

# UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2023 ANNUAL REPORT

PROJECT: 22f

**Project Title:**

Interagency standardized monitoring program assessment of endangered fish reproduction in relation to Flaming Gorge Dam operations in the middle Green and lower Yampa rivers: Yampa and middle Green River assessment of Colorado Pikeminnow and Razorback Sucker larvae

**Bureau of Reclamation Agreement Number:**

R19AP00058

**Project/Grant Period:**

Start date: 10/01/2018

End date: 09/30/2023

Reporting period end date: 09/30/2023

Is this the final report?  No

**Principal Investigator:**

Kevin R. Bestgen

Larval Fish Laboratory (LFL)

Department of Fish, Wildlife, and Conservation Biology

Colorado State University

Fort Collins, CO 80523

(970) 491-1848/5295; FAX 491-5091

E-mail [kbestgen@colostate.edu](mailto:kbestgen@colostate.edu)

Christian Smith

USFWS

Green River Basin FWCO

1380 S. 2350 W.

Vernal, Utah 84078

Phone: (435) 789-0354

**Abstract:**

The goal of Flaming Gorge flow and temperature recommendations (Muth et al., 2000, LaGory et al. 2019) that were implemented in 2006 was to improve the status and prospects for recovery of endangered fish populations in the Green River. A major emphasis of those recommendations was to enhance the reproduction and recruitment success of endangered fishes in the middle Green River, in particular Razorback Sucker and Colorado Pikeminnow. Data reported here will be used to assess effects of flow and temperature regimes on reproduction by Razorback Suckers and Colorado Pikeminnow and to correlate abundance of larvae to abundance of juveniles in autumn. Larvae of Razorback Sucker *Xyrauchen texanus* and Colorado Pikeminnow *Ptychocheilus lucius* were captured in the Green River basin in spring and summer 2023, respectively. Razorback Sucker sampling was conducted with light traps primarily in the Green River between Jensen and Ouray, and Colorado Pikeminnow were sampled with drift nets in the lower Yampa River. Sampling was designed to provide a measure of timing of reproduction and a measure of annual reproductive success of each species. Diel variation in abundance of Colorado Pikeminnow larvae in the drift was also assessed.

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

### **Study Schedule:**

Ongoing in 2023 in a new agreement began on 1 October 2018, similar sampling has been conducted since 1990 for Colorado Pikeminnow drift in the Yampa River, CO, except for 1997, and since 1992 for Razorback Suckers in the middle Green River, Utah. Anticipate continued annual sampling to build this valuable long-term monitoring dataset, which informs real-time flow management at Flaming Gorge Dam.

### **Relationship to RIPRAP:**

Green River Action Plan: Mainstem

I. Provide and protect instream flows--habitat management.

I.A. Green River above Duchesne River.

I.A.3.d. Operate Flaming Gorge Dam to provide winter and spring flows and revised summer/fall flows, if necessary.

I.A.3.d.1. Conduct real-time larval razorback and Colorado Pikeminnow sampling to guide Flaming Gorge operations.

I.D. Green River (Flaming Gorge to Colorado River)

I.D.2.d.(1) Conduct annual monitoring of larval Razorback Suckers and analyze historic monitoring data

I.D.2.f.(1) Conduct annual monitoring of larval Colorado Pikeminnow

V. Monitor populations and habitat and conduct research to support recovery actions--research, monitoring, and data management.

V.C.4. Monitor larval Colorado Pikeminnow.

V.D.1. Implement Razorback Sucker monitoring plan.

### **Accomplishment of FY 2023 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:**

#### Project Objectives

- 1) Determine timing and duration of spawning by Razorback Suckers, timing of first presence, and abundance of larvae in the system as measured by capture of larvae in light traps (Figures 1 and 2). Additional sampling was also conducted in the Stewart Lake floodplain wetland in early summer and autumn under this project.
- 2) Determine timing and duration of spawning by Colorado Pikeminnow and timing of first presence and abundance of larvae in the system as measured by capture of larvae downstream of spawning areas in the lower Yampa River (Figures 3 and 4).

#### **Task Description (FY 2023)**

- 1) Collect light trap samples for Razorback Suckers. The U.S. Fish and Wildlife Service (USFWS) office in Vernal, Utah was responsible for this task.
- 2) Collect drift net samples for Colorado Pikeminnow. The Larval Fish Laboratory was responsible for this task.
- 3) Identify light trap and drift net samples. Preliminary identifications will be conducted by the responsible sampling entity, with assistance from the LFL, as samples are collected to provide real-

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

time data. Final specimen identification and curation will be conducted by the LFL. Preliminary identification of 2023 samples has been completed and are being verified at this time.

- 4) Summarize specimen data collection in an annual report.

### **Accomplishments by Task**

- 1) Collect light trap samples for Razorback Suckers. Light trap samples were collected during May and June 2023 by the Vernal USFWS. Additional sampling was conducted in the Stewart Lake floodplain wetland and the Stirrup wetland in summer 2023 because the wetland was filled, unlike in 2021.
- 2) Collect drift net samples for Colorado Pikeminnow. Drift net samples were collected during June to August 2023 by the Larval Fish Laboratory.
- 3) Identify light trap and drift net samples.

Middle Green River light trap samples, 2020. The sorting and identification of 2020 samples is complete and verification and cataloging is finalized. Light trap sampling extended from 4 May to 12 June. First capture of Razorback Sucker larvae was on 19 May. Similar to 2019, discharge from Flaming Gorge Dam was not increased until 26 May, the day after Memorial Day.

Middle Green River light trap samples, 2021. The sorting and identification of 2021 samples has been complete and verification and cataloging is finalized. Light trap sampling began on 18 May, the day Razorback Sucker larvae were first captured, and ended on 10 June.

Middle Green River light trap samples, 2022. Light trap sampling began on 10 May and ended on 10 June; first Razorback Sucker larvae were captured 21 May. The sorting and identification of 2022 samples has been completed and verification and cataloging is finalized.

Middle Green River light trap samples, 2023. Light trap sampling began on 16 May and ended on 29 June; first Razorback Sucker larvae were captured 31 May. A total of 255 samples was collected. The preliminary sorting and identification of 2023 samples has been completed. These sample identifications need to be verified and that activity is underway.

Lower Yampa River drift net sampling, 2020. Yampa River drift net samples were collected from 16 June to 16 August (61 days of sampling, n = 273 total samples, n = 567 specimens). Samples have been identified and verified, and counts completed. The first Colorado Pikeminnow captured in 2020 was on 28 June and the last was on 26 July. Numbers of Colorado Pikeminnow larvae in samples were moderate and higher than in the last several years (Figure 3). The low abundance of larvae produced in the Yampa River in previous years is worrisome and may be linked to recent reduced abundance of adult Colorado Pikeminnow (see annual report, Project 128).

Summer flows in the Green River were lower in 2020 than in 2019 and in the range of magnitudes that typically promote higher survival of young Colorado Pikeminnow for the entire period of larval drift (Bestgen et al. 2020). Those flows usually in the range of 1,766-5,297 ft<sup>3</sup>/sec are typical of years when

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

young Colorado Pikeminnow survival in the middle Green River is relatively high. Unfortunately, sampling conducted in midsummer and during regular ISMP sampling (project 138) revealed little or no detectable Colorado Pikeminnow survival in summer 2020.

Lower Yampa River drift net sampling, 2021. Yampa River drift net samples were collected from 8 June to 5 August (59 days of sampling, n = 255 total samples). Identification and verification of specimen identities has been completed. The first Colorado Pikeminnow captured in 2021 was on 16 June, which was a few days prior to the onset of the flow spike in the Green River that began on 21 June, but their low early abundance indicated the overlap of larvae and higher flows was not problematic.

