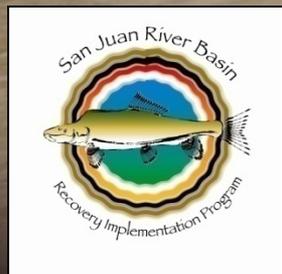


Endangered Fish Monitoring and Nonnative Species Monitoring and Control in the Upper/Middle San Juan River 2014

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NEW MEXICO FISH AND WILDLIFE CONSERVATION
OFFICE
ALBUQUERQUE, NEW MEXICO**

SJRIP – Long Range Plan

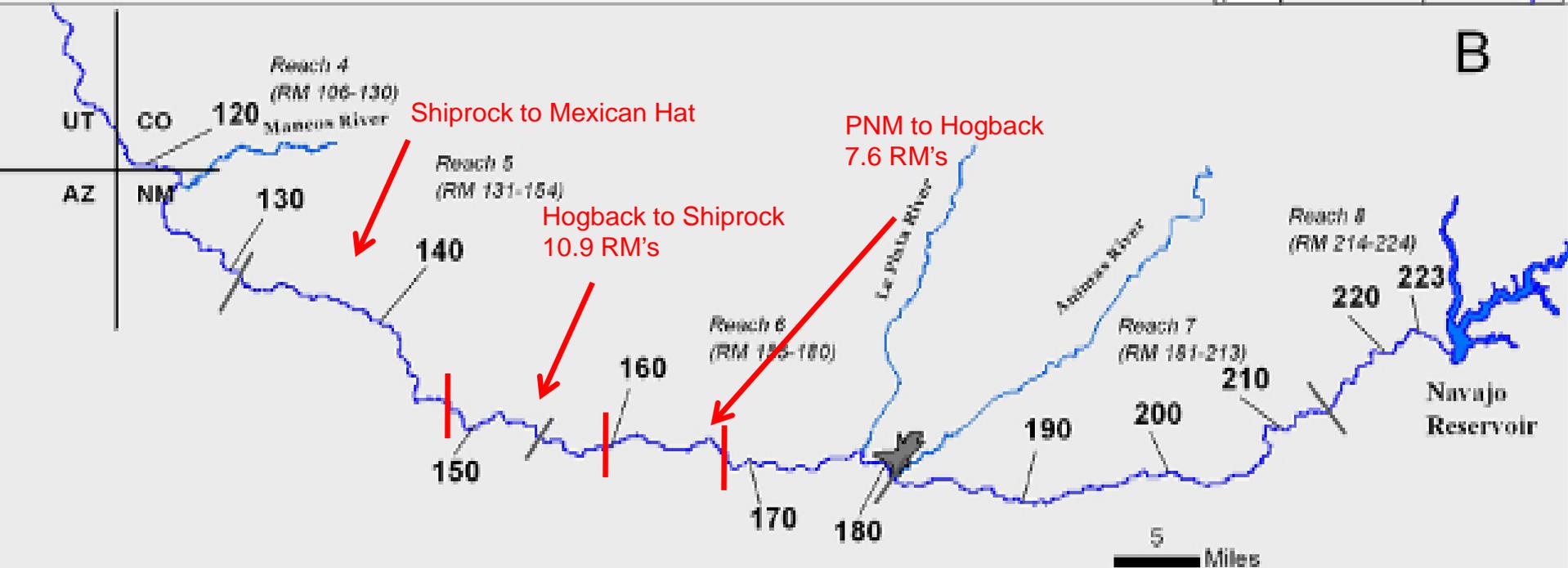
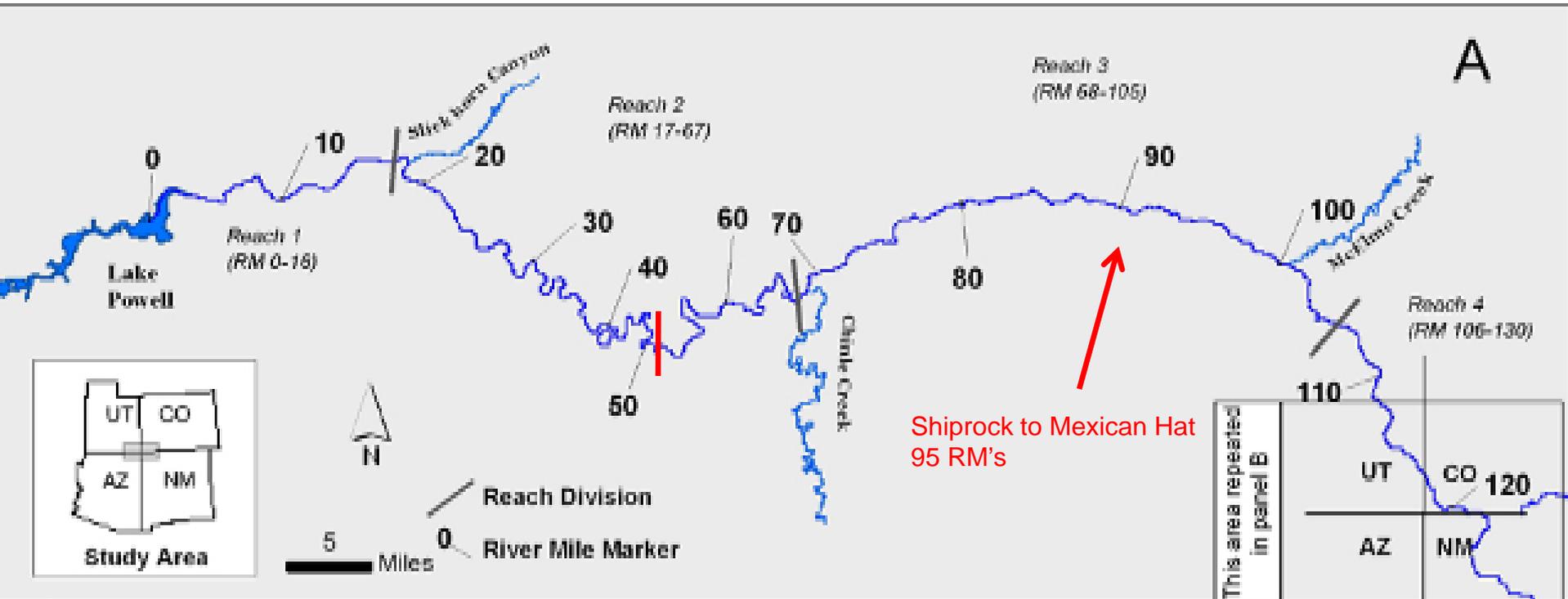


