

# The Virgin River Program: Achieving species conservation through multi-agency cooperation

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Local Coordinator



VIRGIN RIVER  
PROGRAM

# Who are the players?

- Washington County Water Conservancy District
- Utah Department of Natural Resources
- U.S. Fish and Wildlife Service
- U.S. Bureau of Land Management
- U.S. National Park Service
- Washington County Farm Bureau
- Dixie Conservation District
- The Nature Conservancy

# Program Goals



- Implement actions to recover, conserve, enhance, and protect native species in the Virgin River
- Enhance the ability to provide adequate water supplies for sustaining human needs

# Native species addressed by Program

- Woundfin (*Plagopterus argentissimus*)
- Virgin River chub (*Gila seminuda*)
- Virgin spinedace (*Lepidomeda mollispinis mollispinis*)
- Flannelmouth Sucker (*Catostomus latipinnis*)
- Desert Sucker (*Catostomus clarkii*)
- Speckled Dace (*Rhinichthys osculus*)
- Southwestern willow flycatcher (*Empidonax trailii extimus*)

# Woundfin

- Federally endangered
- Found in mainstem Virgin River
- Lifespan only about 1-2 years
- ~ 2.5 inches
- Red mark, VIE tag



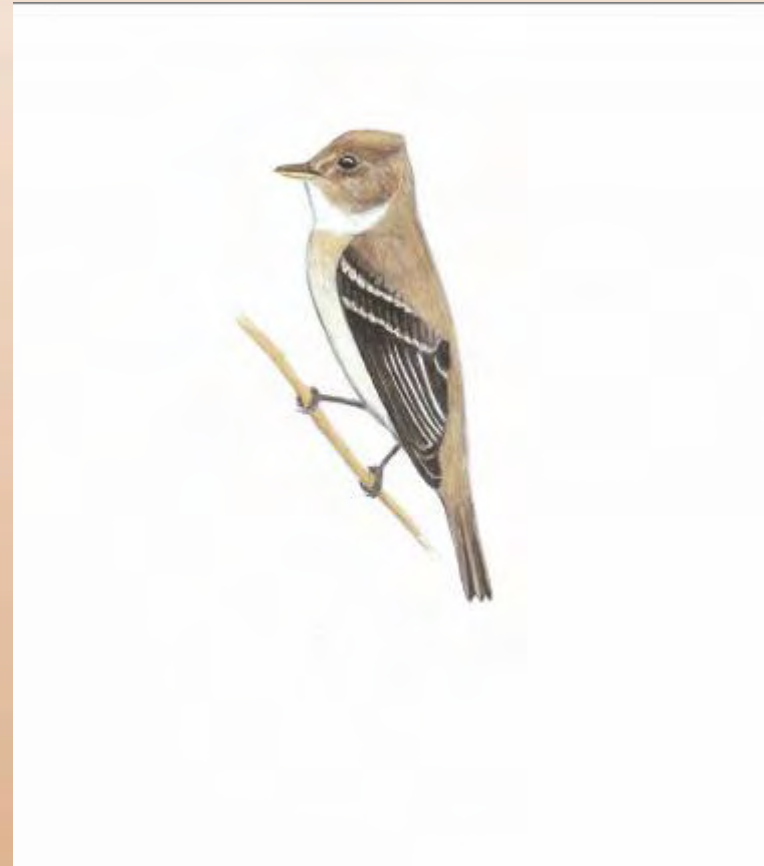
# Virgin River Chub

- Federally endangered
- Found in mainstem Virgin River
- Grows to 12-18 inches
- Longer lifespan