Lower Yampa River drift net sampling, 2022. Yampa River drift net samples were collected from 14 June to 15 August (63 days of sampling, n = 272 total samples). The first Colorado Pikeminnow captured in 2022 was on 2 July, which was several days after the onset of the flow spike in the Green River that began on 21 June. Identification and verification of specimen identities has been completed.

Lower Yampa River drift net sampling, 2023. Yampa River drift net samples were collected from 20 June to 14 August (56 days of sampling, n = 231 total samples). The first verified Colorado Pikeminnow captured in 2023 was on 10 July; early samples have not been verified so that date may be revised. Preliminary identification and verification of specimen identities has started.

### **Additional noteworthy observations:**

We made good progress on the backlog of identifications and verifications for both Razorback Sucker and Colorado Pikeminnow samples. This allowed addition of figures depicting relationships of flow timing to hatching date distributions for Razorback Sucker for 2020-2023, while also adding figures for 2013 and 2014 relationships for completeness. Those figures represent, in part, the outcome of the decision process of the Larval Trigger Study Plan (LTSP), whereby flows are released from Flaming Gorge Dam shortly after first presence of Razorback Sucker larvae is detected with light traps in the middle Green River, Utah. We highlight Stewart Lake here because it may serve as a surrogate measure for the success of Razorback Sucker in other middle Green River floodplain wetlands.

Years with some successful juvenile survival and recruitment in autumn (e.g., Project 165), defined as several hundred to several thousand individuals produced in Stewart Lake, are punctuated with years where less than 100, or even just a few, juveniles are produced. In years when recruitment was relatively successful (2013, n = 613; 2014, n = 749; 2016, n = 2,110; 2019, n = 417 [but likely twice that many or more due to uncontrolled release of unmarked fish]; 2022, n = 3,294) showed that larvae were not only present when flow releases were called for but were relatively abundant through the rising limb of the Green River hydrograph and while Stewart Lake was filling. Larvae were especially abundant in 2013 (Figure 2A), when flows were relatively low, and their abundance in that year may have benefited recruitment in a short wetland filling season. Year 2016 (Figure 2D) was a higher flow year and demonstrated that even with relatively few larvae apparently present, a relatively good year class of juveniles can be produced when increasing flows were sustained and wetlands were allowed to fill for substantial periods. The 2022 pattern (Figure 2J), when the largest number of juveniles was produced, not only in Stewart Lake but other middle Green River wetlands like the Stirrup and Old Charley Wash, larvae were abundant as flows rose. Larvae in high abundance was likely sustained for a period after the

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

day when nearly 300 larvae were captured but that was not evident because no samples were collected. This successful year occurred when flow increases were over a relatively short period but filling was efficient because water was withheld from Stewart Lake until flows rose so filling was relatively fast. Year 2022 was also after successful cattail reduction/removal from Stewart Lake and after a year when no filling occurred (2021) because water was excluded with gates, which resulted in complete elimination of all nonnative fishes prior to filling.

Successful Razorback Sucker recruitment years are in contrast to those when less than 100 autumn juveniles were produced (2015 ( $n = 87$ ), 2017-18 (2 and 10, respectively), 2020 ( $n = 32$ ), and 2023 ( $n = 14$ ) in Stewart Lake. In those years, larvae were sometimes few after flows were released (e.g., 2015; Figure 2C), a situation difficult for managers to predict in real-time and due to variable timing of hatching and larvae emergence. In 2017 (Figure 2E), sustained flow releases from Flaming Gorge Dam early in spring resulted in high flows and early wetland filling, which did not allow many larvae to enter already full floodplain wetlands. In 2018 (Figure 2F) and 2023 (Figure 2K), flow increases may not have been substantial enough or sustained for efficient wetland filling and fewer larvae were present as well. Year 2020 (Figure 2H) represents something of a conundrum, because larvae were available as flows rose. However, other factors such as substantial wetland cattail growth may have limited open areas in the wetland and the number of larvae entrained. Abundant nonnative predators may also have reduced survival of larvae during summer.

Also new to this report are figures depicting flow and hatching date distribution relationships for Colorado Pikeminnow for 2020-2022 (Figure 4F-H), which were made possible by finishing the backlog of sample processing and specimen identification. Unfortunately, substantial autumn year classes of Colorado Pikeminnow have not been produced in the middle Green River since 2015 (Project 138 results). High abundance of young Smallmouth Bass *Micropterus dolomieu* was noted in middle Green River backwaters in autumn 2023 during Project 138 and other sampling, which may have reduced survival of young Colorado Pikeminnow. This was also a year when a flow spike was not conducted, which in 2021 and 2022, was timed to reduce Smallmouth Bass reproductive success.

### **Recommendations:**

Continue sampling as planned in 2024. Continue to integrate this work into Colorado Pikeminnow recruitment patterns noted for juveniles per Bestgen and Hill (2016). An example of this data use is analysis of Colorado Pikeminnow larvae drift data in support of a study plan to implement managed base flows in the middle Green River in summer, a report that was completed in autumn 2020 (Bestgen et al. 2020). The first presence of pikeminnow determined from drift net samples was used to evaluate flow and water temperature levels and relate that to subsequent recruitment patterns in autumn, which were estimated from ISMP data (Project 138 results). That analysis led to recommendations for experimental flow conditions to increase Colorado Pikeminnow recruitment in the Green River.

Additional, more comprehensive assessments of recruitment for both Razorback Sucker and Colorado Pikeminnow, which are outside of the scope of this annual report, would be useful to inform future management. For example, it may be worthwhile to assess larval razorback sucker production in relation to reduced adult stocking rates in the Green River in the future, especially if managers are considering further reductions in stocking.

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

It would also be worthwhile to consider daily, or at least more regular, sampling of Razorback Sucker larvae with light traps. This would be useful to reduce gaps in abundance trends, especially when relating presence and abundance of larvae to periods when flows are inundating floodplain wetlands. This would result in stronger links between timing of larvae abundance to better determine drivers of year class strength of juvenile Razorback Suckers in floodplain wetlands such as Stewart Lake.

### **Project Status:**

Ongoing and on-track.

### **FY 2023 Budget Status**

Funds Provided: \$131,182

Funds Expended: \$101,000

Difference: \$21,182

Percent of the FY 2023 work completed, and projected costs to complete: 77% completed, no new funds needed to complete.

Recovery Program funds spent for publication charges: 0

### **Status of Data Submission**

NA

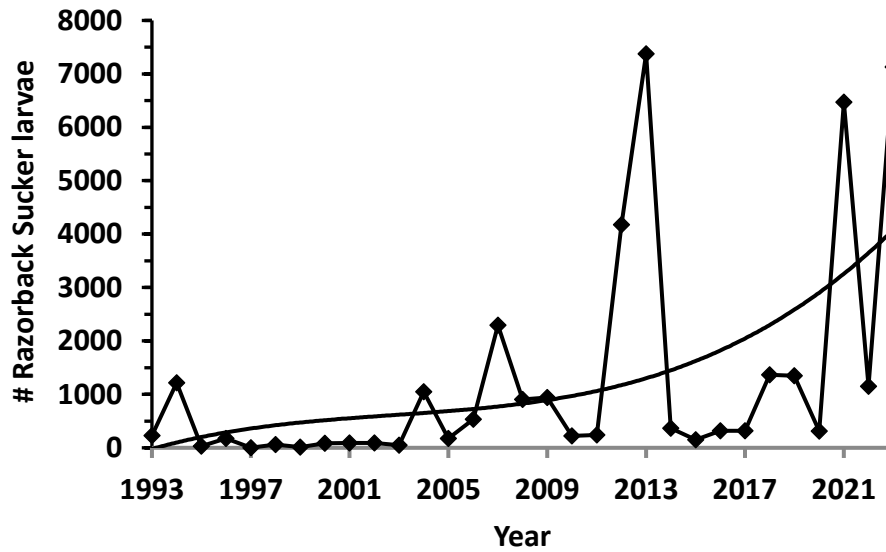
### **Signed:**

Principal Investigator: Kevin R. Bestgen

Date: 16 November 2023

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

A.



