

# RECLAMATION

*Managing Water in the West*

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

## 2014 ANNUAL REPORT



**Colorado River Aquatic Biologists  
7 – 8 January 2015**

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Conservation Program)

**December 2014**



***American Southwest  
Ichthyological Researchers***



# Larval fishes of the Lower Grand Canyon 2014



# Objectives

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





## Larval Fish Sampling

Small seine (1 m x 1 m)

Shallow habitats

Low-velocity habitats

## Larval Fish Sampling

Most specimens < 20 mm

Only age-0 fish included

age-0+ = small-bodied



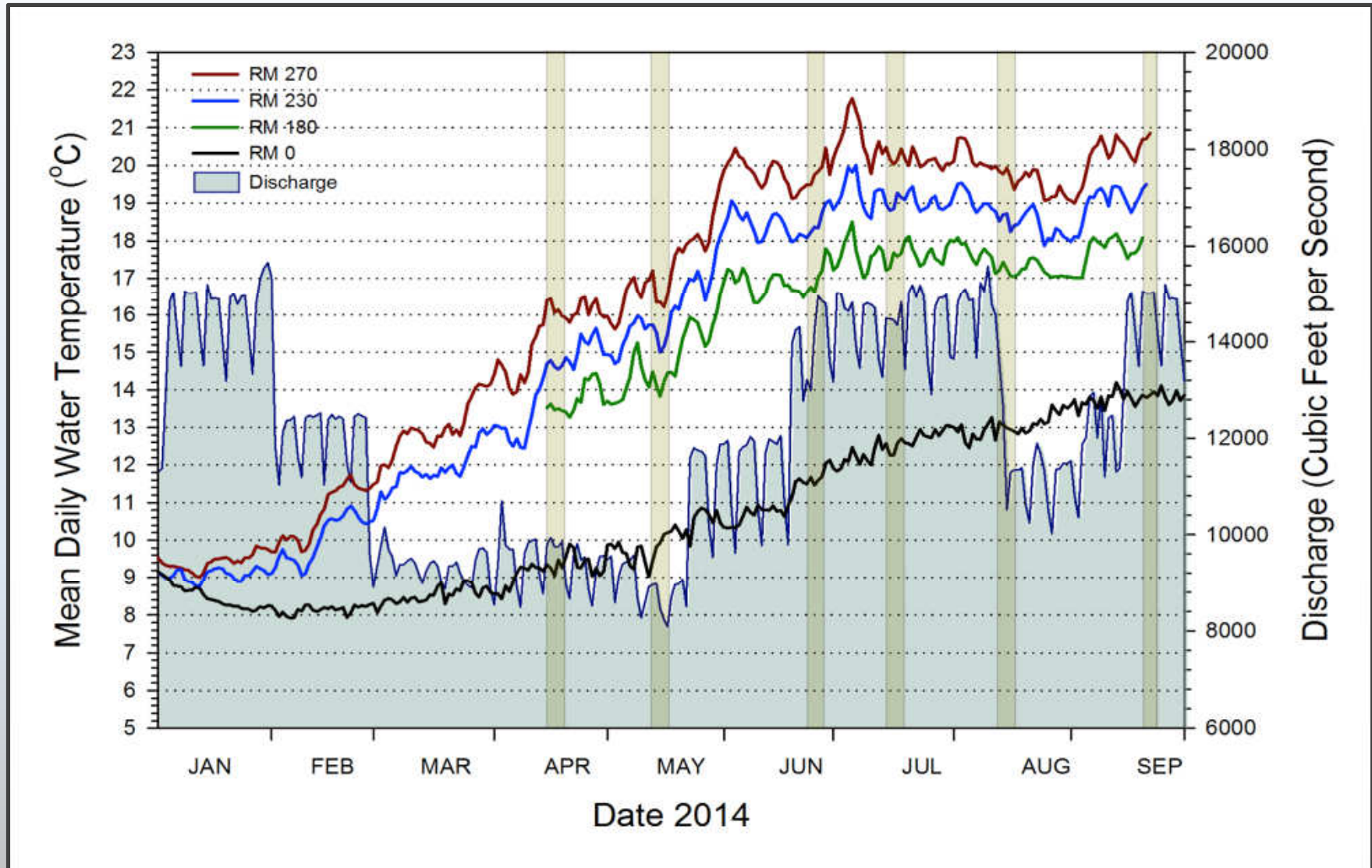
# Generalized Pattern of spawning



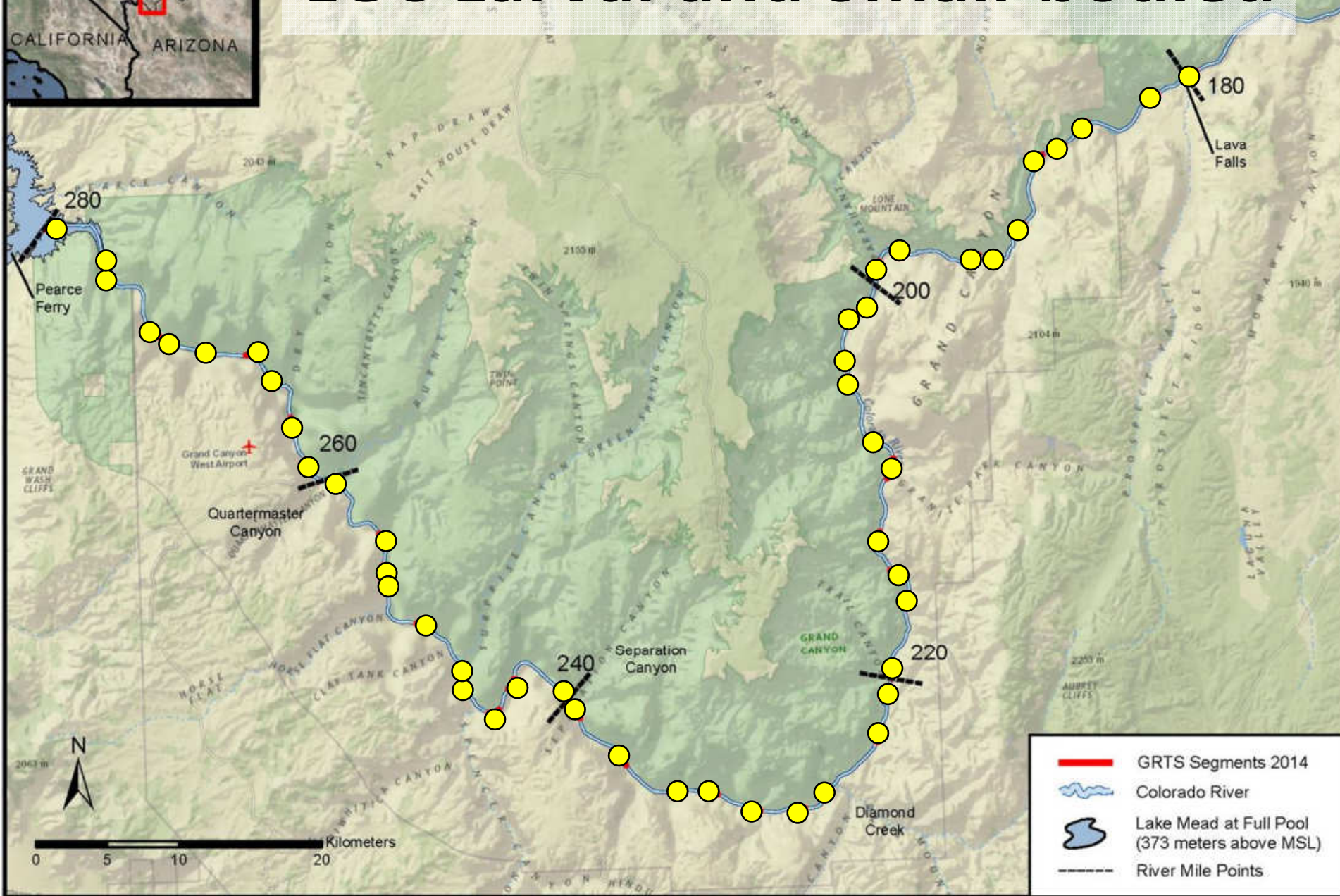