- *Program Element* – Management of Nonnative Species
- **Goal 3.1** Control Problematic Nonnative Fishes
 - ✦ **Task 3.1.1.1** Mechanically remove nonnative fish
- **Goal 4.1** Monitor Fish Populations
 - ✦ **Task 4.1.3.1** Collect data on the endangered fish during nonnative fish control activities.

OBJECTIVES



1. Continue data collection and mechanical removal of large bodied nonnative fishes
2. Conduct mark/recapture to calculate exploitation rates and population estimates for channel catfish
3. Using fall monitoring data, evaluate distribution and abundance of nonnative species to determine effects of mechanical removal
4. Characterize distribution and abundance of endangered fishes in the upper and middle reaches of the San Juan River



SUMMARY OF FISHES COLLECTED: 2014



REACH	EFFORT (hours)	CHANNEL CATFISH	COMMON CARP	RAZORBACK SUCKER	COLORADO PIKEMINNOW
HOGBACK to SHIPROCK	80.2	1,048	35	570	91
SHIPROCK to MONTEZUMA CREEK	52.7	769	8	128	105
**SHIPROCK to MEXICAN HAT	664.1	18,216	49	618	271
TOTAL	797	20,033	92	1,316	467

** includes only nonnative fishes collected during sub-adult/adult fish community monitoring

SHIFTING EFFORT IN 2014



REACH	EFFORT (hours)	CHANNEL CATFISH	COMMON CARP	RAZORBACK SUCKER	COLORADO PIKEMINNOW
** PNM to HOGBACK 2013 (7.6 RM's)	31.3	42	19	676	61
SHIPROCK to MONTEZUMA CREEK 2014 (54 RM's)	52.7	769	8	128	105

** ONLY 8 CHANNEL CATFISH AND 1 COMMON CARP COLLECTED DURING FALL MONITORING IN 2014

HOGBACK DIVERSION TO SHIPROCK BRIDGE



- 12th consecutive year of intensive nonnative removal
- A total of three, three day, trips completed in 2014
- Trips were conducted in July and August

HOGBACK DIVERSION TO SHIPROCK BRIDGE – CHANNEL CATFISH

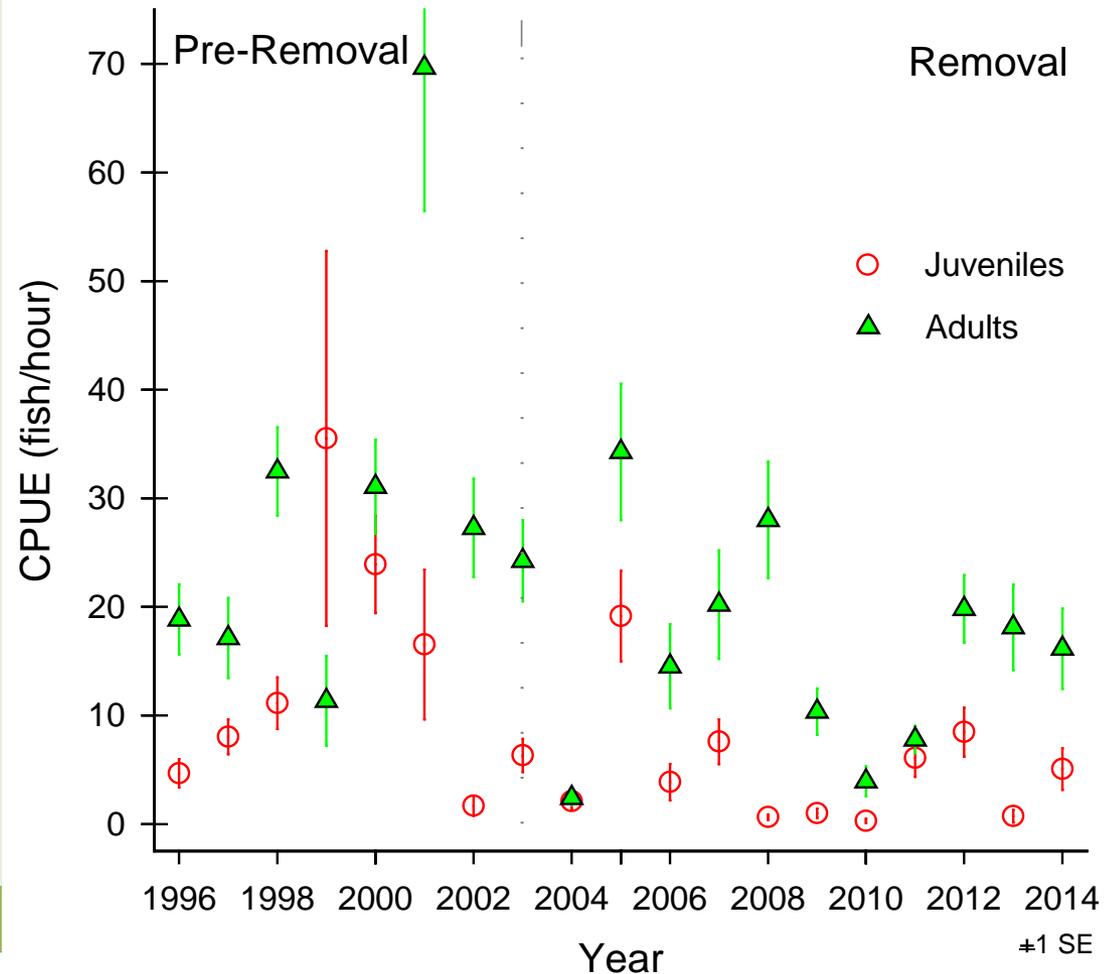


- Moved March trip to August
 - Fewer fish removed compared to 2013
- Twenty-two fish tagged downstream of Shiprock Bridge and Mexican Hat recaptured in this section
 - 8-140 River Miles upstream