B.

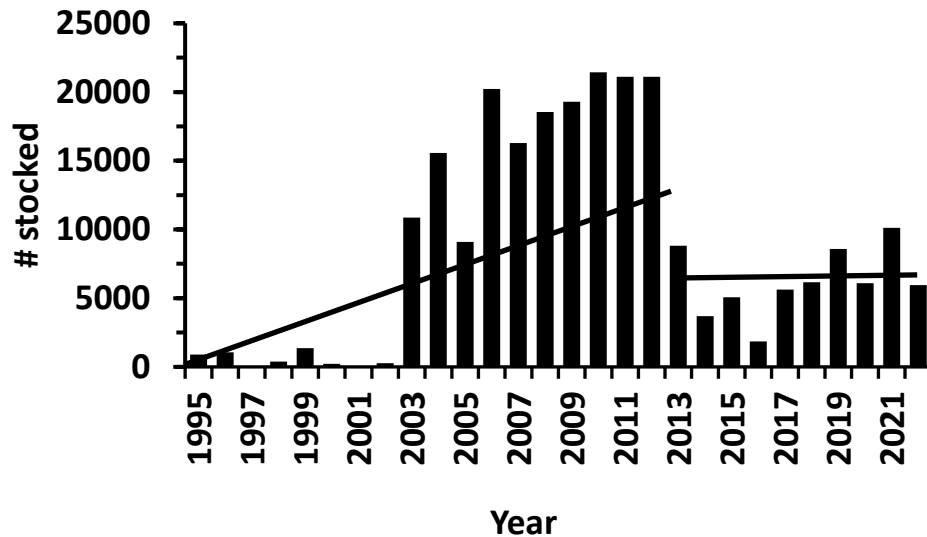
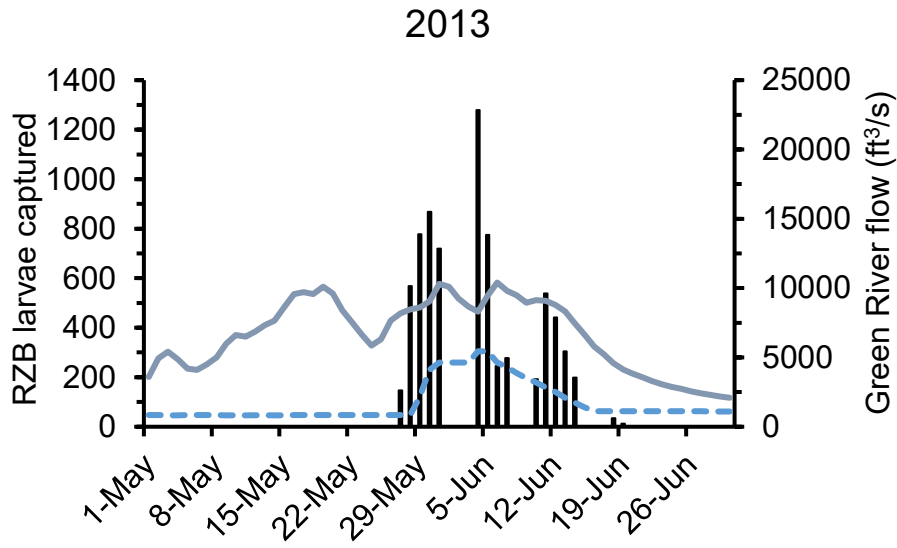


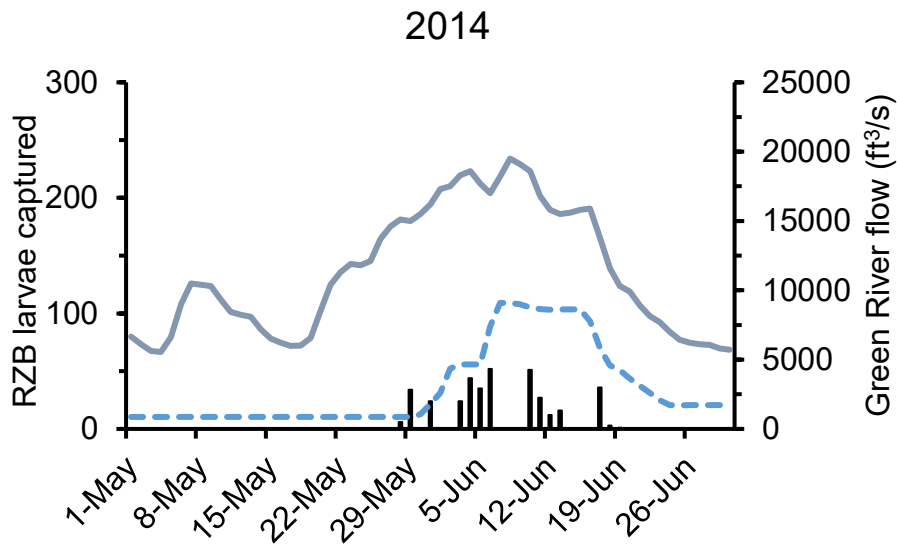
Figure 1. Panel A depicts the increasing number of Razorback Sucker larvae captured from 1993 to 2023 in the middle Green River, Utah, in light traps (all fish including those of questionable taxonomic identity included; 2023 sample identification is preliminary so total may change slightly). Panel B depicts number of Razorback Suckers stocked each year throughout the Green River (about ½ in each of the middle and lower Green River each year), 1995-2022, with high numbers (about 10,000-20,000) stocked from 2003-2012, and lower numbers (about 2,000-9,000) stocked from 2013-2022.

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

A.



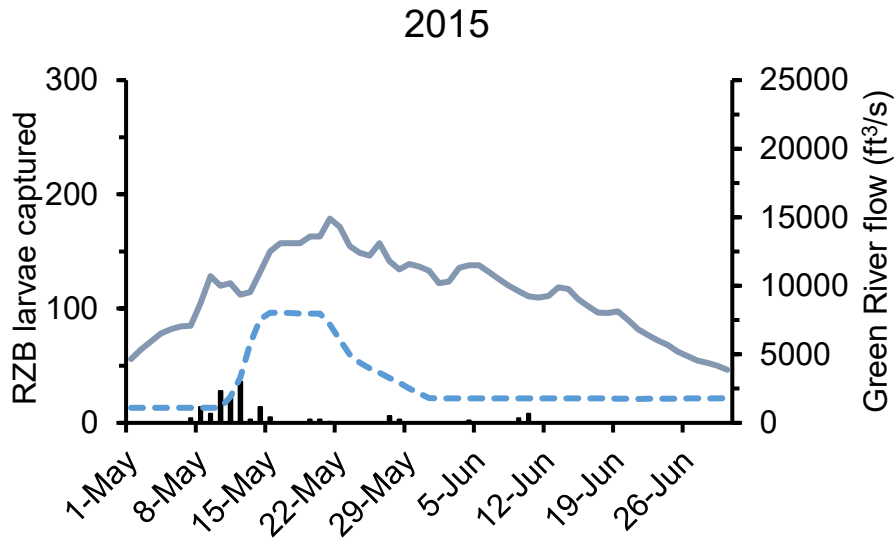
B.



