# Razorback Sucker *Xyrauchen texanus* Research and Monitoring in the Colorado River Inflow Area of Lake Mead and the Lower Grand Canyon, Arizona and Nevada, 2016

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BIO-WEST

American Southwest Ichthyological Researchers

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

NATIONAL PARK SERVICE

Lower Colorado River Multi-Species Conservation Program

NEVADA DEPARTMENT OF WILDLIFE

ARIZONA GAME & FISH

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

LAKE MEAD WORKGROUP

# Objectives

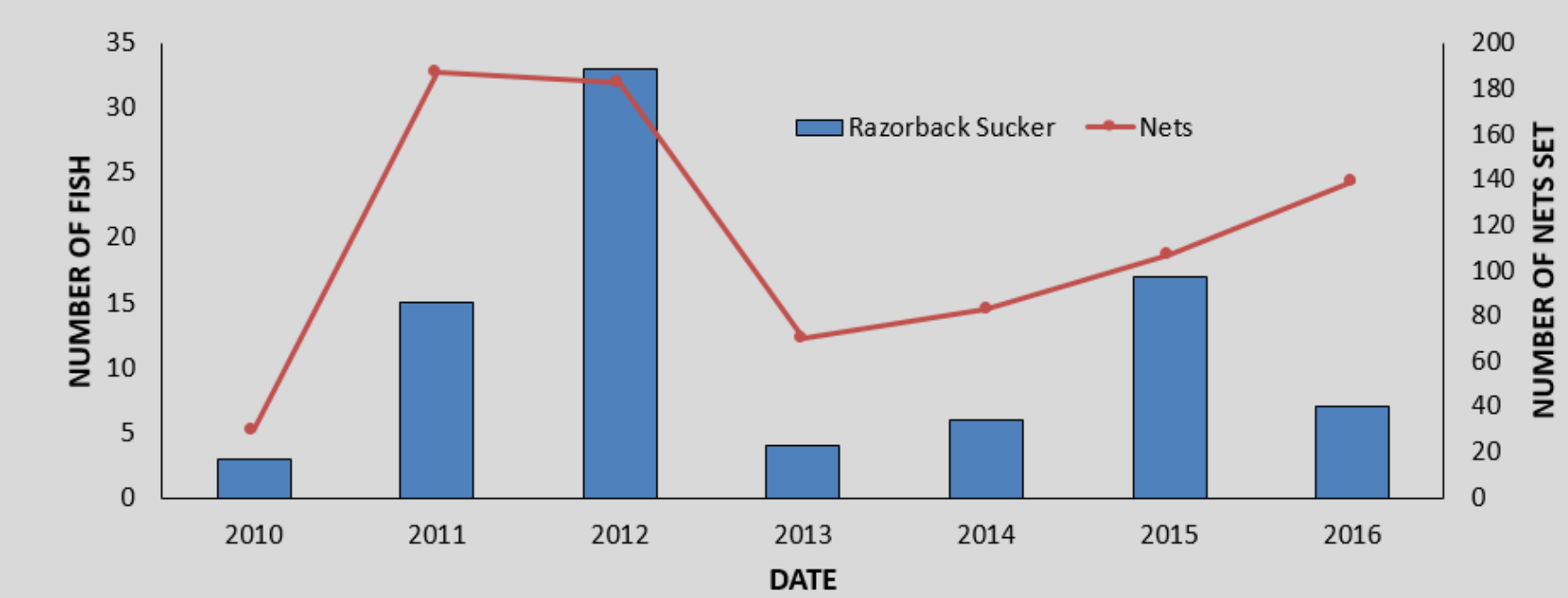
- Continue monitoring the CRI
  - Same methods since 2010
- Determine RBS presence and habitat use in GC
  - Larval and small-bodied fish community sampling within the GC
    - Assess reproduction and distribution
  - GC sonic telemetry
- Explore linkages between Lake Mead and GC

# Colorado River Inflow Area (CRI)

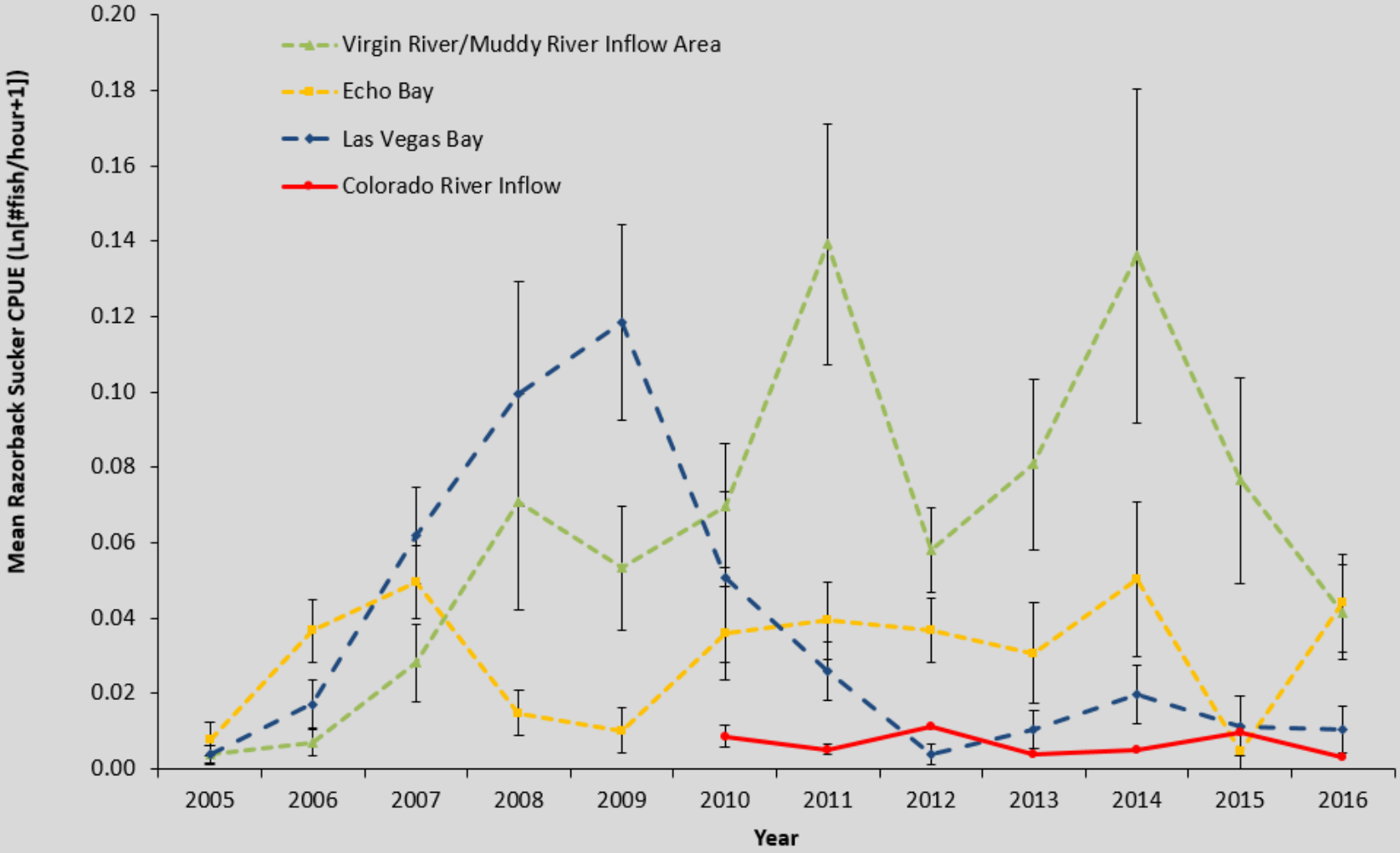
# Adult Sampling (CRI)

