

COLORADO RIVER RECOVERY PROGRAM  
FY 2012 ANNUAL PROJECT REPORT

RECOVERY PROGRAM  
PROJECT NUMBER: 110

I. Project Title: Smallmouth bass control in the lower Yampa River

II. Bureau of Reclamation Agreement Number(s): R10PG40083

Project/Grant Period: Start date (Mo/Day/Yr): 10/1/2006  
End date: (Mo/Day/Yr): 9/30/2012  
Reporting period end date: 9/30/2012  
Is this the final report? Yes X No \_\_\_\_\_

III. Principal Investigator(s): Tildon Jones, U.S. Fish & Wildlife Service  
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IV. Abstract: This project is designed to reduce the abundance of smallmouth bass, to determine the efficacy of such efforts, and to monitor the native fish community in Yampa Canyon. Only two passes were completed this year due to well below average run-off. During one of these passes, five monitoring reaches were sampled to determine the fish community composition. The adult fish community in this reach continued to be comprised mostly of native suckers (81%). Roundtail chub were also collected on the first pass, where 99 adults and 172 subadults were captured. One hundred twenty-six bass were removed this year. The remaining passes scheduled for 2012 were directed at other nonnative fish control projects in the Green/Yampa River basins.

V. Study Schedule: 2001-ongoing

VI. Relationship to RIPRAP:  
General Recovery Program Support Action Plan  
III.A.2.c Evaluate the effectiveness and develop and implement an integrated, viable active control program.

Green River Action Plan: Yampa and Little Snake Rivers  
III.B.2. Control nonnative fishes via mechanical removal

VII. Accomplishment of FY 2012 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Two passes were completed for this reach in 2012, June 5-8 and June 12-15 (Table 1). Low flows beginning in mid-June made boat electrofishing impossible. After the two passes, flows were below 400 cfs, and reached nearly 40 cfs by July 5, precluding access with smaller boats. The effort that would have been expended on the remaining passes was redirected to other nonnative removal projects in the upper basin under the direction of the Recovery Program. Monitoring passes for fish community composition and *Gila*

species were completed within the limited sampling available.

Smallmouth bass were not tagged in 2012. Given the low number of captures and passes, removing bass on all passes was justified. During the project, 62 adult, 61 subadult, and 3 age-1 bass were removed (Table 1). Total numbers and catch rates for adults were similar between passes, but fewer subadults were captured in pass 2. The catch rate for adult and subadult bass during the project was relatively low and similar to 2011 (Figure 1). Catch rates fell somewhat during pass 2, mainly resulting from fewer subadult captures (Figure 2). Length-frequency data showed the largest proportion of bass were 126-175mm (Figure 3). These likely represent fish spawned in 2010.

It was also possible to track a cohort of bass spawned in 2007 into larger adult sizes (Figure 4), but the total number caught was similar to previous years. This suggests the 2007 cohort has not disproportionately increased the adult population considering the large number of fish that were produced in that year. This could be due to unfavorable environmental conditions over the last four growing seasons reducing survival, or as these fish mature they may be moving upstream to preferred spawning habitats. Some evidence for the latter exists from tagged fish recaptures in the project upstream. Five fish tagged in Yampa Canyon during 2010 and 2011 were recaptured by CSU crews upstream in May and June 2012. All five fish were adults larger than 250mm. This compares to one fish from this project recaptured in the same reach in which it was tagged in 2009, and one bass with a gray tag recaptured from an upstream study reach. These data are also consistent with observations in previous years of subadult fish moving into Yampa Canyon from upstream sources and from higher bass numbers caught in the upper reaches of the canyon (Figure 5). These bass would be expected to move back to preferred spawning areas once they reach maturity.