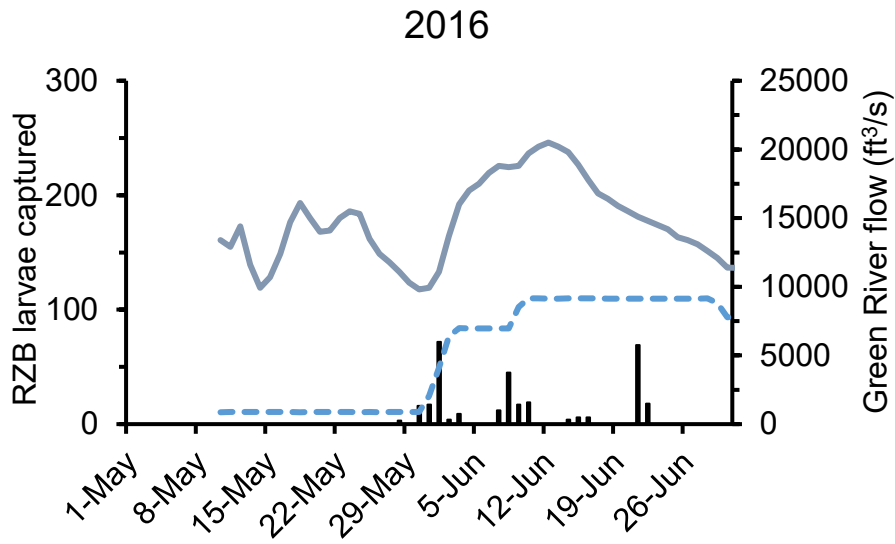


UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

C.

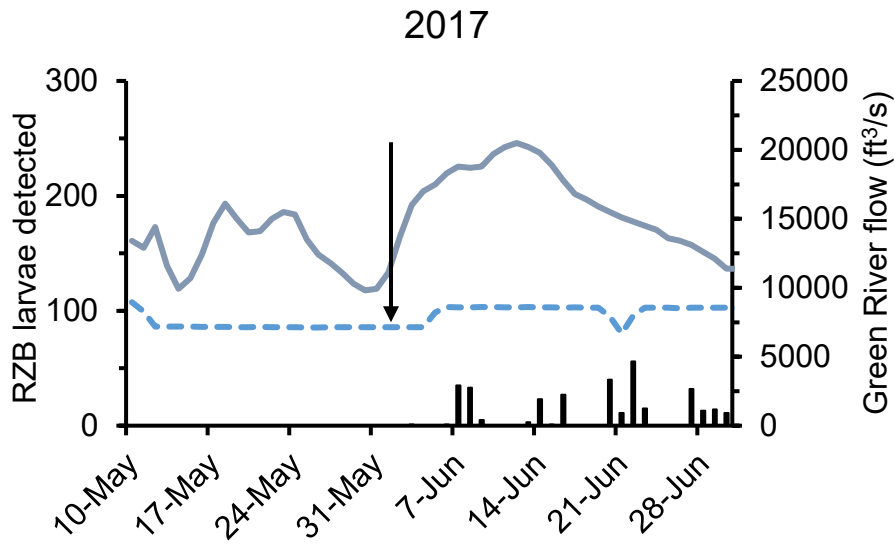


D.

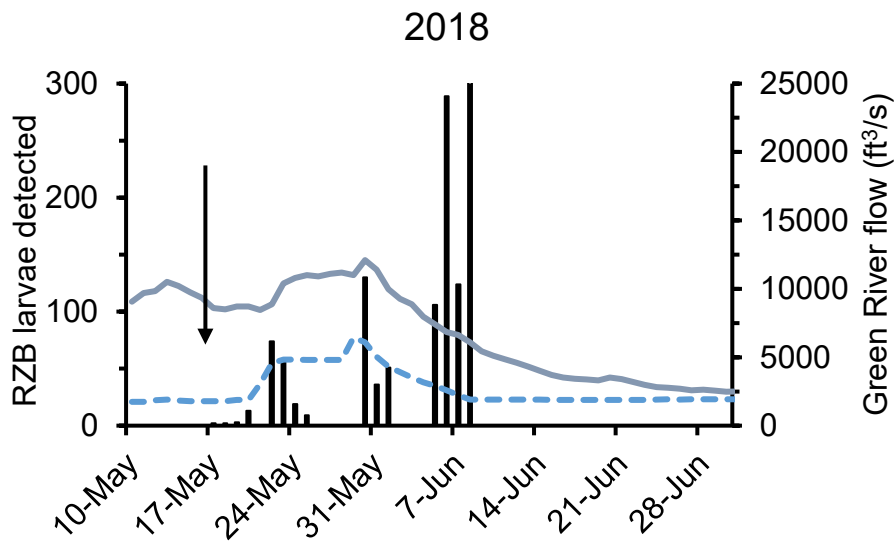


UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

E.

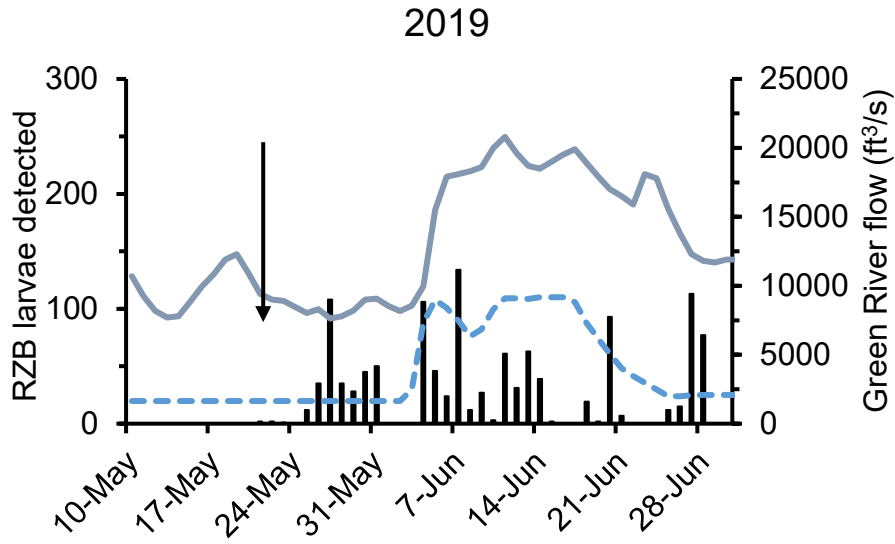


F.

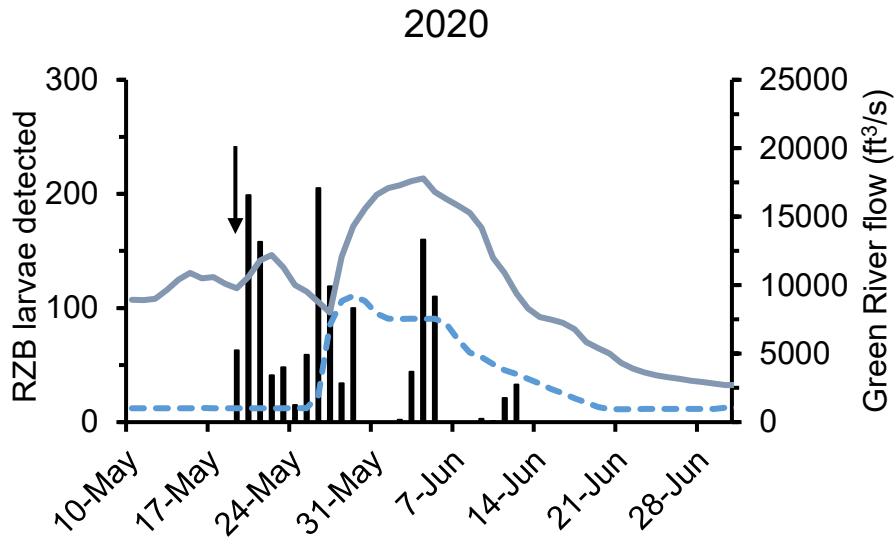


UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

G.