Catostomids – April, May, June

Cyprinids – June, July, August

# Discharge & Water Temperature

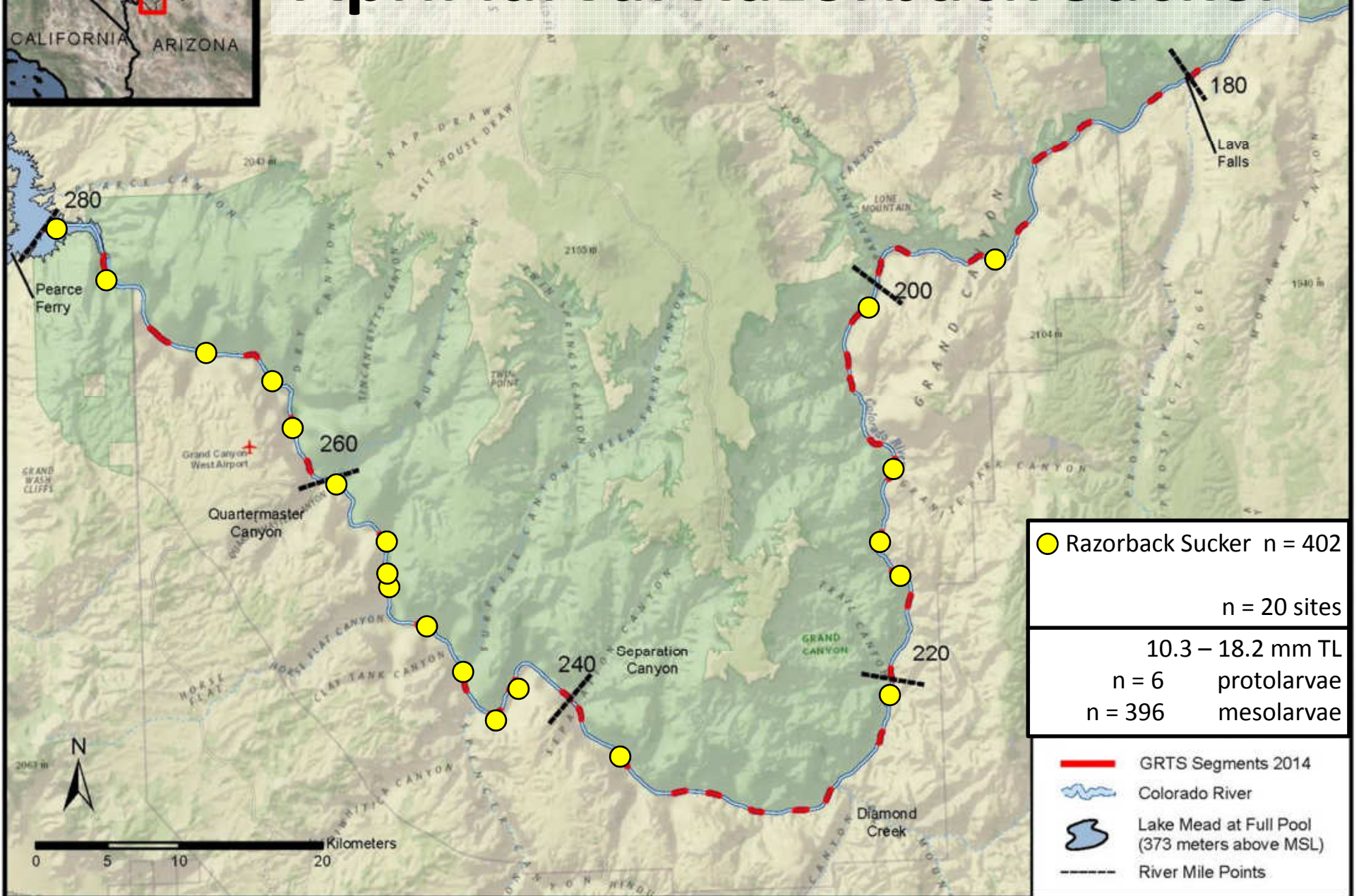


# LGC Larval and Small-bodied

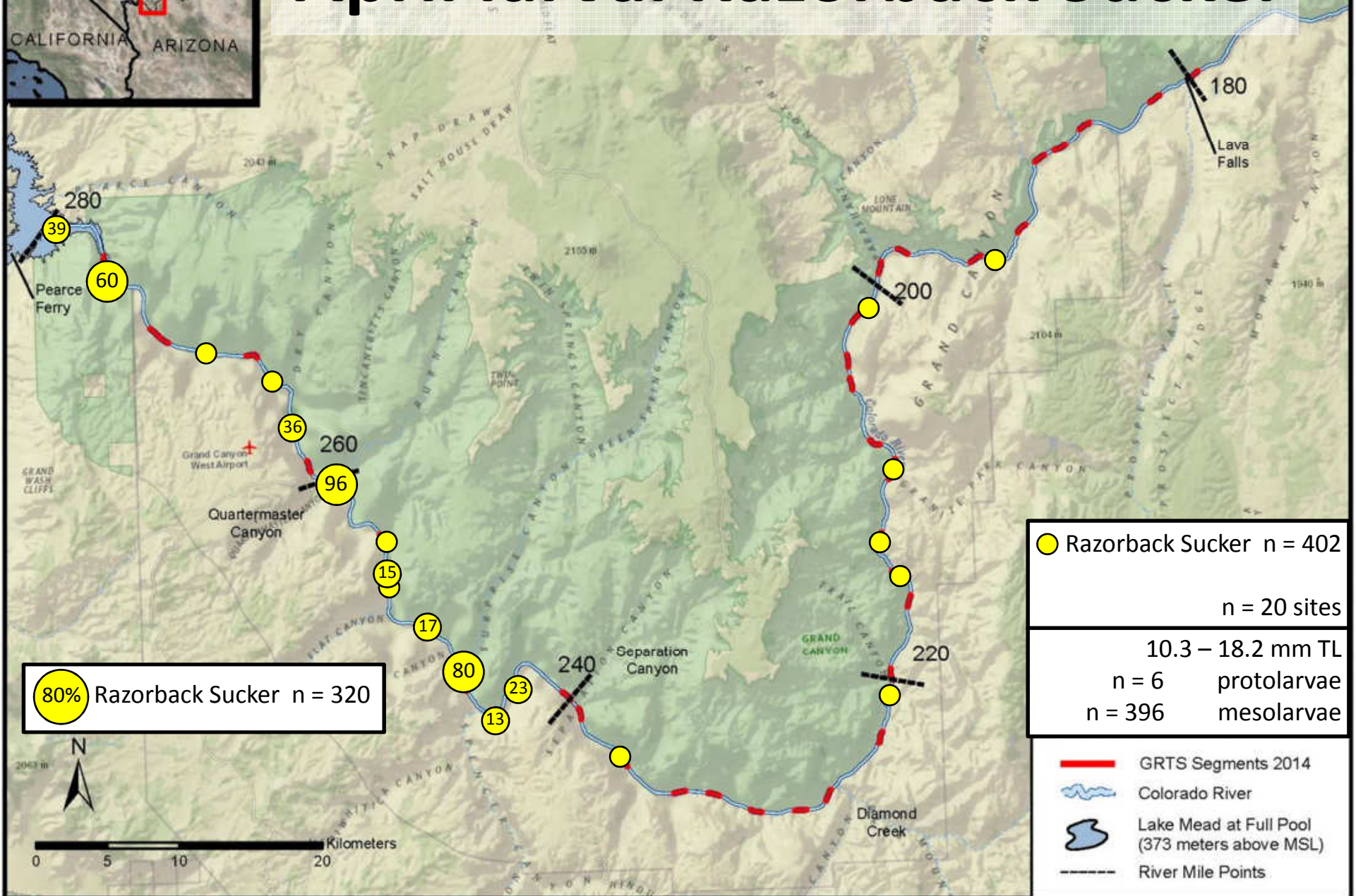




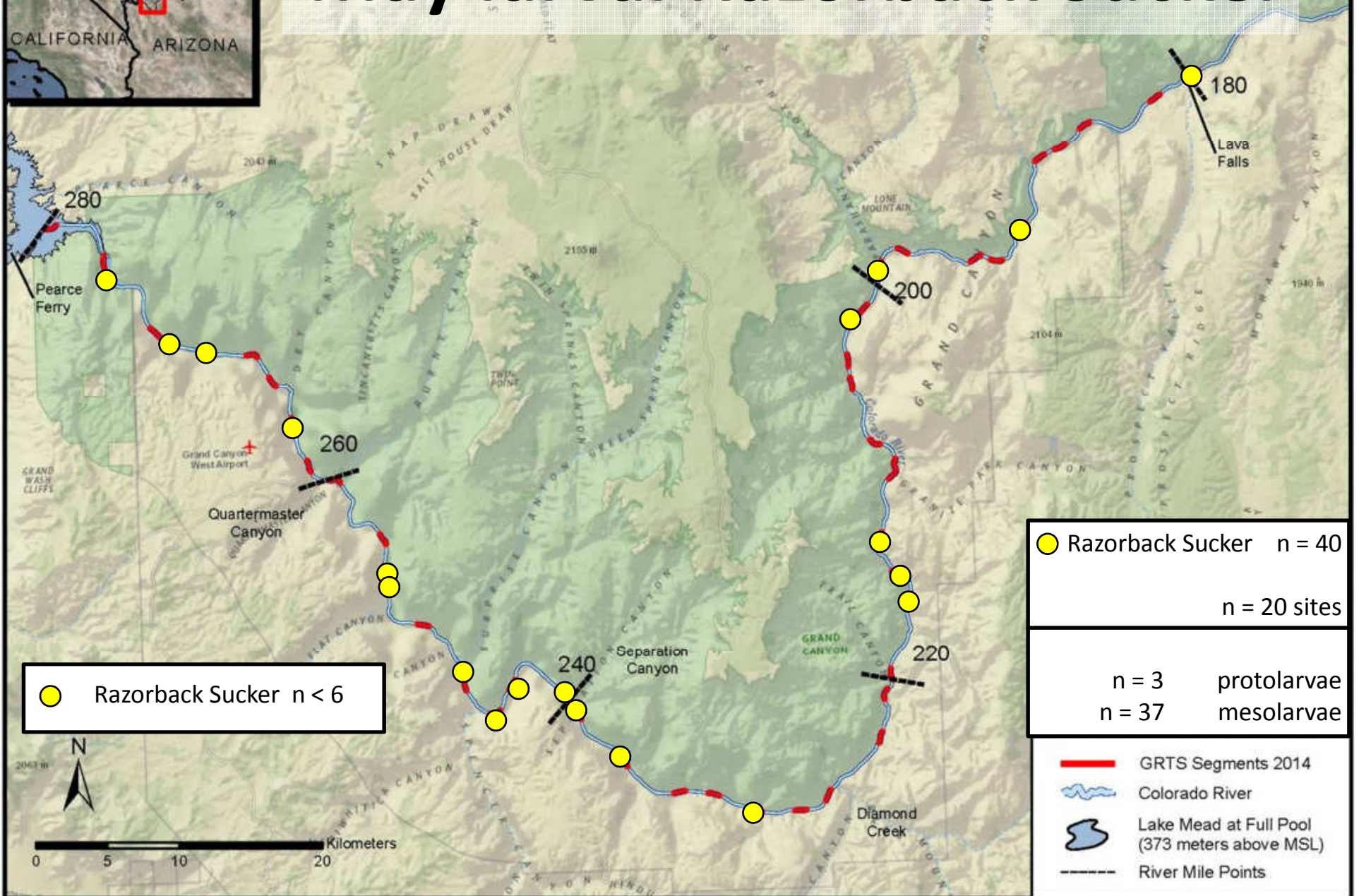
# April larval Razorback Sucker



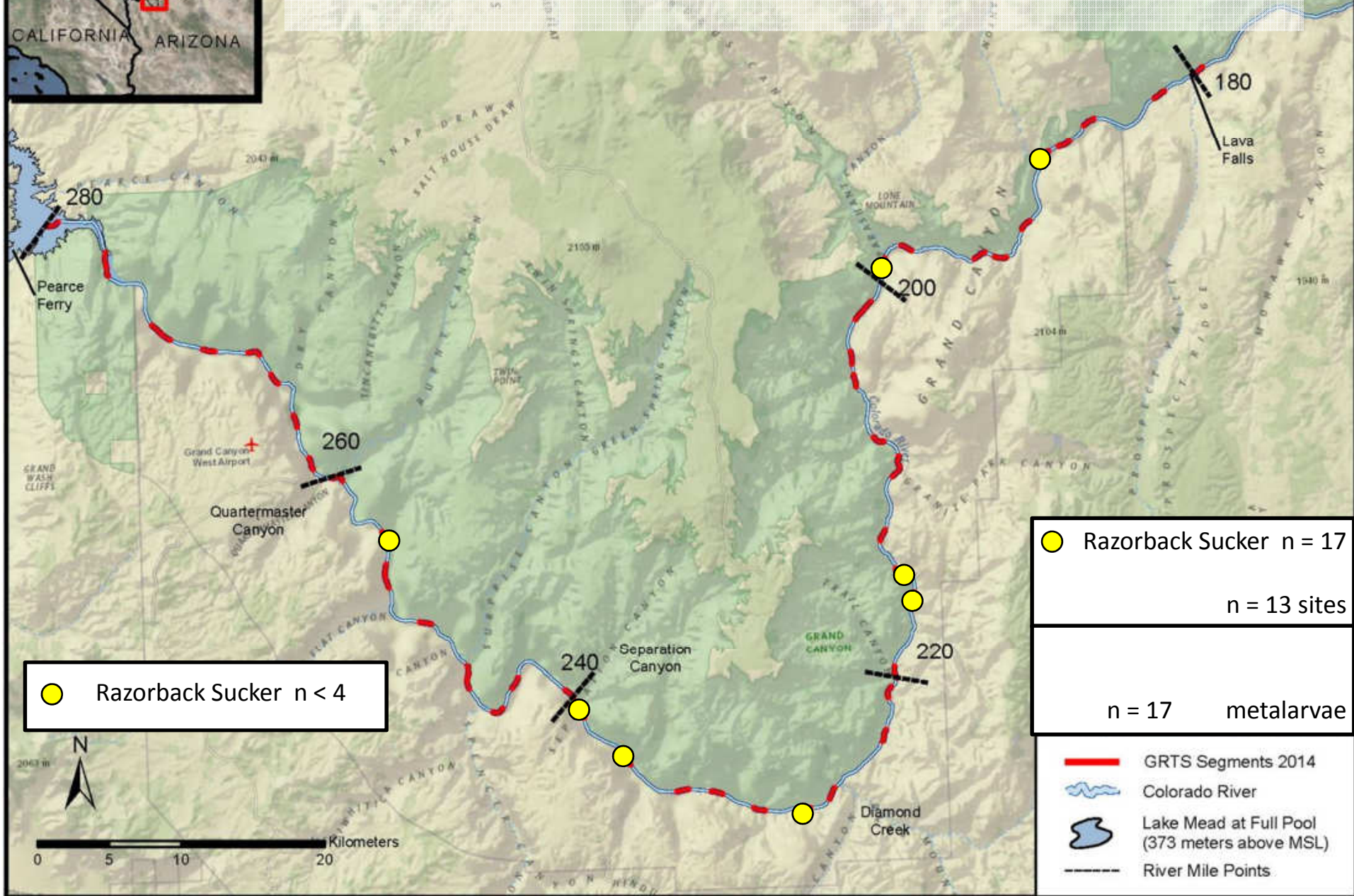
# April larval Razorback Sucker



# May larval Razorback Sucker



# June larval Razorback Sucker

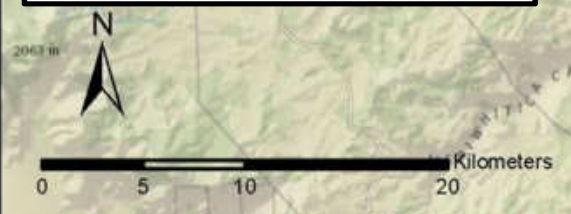


● Razorback Sucker n < 4

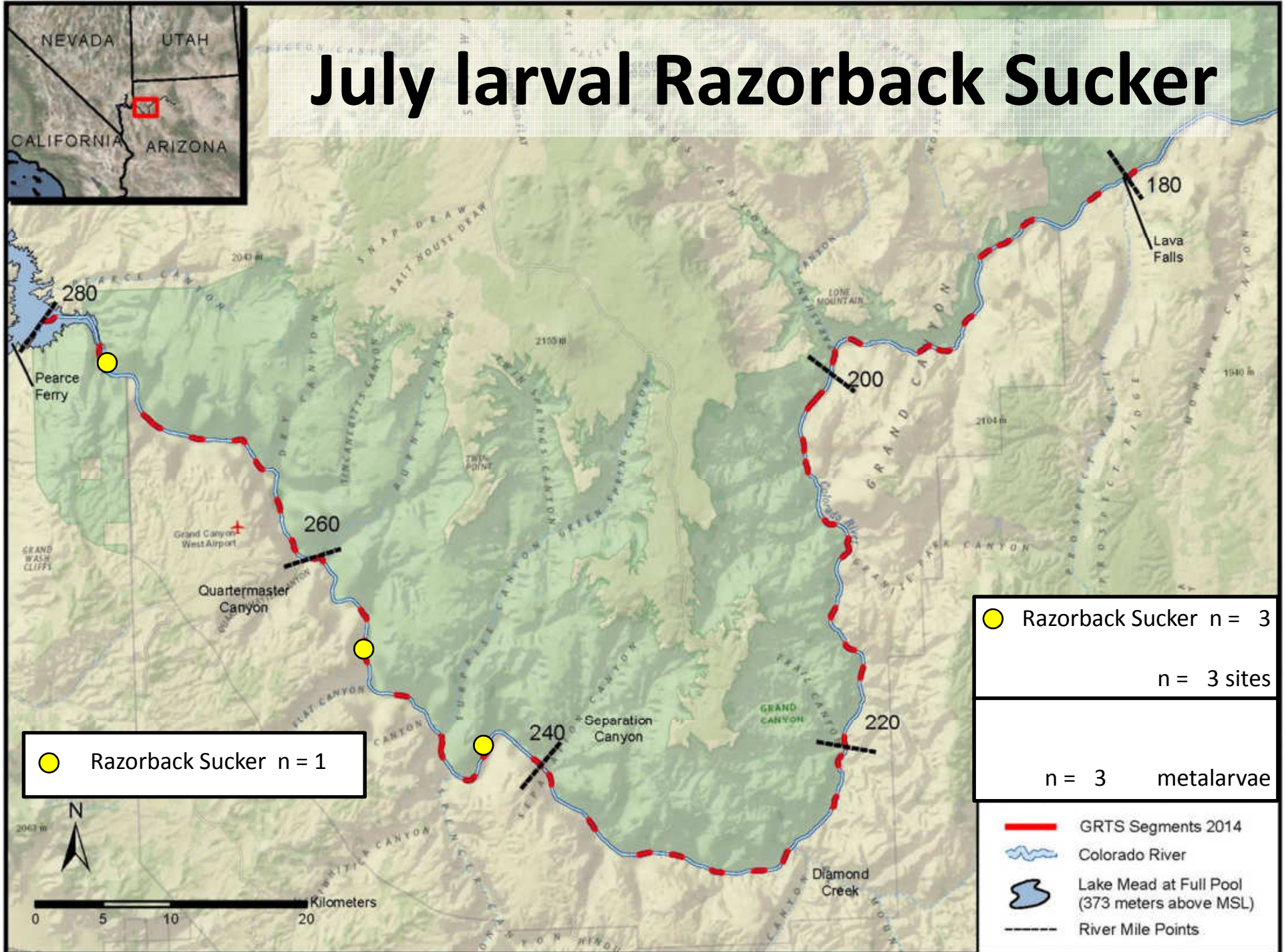
● Razorback Sucker n = 17  
n = 13 sites

n = 17 metalarvae

- - - GRTS Segments 2014
- Colorado River
- Lake Mead at Full Pool (373 meters above MSL)
- - - River Mile Points