Fish community sampling was conducted during the second pass in five, 1-mile reaches. The fish community in these reaches continued to predominantly consist of two native sucker species: flannelmouth and bluehead suckers accounted for 81% of fish in these samples (Figure 6). Channel catfish were the third most common species, followed by roundtail chub and small, unidentified chub (*Gila* sp.). The relative composition of each species remained similar to previous years (Figure 7). Roundtail chub were collected on the first pass, where adults were PIT tagged, and all chub were measured and released. Chub <200mm were not collected below reach 7 after these smaller fish were observed displaying symptoms of handling stress. Chub of all sizes were collected during the monitoring pass, and smaller size classes were prevalent in the sample (Figure 8). This sample indicates successful reproduction and recruitment by roundtail chub in this reach. Adult chub were more common in the upper reaches, which are characterized by higher gradient and more boulder habitat. Forty percent of adult roundtail chub captured during pass 1 were tuberculated, and these fish were found throughout all reaches. Twenty percent of adults on this pass were noted expressing gametes. Ninety-four roundtail chub were PIT tagged during pass 1, and four chub were recaptured from previous years' tagging. One fish believed to be a bonytail was recaptured, but stocking records were not available as of this report to confirm the source of the fish. Eighteen fin clips from

roundtail chub were also collected this year and have been submitted to the Southwest Native Aquatics Resources and Recovery Center (Dexter NFTC).

Finally, several other species of interest were encountered during the sampling this year (Table 2). One gizzard shad was captured near river mile 7 during pass 2. This is the first time this species has been documented in the Yampa River, although this species has been detected downstream in Whirlpool Canyon and the Uinta Basin. Three walleye were also removed, and otoliths were collected for microchemistry analysis. Colorado pikeminnow were especially common on pass 2, and tuberculated, expressing fish were captured. In addition, aggregations of expressing fish were noted throughout reach 9 and two miles above the confluence, both well below the reach where spawning has traditionally been observed. Fish in these apparent spawning congregations were not collected, and electrofishing equipment was shut down upon observing such groups. River discharge at this time was relatively low, and many riffle habitats were shallow. While fish may have been able to navigate these riffles, it would have required negotiating shallow, clear riffles with little cover.

VIII. Recommendations:

- Continue smallmouth bass removal in Yampa Canyon at current level. Given successful reproduction in the Green River this year, it is likely bass numbers will increase in 2013.
- Continue removing bass on all passes and not conducting mark-recapture estimates.
- Continue chub and fish community monitoring. Consider hoop nets for sampling chub. This gear has been used successfully in Grand Canyon to sample humpback chub, and would likely involve little extra time and effort. It has also proven effective at sampling small bass in the Green River in 2012, and may help to better sample this size of bass.

IX. Project Status: On track and ongoing

X. FY 2012 Budget Status

- A. Funds Provided: \$137,525
- B. Funds Expended: \$137,525
- C. Difference: -0-
- D. Percent of the FY 2012 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: -0-

XI. Status of Data Submission (Where applicable): Data are being compiled and will be submitted to the Recovery Program database coordinator by 31 December 2012.

