

COLORADO RIVER RECOVERY PROGRAM  
FY 2019 ANNUAL PROJECT REPORT

RECOVERY PROGRAM  
PROJECT NUMBER: 167

- I. Project Title: Smallmouth bass control in the White River
- II. Bureau of Reclamation Agreement Number(s): R19AP00059 (UDWR)  
R15PG00083 (USFWS)  
R17AP00301 (CPW)
- III. Principal Investigator(s):

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IV. Abstract:

U.S. Fish and Wildlife Service, Utah Division of Wildlife Resources, and Colorado Parks & Wildlife worked collaboratively to control an established and growing population of smallmouth bass in the White River. In 2019, a total of 5,387 smallmouth bass were removed between Taylor Draw Dam and the Enron boat ramp (river mile 104.3-24.0). Overall catch rates in 2019 were lower than in 2018, but because effort was increased, total catch was the highest to date. Similar to years past, adult (> 200 mm total length [TL]) bass catch rates peaked in the reach immediately downstream of Taylor Draw Dam; adults comprised 28.8% of bass captures in Colorado and 5.6% in Utah. Adult, juvenile (100-199 mm TL), and smallmouth bass less than 100 mm TL were caught in 2019, demonstrating that successful reproduction and survival have occurred in this

system for at least the past three years. The size structure of bass caught in 2019 revealed one dominant size class that appears to correspond to fish spawned in 2018 and, in Colorado, more even representation by fish up to 275 mm TL than what has been observed in the past.

V. Study Schedule: 2012 – ongoing

VI. Relationship to RIPRAP:

GENERAL RECOVERY PROGRAM SUPPORT ACTION PLAN

III. Reduce negative impacts of nonnative fishes and sportfish management activities.

III.A. Reduce negative interactions between nonnative and endangered fishes.

III.A.2. Identify and implement viable active control measures.

GREEN RIVER ACTION PLAN: WHITE RIVER

III. Reduce negative impacts of nonnative fishes and sportfish management activities.

III.A. Reduce negative interactions between nonnative and endangered fishes.

III.B.2. Preclude new nonnative species introductions, translocations or invasions to preserve native species dominance within critical habitat.

VII. Accomplishment of FY 2019 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

**Task 1: Smallmouth bass removal from Taylor Draw Dam to the Colorado/Utah border**

U.S. Fish and Wildlife Service Green River Basin Fish and Wildlife Conservation Office (GRB FWCO) and Colorado Parks and Wildlife (CPW) removed smallmouth bass from the Taylor Draw Dam to the Colorado/Utah border between 9 May and 9 August 2019 (Table 1). The majority of effort occurred in the 11 miles downstream of Taylor Draw Dam, as previous data suggested this was the area containing the highest bass densities and an abundance of spawning adult bass (Breen et al. 2012; Webber et al. 2013, 2014; Smith et al. 2015, 2016, 2017, 2018). Additionally, four days of removal were conducted from the BLM Big Trujillo Wash boat launch to the Utah border (river mile [RM] 87.5-71.6) because early season effort in 2017 and 2018 in this reach indicated bass densities that warranted removal.

Crews removed 3,534 smallmouth bass during 28 days of electrofishing in the Colorado portion of the White River (Table 1), consisting of 1,071 adults ( $\geq 200$  mm TL), 1,995 juveniles (100-199 mm TL), and 467 fish  $< 100$  mm TL (likely age-1). Of the 1,071 adults caught, 53 were large enough to be considered piscivores ( $\geq 325$  mm TL) posing a competitive threat to Colorado pikeminnow and a predatory threat to smaller native fishes. A total of 406 adult bass were expressing gametes, and more ripe males were caught than females ( $n = 221$  and  $185$ , respectively).

Mean total length of smallmouth bass removed was 164.4 mm (range = 59-476 mm TL;

Figure 2). The size structure of bass caught in 2019 revealed one dominant size class that appears to correspond to fish spawned in 2018 and more even representation by fish up to 275 mm TL than what has been observed in the past (Figure 3). Although the magnitude of bass captured varies by year, age-1 (range = 100-199 mm) fish comprise a noticeable proportion of each year's sample, indicating consistent reproduction and juvenile survival in the White River since 2012 (Figure 3).

Catch-per-unit effort (CPUE) for smallmouth bass from Taylor Draw Dam to the Colorado-Utah border (RM 104.3-71.6) in 2019 was 19.0 fish/hr. This level of removal represents the third highest catch rate since the initiation of this project, but is substantially below the 2018 catch rate of 30 fish per hour (Figure 1). This reduction in catch compared to 2018 (Figure 1) likely resulted from a combination of factors. These include runoff and associated higher flows/velocities and colder water temperatures extending into July along with effort being more than doubled in 2019 (2019 effort = 186.3 hrs vs. 2018 effort = 83.2 hrs). The catch rate downstream of the Big Trujillo Wash boat launch (RM 87.5) was lower (effort = 26.8 hrs, CPUE= 7.7 bass/hr) than upstream reaches (effort = 159.5 hrs, CPUE = 21.0 bass/hr; Table 1, Figure 1) in 2019. Due to consistently higher catch rates, efforts have focused on reaches above Big Trujillo Wash and removal efforts downstream of Big Trujillo Wash were infrequent prior to 2017.