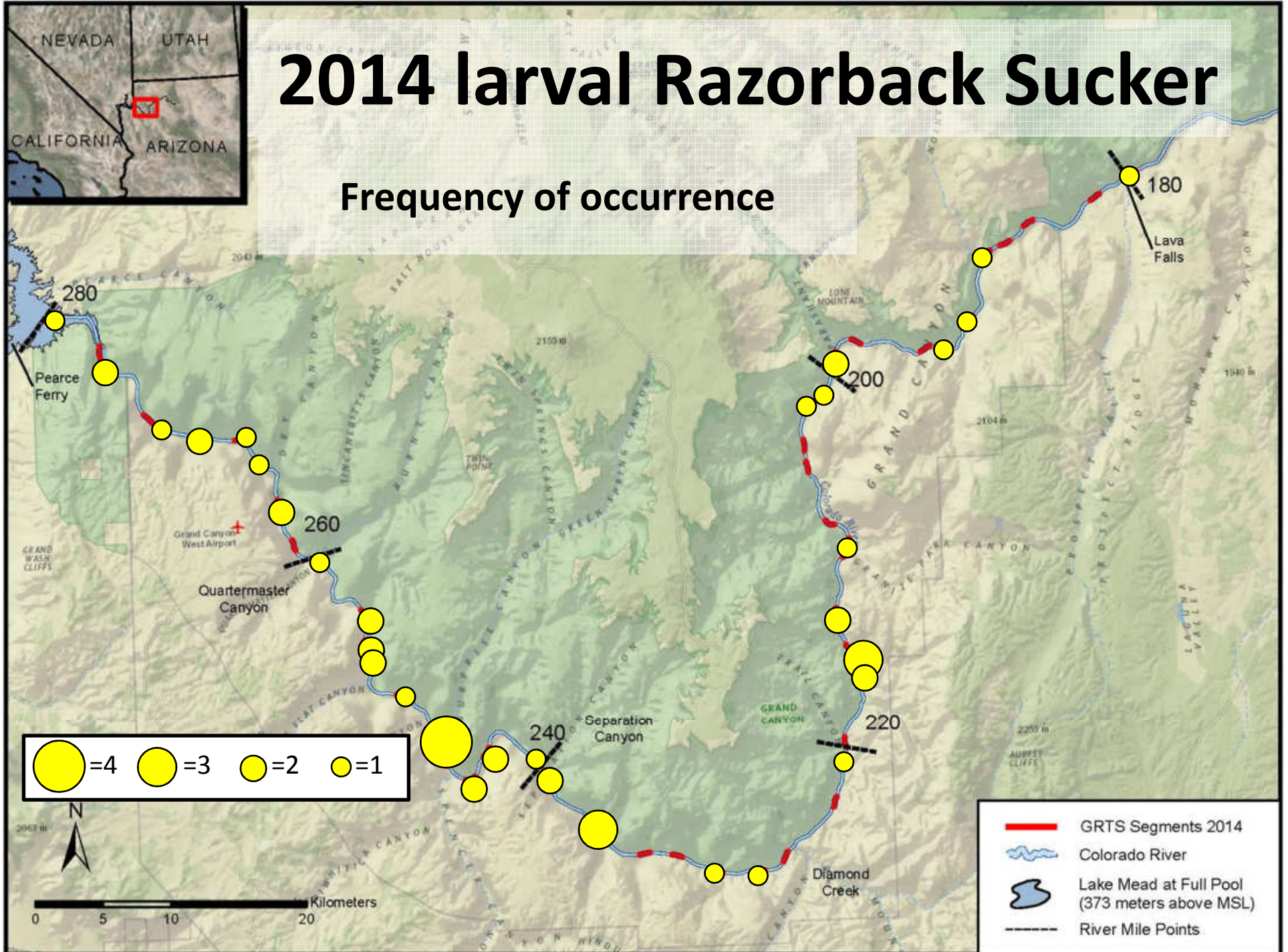


# July larval Razorback Sucker

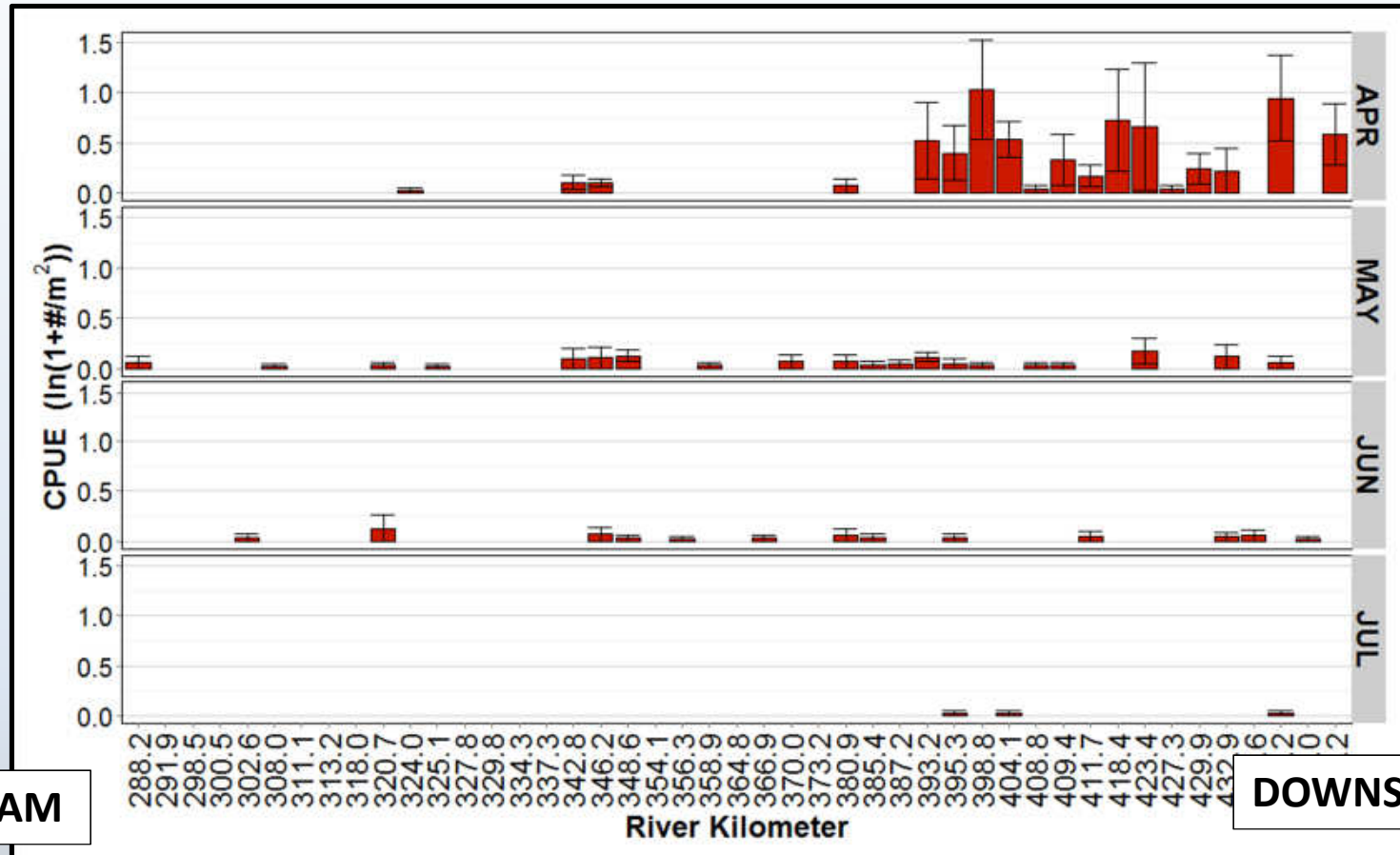


# 2014 larval Razorback Sucker

## Frequency of occurrence



# Razorback Sucker CPUE

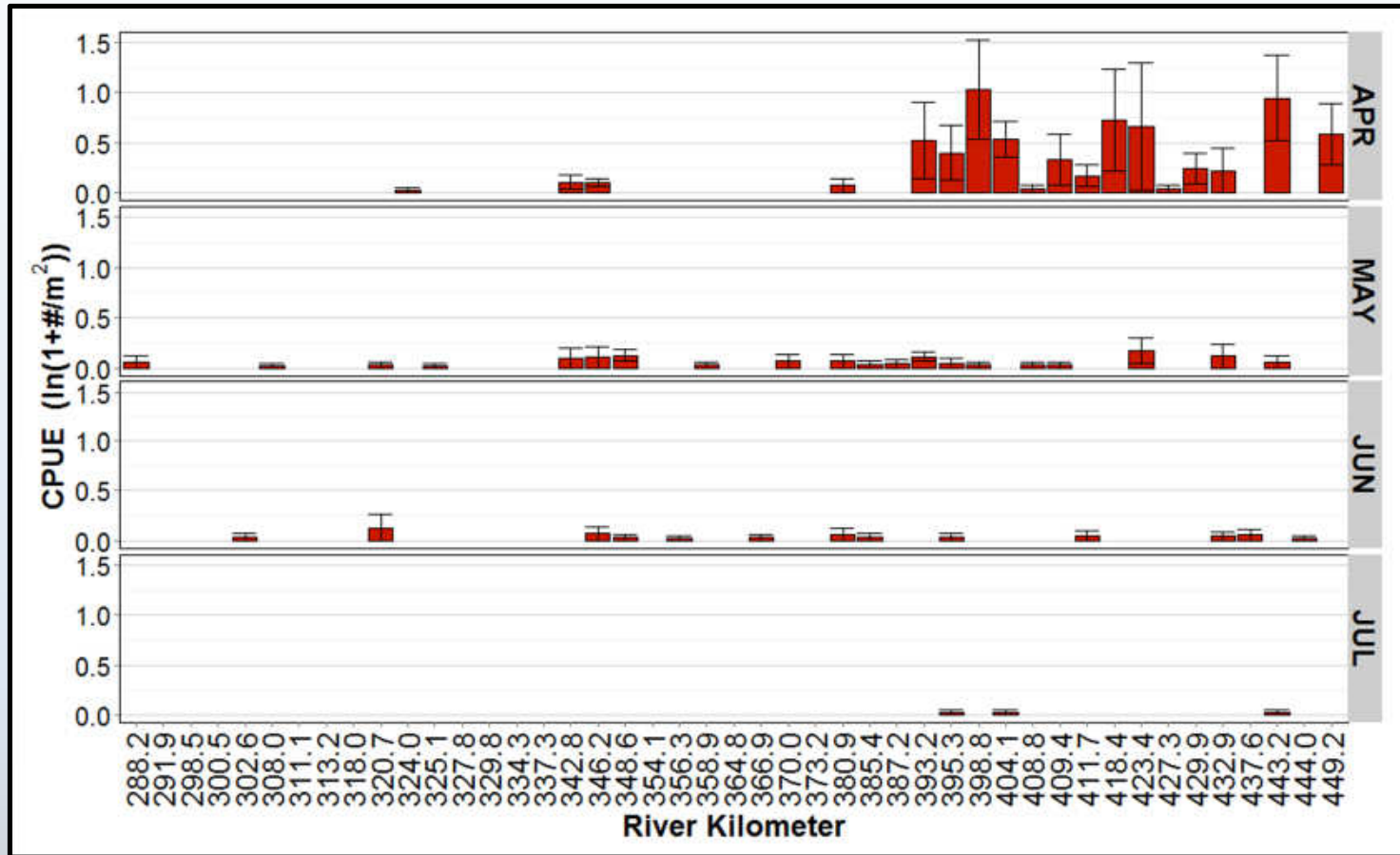


UPSTREAM

DOWNSTREAM

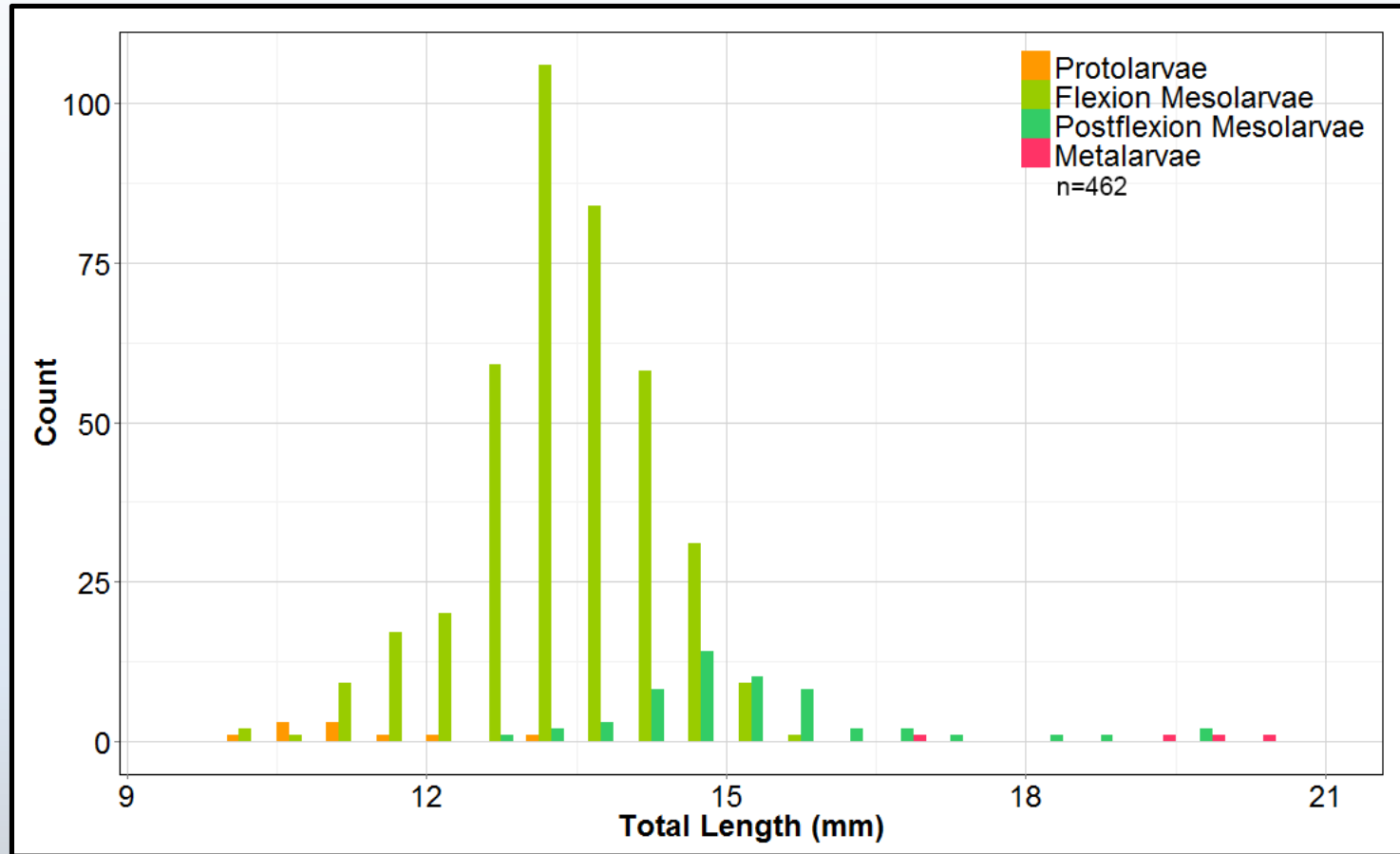