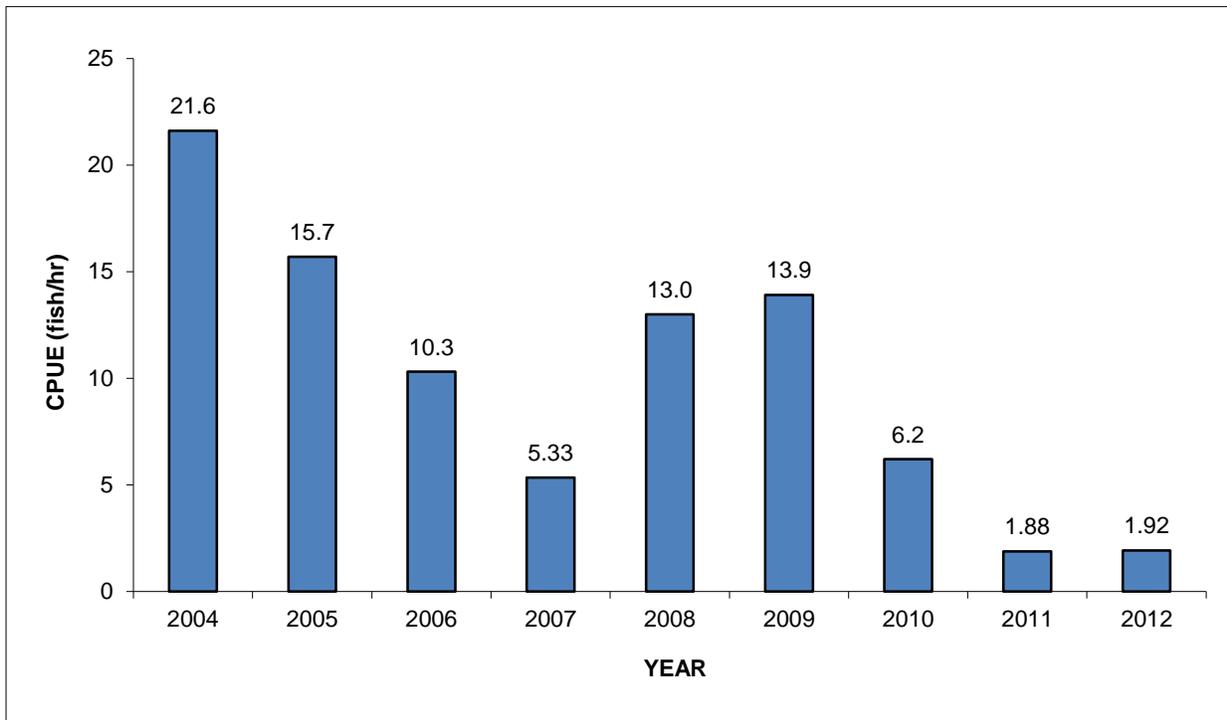
XII. Signed: *Tilden Jones*                      11/14/2012  
Principal Investigator                      Date

**Table 1. Sampling dates and number of smallmouth bass captured in each pass, 2012.**

Pass	Date	<100mm	Subadults	Adults
1	June 5-8	2	40	34
2	June 12-15	1	21	28
Total		3	61	62

**Table 2. Ancillary fish captures.**

Species	Number captured
Northern pike	5
White sucker	23
Gizzard shad	1
Walleye	3
Colorado pikeminnow	31
Bonytail	1
Roundtail chub	227
Small <i>Gila spp.</i> (<150mm)	92



**Figure 1. Catch rates for bass >100mmTL during all passes, 2004-2012.**

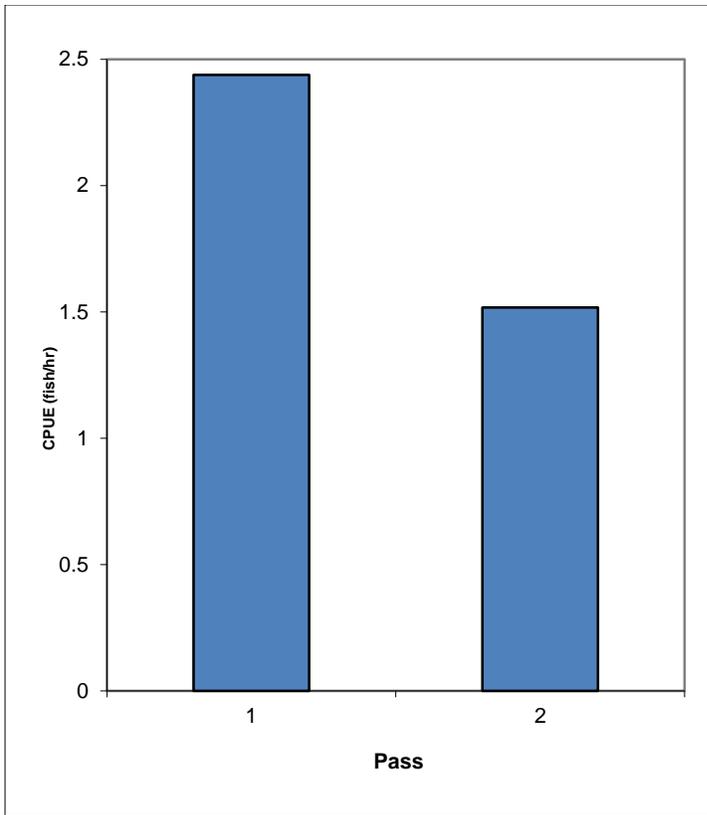


Figure 2. Catch rate for all bass by pass, 2012.

