BO) for the Carlsbad Project Water Operations and Water Supply Conservation

**Species:**

**Interior least tern, Pecos bluntnose shiner**





# BO Components for Bluntnose Shiner

## Years not critically dry:

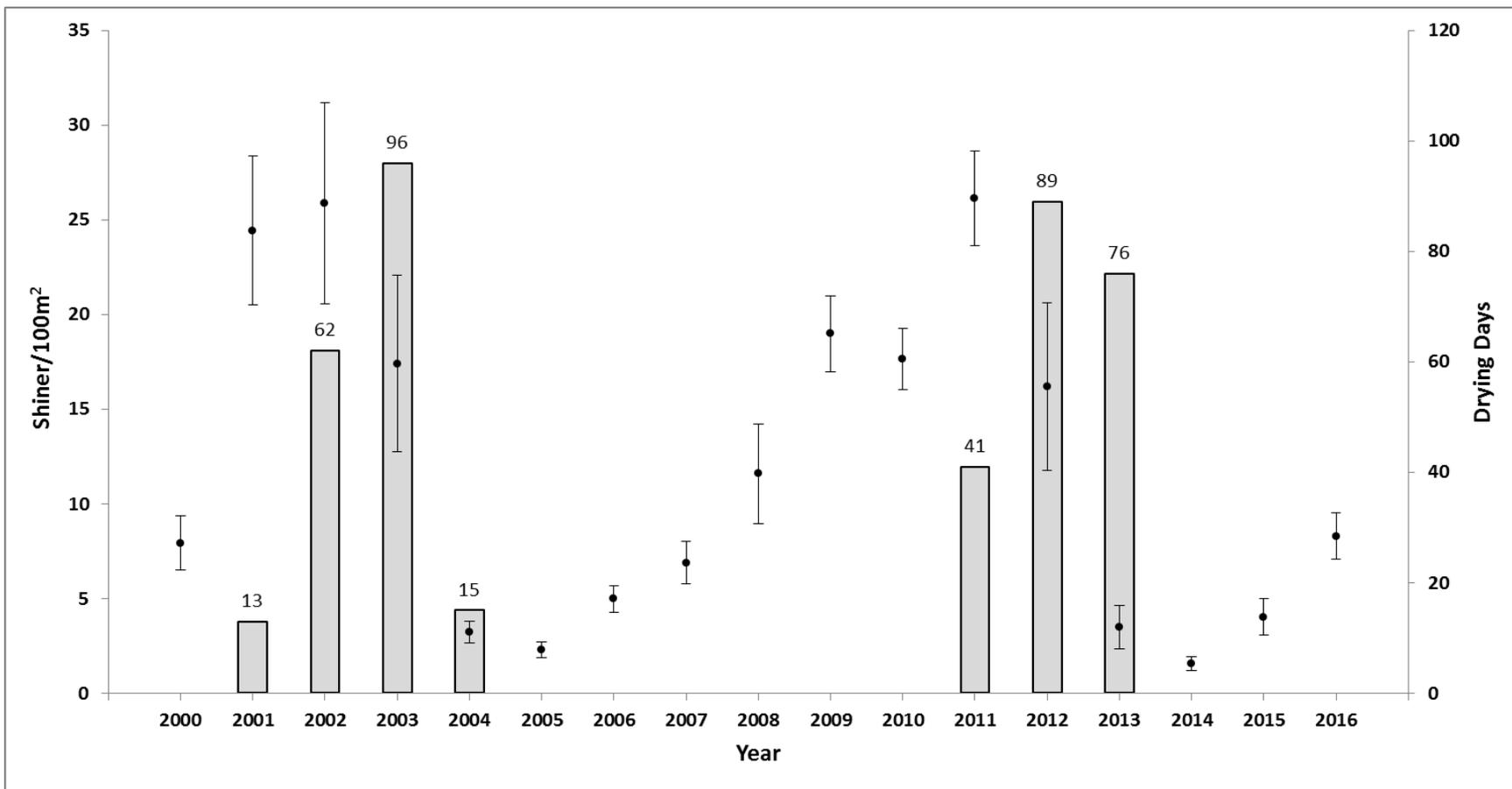
- 3<sup>rd</sup> trimester density  $> 12$  fish/100 m<sup>2</sup> or density increasing = take not exceeded