2016

- 7 Razorback Suckers
  - 1 new, wild
  - 1 recap from OA
- 6 Hybrid Suckers
  - 4 new, wild
- 113 Flannelmouth Suckers



# Netting Catch Rates (CRI)



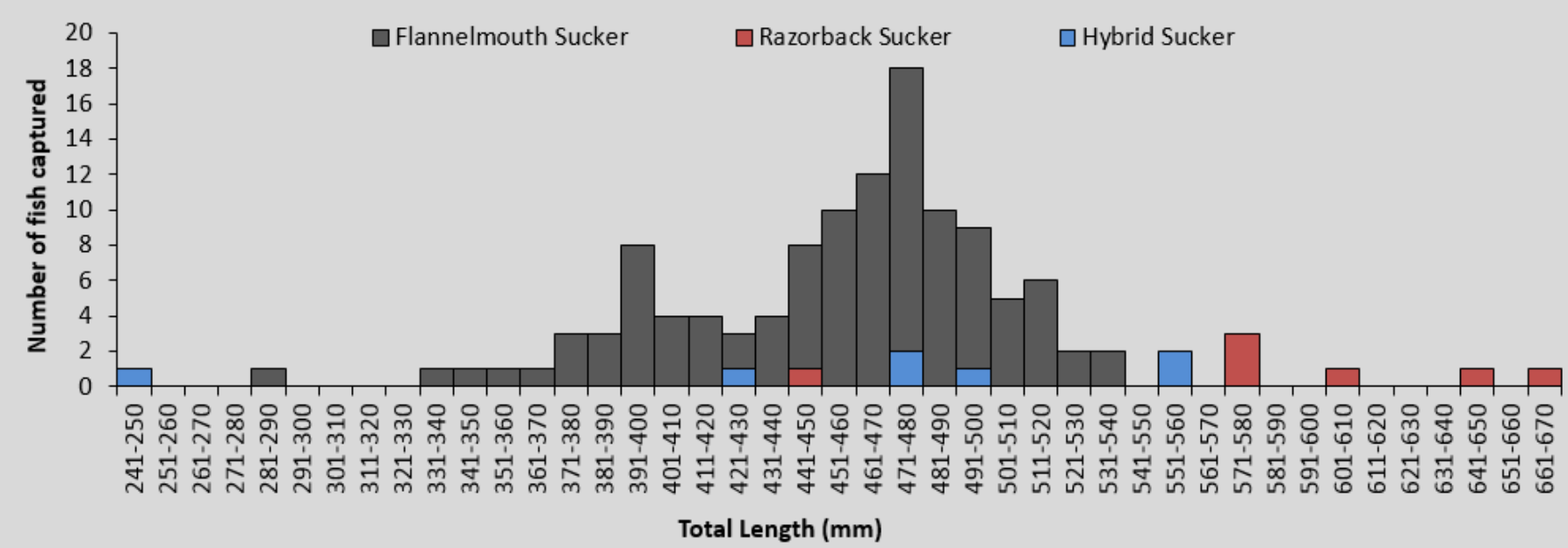
# Length and Growth (CRI)

| PIT[a] TAG NUMBER | DATE FIRST CAPTURED[a] | TL (mm)[b] | LAST DATE RECAPTURED | TL (mm) | TOTAL GROWTH (mm) | DAYS BETWEEN MEASUREMENTS | GROWTH / YEAR (mm/365 days) |
|---|---|---|---|---|---|---|---|
| **CRI-Wild Fish** | | | | | | | |
| 384.1B796EE9AA | 3/20/2012 | 630 | 3/31/2016 | 643 | 13 | 1,472 | 3.2 |
| 3D9.1C2D2683FE | 2/8/2011 | 594 | 2/22/2016 | 662 | 68 | 1,840 | 13.5 |
| **Mean Annual Growth-Wild Fish** | | | | | | | **8.4 (SE ±5.1)** |