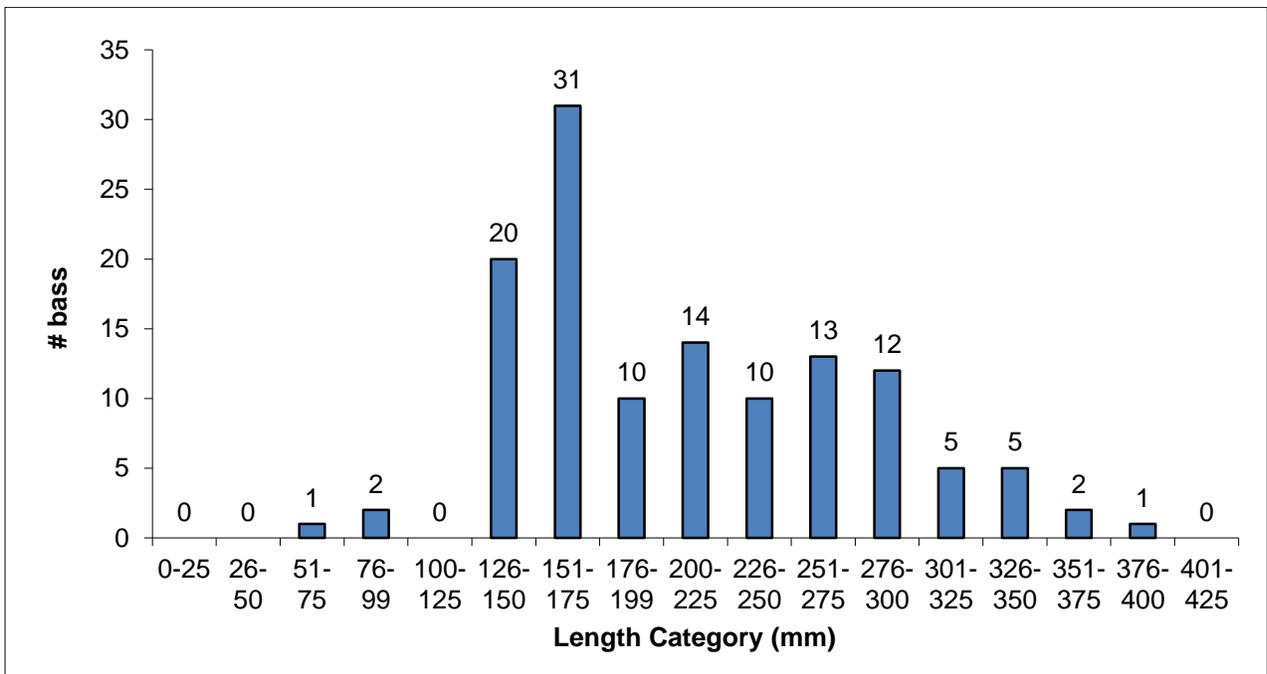


Figure 3. Length-frequency histogram for all bas captured, 2012.