## Critically dry:

- Take not exceeded if all water resources at Reclamation's disposal are being utilized to minimize river drying



# Shiner Densities and Continuous Flows





## 2019 Results

- **Not critically dry**
- **3rd trimester density = ~14 fish/100 m<sup>2</sup>; above threshold so no take or reconsultation**





# Research: Shiner Habitat and Downstream Displacement

- **Contract to Tetra Tech**
- **Evaluating changes in hydrology, channel geomorphology**
- **Identifying opportunities for habitat restoration**



Photos: Tetra Tech



# Interior Least Tern Monitoring

- **Two terns, no nests observed at Brantley in 2019**
- **Seven adult terns, 3 nests, 5 nesting attempts at Bitter Lake National Wildlife Refuge**
- **Proposed for rangewide delisting**





# Other Pecos River Basin Listed Species

- Recovery plan for 4 endangered invertebrates at BLNWR completed in 2019
- Continued monitoring and species persistence
- Successful translocation of Koster's and Roswell springsnails



Noel's amphipod



Roswell springsnail



Koster's springsnail



Pecos assiminea

Photos: Brian Lang



# Texas Hornshell

- Implementation of public and private land conservation agreements (CCA, CCAA)
- Enrollees (2019):
  - $n > 100$
  - $>630,000$  acres



Photo: Dan Trujillo



# Pecos Sunflower

- **Extensive germination on Bitter Lake NWR in 2019**
- **Restoration burn in refuge Unit 5**

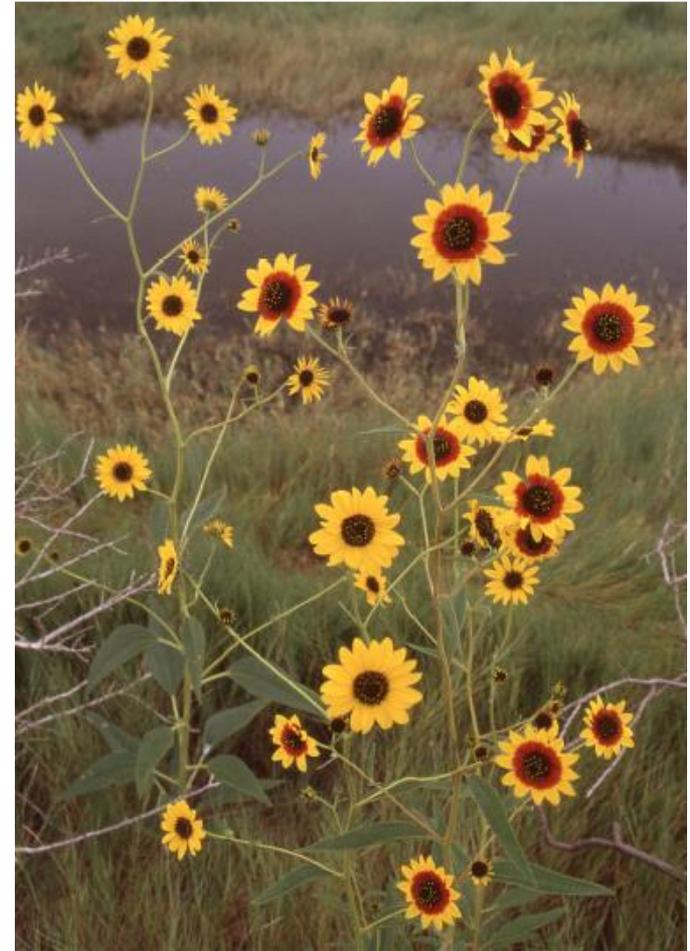


Photo: Bill Radke



# Bitter Lake National Wildlife Refuge

- Winter habitat for >20,000 sandhill cranes
- >1,500 attendees to the annual dragonfly festival
- Ongoing emphasis on habitat restoration, invasive species management



Photo: Janet Bauer





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