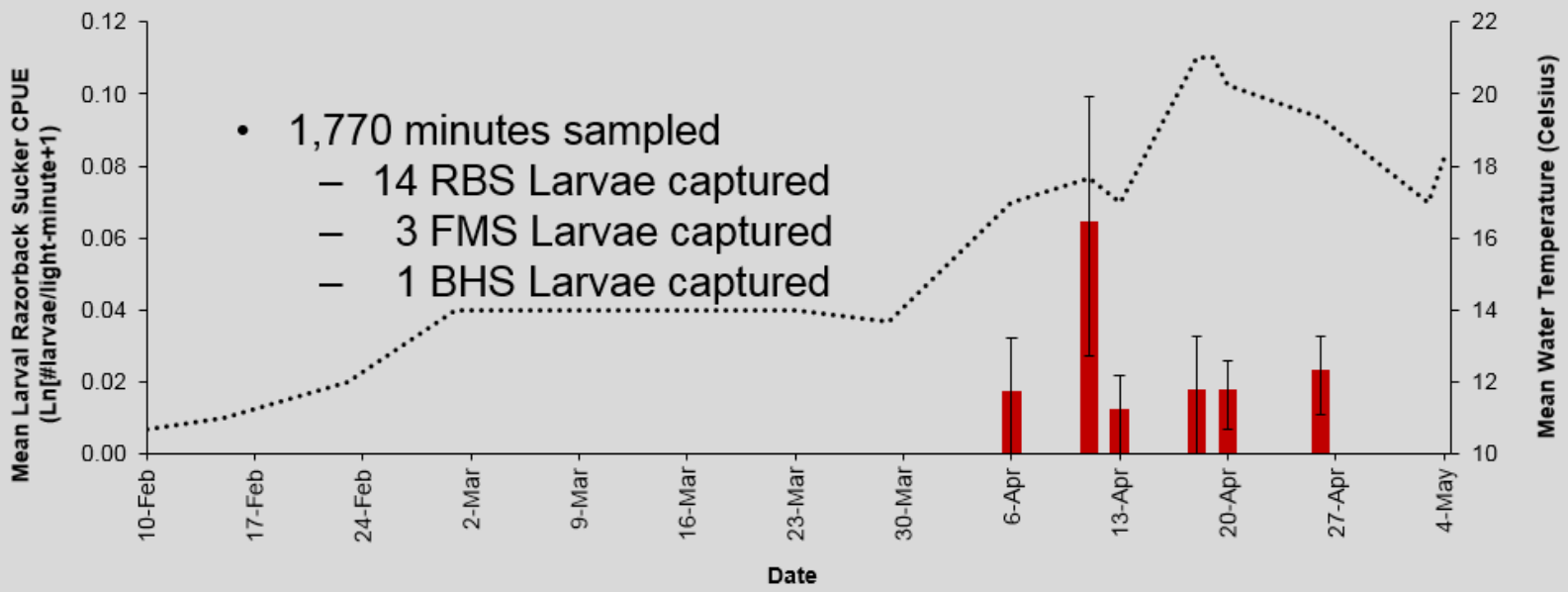
[a] Passive integrated transponder.

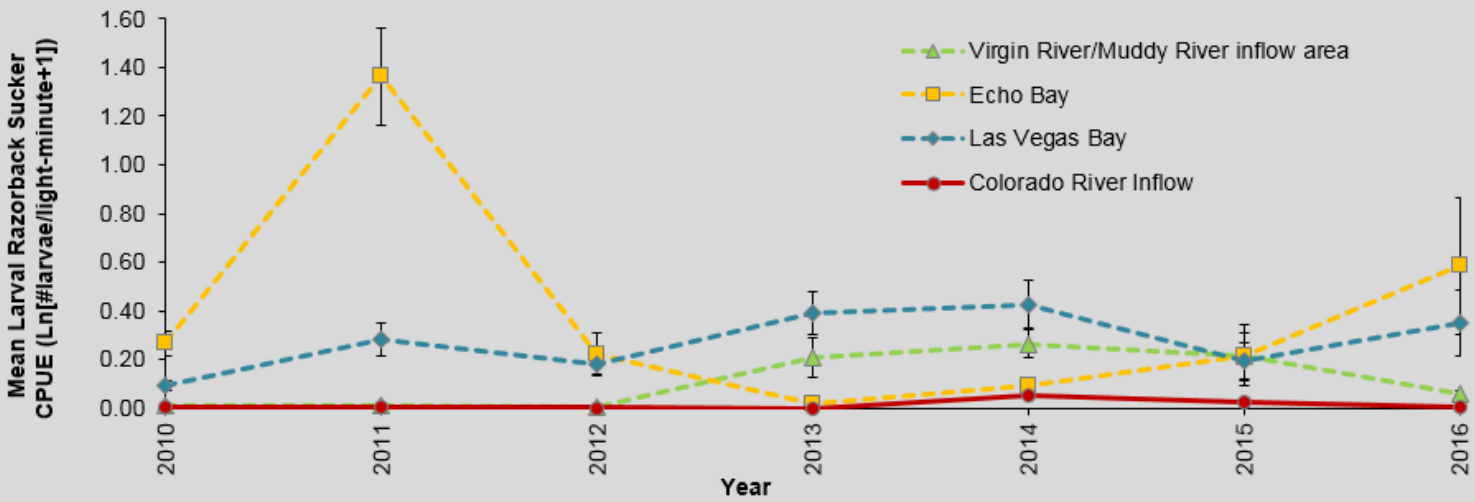
[b] The date a fish was stocked into Lake Mead, or the date a wild fish was originally captured.