Adult catch rates were highest in the reach immediately downstream of the Taylor Draw Dam (RM 104.3-102.6) and, similar to years past, declined abruptly downstream of Douglas Creek (RM 97.1; Figure 4; Webber et al. 2013, 2014, Smith et al. 2015, 2016, 2017, 2018). Catch rates for juveniles between 100 to 199 mm TL were fairly high (CPUE > 9 bass/hr) in all reaches upstream of Big Trujillo Wash, and were highest from RM 97.1 to 93.4 (Reach 3; Figure 4). This pattern is similar to 2018 (Smith et al. 2018), but unlike previous data where catch rates for all size classes had been relatively low in Reach 3 (Smith et al. 2017). Only one day of removal occurred in reach three in 2018, compared to six days in 2019. These continued high catch rates suggest high densities of juvenile smallmouth bass within Reach 3.

Targeted smallmouth bass removal from the Big Trujillo boat launch (RM 87.5) to the Utah state line (RM 71.6) had not been conducted as part of Project 167 between 2012 and 2016 due to lower bass densities compared to reaches upstream observed during Project 128 passes. Increased smallmouth bass catch rates during Project 128 passes in 2017, which continued in 2018, prompted GRB FWCO to expand Project 167 efforts into this orphaned reach. While the 2019 CPUE and total catch in this stretch decreased compared to 2017 and 2018, the driver might not have been lower bass densities but instead logistical challenges. Extended high flows on the White River in 2019 required that crews either sample in suboptimal conditions (higher flows, velocities, and cooler water temperature) or adjust schedules such that fieldwork was delayed later into the season. Additionally, access to the Colorado-Utah state line through private property was declined in 2019. Lack of access to the state line required Utah Division of Wildlife Resources Vernal (UDWR Vernal) to begin field trips at the Big Trujillo Wash boat launch and GRB FWCO to end field trips at the Bonanza Bridge boat launch (RM 59.0). In both cases, crews were required to travel ~15 river miles without electrofishing. This

inefficiency in both time and effort promoted focusing efforts in reaches upstream of the Big Trujillo Wash launch during optimal removal periods.

### **Task 2: Five smallmouth bass removal passes from the Colorado/Utah border to Enron boat launch**

Twenty days of smallmouth bass removal (RM 71.6-24.0; 169.84 hrs of total effort) were completed via cataraft electrofishing from 20 May to 13 July 2019 and from 20-23 October 2019 (Table 1). This represents approximately twice the amount of removal effort expended in Utah in 2018 (Smith et al. 2018). However, limited access affected our ability to focus efforts on repetitive nest disturbance in upstream areas (e.g., Smith et al. 2017) that have consistently proven to hold higher densities of smallmouth bass (Breen et al. 2012; Webber et al. 2013, 2014; Smith et al. 2015, 2016, 2017). Therefore, each removal trip in 2019 consisted of four continuous days of sampling from the Colorado-Utah state line (RM 71.6) to the Enron boat launch (RM 24.0; Table 1).

During this effort, 1,674 smallmouth bass were removed in the Utah portion of the White River (Table 1), representing a slight increase compared to 2018 (Smith et al. 2018). Catch consisted of 1,581 juveniles ( $\leq 199$  mm TL) and 93 adults ( $> 200$  mm TL), two of which were in the piscivore size class ( $\geq 325$  mm TL; Figures 5 and 6).

Mean total length of smallmouth bass removed in Utah was 123.6 mm (range = 42-382 mm TL; Figure 5). As was observed in Colorado, the size structure of bass removed from Utah in 2019 revealed one dominant size class that appears to correspond to fish spawned in 2018, particularly individuals between 100-124 mm TL (Figure 5). Due in part to a new strategy implemented in 2019, the number of adult smallmouth bass removed in Utah more than doubled compared to 2018 (Figure 6; Smith et al. 2018). More specifically, our single removal pass conducted in October was responsible for 35% of adult captures (mean  $\pm$  SE = 243.3  $\pm$  3.5 mm TL) in Utah. Adult bass were dissected for sex determination and gamete expression. Excluding all bass collected in October (i.e., post-spawn) and two fish collected in spring/summer because sex was not recorded, we removed 43 female and 16 male adult bass; 4.7% of females and 6.3% of males were ripe at the time of collection.

Overall CPUE was 9.86 fish/hr, which is slightly more than half of the 2018 catch rate (17.07 fish/hr; Smith et al. 2018; Figure 7). We suspect that high flows in 2019 relative to 2018 were largely responsible for decreased catch rates. More specifically, as we made adjustments to focus on the descending limb of the hydrograph (i.e., reduced flows and better water clarity to improve capture rates), we increased captures within the year, highlighted by removal of 685 bass (41% of the total) during our July 10-13 trip (Table 1). With the exception of a couple 5-mile sample reaches for juveniles, CPUE by river reach was relatively consistent for all size classes of smallmouth bass, suggesting that population establishment and expansion has continued in 2019 (Figure 4).

### **Task 3: Data entry, analysis, and reporting**

Recovery Program annual progress report submitted November 2019. Data will be submitted to the STReAMS database in December 2019.