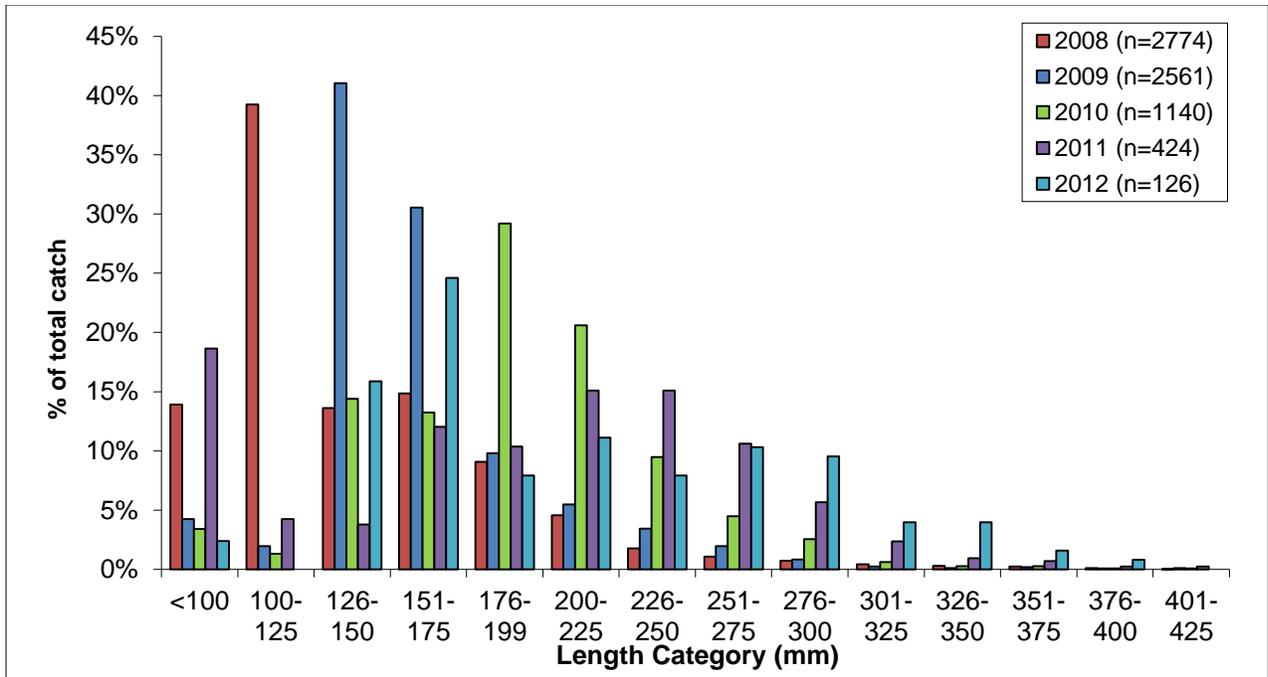


Figure 4. Length-frequency histogram showing relative frequency of bass captured, 2008-2012.