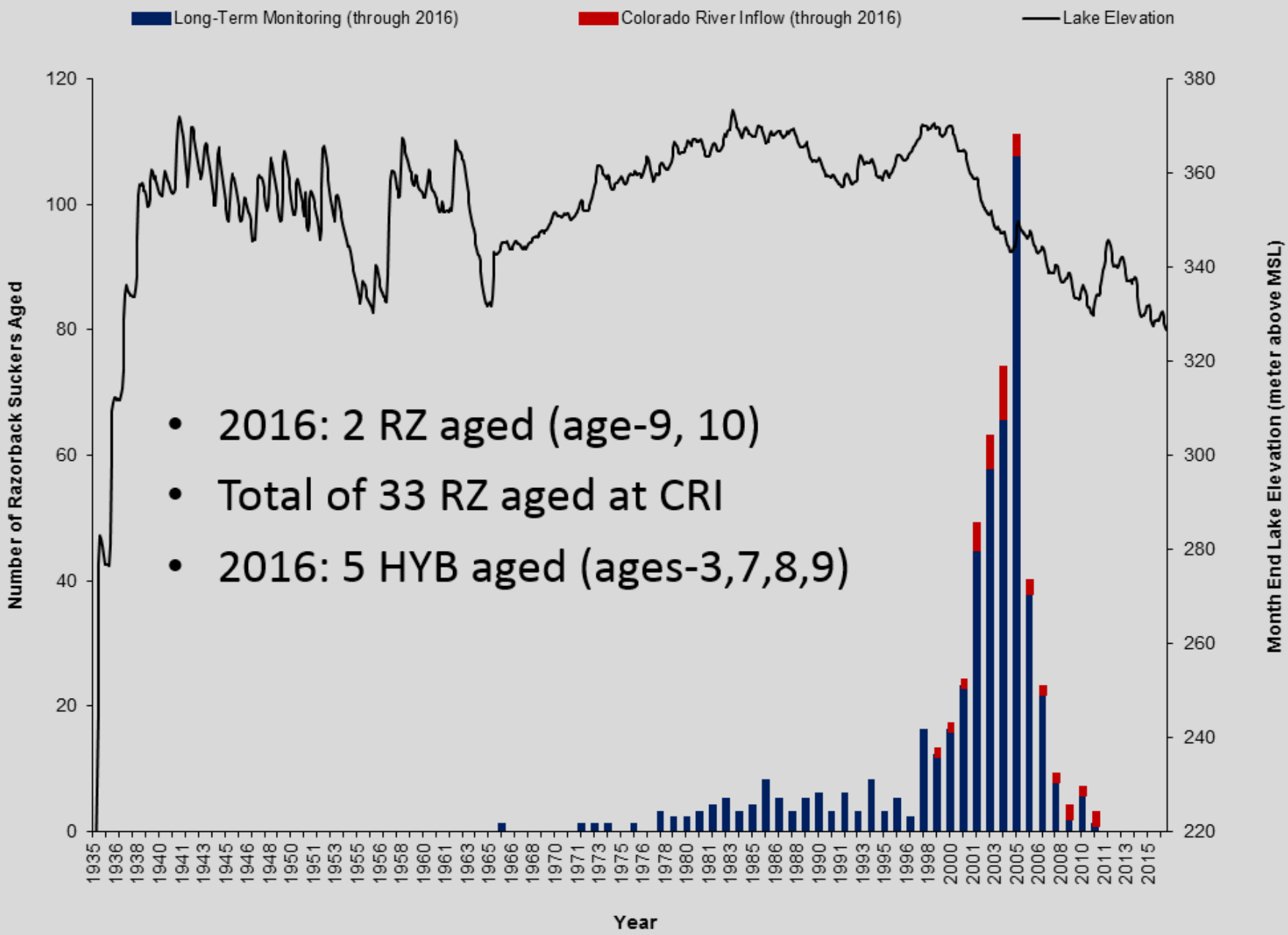
[c] Total length in millimeters.



# Larval Sampling (CRI)



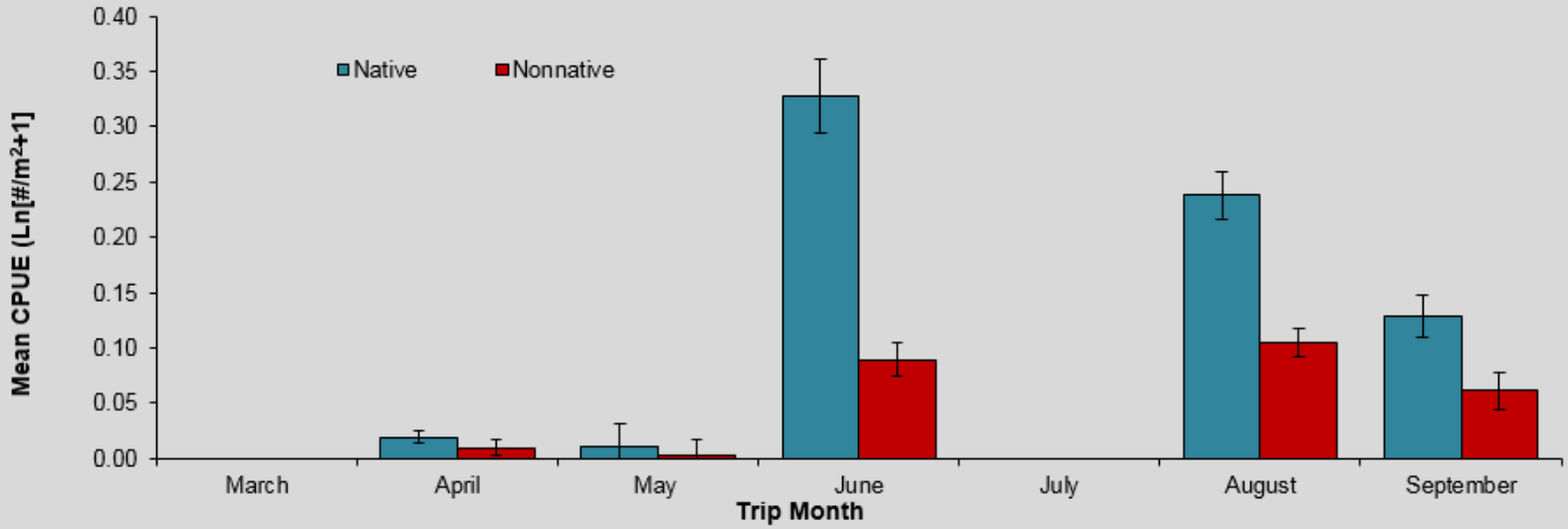

Long-Term Monitoring (through 2016)
Colorado River Inflow (through 2016)
Lake Elevation
Number of Razorback Suckers Aged
Month End Lake Elevation (meter above MSL)
Year
• 2016: 2 RZ aged (age-9, 10)
• Total of 33 RZ aged at CRI
• 2016: 5 HYB aged (ages-3,7,8,9)