- Additional noteworthy observations:
- Four northern pike were captured in the White River in 2019. Two were caught in the most upstream reach (RM 104.3-102.7), one between Douglas Creek (RM 97.1) and the Highway 64 bridge (RM 93.8), and one between RM 61.5-56.5 in Utah. Two northern pike were provided to CPW to determine origin through otolith or genetic analysis. In the past, no more than two northern pike have been caught per year. An increase in northern pike catches in the White River below Kenney Reservoir may be the result of a recently discovered population within Kenney Reservoir. This population is likely the result of an illicit introduction. Removal efforts are ongoing in Kenney Reservoir and will be reported by CPW in 2020.
- More green sunfish were caught in 2019 than in any year since 2012. The majority (74.7%) were caught in the most upstream reach (RM 104.3-102.6), and most green sunfish captures (81.8%) occurred in July and August. Higher and longer than average runoff in the White River this year equated to a longer spilling period at Taylor Draw Dam. Since green sunfish occur in Kenney Reservoir and more were caught in the 1.7 mile reach immediately downstream of this dam, it seems likely that many of these fish were reservoir escapees. Regardless of the source, these increased numbers warrant attention in future removal efforts.
- Road access to the White River at the Colorado-Utah state line is no longer possible as of 2019. More specifically, we no longer have landowner permission to launch boats near the state line. Additionally, a driftwood pile that was deposited in 2019 now prevents boat egress at the state line, which is where GRB FWCO crews ended field trips in 2017 and 2018.
- Flows in the White River in 2019 peaked at 4,470 CFS (USGS gauge #09306500 located at Watson, UT) on June 24, 2019. This date of peak discharge is later than any year since the inception of this project in 2012. Average daily discharge was consistently over 1,000 CFS beginning 01 April 2019. In 2018, peak flow reached 1,420 CFS on May 13, more than a month earlier than in 2019. High flow conditions may disadvantage smallmouth bass, particularly during the spawning period by delaying the onset of warmer water temperatures and formation of favorable spawning habitats. However, these higher discharge conditions may also inhibit electrofishing captures. Delayed spawning may result in fewer bass concentrating in known spawning areas and overall dispersal of the population, reducing the probability of capture. Lower water temperature, increased turbidity, and decreased boat maneuverability in higher velocity conditions may impede electrofishing efficiency. While a decrease in smallmouth bass CPUE was noted in 2019, early season electrofishing conditions may have partially contributed to the reduced CPUE.

IX. Recommendations:

- Removal passes in the upper 11 miles of the White River below Taylor Draw Dam should continue to be the priority of this project. Removal should continue to target adult smallmouth bass before and during the spawn period since spawning adults make up a larger proportion of the total catch in Colorado.
- Smallmouth bass removal should continue in the reach between Big Trujillo Wash (RM 87.6) and the Colorado-Utah border (RM 71.6). The higher catch rates observed in this reach and in Utah reaches in 2017 and 2018 justify the additional effort required to conduct bass control in this stretch. Additional effort in Colorado will be accommodated by adding nine days in 2020 to cover removal downstream of Big Trujillo Wash.
- In response to loss of access in close proximity to the Colorado-Utah state line, we recommend that in future years of implementation GRB FWCO covers the area from the state line downstream to Bonanza bridge (RM 59.0) and UDWR Vernal begins their sampling reach at Bonanza bridge. This strategy will eliminate the need for either agency to float any portion of the White River without electrofishing, thus increasing our efficiency dramatically over 2019.
- Fall removal efforts in Colorado could be investigated if resources are available and flows in the White River are sufficient, but would not replace spring and summer efforts.
- Additional efforts in the fall may contribute to control of smallmouth bass while limiting disturbance to the native fish community during their spawning period. Fall removal efforts in Utah in October 2019 were effective at removing adult smallmouth bass and should continue in the future.
- Coordinate with Rio Blanco Water Conservancy District and the Town of Rangely for future opportunities to manipulate discharge below the Taylor Draw Dam hydro-electric tunnel to provide short duration high flow events in the White River during low flow years. Evaluate young-of-year smallmouth bass response to flow manipulations.

X. Project Status: On track and ongoing

XI. FY 2019 Budget Status:

- A. Funds Provided: \$79,999
- B. Funds Expended: \$79,999
- C. Difference: \$0
- D. Percent of the FY 2019 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: \$0

XII. Status of Data Submission (Where applicable):

We will submit all data to the database manager by December 2019.

XIII. Signed:

Principal Investigators: Chris Smith, Matthew J. Breen, & Jenn Logan

Date: November 13, 2019

XIV. References:

- Breen, M.J., J.A. Skorupski Jr., A. Webber, and T. Jones. 2012. Smallmouth bass control in the White River. Annual Report to the Upper Colorado River Endangered Fish Recovery Program. Denver, CO.
- Smith, C., T. Jones, M.J. Breen, R.C. Schelly, and J. Logan. 2015. Smallmouth bass control in the White River. Annual Report to the Upper Colorado River Endangered Fish Recovery Program. Denver, CO.
- Smith, C., T. Jones, M.J. Breen, R.C. Schelly, and J. Logan. 2016. Smallmouth bass control in the White River. Annual Report to the Upper Colorado River Endangered Fish Recovery Program. Denver, CO.
- Smith, C., T. Jones, M.J. Breen, R. Staffeldt, and J. Logan. 2017. Smallmouth bass control in the White River. Annual Report to the Upper Colorado River Endangered Fish Recovery Program. Denver, CO.
- Smith, C., T. Jones, M.J. Breen, and J. Logan. 2018. Smallmouth bass control in the White River. Annual Report to the Upper Colorado River Endangered Fish Recovery Program. Denver, CO.
- Webber, A., M.J. Breen, and J.A. Skorupski Jr. 2013. Smallmouth bass control in the White River. Annual Report to the Upper Colorado River Endangered Fish Recovery Program. Denver, CO.
- Webber, A., M.T. Jones, M.J. Breen, and R.C. Schelly. 2014. Smallmouth bass control in the White River. Annual Report to the Upper Colorado River Endangered Fish Recovery Program. Denver, CO.