HOGBACK DIVERSION TO SHIPROCK BRIDGE – CHANNEL CATFISH



- During Fall Monitoring juvenile CPUE 5.1 fish/hour in 2014
- During Fall Monitoring adult CPUE 16.1 fish/hour in 2014



SHIPROCK BRIDGE TO MEXICAN HAT, UT



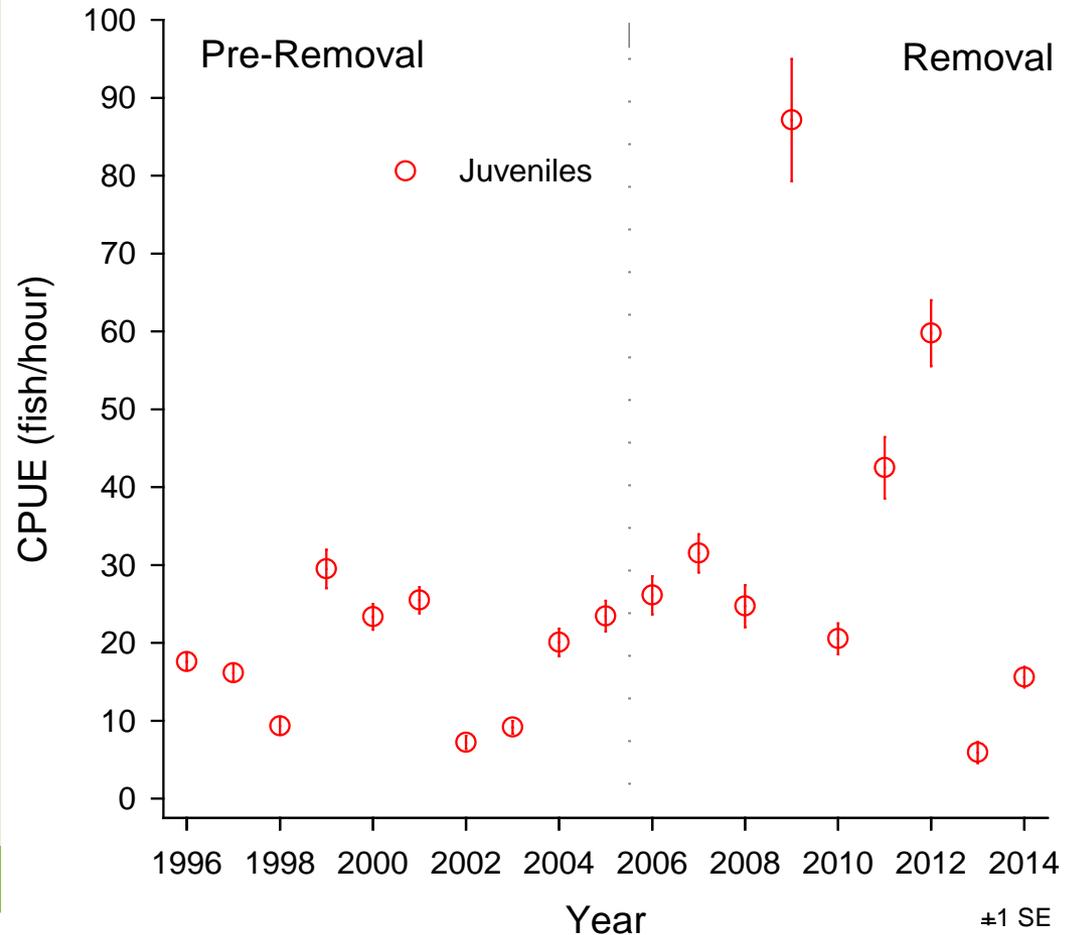
- 7th consecutive year of two passes/trip effort
- 2011 was the first year mark/recapture was conducted
- A total of four, nine day, trips completed in 2014
 - Plus one, nine day, tagging trip in early April
- Trips ranged from April through September