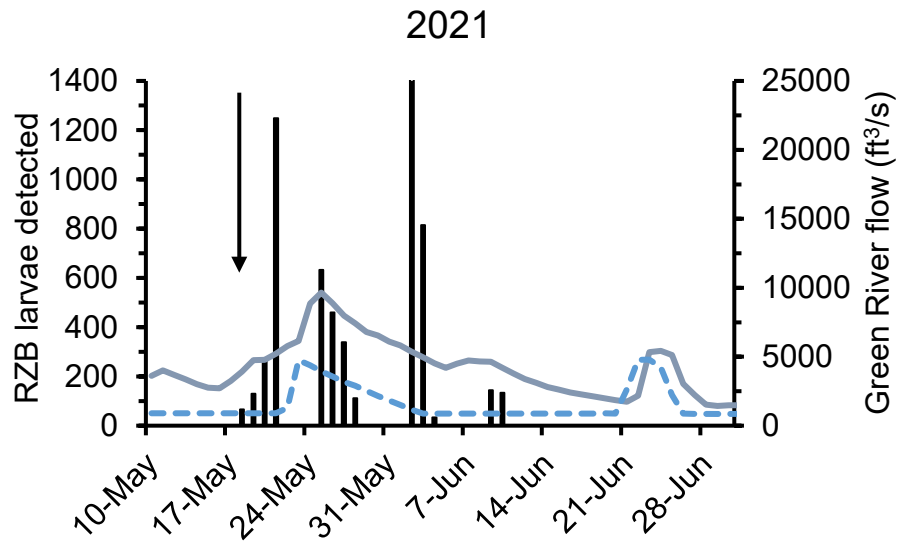


H.

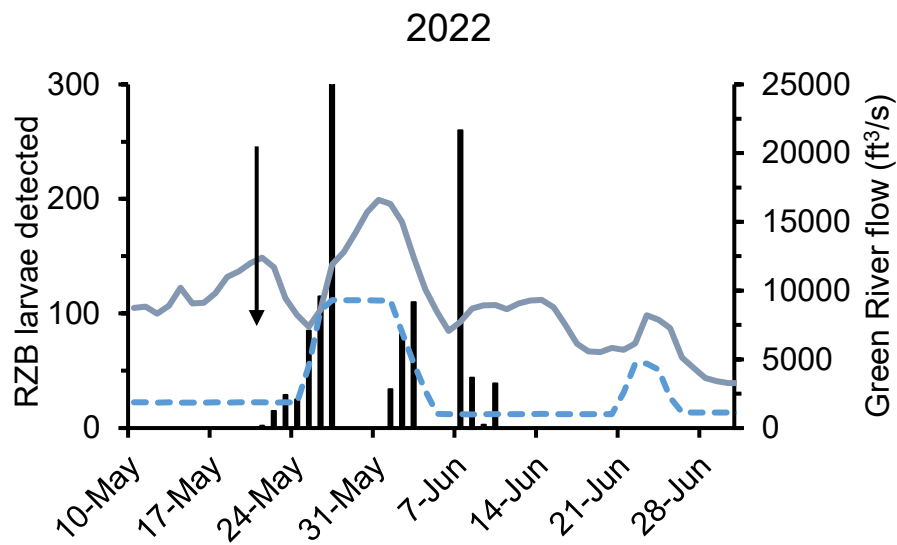


UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

I.



J.



K.

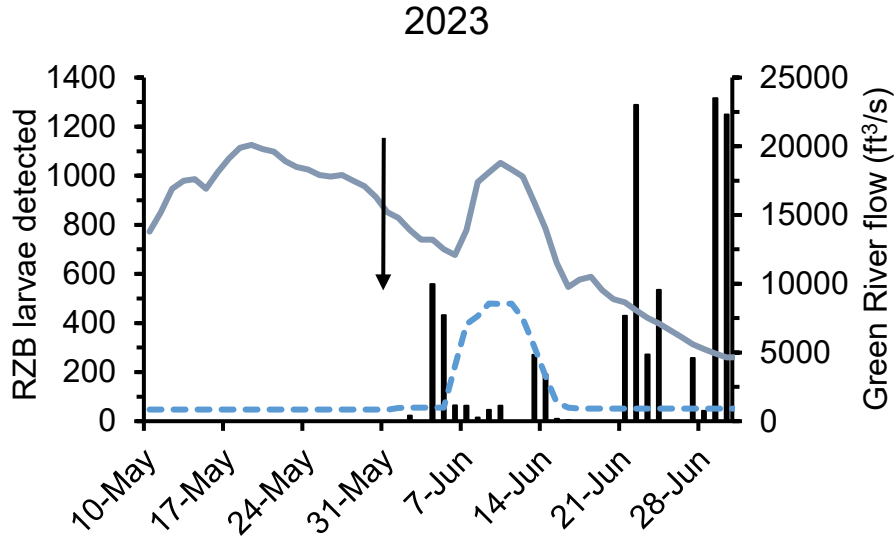


Figure 2. Seasonal distribution of Razorback Sucker (RZB) larvae captured in 2013 (panel A), 2014 (panel B), 2015 (panel C), 2016 (panel D), 2017 (panel E), 2018 (panel F), 2019 (panel G), 2020 (panel H), 2021 (panel I), 2022 (panel J), and 2023 (panel K preliminary; larvae await final verification) in middle Green River, Utah, light trap samples (all fish including those identified as “Razorback Sucker?” were included). All samples from all locations were combined for each day. Timing of larvae first presence varies but usually occurs from early May to early June and continues for about a month. Green River flows usually begin to rise shortly after larvae first presence due to releases from Flaming Gorge Dam, and often when Yampa River flows are declining. Note differences in y-axes for larvae detected, with especially high numbers of larvae captured in 2013, 2021 (wetlands not inundated purposefully), and 2023. Arrow indicates first presence detected. Gaps in captures between first and last captures likely indicate lack of sampling rather than absence of the species. Green River flows at Jensen, Utah (solid, gray line) are plotted, as are releases from Flaming Gorge Dam (Greendale, Utah gauge, dashed blue line), with the difference in the two lines being flows mainly from the Yampa River.