APPENDIX:

**Table 1. Juvenile (includes all bass < 200 mm) and adult smallmouth bass removed from the White River for each pass in 2019. River miles (RM) and dates sampled are also indicated for each pass.**

<b>Agency, Date</b>	<b>RM</b>	<b>Juveniles</b>	<b>Adults</b>	<b>Total</b>
FWS, 9 May	104.3-97.1	12	45	57
FWS, 14 May	104.3-102.6, 97.1-93.5	5	7	12
FWS, 17 May	97.1-87.6	11	23	34
FWS, 20 May	104.3-97.1	48	67	115
CPW, 21 May	93.5-87.6	7	8	15
FWS, 22 & 23 May	87.6-72.0	47	19	66
CPW, 28 May	93.5-87.6	38	13	51
CPW, 29 May	104.3-97.1	54	62	116
CPW, 30 May	104.3-104.0, 97.1-93.5	55	30	85
FWS, 3 June	104.3-97.1	105	97	202
CPW, 4 June	93.5-87.6	41	30	71
CPW, 5 June	104.3-97.3	73	107	180
FWS, 7 June	104.3-102.6, 97.1-93.5	24	36	60
CPW, 19 June	104.3-97.3	23	33	56
CPW, 9 July	104.3-97.3	65	65	130
FWS, 9 July	93.5-87.6	32	6	38
FWS, 10 & 11 July	87.6-72.0	114	26	140
FWS, 12 July	104.3-102.6, 97.1-93.5	43	17	60
FWS, 15 July	104.3-97.1	164	85	249
FWS, 16 July	97.1-87.6	187	13	200
FWS, 17 July	104.3-97.3	192	71	263
FWS, 18 July	93.5-87.6	121	13	134
FWS, 19 July	104.3-102.6, 97.1-93.5	195	21	216
FWS, 7 August	104.3-97.1	345	121	466
FWS, 8 August	104.3-102.6, 97.1-93.5	248	29	277
FWS, 9 August	93.5-87.6	214	27	241
<b>Colorado Totals</b>		<b>2463</b>	<b>1071</b>	<b>3534</b>
UDWR, 20-23 May	71.6-24.0	297	20	317
UDWR, 3-6 June	71.6-24.0	415	23	438
UDWR, 24-27 June	71.6-24.0	145	5	150
UDWR, 10-13 July	71.6-24.0	672	13	685
UDWR, 20-23 October	71.6-24.0	52	32	84
<b>Utah Totals</b>		<b>1581</b>	<b>93</b>	<b>1674</b>
UDWR, 15-19 July*	71.6-24.0	62	2	64
UDWR, 22-25 July*	71.6-24.0	33	3	36
UDWR, 29 July-2 August*	71.6-24.0	70	9	79
<b>Three Species Monitoring Totals</b>		<b>165</b>	<b>14</b>	<b>179</b>
<b>Combined Totals</b>		<b>4209</b>	<b>1178</b>	<b>5387</b>

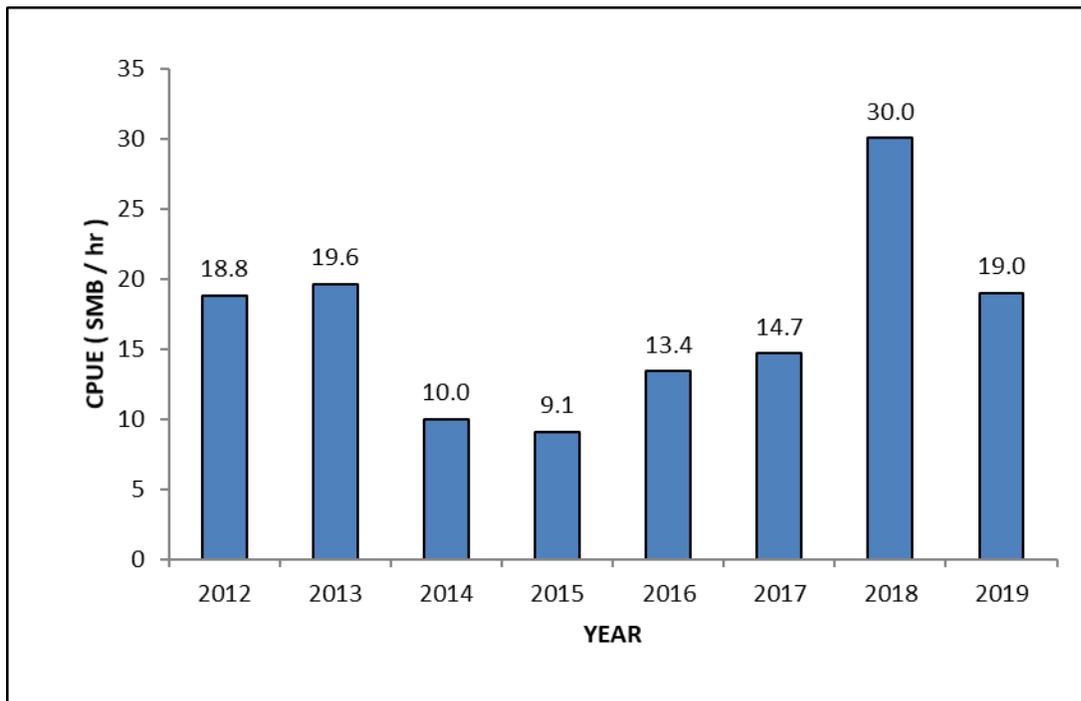
\* Three species sampling conducted by the state of Utah, not funded by the Recovery Program; this is the only location in this report where this data is described. Note that this sampling is not focused on smallmouth bass and their respective habitats as during targeted passes for this project.