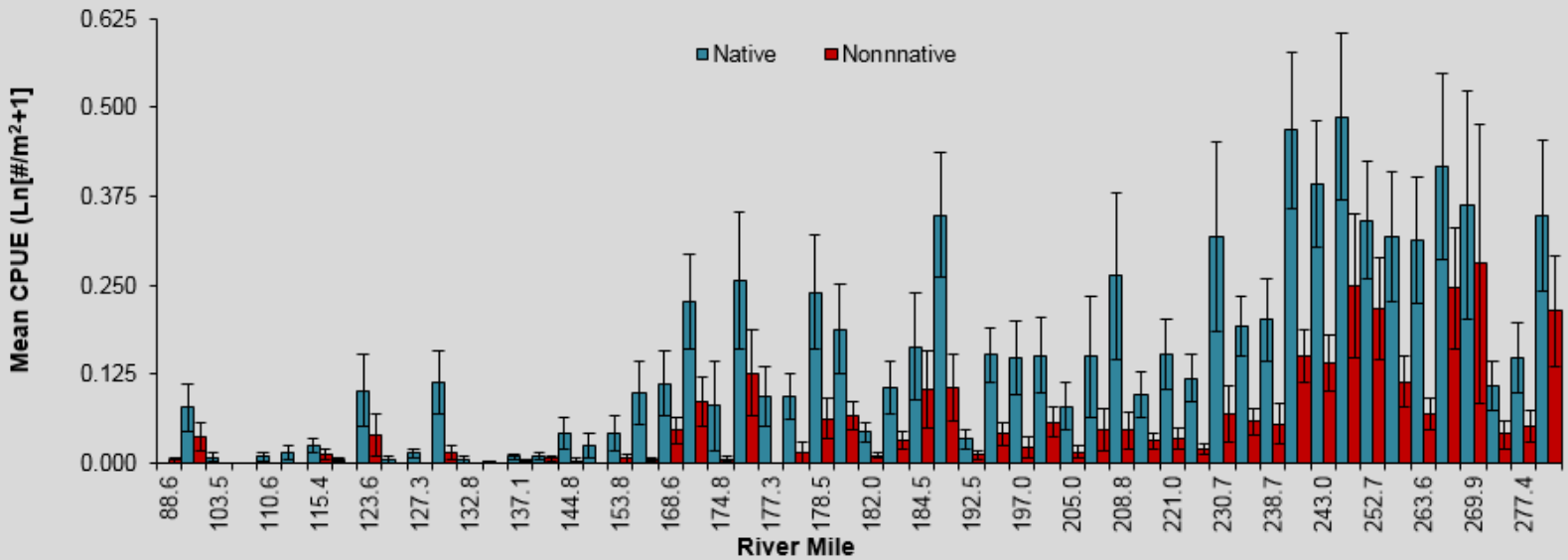
- Generalized Random Tessellation Stratified (GRTS)

- 6 Trips
  - Mar-Sept

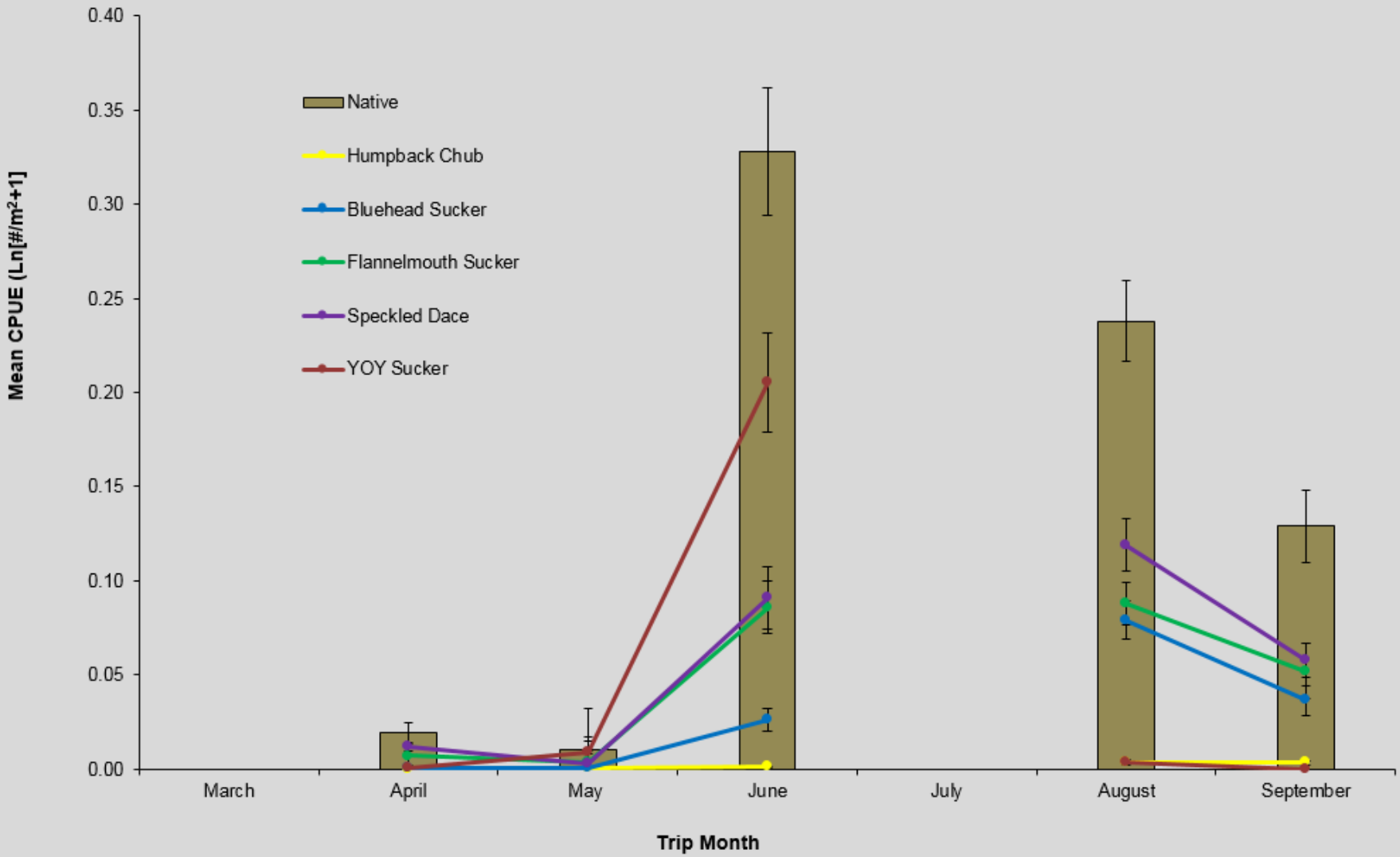
- Larval Seining
- Small-bodied Seining
- Telemetry
  - Active
  - Passive (SUR)