SHIPROCK BRIDGE TO MEXICAN HAT- CHANNEL CATFISH



○ 2014 Fall Monitoring juvenile
CPUE 15.6 fish/hour

○ Juvenile catch rates in 2014 were
significantly lower than observed
values in 2007, 2009, 2011 and
2012

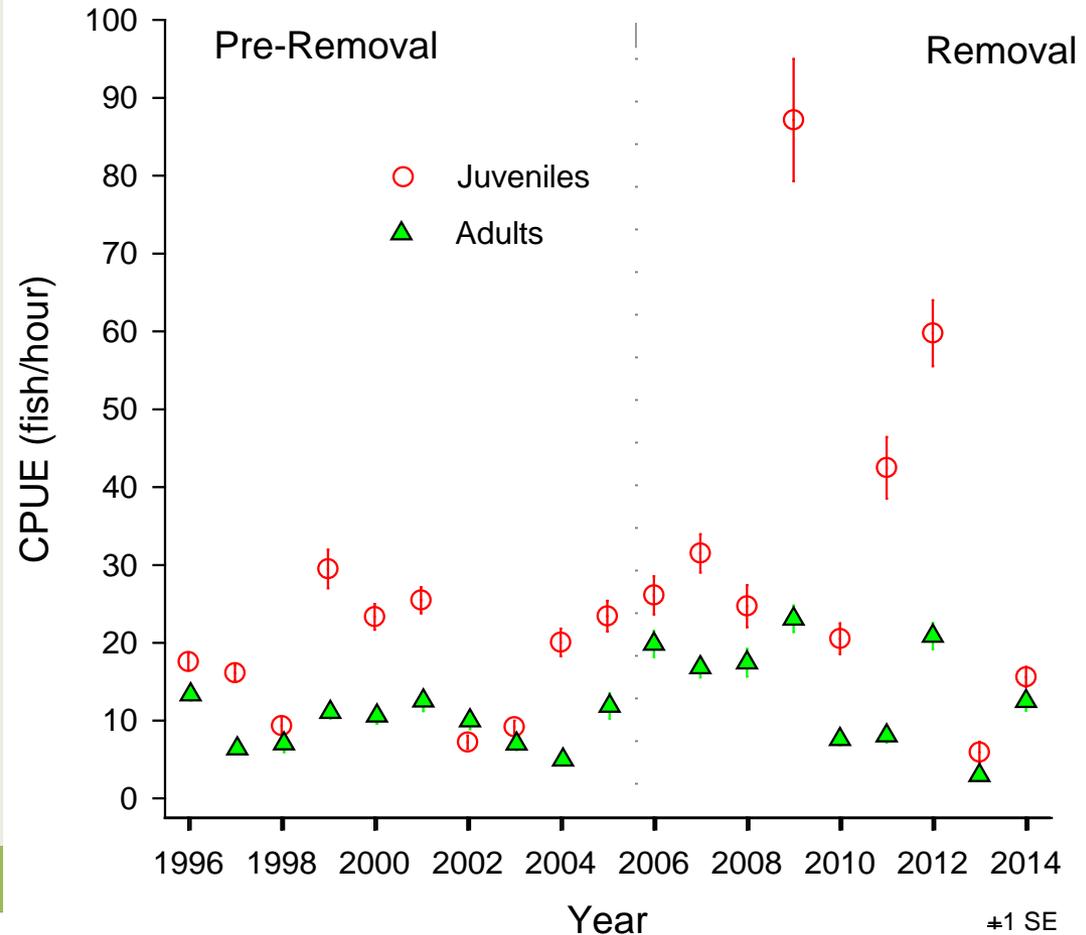


SHIPROCK BRIDGE TO MEXICAN HAT- CHANNEL CATFISH



- 2014 Fall Monitoring adult CPUE 12.5 fish/hour
 - 2.9 fish/hour in 2013

○ Adult catch rates in 2014 were higher than 2013 values but significantly lower than 2006, 2009 and 2012