**Table 2. Ancillary captures from the White River, 2019.**

<b>Species</b>	<b>Total Captured</b>	<b>Length Range (mm)</b>
Black bullhead	25	82 - 243
Black crappie	401	76 - 315
Bonytail	15	267 - 325
Brown trout	2	153 - 178
Colorado pikeminnow	30	340 - 745
Green sunfish	818	35 - 232
Northern pike	4	632 - 880
Rainbow trout	2	303 - 315
Razorback sucker	5	259 - 473
Roundtail chub	123	128 - 417
White sucker x bluehead sucker hybrid	30	133 - 443
White sucker x flannelmouth sucker hybrid	75	128 - 502
White sucker	69	96 - 470

\* UDWR captured four razorback sucker and CPW captured one individual that had been stocked into the White River by CPW on 2 June.

\*\*UDWR collected roundtail chub (n = 127) during all Project 167 passes. CPW collected roundtail chub (n = 7) on 30 May for an educational display. All fish were returned to the White River on 2 June.



**Figure 1. Catch rates for all smallmouth bass captured during Project 167 passes in the White River in Colorado (RM 104.3-71.6), 2012-2019.**

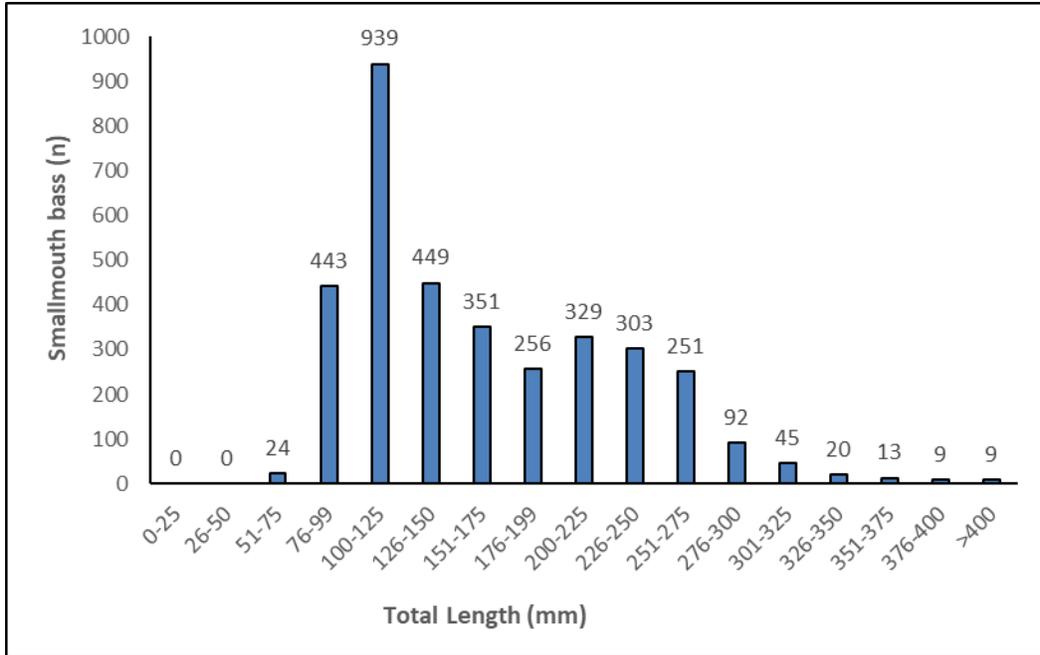


Figure 2. Length frequency of smallmouth bass removed from the White River in Colorado, 2019.