# GC Small-Bodied Sampling



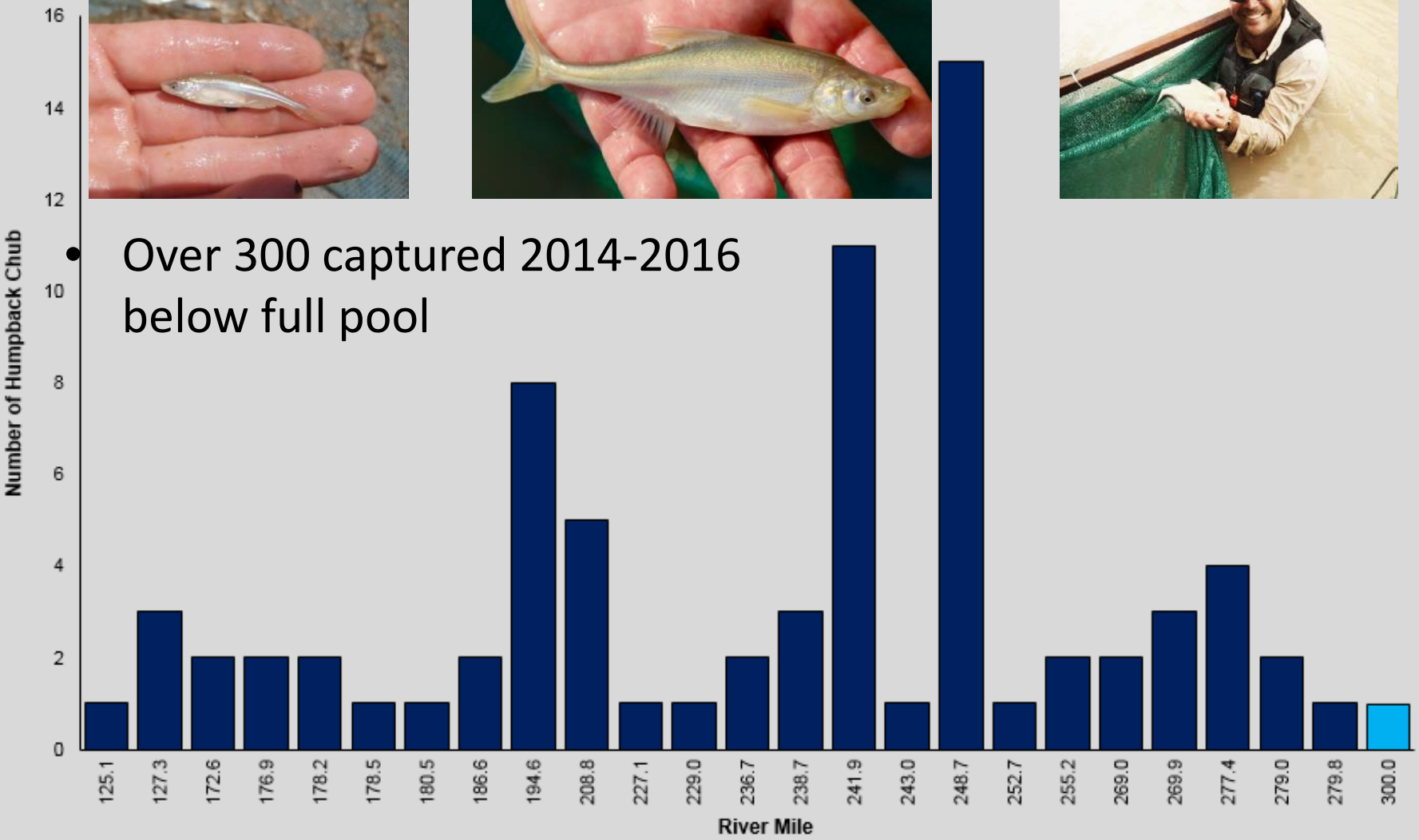



# GC Small-Bodied Sampling



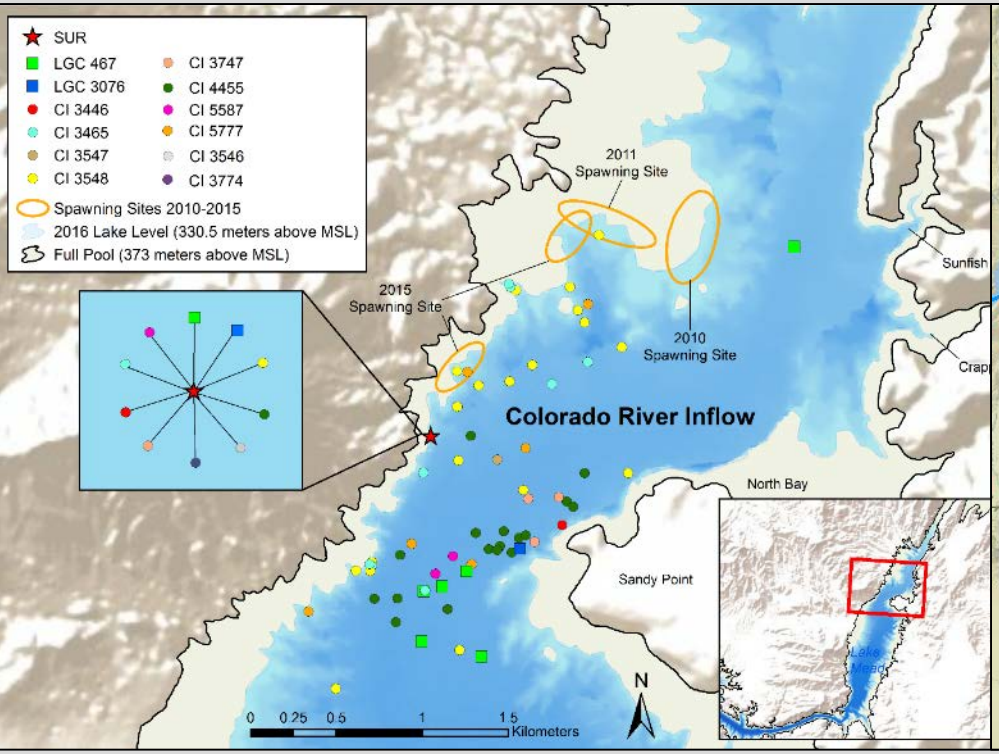