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

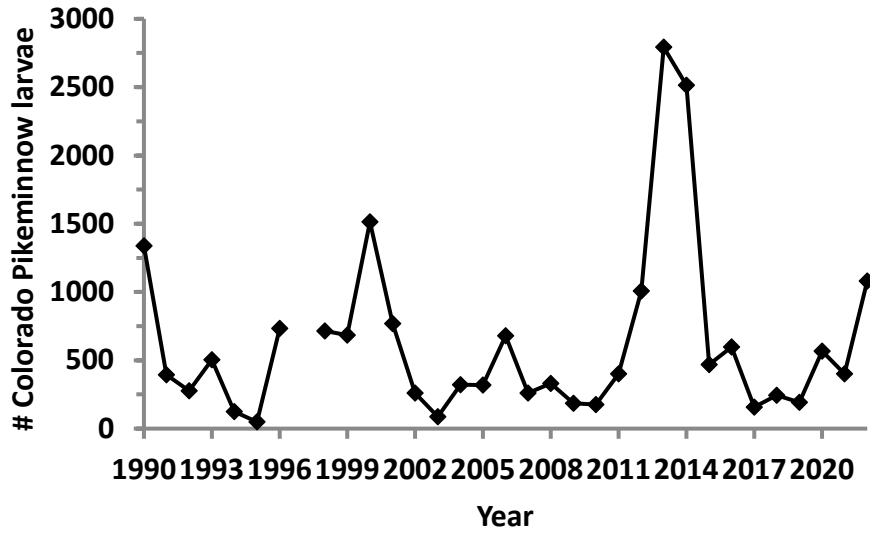
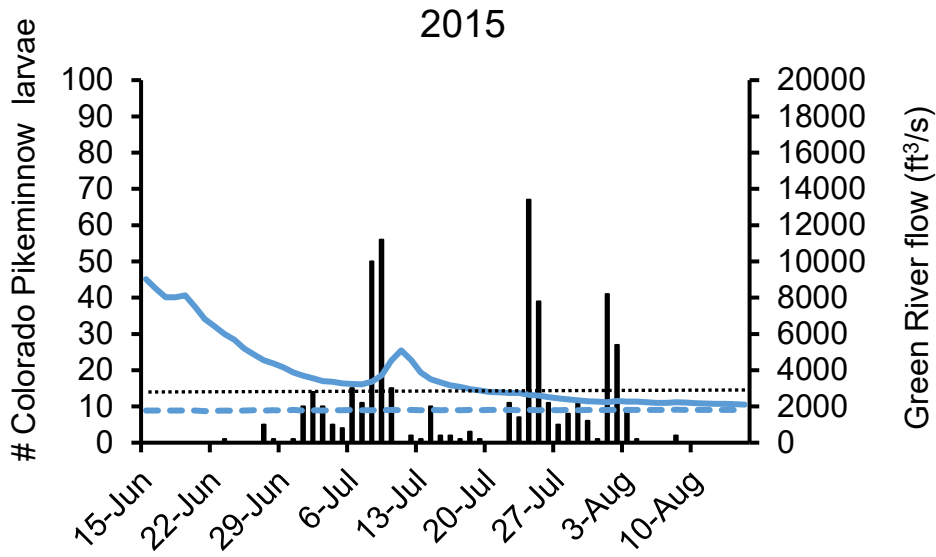


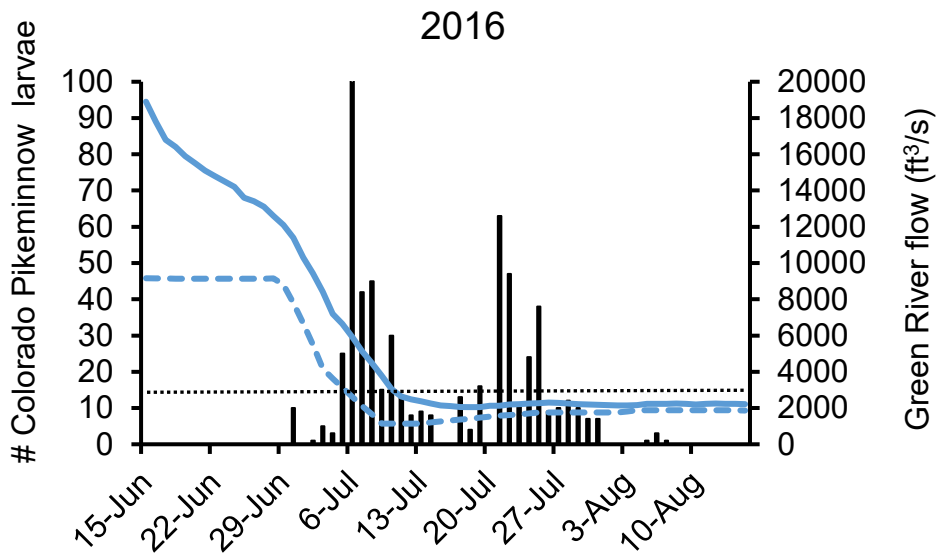
Figure 3. Number of Colorado Pikeminnow larvae captured in drift nets from 1990 to 2022 (no sampling in 1997, includes specimens from all diel samples; 2023 sample identification is not yet complete) in summer, lower Yampa River. Abundance of Colorado Pikeminnow larvae varies annually from a low of 49 captured in 1995, to several thousand captured in 1990, 2000, 2013-14, and 2022.

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

A.

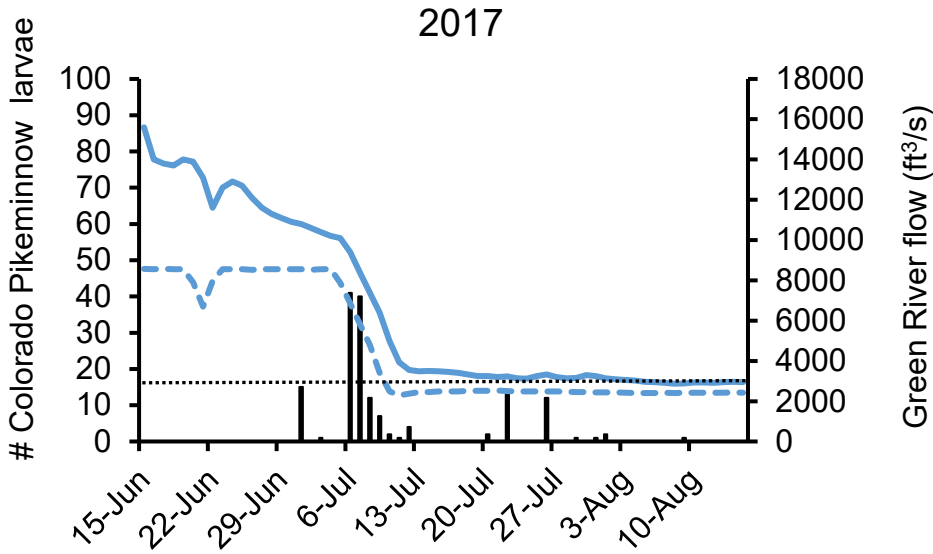


B.

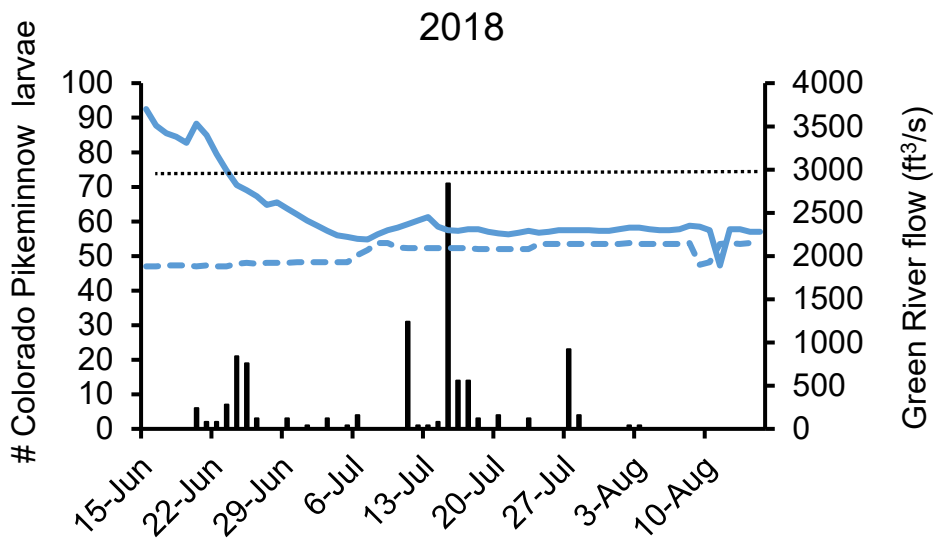


UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

C.