Lincoln-Peterson Population Estimates



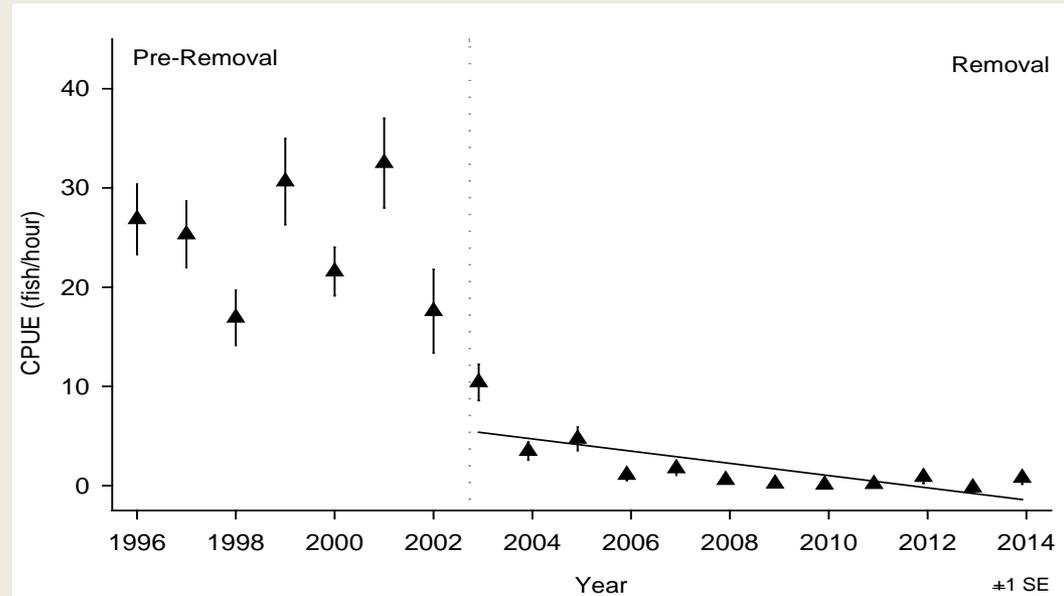
- Adults (≥ 300 mm TL)
 - N = **35,379**
 - 95% upper = 41,057
 - 95% lower = 29,702
 - Standard error = 2,839
 - CV = 8.02 %

- Juveniles (200-299mm TL)
 - N = **27,348**
 - 95% upper = 43,763
 - 95% lower = 10,933
 - Standard error = 8,208
 - CV = 30.01 %