# Razorback Sucker CPUE





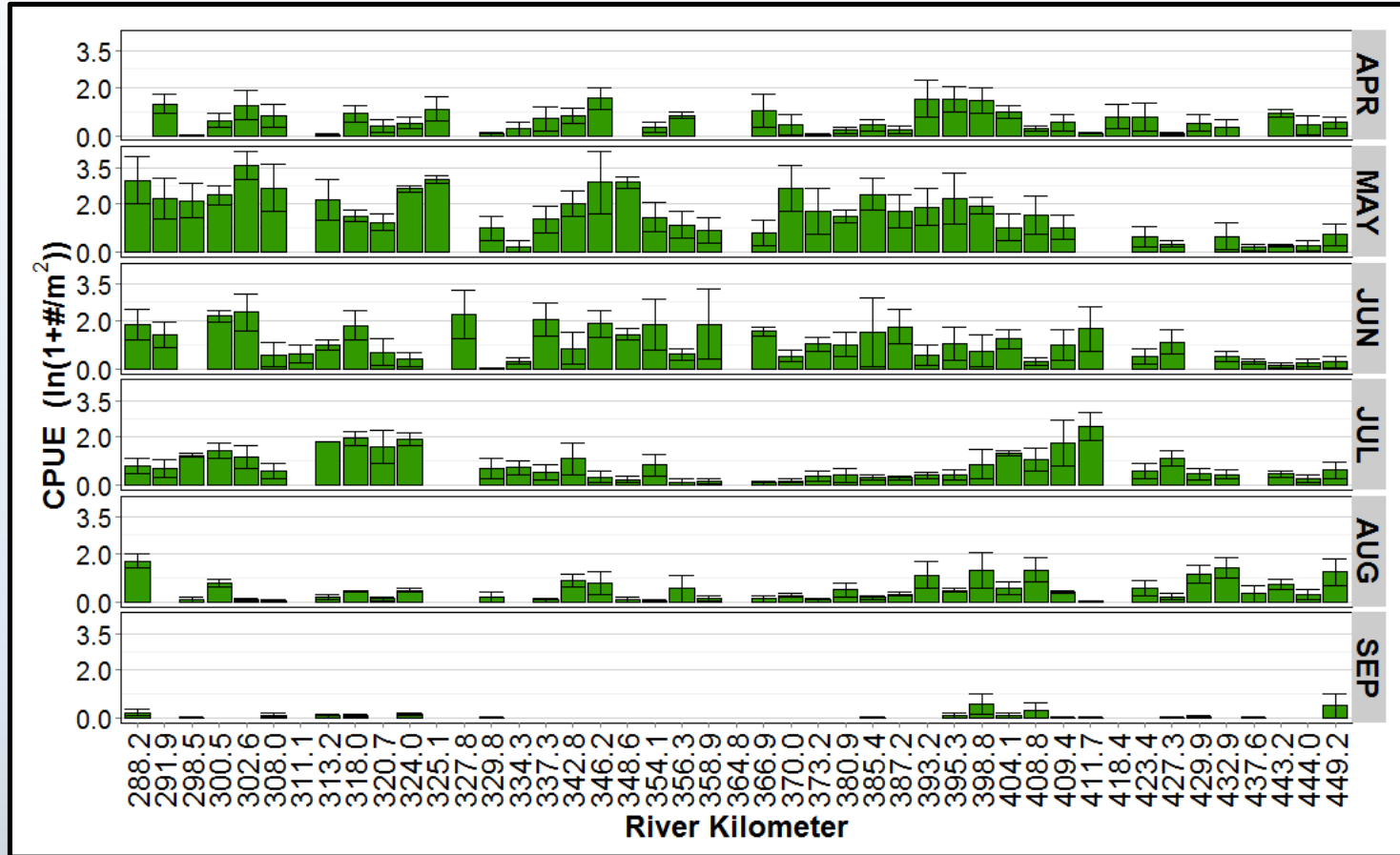
# Razorback Sucker Lengths



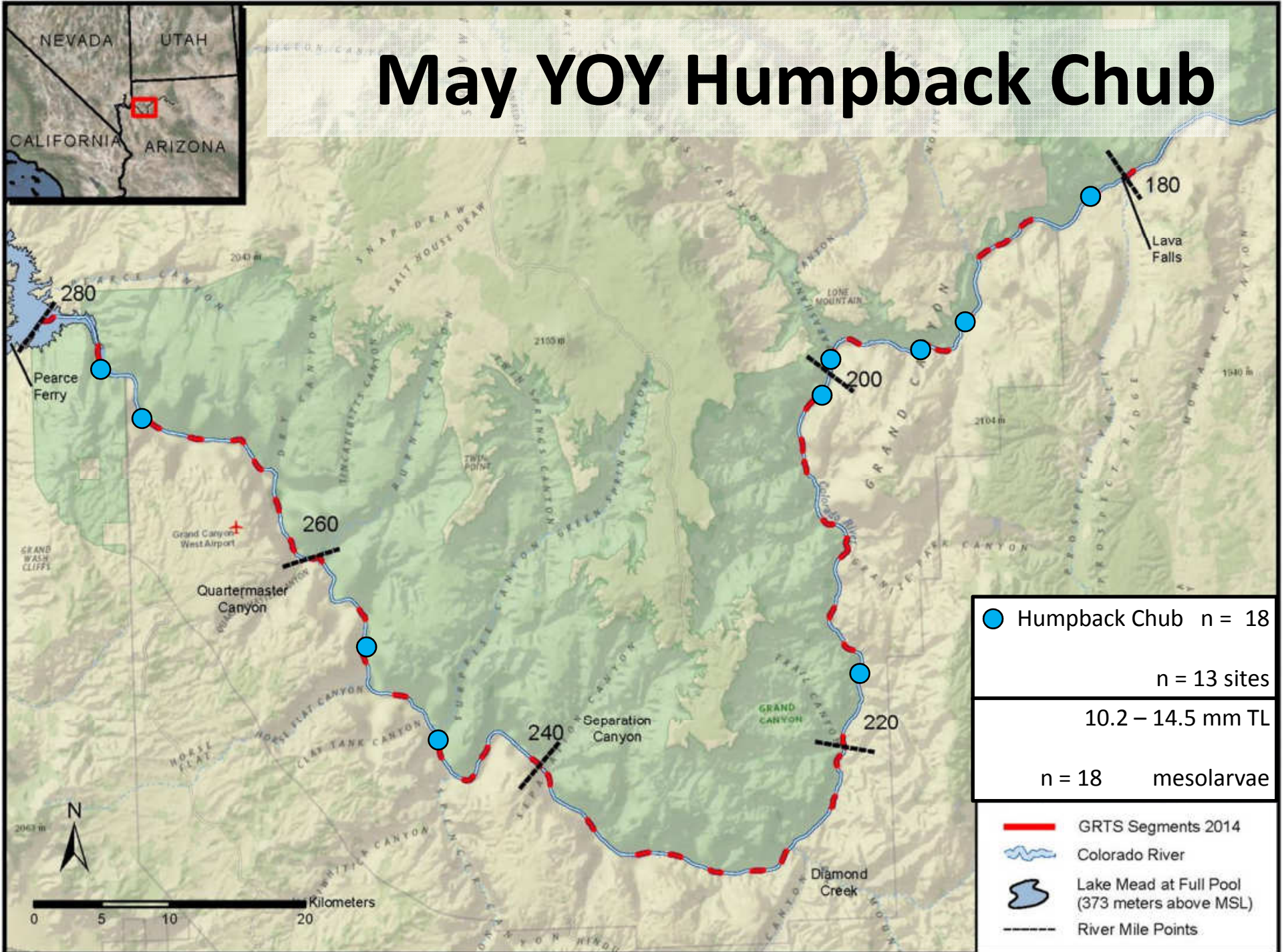
# Bluehead Sucker CPUE



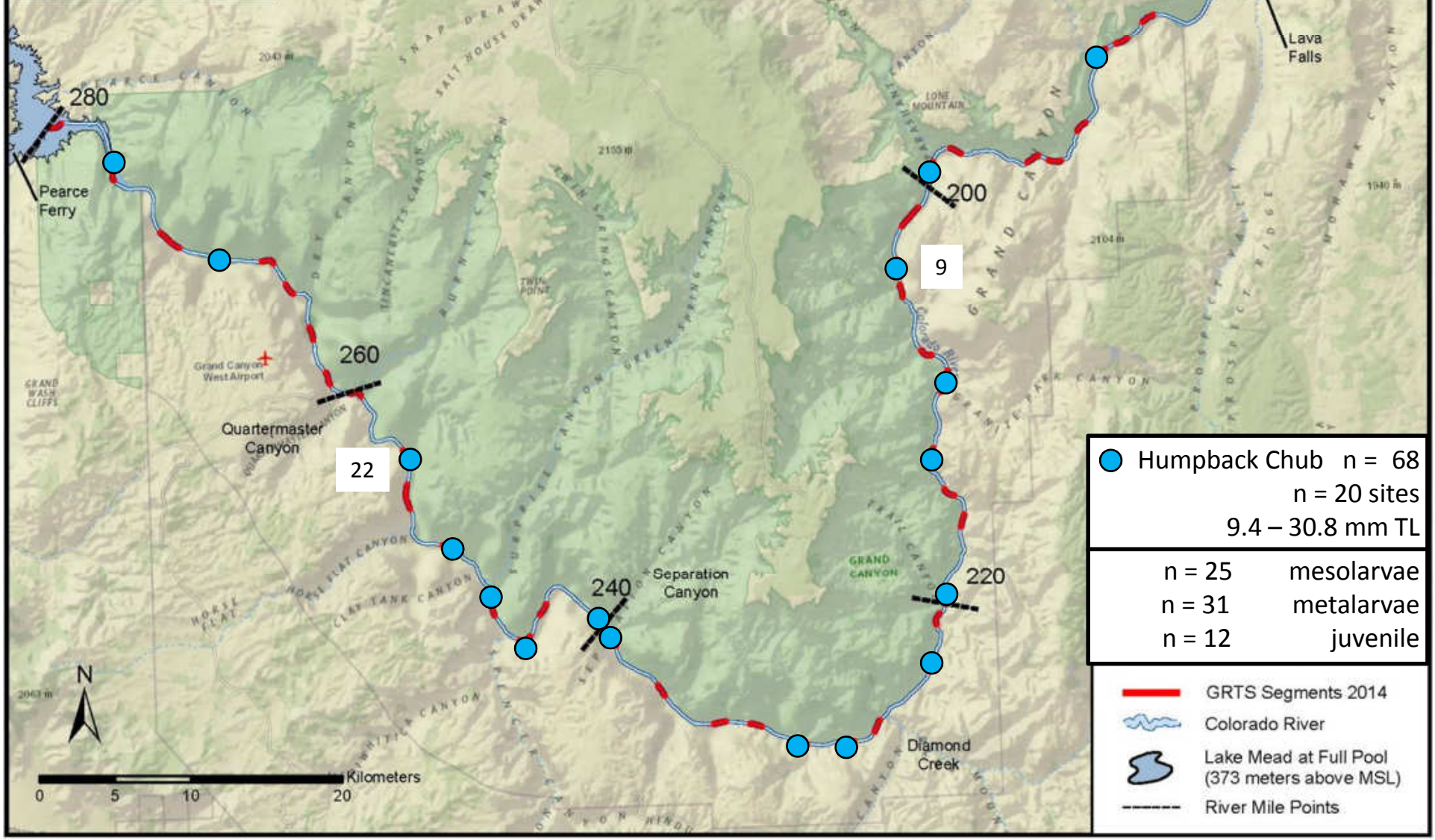
# Flannemouth Sucker CPUE



# May YOY Humpback Chub

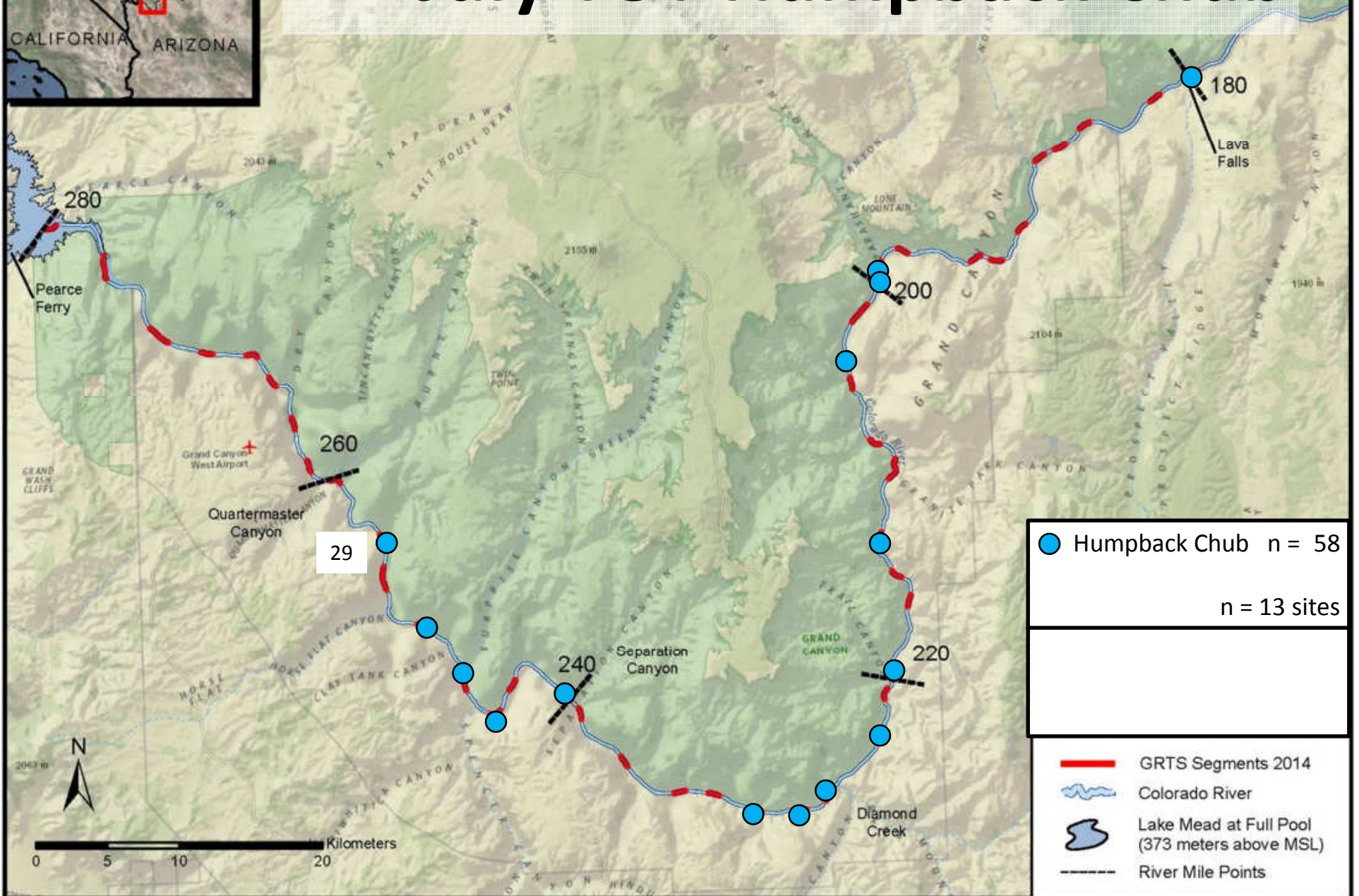