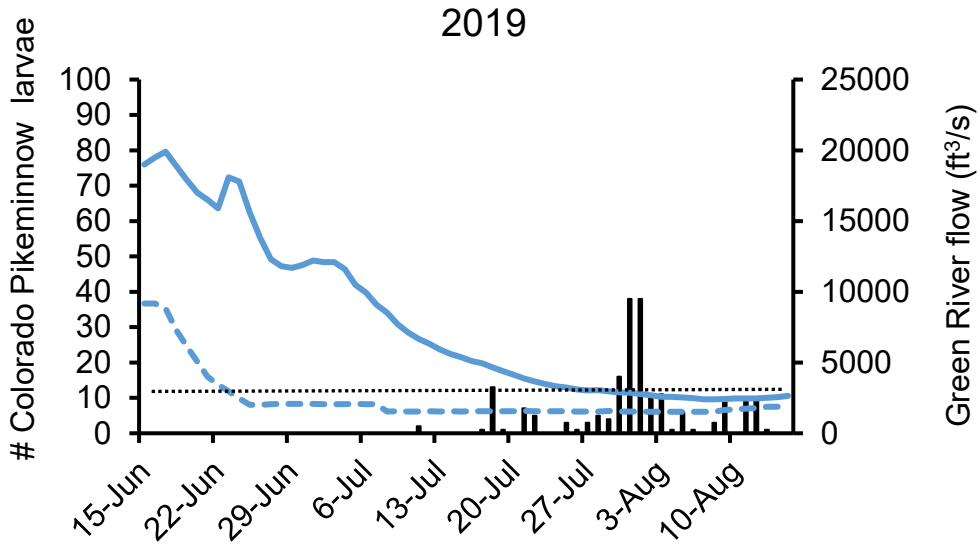
D.



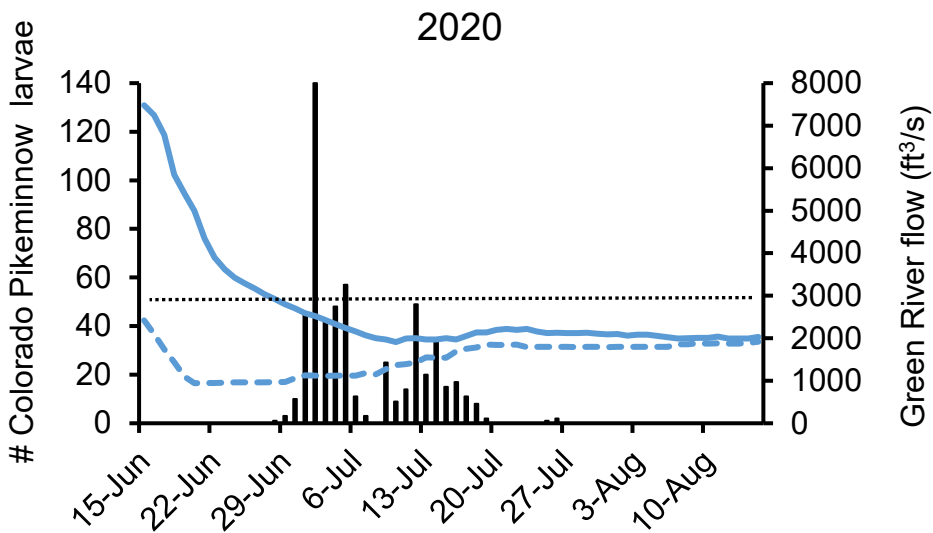


UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

E.

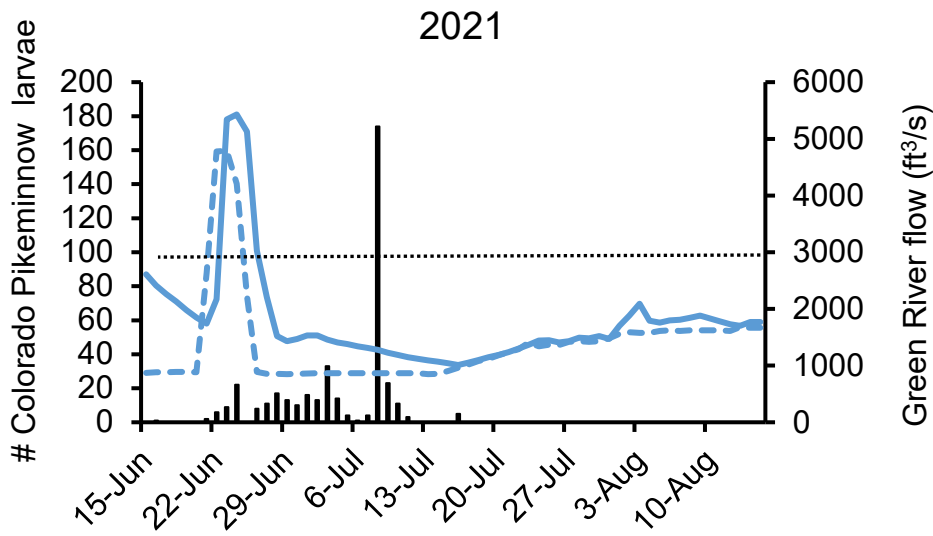


F.

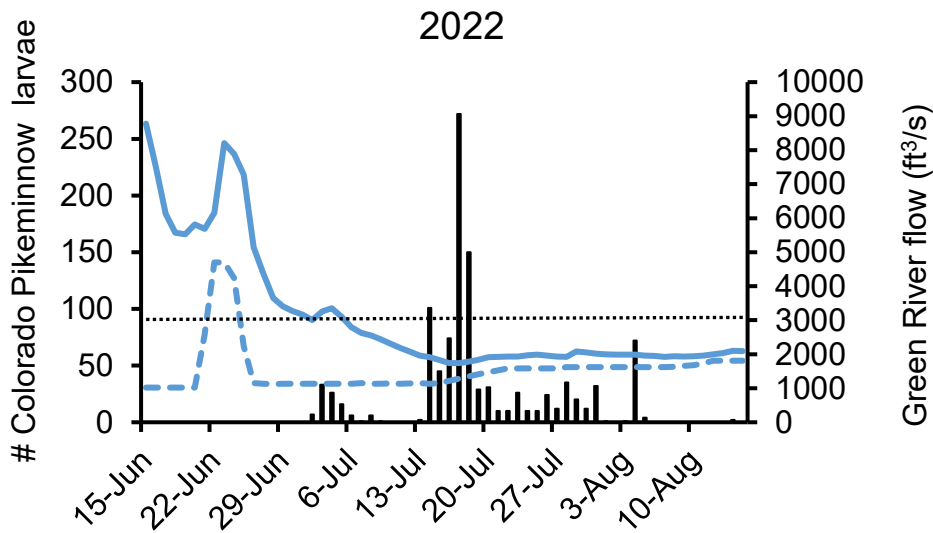


UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

G.



H.



UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

I.