# Humpback Chub

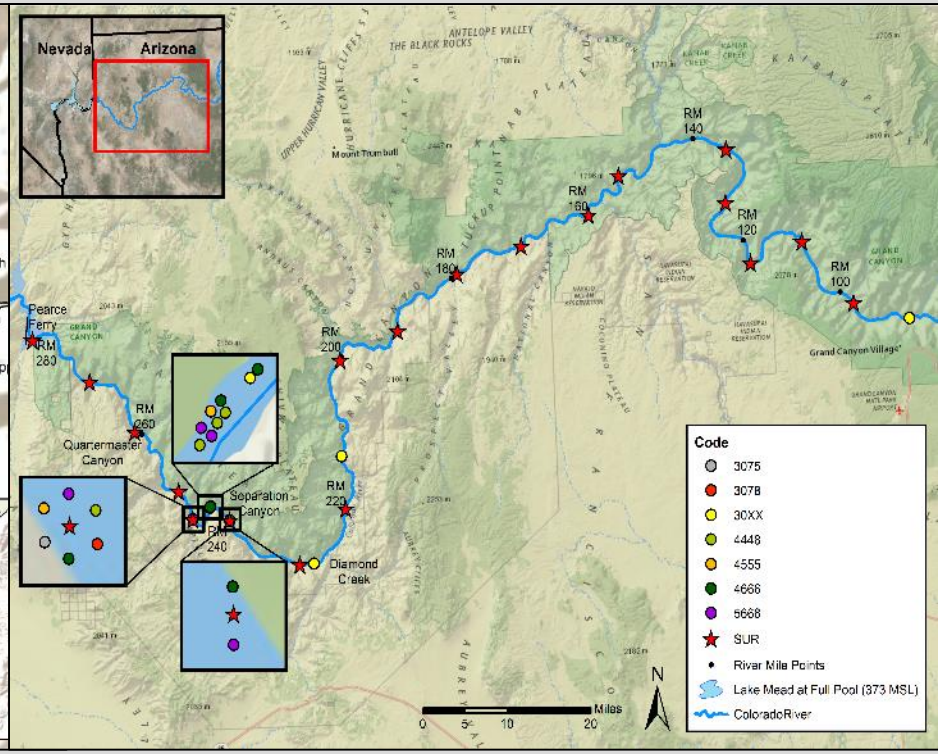
- Over 300 captured 2014-2016 below full pool