# June YOY Humpback Chub

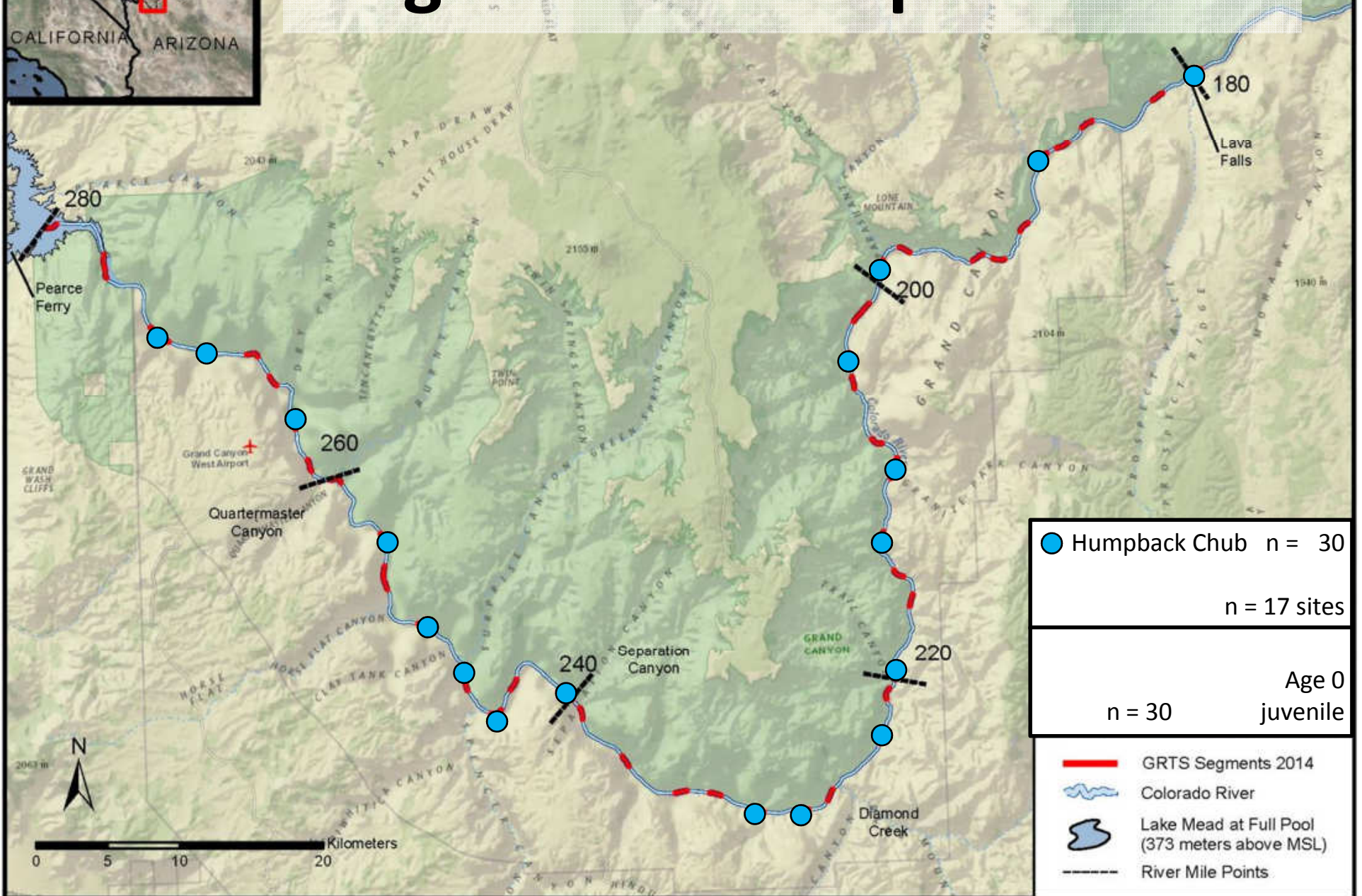


	Humpback Chub	n = 68
		n = 20 sites
		9.4 – 30.8 mm TL
	n = 25	mesolarvae
	n = 31	metalarvae
	n = 12	juvenile
	GRTS Segments 2014	
	Colorado River	
	Lake Mead at Full Pool (373 meters above MSL)	
	River Mile Points	