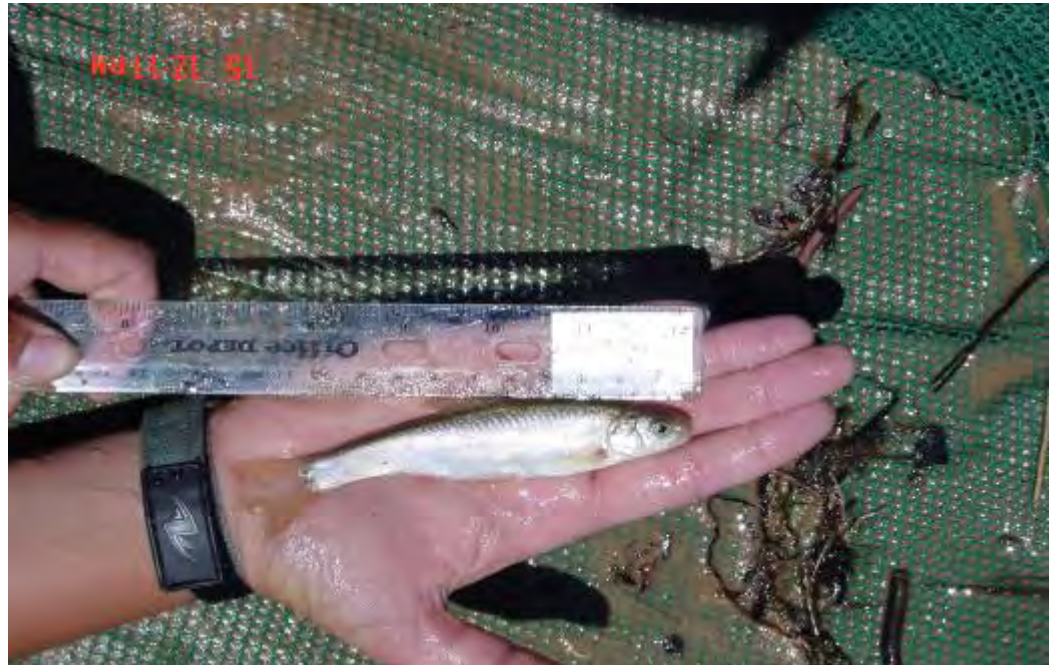
# Southwestern Willow Flycatcher

- Federally endangered
- Prefers dense vegetation with slow open water
- Critical habitat = 100 year floodplain
- Recent addition to Program activities



# Virgin spinedace

- State of Utah conservation species
- Found throughout basin, tributaries and mainstem
  - North and East Fork
  - North Creek
  - Ash Creek
  - LaVerkin Creek
  - Santa Clara River
  - Beaver Dam Wash
- ~3-4 inches
- 2-4 year lifespan





# Other native fish species



Flannelmouth sucker  
State of Utah Conservation  
Species



Desert sucker  
State Wildlife Species of Concern



Speckled dace

# Why are the natives struggling?

- **Loss of habitat**
  - Water
  - Tamarisk
- **Nonnative introductions**
  - Red Shiner
- **Water quality issues**
  - Temperature
  - Low turbidity



Arnold W. Sneegas



# Actions for Recovery

- Restore water to the river channel
- Place fish screens on diversions
- Maintain native fish brood stock at hatcheries and stock into the river
- Improve natural river processes
- Eliminate nonnative fishes from river (physical removal and rotenone treatments)
- Identify and address factors that limit native fish populations (temperature, turbidity, low flow, flow variability, habitat)
- Public outreach and education