COMMON CARP

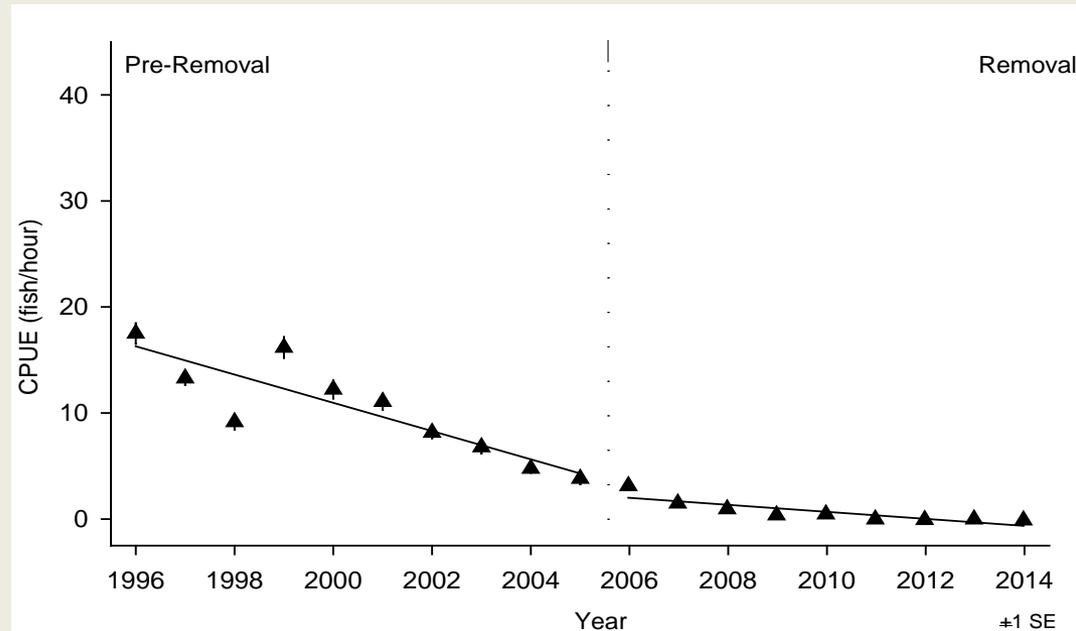
- Hogback to Shiprock

- During Fall Monitoring adult CPUE 0.9 fish/hour (7 fish)



- Shiprock to Mexican Hat

- 2014 Fall Monitoring CPUE 0.07 fish/hour
- 6th consecutive year with catch rates < 1.0 fish/hour



SUMMARY OF RARE FISH COLLECTED - 2014



- Colorado pikeminnow
 - 502 captures (470 individual fish)
 - Ranged from 54 – 745 mm TL; Mean = 204 mm TL
 - 33 individuals \geq 450 mm

- Razorback sucker
 - 1,448 captures (1,197 individual fish)
 - Ranged from 282 – 585 mm TL; Mean = 443 mm TL
 - 900 fish \geq 400 mm

SUMMARY OF RARE FISH COLLECTED - 2014



- Another spawning aggregation of adult Colorado pikeminnow
 - 6/20/2014 at River Mile 130 – 2 adults
 - ✦ 601,670 mm TL
 - 6/21/2014 at River Mile 119 – 3 adults (570-710 mm TL)
 - ✦ 2013 – 5 adults (450-695 mm TL)
 - ✦ 2012 – 8 adults (450-660 mm TL)
 - 2 portable submersible pit tag readers deployed near RM 119
 - ✦ 6/25 - 6/29/2014
 - ✦ Recorded 13 individual pikeminnow
 - 11 fish being > 500 mm TL

SUMMARY OF RARE FISH COLLECTED - 2014

- Razorback sucker long term retention

- 2014

- > 10 years – 21
- 5-10 years – 103
- 2-5 years – 505
- < 2 years – 468

Total 1,097

- 9 out of 21 fish in river > 10 years
 - RM 158-148
- 6 out of 21 fish in river > 10 years
 - RM 121-118

SUMMARY- CHANNEL CATFISH



- PNM Weir to Hogback Diversion
 - ✦ Did not sample in 2014
 - ✦ Only 8 fish caught during Fall Monitoring
- Hogback Diversion to Shiprock Bridge
 - ✦ Recaptures of fish tagged downstream of this section show the possibility for fish to repopulate a section after intensive removal
 - ✦ Juvenile and adult channel catfish CPUE values fluctuated over time and have not realized significant declines pre or post removal

SUMMARY- CHANNEL CATFISH



- Shiprock Bridge to Mexican Hat
 - ✦ Adult catch rates in 2014 were higher than 2013 values
 - ✦ Low catch rates in 2013 may have been a result of poor sampling conditions due to high flows and increased turbidity
 - ✦ Juvenile and adult channel catfish CPUE values differ among and between years but have not realized significant declines post removal

SUMMARY- COMMON CARP



- Common carp
 - ✦ Common carp CPUE was < 1.0 fish/hour for all NNR trips
 - ✦ During Fall Monitoring, very few carp collected in two upper sections
 - ✦ Common carp remain *uncommon* in all collections

2015 Efforts



- Continue mark/recapture to determine exploitation rates and population estimates – test survivorship of juvenile fish after tagging
- Concentrate effort during spawning times and locations
- Continue five-day trip from Shiprock to Montezuma Creek
- Continue effort from Hogback to Shiprock during summer months

Questions?