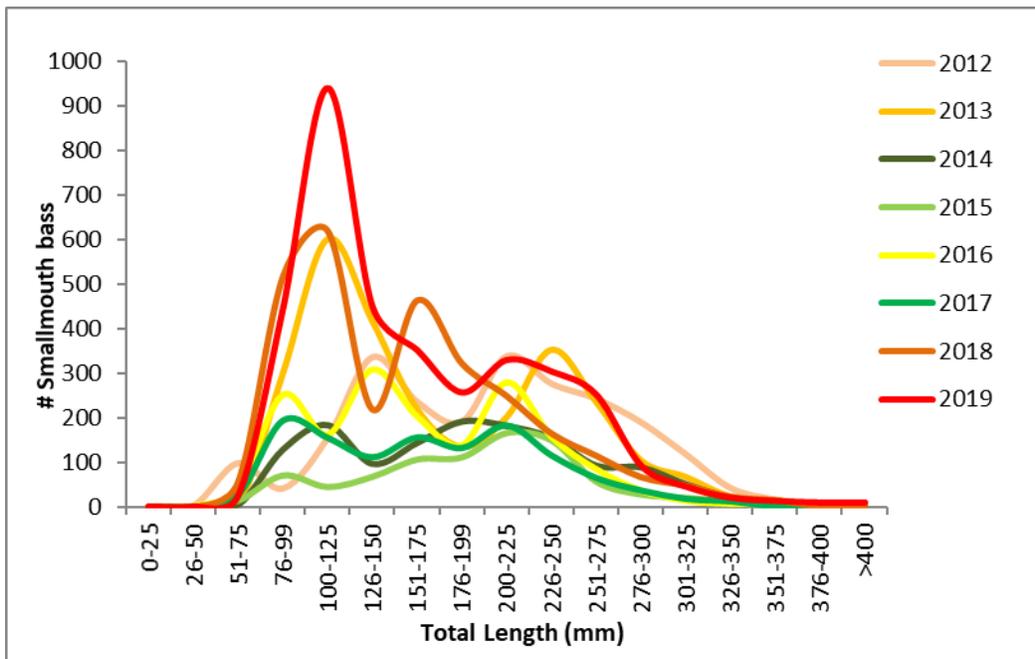


Figure 3. Length frequency of smallmouth bass removed from the White River in Colorado, 2012-2019.

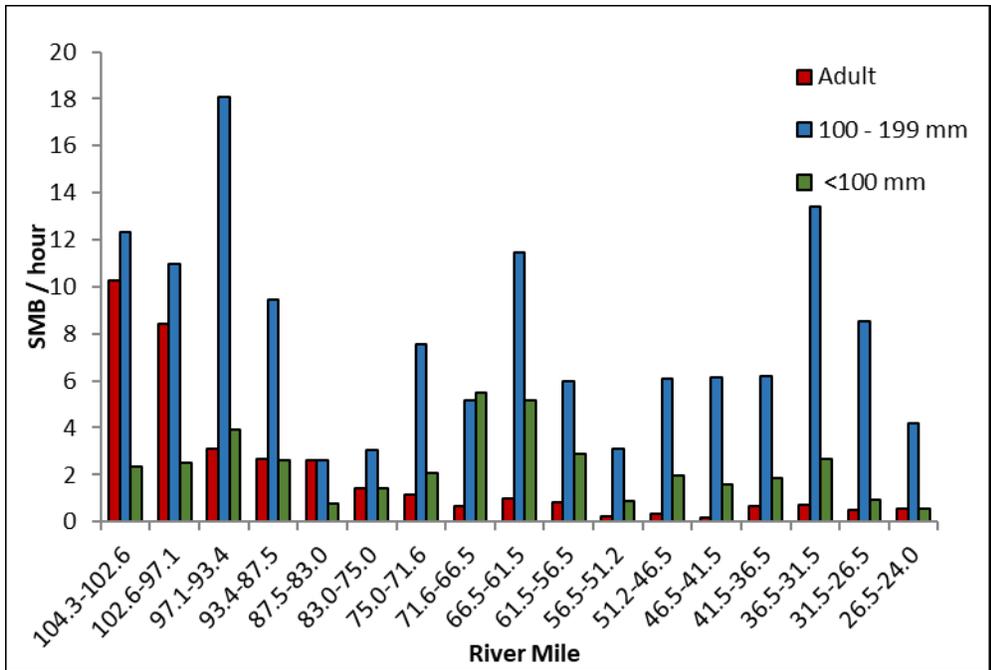


Figure 4. Catch rates for different size classes of smallmouth bass in the White River, Colorado and Utah during Project 167 passes by river reach, 2019.

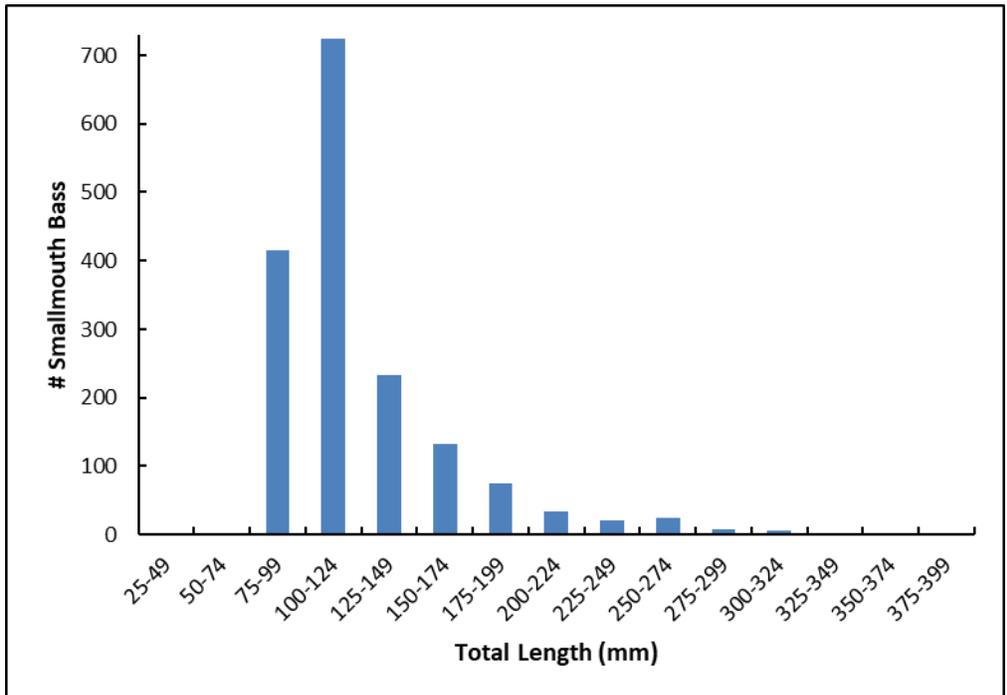


Figure 5. Length frequency of smallmouth bass removed from the White River in Utah, 2019.