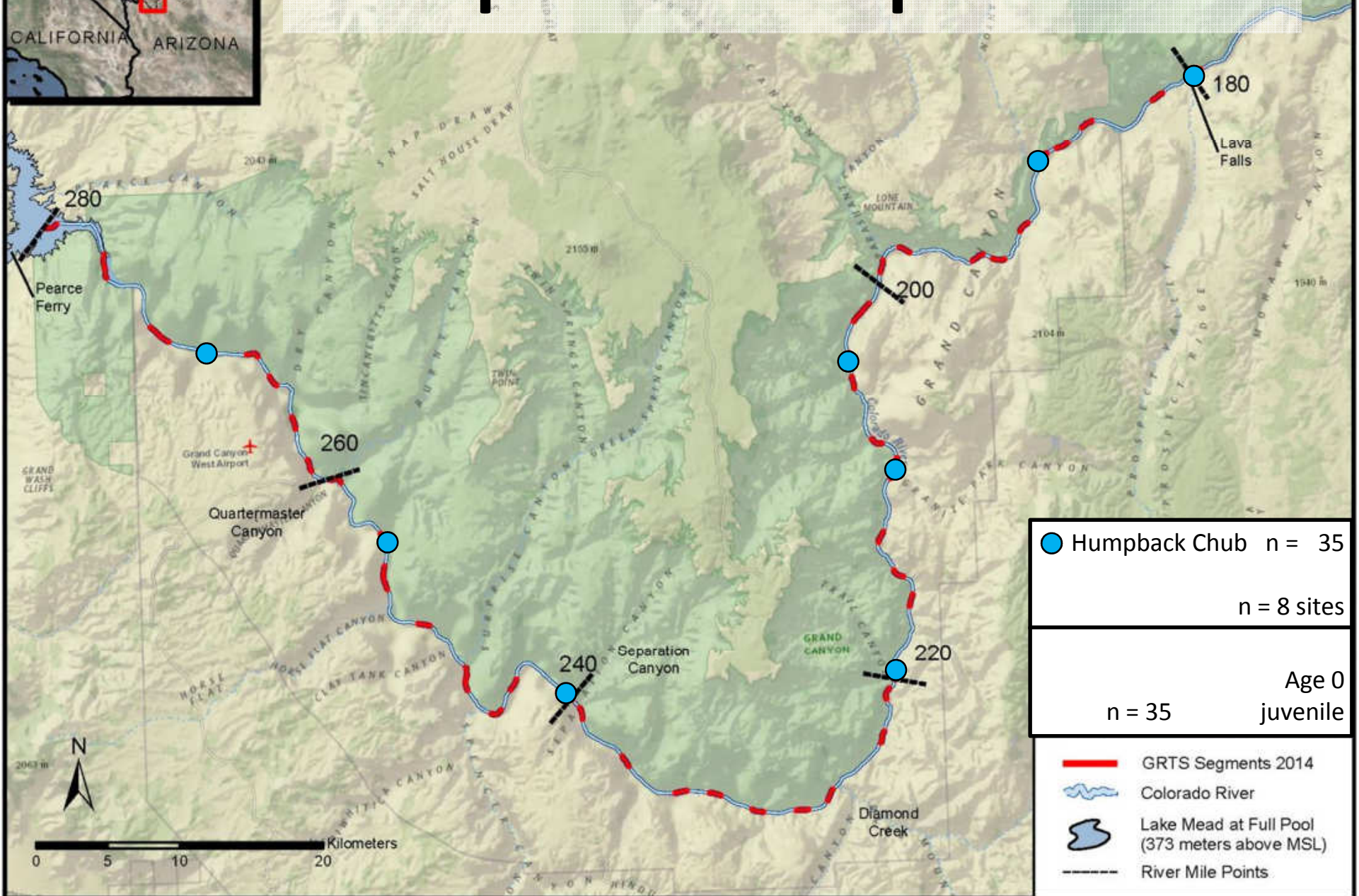
# July YOY Humpback Chub



# August YOY Humpback Chub



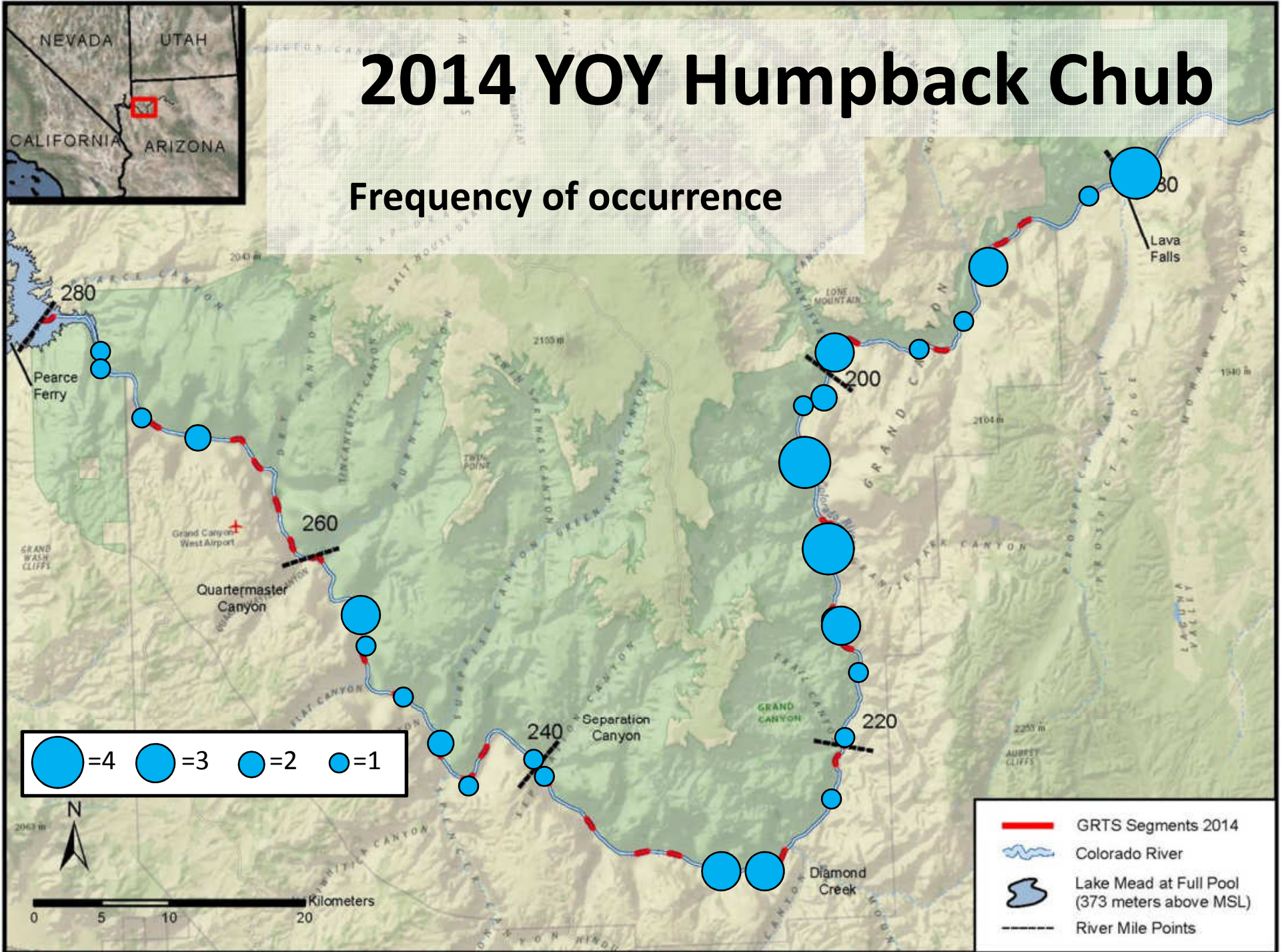
# Sept YOY Humpback Chub



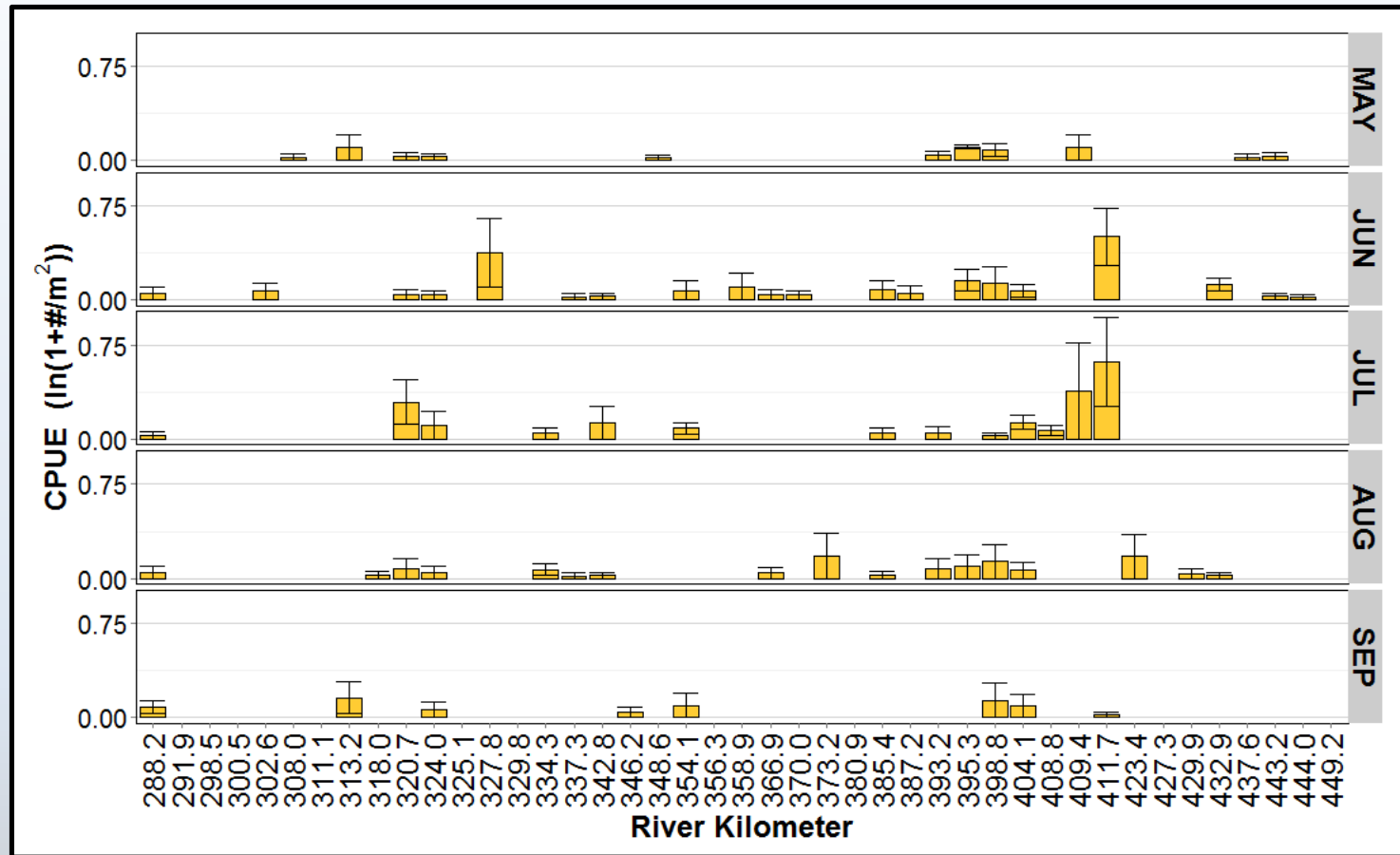


# 2014 YOY Humpback Chub

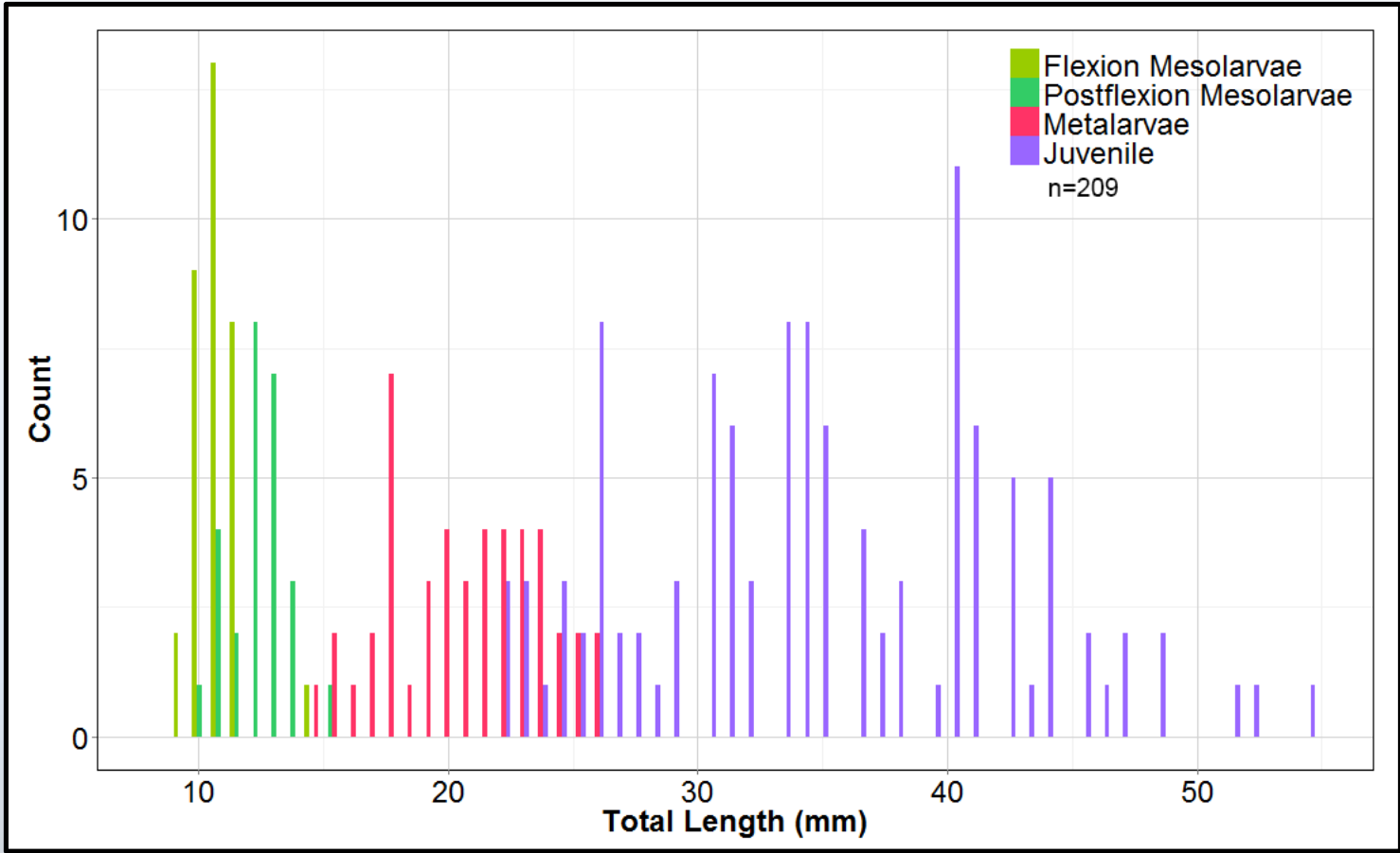
Frequency of occurrence



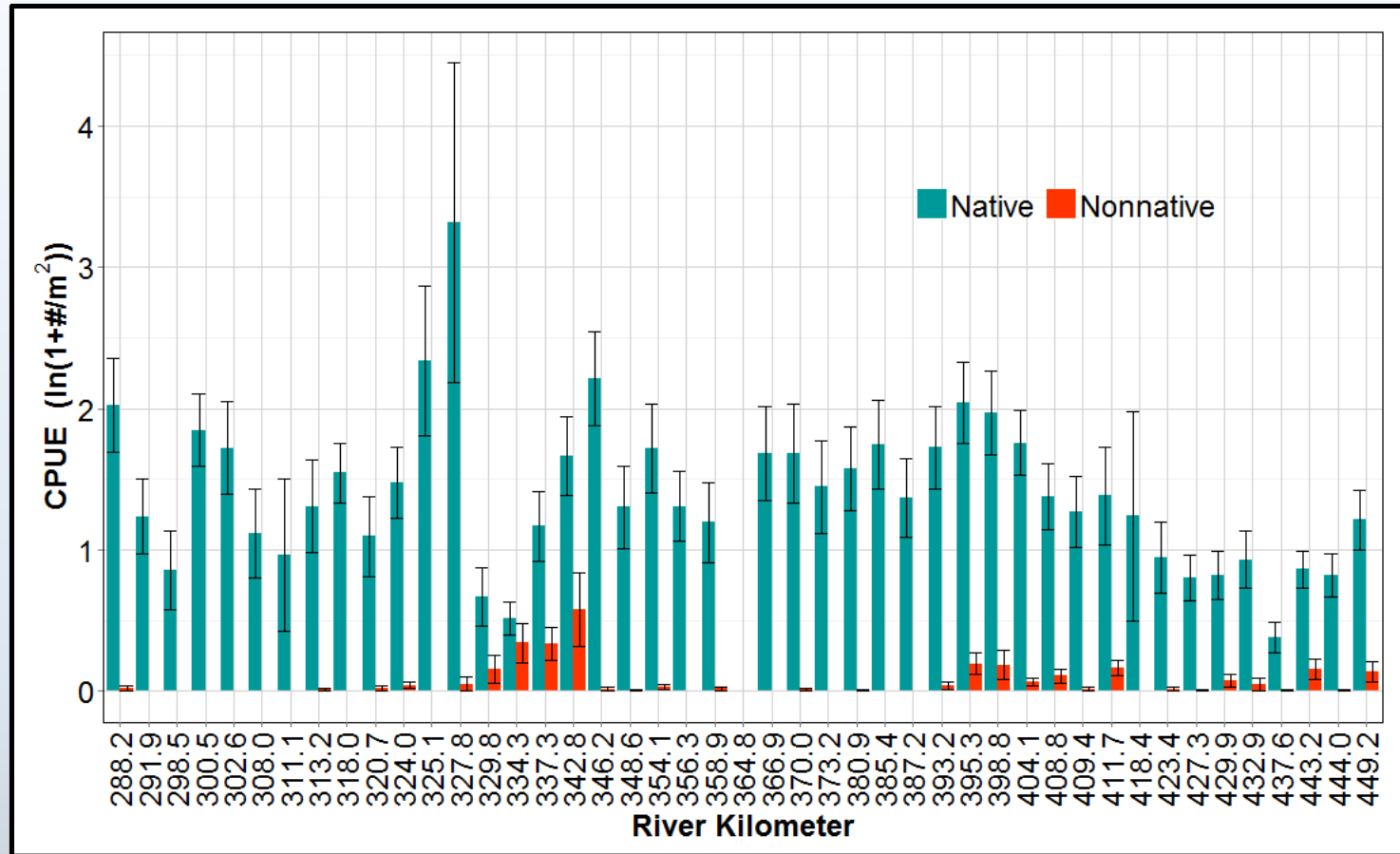
# Humpback Chub CPUE



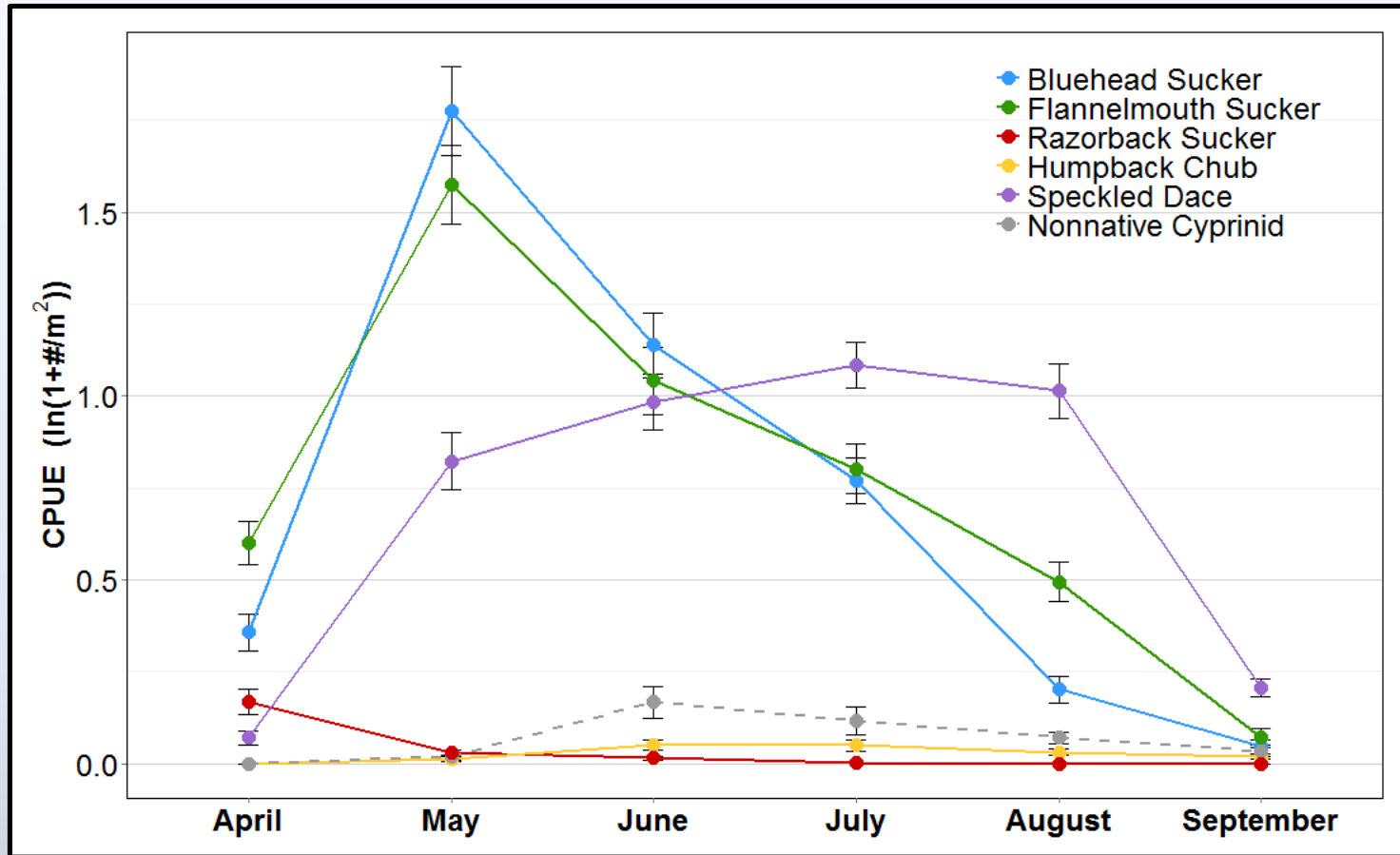
# Humpback Chub Lengths



# Native vs Non Native CPUE



# Monthly CPUE



# Conclusions

## Razorback Sucker

- Larval Razorback Sucker present through study area from Lava Falls to Pearce Ferry
- Spawning occurring above Lava Falls
- Razorback Sucker present at 32 of 50 sites
- April distribution skewed downstream
- Spawning had begun prior to first (April) sampling effort

# Conclusions

## Humpback Chub

- Humpback Chub present through study area from Lava Falls to upstream of Pearce Ferry
- Humpback Chub present at 27 of 50 sites
- Distribution increased monthly
- Present in samples throughout study period

# Recommendations

- 1) Continue monitoring the CRI under current methods including sonic-tagging wild Razorbacks, as needed
- 2) More frequent sampling from Separation to the CRI during lake sampling events, particularly for adults
- 3) **Continue small-bodied and larval fish sampling within the LGC**
- 4) Maintain telemetry efforts with SURs and release sonic fish as needed, within the LGC
- 5) Explore the use of dual functioning (acoustic/RF) tags for implantation
- 6) **Discuss options for determining extent of spawning**
- 7) Need for a comprehensive report detailing and analyzing Razorback Sucker data from Lake Mead and the LGC to date.



# Recommendations

- 3) Continue small-bodied and larval fish sampling within the LGC
  - A. *Consider spatial (upstream) and temporal (earlier) expansion of larval study*
  
- 5) Discuss options for determining extent of spawning
  - A. *Age larval fish using otoliths*
  - B. *Determine spawning dates*
  - C. *Correlate with flow and water temperature*



**1-Day Forecast**  
Abundant sunshine is on tap for Valley with highs in the upper 80s and lows in the mid 40s. There is a 20 percent chance of rain on Friday. Over the weekend, high temperatures will be in the upper 80s and lows will drop to the upper 40s.