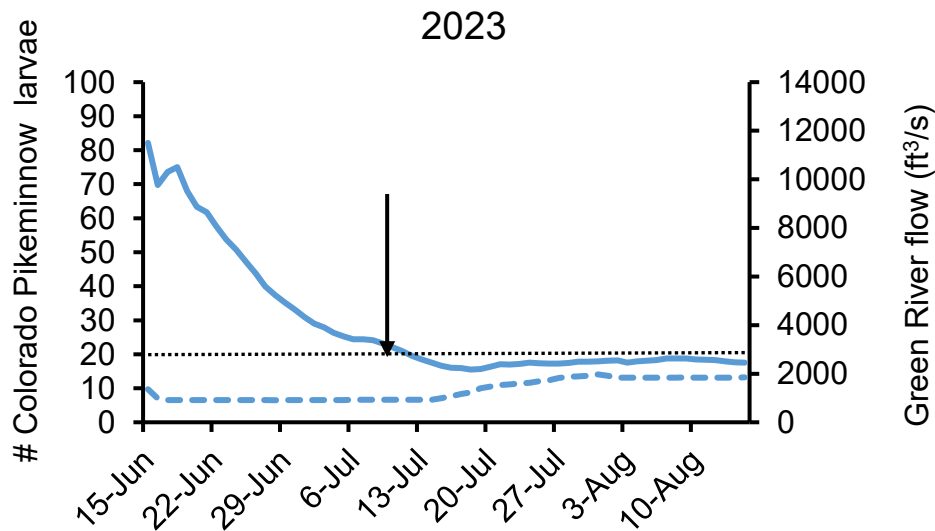


Figure 4. Seasonal distribution of Colorado Pikeminnow larvae captured in 2015 (panel A), 2016 (panel B), 2017 (panel C), 2018 (panel D), 2019 (panel E), 2020 (panel F), 2021 (panel G), and 2022 (panel H); for 2023 (panel I; specimens collected have preliminary sample identification completed, verification is needed). First presence date in 2023 was 10 July but may be altered as drift net samples from the lower Yampa River, Colorado, are verified. Sampling for 2015 began on 17 June and ended 16 August. Sampling for 2016 began on 23 June and ended 16 August. Sampling for 2017 began on 21 June and ended 14 August. Sampling for 2018 began on 13 June and ended 12 August. Sampling for 2019 began on 3 July and ended on 21 August (n = 219 samples). Sampling in 2020 began on 16 June and ended on 16 August (n = 273 samples). Sampling in 2021 began on 8 June and ended on 5 August (n = 255 samples) and in 2022 began on 14 June and ended on 15 August (n = 272 samples); flow spikes to reduce Smallmouth Bass reproductive success is evident in the 2021 and 2022 graphs in later June. Sampling in 2023 began on 20 June and ended on 14 August (n = 231 samples). Several of the largest capture dates were diel sampling occasions (12 samples total each day). Flows of the Green River at Jensen (solid line) and Greendale (dashed line) are also depicted, with the difference in the two flows being the contribution of the Yampa River. Note the difference in scale for number of Colorado Pikeminnow larvae on the left y-axis (especially years 2021 and 2022) and flows on the right y-axis. The dotted black line represents the maximum level of the range (1,700-3,000 cfs) of recommended summer base flows thought to benefit survival of young Colorado Pikeminnow.

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

### References

Major products based on data collected in this study include:

Bestgen, K. R., T. E. Chart, D. M. Anderson, and M. T. Jones. 2020. Evaluate effects of summer flow management on survival of age-0 Colorado Pikeminnow in the middle Green River, Utah. Final report to the Upper Colorado River Endangered Fish Recovery Program. Denver, Colorado. Department of Fish, Wildlife, and Conservation Biology, Colorado State University, Fort Collins. Larval Fish Laboratory Contribution 216.

LaGory, K. L., K. R. Bestgen, H. Patno, J. Wilhite, D. Speas, and M. Trammell. 2019. Evaluation and suggested revisions of flow and temperature recommendations for endangered fish in the Green River downstream of Flaming Gorge Dam. Final report to the Upper Colorado River Endangered Fish Recovery Program. Denver Federal Center, Lakewood, Colorado.

Bestgen, K. R., and A. A. Hill. 2016. Reproduction, abundance, and recruitment dynamics of young Colorado Pikeminnow in the Green River Basin, Utah and Colorado, 1979-2012. Final report to the Upper Colorado River Endangered Fish Recovery Program, Project FW BW-Synth, Denver, CO. Department of Fish, Wildlife, and Conservation Biology, Colorado State University, Fort Collins. Larval Fish Laboratory Contribution 183.

Bestgen, K. R. 2015. Aspects of the Yampa River flow regime essential for maintenance of native fishes. Final Report submitted to the National Park Service, Fort Collins, CO, The Nature Conservancy, Boulder, CO, and Western Resource Advocates, Boulder, CO. Department of Fish, Wildlife, and Conservation Biology, Colorado State University, Fort Collins. Larval Fish Laboratory Contribution 181.

Bestgen, K. R., K. A. Zelasko, and G. C. White. 2012. Monitoring reproduction, recruitment, and population status of Razorback Suckers in the Upper Colorado River Basin. Final Report to the Upper Colorado River Endangered Fish Recovery Program, U. S. Fish and Wildlife Service, Denver. Larval Fish Laboratory Contribution 170.

Bestgen, K. R., G. B. Haines, and A. A. Hill. 2011. Synthesis of flood plain wetland information: Timing of Razorback Sucker reproduction in the Green River, Utah, related to stream flow, water temperature, and flood plain wetland availability. Final report to the Recovery Implementation Program for Endangered Fishes in the Upper Colorado River Basin. U. S. Fish and Wildlife Service, Denver, CO. Larval Fish Laboratory Contribution 163.

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

ANNUAL PERFORMANCE PROGRESS REPORT (PPR)

BUREAU OF RECLAMATION AGREEMENT NUMBER: R19AP00058

UPPER COLORADO RIVER RECOVERY PROGRAM PROJECT NUMBER: 22f

**Project Title:**

Interagency standardized monitoring program assessment of endangered fish reproduction in relation to Flaming Gorge Dam operations in the middle Green and lower Yampa rivers.

**Bureau of Reclamation Agreement Number:**

R19AP00058

**Principal Investigator:**

Kevin R. Bestgen  
Larval Fish Laboratory (LFL)  
Department of Fish, Wildlife, and Conservation Biology  
Colorado State University  
Fort Collins, CO 80523  
(970) 491-1848/5295; FAX 970 491-5091  
E-mail kbestgen@colostate.edu

**Project/Grant Period:**

Start date: 1 Oct. 2018

End date: 30 Sept. 2023

Reporting period end date: 30 Sept. 2023

Is this the final report? Yes \_\_\_\_\_ No \_\_\_

**Performance:**

The goal of this project is to document timing and intensity of reproduction by Razorback Suckers and Colorado Pikeminnow in the lower Yampa and middle Green rivers. Samples were collected in the Yampa River about 0.2 to 0.8 km upstream from the Green River (n = 231 total samples collected in 2023), the same site that samples were collected from in 1990 to 1996 (Bestgen et al. 1998) and in 1998 to 2023. Sampling in 2023 commenced on 20 June and extended through 14 August. The first Colorado Pikeminnow larva was collected on 10 July. We also received light trap samples collected by the U.S. Fish and Wildlife Service in spring 2023. All samples are being identified or verified at this time.

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

ANNUAL PERFORMANCE PROGRESS REPORT (PPR)

BUREAU OF RECLAMATION AGREEMENT NUMBER: R20PG00024

UPPER COLORADO RIVER RECOVERY PROGRAM PROJECT NUMBER: 22f

**Project Title:**

Light trap and drift net sampling for Razorback Sucker and Colorado Pikeminnow larvae

**Bureau of Reclamation Agreement Number:**

R20PG00024

**Project/Grant Period:**

Start date: 10/01/2019

End date: 09/30/2024

Reporting period end date: 09/30/2023

Is this the final report? Yes \_\_\_\_\_ No X

**Performance:**

U.S. Fish and Wildlife Service Green River Basin FWCO completed our portion of Task 1, collect light trap and seine samples from the Green River and its wetlands. We began light trapping on 16 May and continued sampling through 30 June. All samples and data were delivered to CSU LFL.