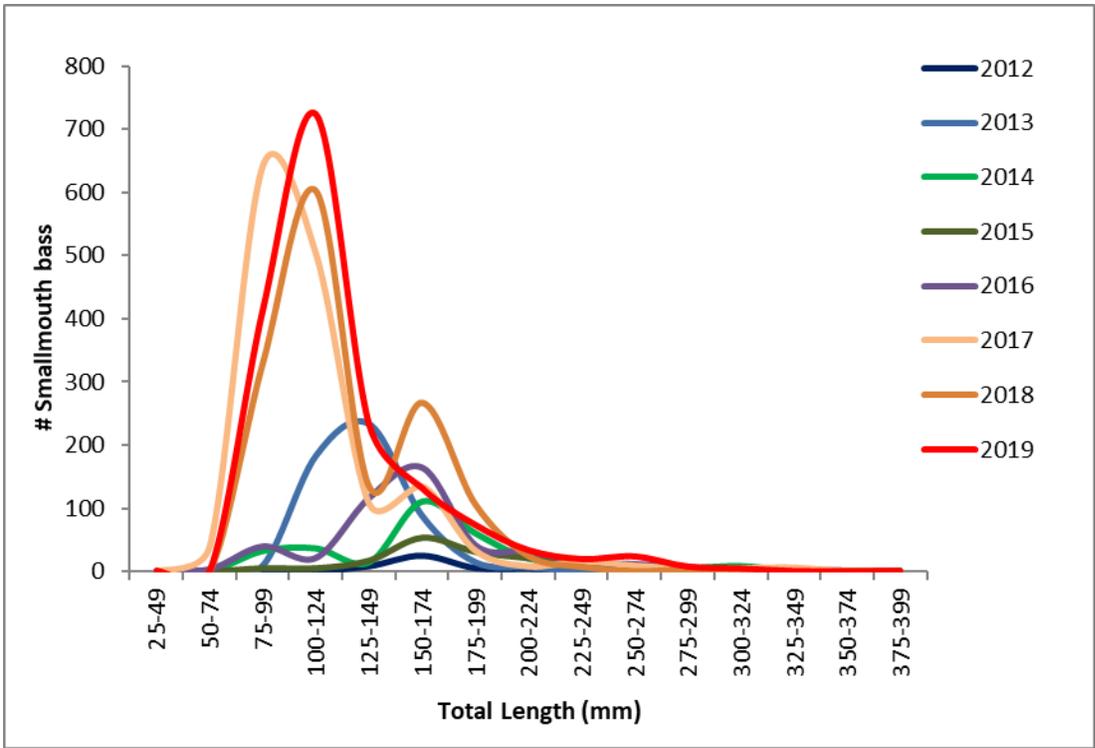


Figure 6. Length frequency of smallmouth bass removed from the White River in Utah, 2012-2019.