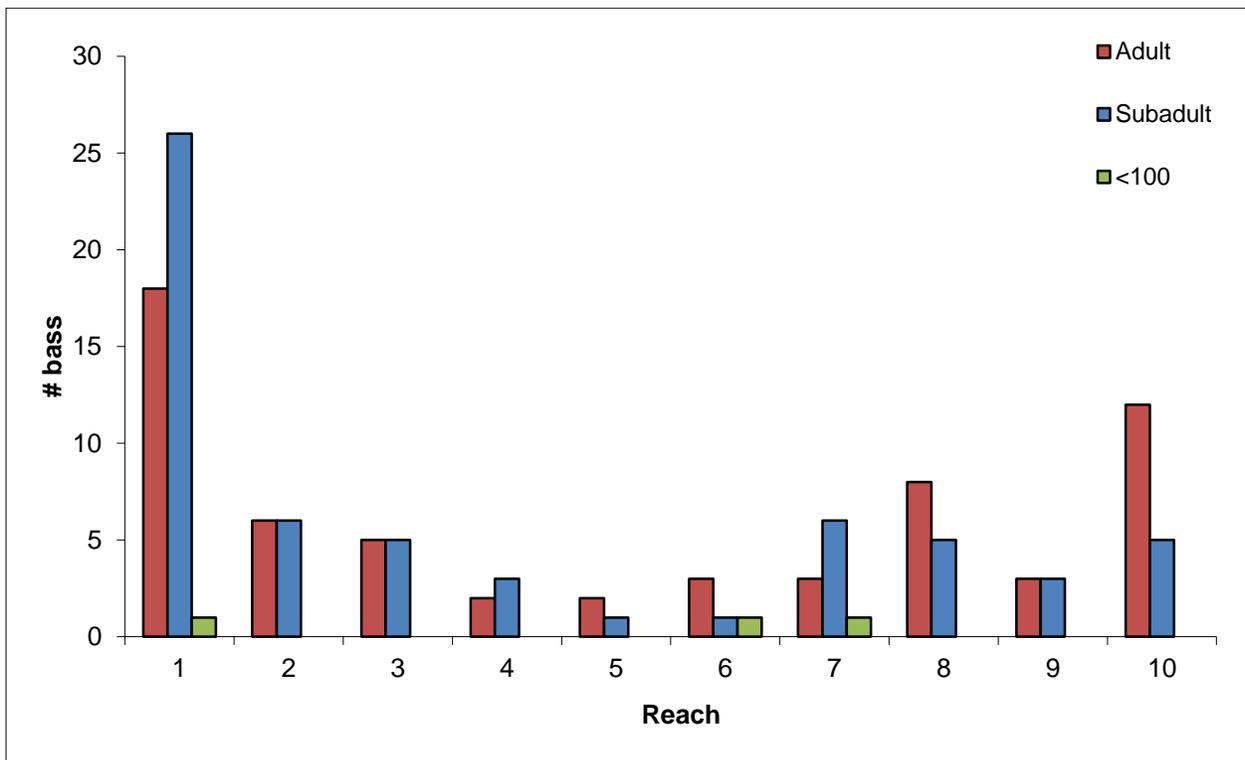


Figure 5. Number of bass in each size class caught by reach, 2012.