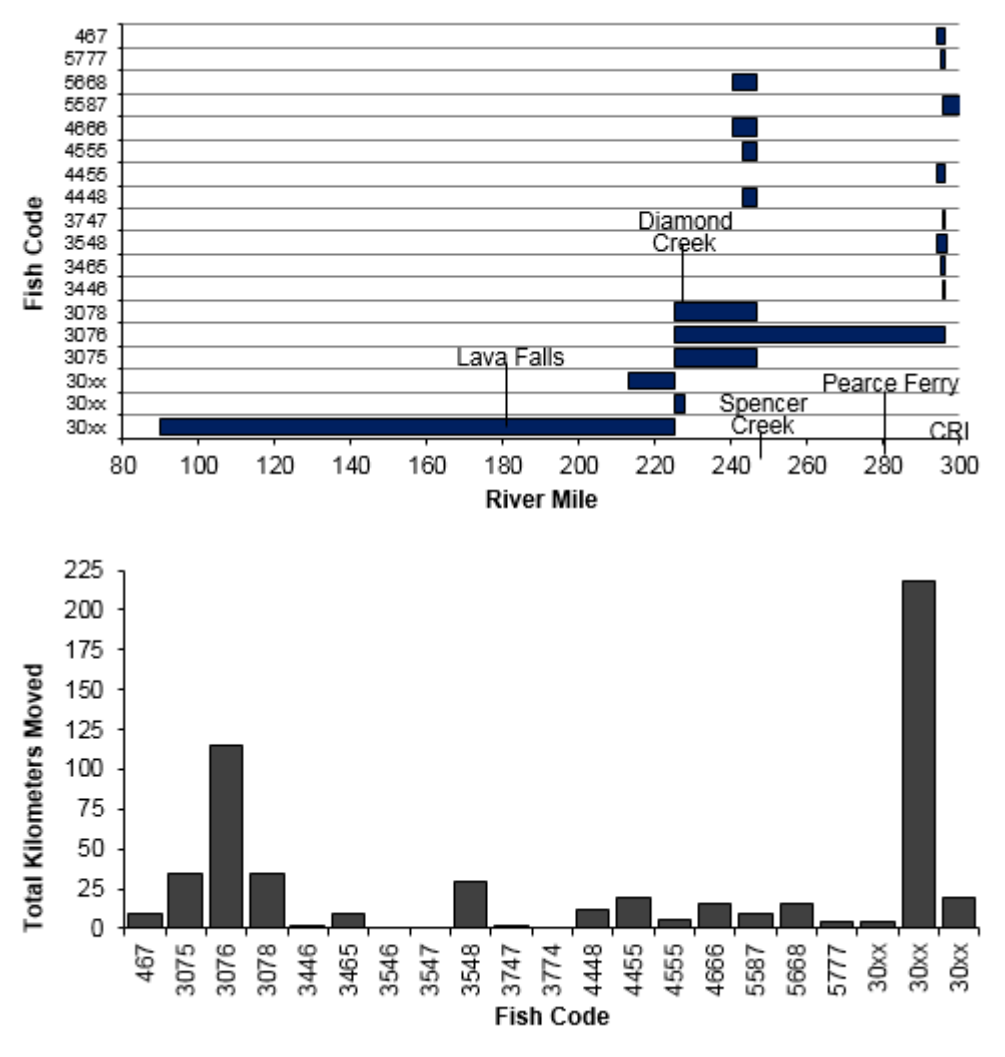
# Telemetry

- 53 released into CRI or Grand Canyon since 2010
- 18 contacted in 2016



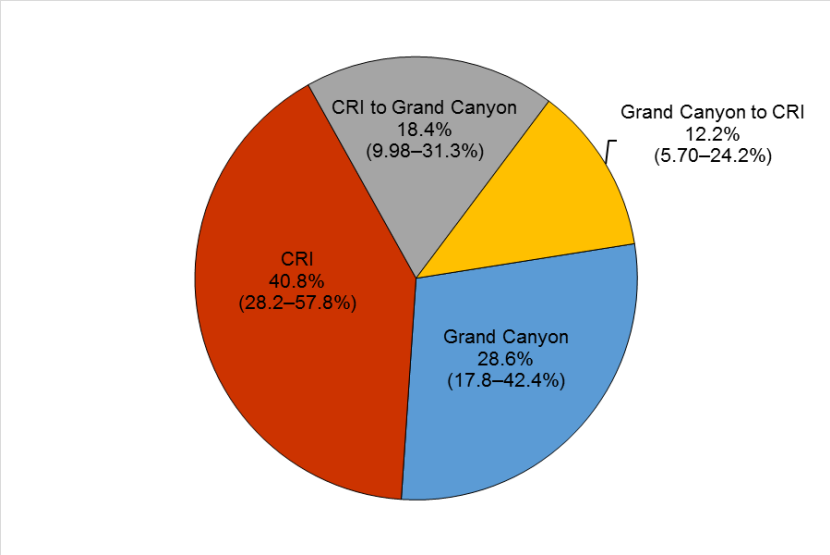



# Razorback Sucker Movement

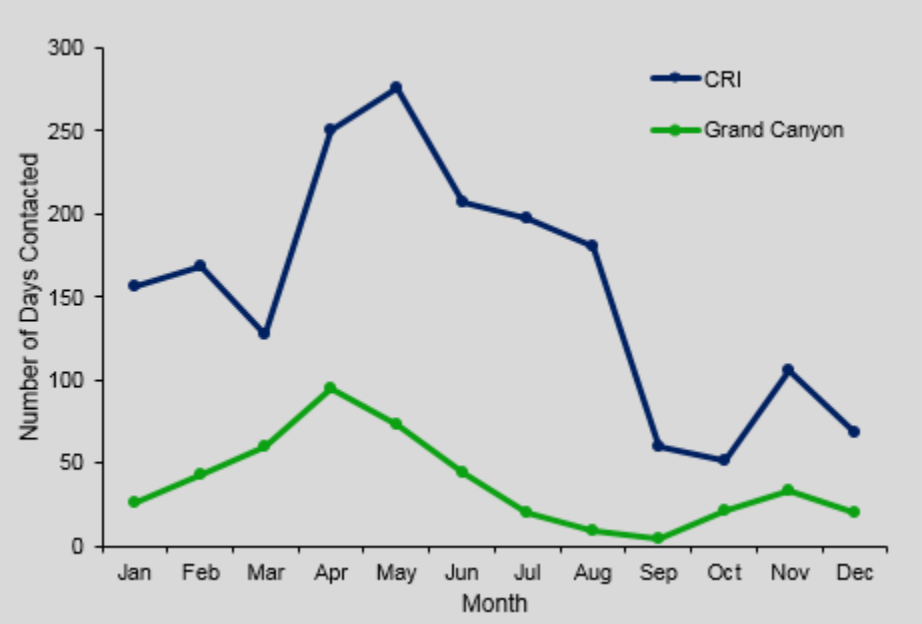



- 2016
  - Movement from Diamond Ck.
  - Activity near Spencer Ck. (RM 243)
  - Out of the river and into the CRI
- Distance
  - 0–217 RKM
  - Most <30 RKM
  - Two >100 RKM

# Movement Patterns




- Four types of movement
- 70% remain within stocking habitat
- Slightly more movement from the CRI to the Grand Canyon




- Most movement occurs during the spring and summer

# Conclusions and Considerations

- Razorback Sucker present at the CRI (7th year)
- Native fish dominate the Grand Canyon fish community
- Native fish catch increases moving downstream through Grand Canyon
- Humpback Chub are found throughout the study area in multiple size classes
- Razorback and other sucker habitat overlaps within the CRI and GC with movement between the two
- Hypothesize that both habitats cumulatively allow for Razorback Sucker recruitment

# Recommendations

1) Maintain sampling efforts at the CRI and GC
2) More frequent sampling from Pearce Ferry to the CRI during lake sampling events
3) Maintain telemetry efforts with SURs and release fish as needed, within the GC (smaller with CART tags? higher in system?)
4) Need for a comprehensive report detailing and analyzing Razorback Sucker data from Lake Mead and the GC to date.
5) Three year science panel review of Razorback Sucker research in the GC