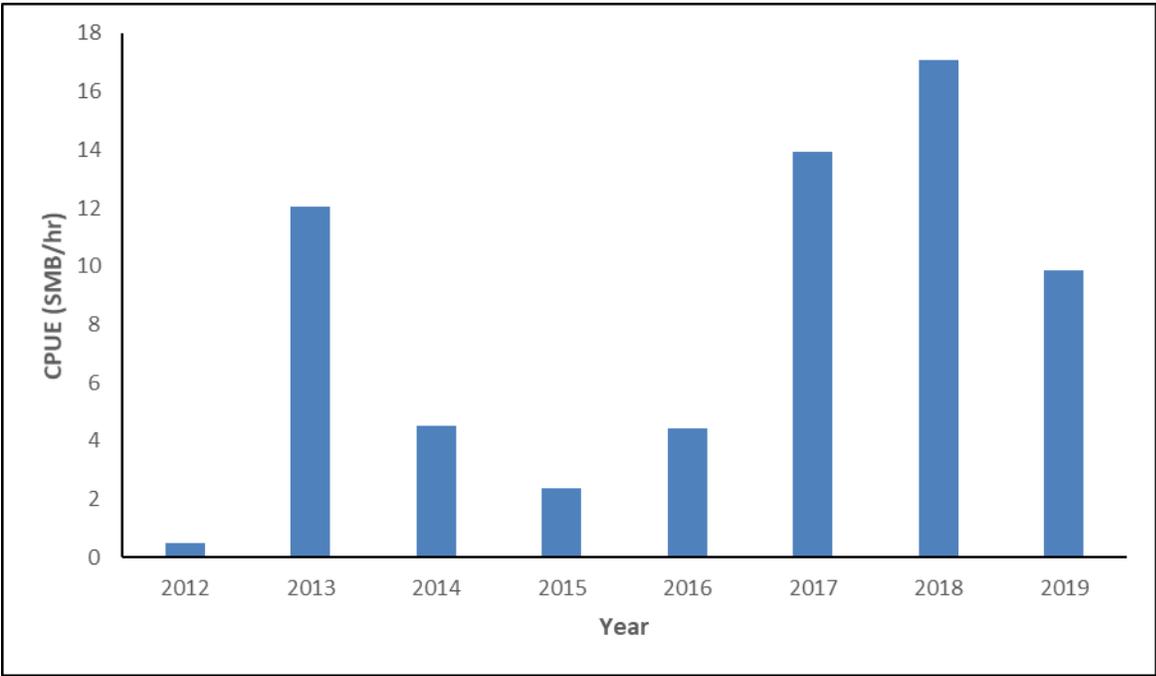


Figure 7. Catch-per-unit-effort (CPUE) for all smallmouth bass captured during Project 167 passes in the White River in Utah (RM 71.6-24.0), 2012-2019.

## ANNUAL PERFORMANCE PROGRESS REPORT (PPR)

BUREAU OF RECLAMATION AGREEMENT NUMBER: #R14AP00007

UPPER COLORADO RIVER RECOVERY PROGRAM PROJECT NUMBER: 167

Project Title: Smallmouth bass control in the White River

Principal Investigator:

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Project/Grant Period: Start date (Mo/Day/Yr): 5/1/2014  
End date: (Mo/Day/Yr): 9/30/2019  
Reporting period end date (Mo/Day/Yr): 9/30/2019  
Is this the final report? Yes \_\_\_\_\_ No X

Performance:

Tasks 2–3 were accomplished as outlined in the scope of work for this project. From 20 May to 13 July 2019 and from 20–23 October 2019 we completed five passes of cataraft electrofishing from river mile 71.6–24.0. Bass densities in the lower White River have increased slightly from 2018 levels, mainly due to juvenile smallmouth bass (< 200 mm total length). We removed a total of 1,674 smallmouth bass in 2019. Annual reporting is complete under task 3 and nonnative data will be submitted to Recovery Program personnel by December 2019.

## ANNUAL PERFORMANCE PROGRESS REPORT (PPR)

BUREAU OF RECLAMATION AGREEMENT NUMBER: #R17AP00301

UPPER COLORADO RIVER RECOVERY PROGRAM PROJECT NUMBER: 167b

Project Title: Smallmouth bass control in the White River

Principal Investigator:

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Project/Grant Period: Start date (Mo/Day/Yr): 9/22/2017  
End date: (Mo/Day/Yr): 9/30/2022  
Reporting period end date (Mo/Day/Yr): 9/30/2019  
Is this the final report? Yes \_\_\_\_\_ No X

Performance:

Task 5-Complete

- Eight removal days were conducted on the White River by CPW crews from May 21-July 9, 2019. CPW was unable to complete the ninth removal day due to unfavorable early season conditions (high flows and low water temperatures) and insufficient fall river flows. Two, 16' rafts equipped with ETS units electrofished both shorelines and all accessible backwater and slackwater habitats. Fish captured were measured in length to the nearest millimeter and weighed to the nearest gram. Reproductive condition was also assessed on all Smallmouth Bass over 200 mm in total length. Centrarchid species, Black Bullhead, non-native sucker species, and non-native sucker hybrids were lethally removed. While not specifically targeted, some incidental captures of non-native cyprinid species also resulted in lethal removal. Five Channel Catfish were removed as part of CPW's annual fish health inspection for the White River. Two Colorado Pikeminnow and one Razorback Sucker were captured by CPW crews in 2019. Other native fish species were not netted or handled.
- Four passes were completed from Taylor Draw Dam (RM 104.3) to Douglas Creek (RM 97.1). An additional pass was completed from Taylor Draw Dam to RM 102.6. One pass was completed from RM 97.1- RM 93.4 and three passes from RM 93.4- 87.5. Additional passes were conducted by USFWS personnel and are not included in this summary.

- Ten species of non-native fish were captured and removed. Smallmouth Bass comprised 57% of the total fish removed by CPW crews. Black Bullhead, Black Crappie, Common Carp, Fathead Minnow, Red Shiner, Sand Shiner, Green Sunfish, White Sucker and White Sucker hybrids were also removed. As part of CPW's annual fish health inspection, 5 Channel Catfish were also removed.
- Total number of fish captured and removed = 1,236

Species	Total Captured	% of Total Catch	Size Range
Black Bullhead	19	1.5%	108-221 mm
Black Crappie	196	15.9%	63-227 mm
Channel Catfish	5	<1.0%	273-326 mm
Green Sunfish	154	12.5%	38-187 mm
Smallmouth Bass	704	57.0%	22- 476 mm
White Sucker and Hybrids	83	6.7%	133-502 mm
Nonnative cyprinid species	75	6.0%	52-89 mm
<b>Total</b>	<b>1,236</b>		

- Total effort expended= 55.68 hours

#### Catch-per-unit-effort (CPUE)

Species	CPUE (fish/hour)
Black Bullhead	0.34
Black Crappie	3.52
<b>Smallmouth Bass</b>	<b>12.64</b>
<b>White Sucker and Hybrids</b>	<b>0.99</b>
<b>Nonnative cyprinid species</b>	<b>1.35</b>

#### Task 6- Complete

- All data submitted to USFWS (Green River- FWCO) for data analysis October 2019.
- All data submitted to STreaMs database October 2019.