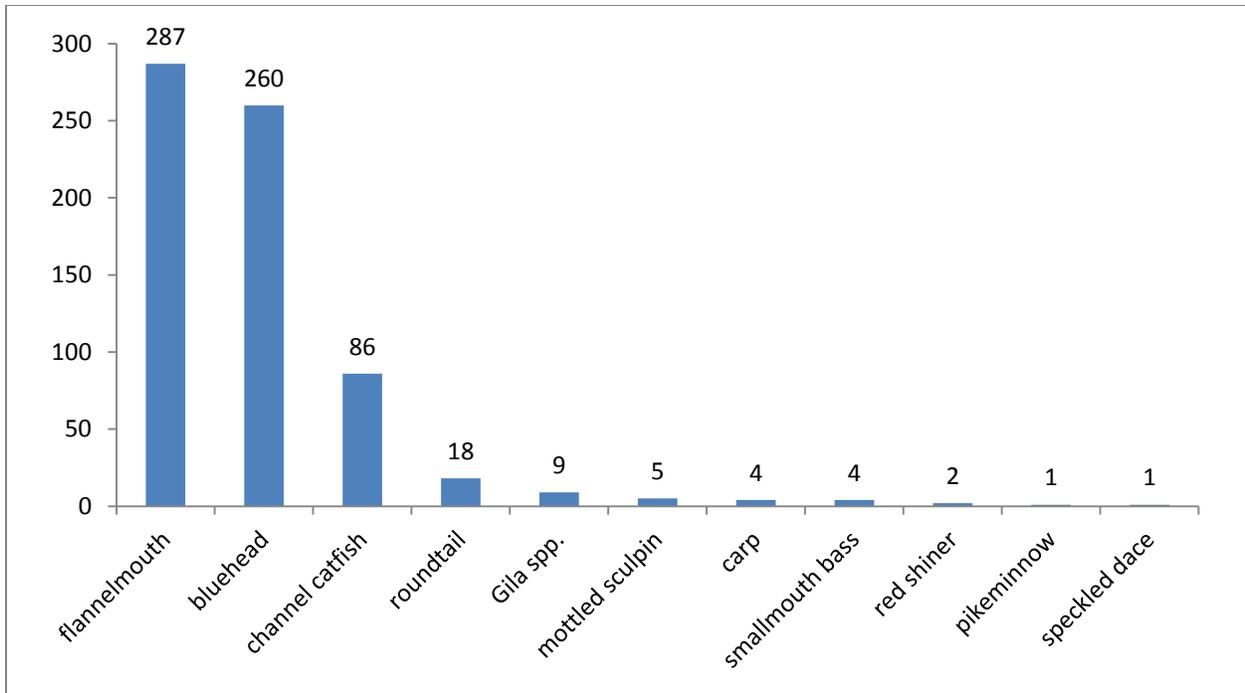


Figure 6. Number of fish caught for each species during community sampling in one-mile subreaches, 2012.

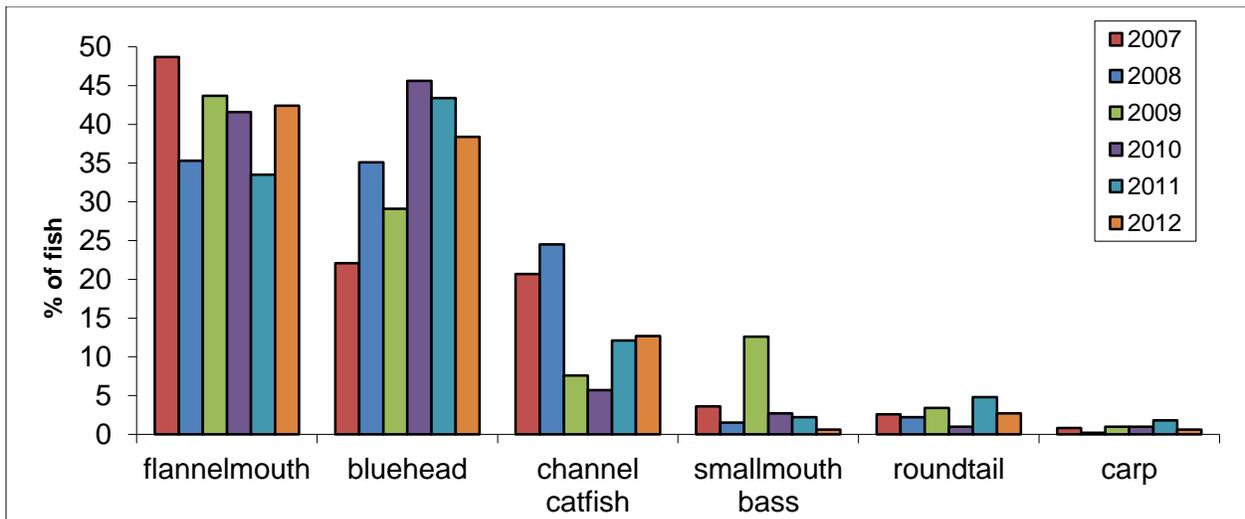


Figure 7. Relative fish community composition, 2007-2012.