**Page 28** | Conservationists guide to reintroduce gray wolves to the Southwest.  
**Page 29** | New National Geographic Visitor Center celebrates 50 years.  
**Page 40** | Wedding Walter and Cleveland.

Wednesday, June 25, 2014

# GRAND CANYON NEWS

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## Endangered razorback sucker makes comeback

The Interior announces the fish are successfully reproducing in the Canyon after moving upstream from Lake Mead.



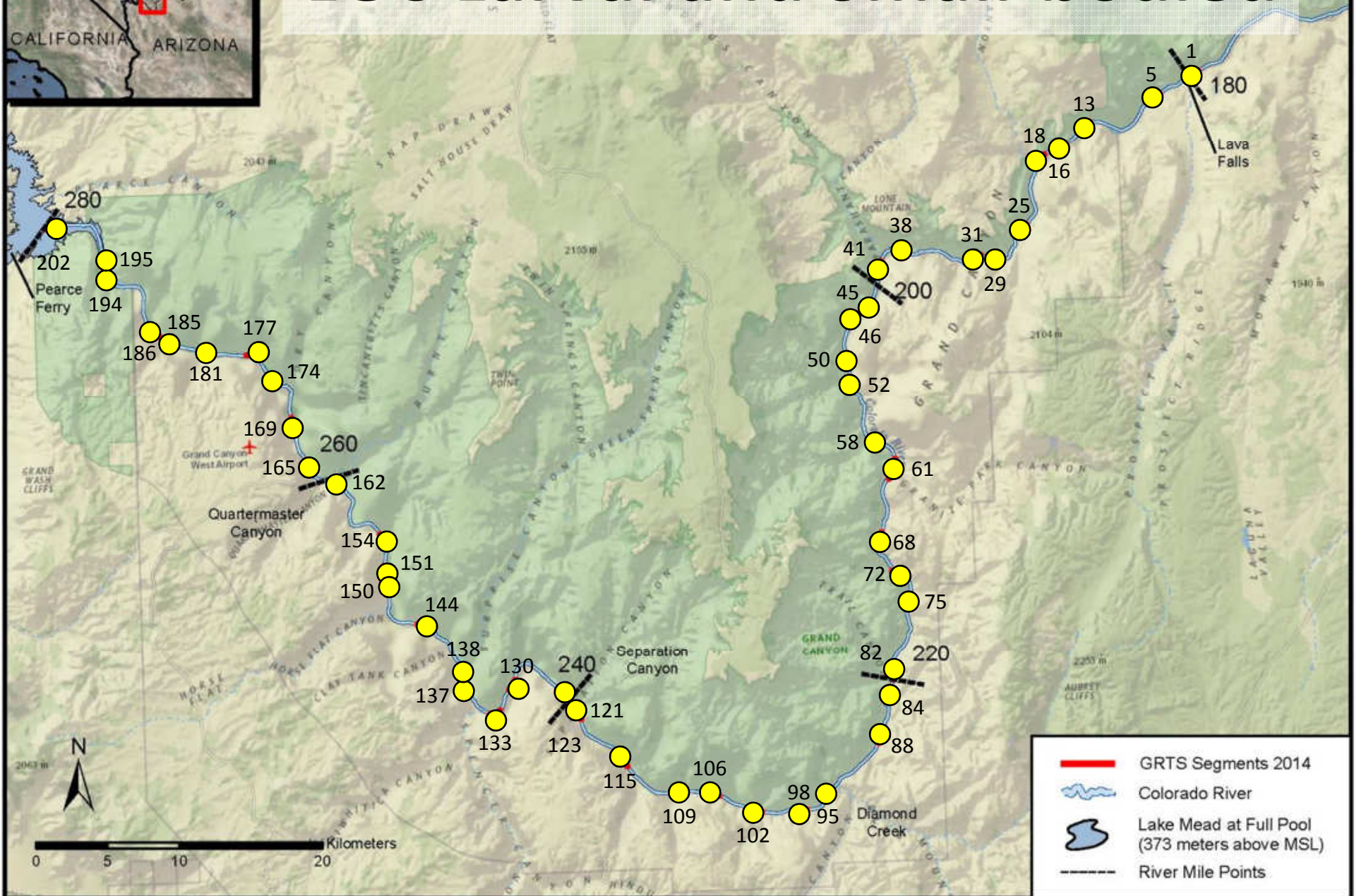
**By Patricia Phoenix**  
The Interior Department today announced that the endangered razorback sucker has been successfully reproduced in the Grand Canyon after being moved upstream from Lake Mead. The fish, which was once thought to be extinct, is now being reintroduced to the canyon. The Interior Department said the fish were successfully reproduced in the canyon after being moved upstream from Lake Mead. The fish, which was once thought to be extinct, is now being reintroduced to the canyon. The Interior Department said the fish were successfully reproduced in the canyon after being moved upstream from Lake Mead.

The razorback sucker, though a large fish, is not the same as the one found in the Grand Canyon. It is a different species, and its reintroduction to the canyon is a major step in the recovery of the species. The Interior Department said the fish were successfully reproduced in the canyon after being moved upstream from Lake Mead. The fish, which was once thought to be extinct, is now being reintroduced to the canyon. The Interior Department said the fish were successfully reproduced in the canyon after being moved upstream from Lake Mead.

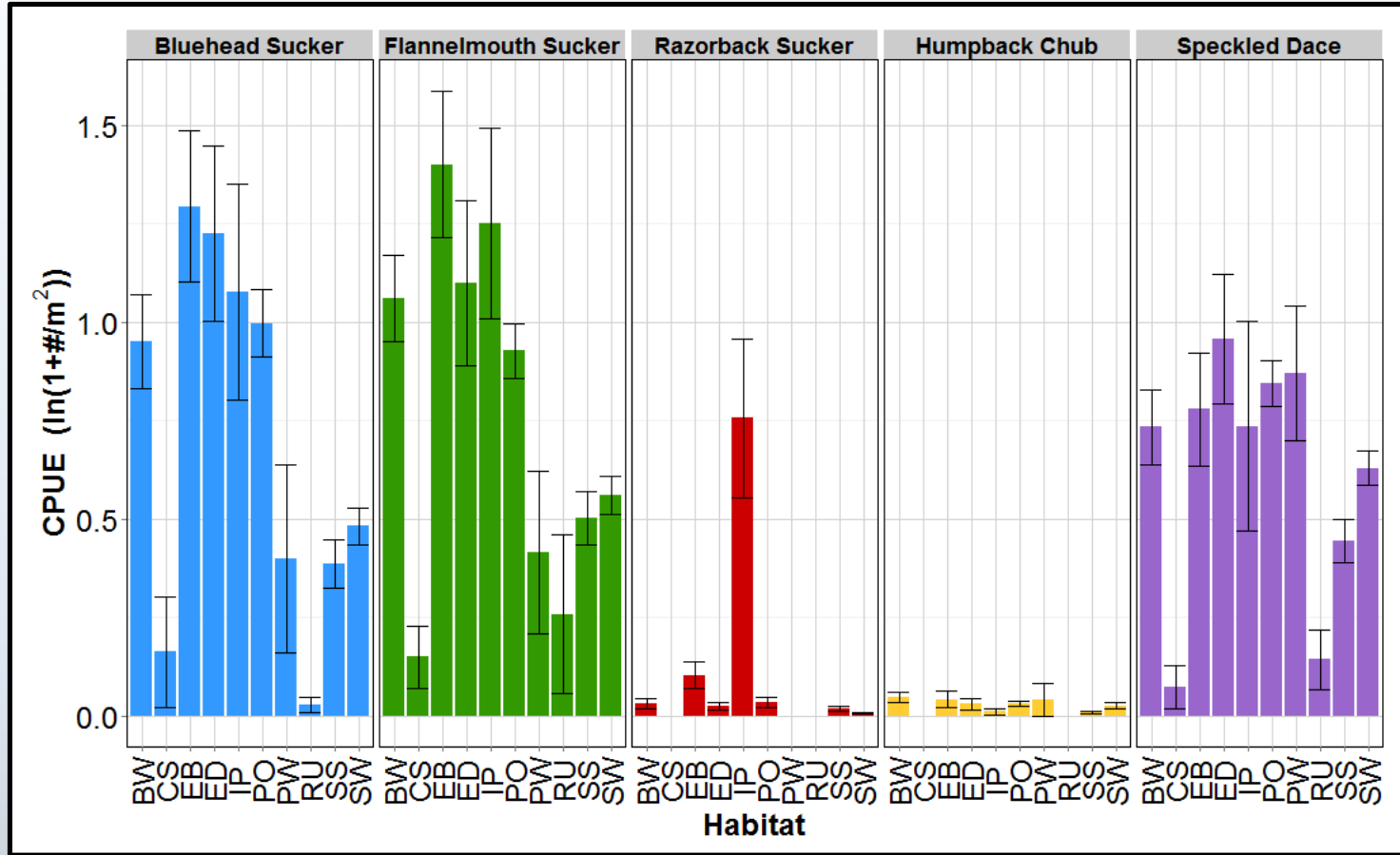
Park to



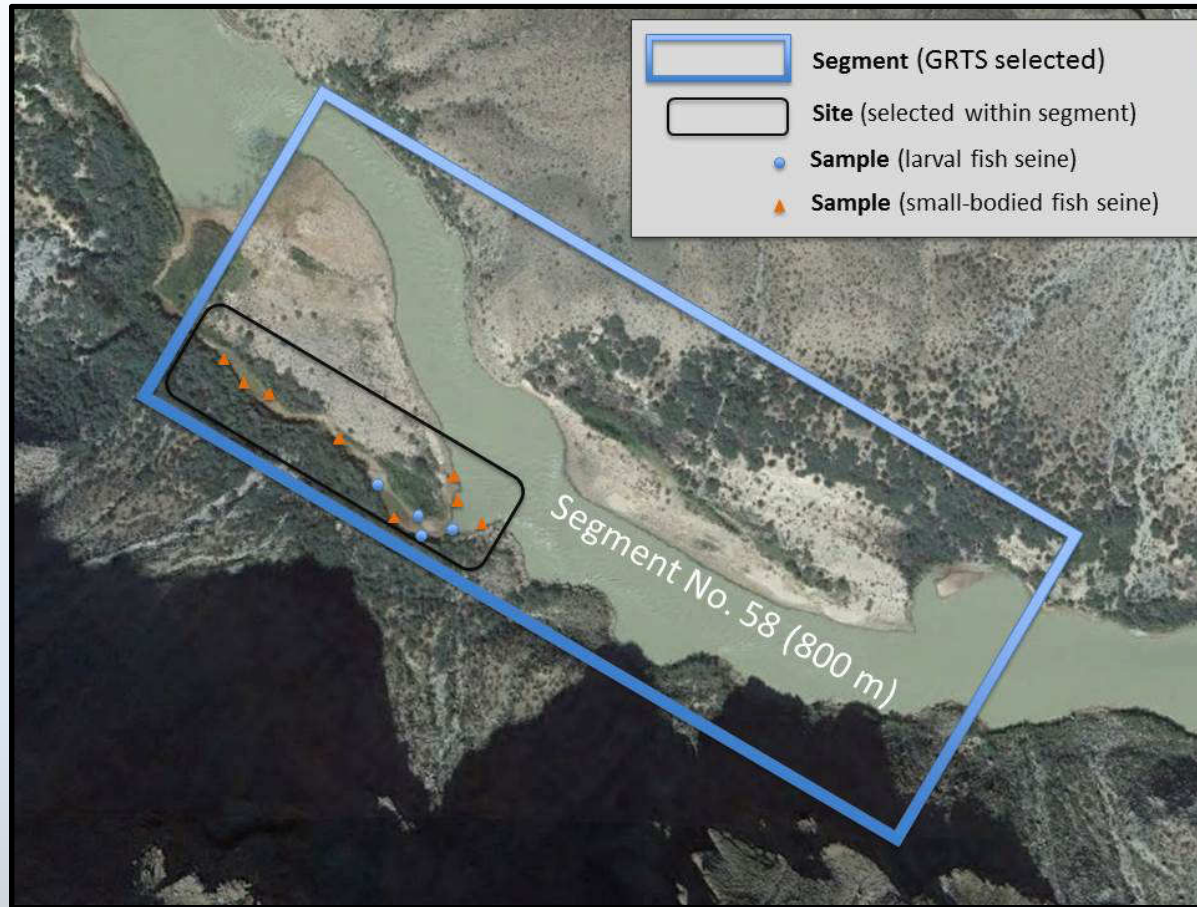
# LGC Larval and Small-bodied



# Habitat Use



# GRTS



# Preliminary Results

