
Harrison Mohn, Brandon Albrecht, Ron Rogers, and Ron Kegerries
Objectives and Study Area

- Locate Razorback Suckers
  - All life stages
- Monitor
  - Year-round movement and identify spawning sites
- Estimate
  - Growth, survival, population size and movement between sites.
- Goal
  - Achieve better understanding of a wild population.
Methods

- **Field**
  - Sonic telemetry
  - Trammel netting
  - Larval sampling

- **Laboratory**
  - Aging of fin rays
  - MARK estimates
    - Survival, population size, and movement
Sonic Telemetry

- 83 active contacts (important for spring field crews)
- 11,539 passive contacts
  - Several only contacted with SURs
- Two individuals tagged in 2014 for the juvenile study were captured while spawning in EB. (expired tags)
Trammel Netting

Las Vegas Bay
- CPUE: 0.0104 (± SE=0.0064), 4 adults Razorback Suckers (2 new, 2 recaps)
- 24 nets, primarily on either side of Las Vegas Wash

Echo Bay
- CPUE: 0.0440 (± SE=0.0129), 35 adult Razorback Suckers (13 new, 22 recaps)
- 46 nets, primarily west side of bay
- 10/18 unique recaptures were from OA

Virgin River/Muddy River inflow area
- CPUE: 0.0415 (± SE=0.0125), 28 adult Razorback Suckers (15 new, 13 recaps)
- 38 nets, primarily gravel bars 1-2 km south of inflow on eastern side

67 total captures of 61 unique individuals
Adult CPUE

Adults captured at all locations

Adult Razorback Sucker Mean Ln(CPUE + 1)

Year

Virgin River/Muddy River Inflow Area
Echo Bay
Las Vegas Bay
Colorado Inflow Area
Larval: Yearly CPUE and Spawning Locations

- Las Vegas Bay
  - Likely spawning within the wash. Many larvae found in large eddies adjacent to inflow.
- Echo Bay
  - Small area of gravel among rocky cliffs, west-side
- Virgin River/Muddy River inflow
  - Rocky bars 2 km south of river inflow
Aging and Recruitment

31 individuals aged, 5-14 years old
Population and Survival Estimates

- **Program MARK**
  - Annual apparent survival rate estimate
    - CJS life recapture model, adults >450 mm TL
    - Mark-recapture data spawning 1996-2016
    - Model average estimate 0.71 annual survival
  - Population estimate
    - 3 year time scale
    - 410 adults (327–537)
    - Extra effort from BOR and NDOW, PIT scanner data used. Several fish contacted have not been captured in >5 years.
Movement/Transition Estimate

- Program MARK, RMark
  - Multistate Model
  - Extension of CJS models
- 712 fish captures, 12 years of data (2005-2016)
- Top model allowed fish to transition and accounted for differing survival between sites. Null models performed poorly.
Discussion

- **Sonic-tagging**
  - Need to tag more wild fish during 2016-2017.

- **Recruitment**
  - Catches are majority 10-12 years old (that 2004-2006 year class)
  - Most recently, 1 fish from 2011 year class

- **MARK estimates**
  - Transition estimates: important to quantify movement and genetic exchange
  - PIT antenna use next season
    - Las Vegas Wash fish release