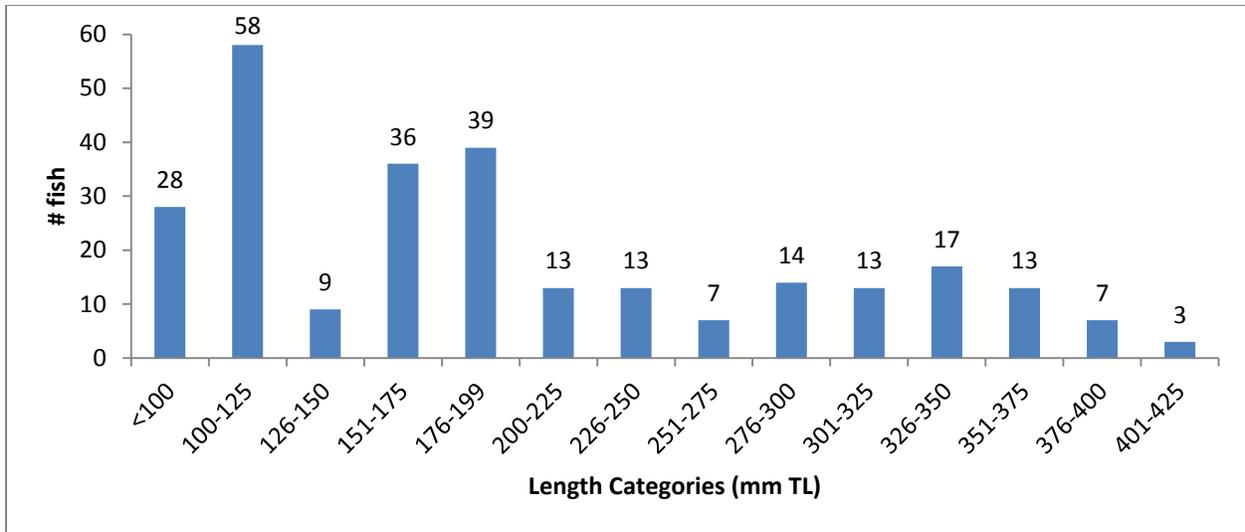


Figure 8. Chub (*Gila* sp.) captures during pass 1, 2012.

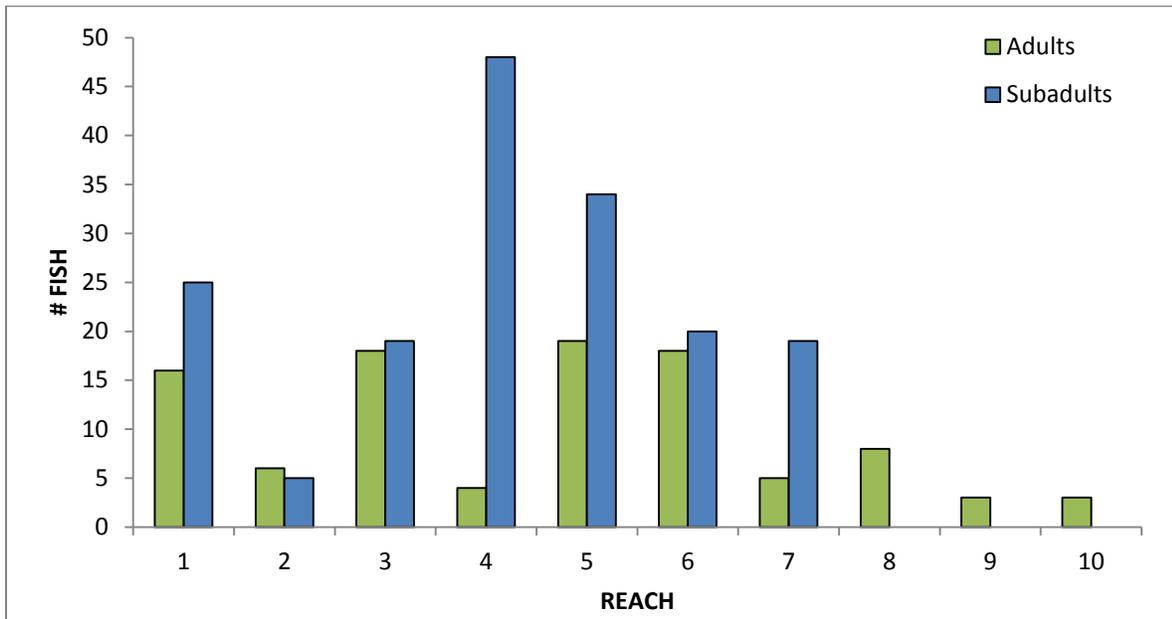


Figure 9. Chub captured for each size class by reach, pass 1, 2012.