# Adding water to channel

- To reduce water temperatures
- Increase turbidity



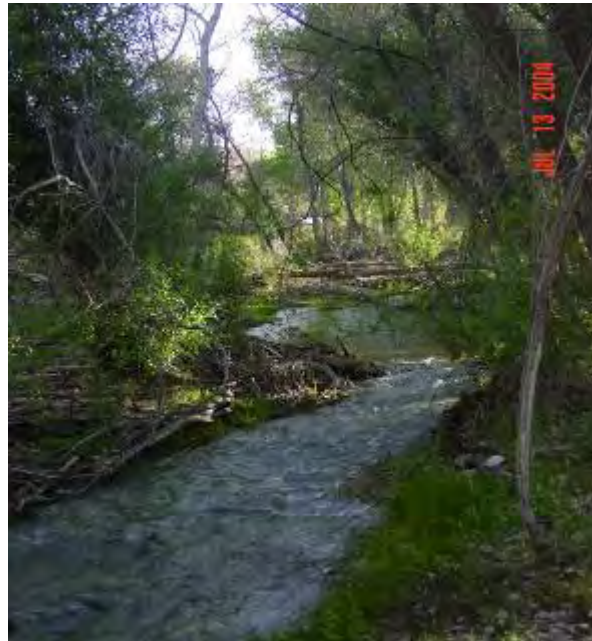
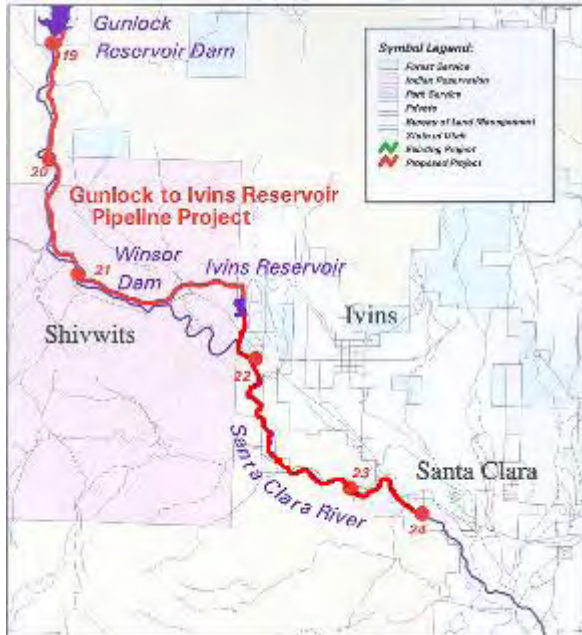
# Washington Fields Diversion Screening

- Conversion of open canal to pipeline results in water savings for the canal company. Prevent debris buildup in pipe.
- Screens constructed by the Program prevent entrainment of native fish.



# Santa Clara Pipeline

- Program Partners provided the majority of the funding for the project
- Open canals replaced by pipeline resulting in water conservation
- Provides 3 cfs year round flow for Virgin spinedace



# Fish Management Activities

- Rotenone Treatments
- Fish Barriers
- Ongoing population monitoring



# Rotenone Treatments

- Approximately 40 miles of river
- Nearly 40 persons over 1 week for actual treatment
- Over 15 off channel marshes
- Up to 120 cfs treated at 3 ppm/Detox at 6 ppm (potassium permanganate)
- Months of preparation
  - Mapping
  - Fish monitoring





# Fish Barriers

- Two to date : State line and Webb Hill
  - Prevent upstream movement of red shiner
- Planning ongoing for barrier in the Virgin River Gorge



# Community participation

- NRCS Streambank Reconstruction and Stream alteration permits
  - Provide endangered fish clearances for river work
- Santa Clara and Virgin River Master Plans
  - Provide funding and technical support for plans to provide instruction on river corridor planning
    - Over \$120,000 provided
- Stream Stability and Revegetation Workshops
  - Offer landowners and agencies training on naturally protecting properties along streambanks
- Working with City of St. George and UDWR to organize willow revegetation efforts for volunteer groups

# Results of Program

- Communication and cooperation between regulatory and community entities
- Screening projects have saved ~ 20,000 fish
- Water in areas where it has been lacking before
- Maintaining populations of endangered species

# Challenges

- Drought years
  - High water temperatures
  - Low dissolved oxygen
  - Low turbidity
- NRCS rock levees from 2005
  - Porous rock levees provide refuge for red shiner and make eradication very difficult
    - Catch to date
    - 1,677 red shiner
    - Woundfin, Virgin River chub, Virgin spinedace, desert sucker, speckled dace, bullhead catfish, sunfish – only native not caught
    - flannelmouth sucker



# Additional Information

- Virgin River Resource Management & Recovery Program
  - Steve Meismer – Local coordinator
  - <http://www.virginriverprogram.org>
- U.S. Fish and Wildlife Service –
  - Tom Chart SLC
- Utah Division of Wildlife –
  - Rick Fridell St. George Field Office
- Utah Native Fishes Viewer:
  - <http://water.usu.edu/utahfish/>