

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2020 ANNUAL REPORT

PROJECT: 98a

Project Title

Middle Yampa River nonnative fish management

Bureau of Reclamation Agreement Number:

R17AP00301

Project/Grant Period:

Start date: 09/22/2017

End date: 09/30/2022

Reporting period end date: 11/15/2020

Is this the final report? Yes _____ No X

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Abstract:

This project is one of several designed to facilitate the removal of nonnative northern pike and smallmouth bass within the Yampa River Basin, with an evaluation of the efficiency of such efforts. The study area consisted of the middle Yampa River miles (RM) 134.2 to 50.5 which were sampled to capture and remove smallmouth bass and northern pike. Crews were not able to complete early spring northern pike gill-netting or as much electrofishing removal in 2020 due to COVID-19 health concerns and agency guidelines that restricted their ability to complete this work. Therefore, comparing the 2020 catch rate to that of prior years may not be reliable considering that total electrofishing effort expended in 2020 was far less. Colorado Parks and Wildlife (CPW) and Colorado State University (CSU) removed 117 northern pike during electrofishing efforts which began June 2nd and continued through July 12th. The northern pike electrofishing catch rate was 0.69 fish/hour, which is a decrease in catch rate compared to the 2019 sampling season but an increase in catch rate compared to the same general timeframe of electrofishing in 2019 (June 2nd through July 12). Please see CSU's 2020 Annual Report for Project #125 for a detailed analysis of smallmouth bass data collected in the study area.

Study Schedule:

2005 (CPW assisted CSU in 2004) - Ongoing

Relationship to RIPRAP:

This study involved removing nonnative fish, primarily northern pike and smallmouth bass, from the middle Yampa River near Craig, Colorado (RM 134.2). CPW evaluated the efficiency of that northern pike removal, while CSU evaluated the smallmouth bass removal effort.

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General Recovery Program Support Action Plan

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

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

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

Green River Action Plan: Yampa and Little Snake rivers:

III.B. Implement CPW Yampa Basin aquatic wildlife management plan (CDOW 1998) and the Recovery Program's Yampa River Nonnative Fish Control Strategy. Each control activity will be evaluated for effectiveness and then continued as needed.

III.B.2. Control nonnative fishes via mechanical removal.

III.B.2.d. Remove (formerly "and translocate") northern pike from Yampa River designated critical habitat.

III.B.2.d. (1) Remove northern pike above Craig, Colorado

III.B.2.e. Remove (formerly "and translocate") smallmouth bass.

Accomplishment of FY 2020 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1. Establish landowner contacts, obtain permission to access property and backwaters for sampling.

Schedule: February-Mid March.

Deliverable: Task Completed

Task 2. Plan logistics, hire and train personnel, order and maintain equipment, and prepare for sampling.

Schedule: February-April

Deliverable: Task partially completed. An agency-required temporary hiring freeze due to COVID-19 agency guidelines prevented the hiring of a full crew.

Task 3. Complete early spring backwater removals utilizing gill nets to target northern pike during the spawning period in the area covering Project #98a and #98b sections of river.

Schedule: Mid March -April

Deliverable: Task not completed. CPW was not able to complete any backwater removals due to agency guidelines enacted in response to health concerns with COVID-19.

Task 4. Complete main channel and backwater electrofishing within the study area to remove northern pike and smallmouth bass. This task is included in SOW 128 in FY18, 21, and 22 because it will focus on providing data for Colorado pikeminnow population estimates.

Schedule: May

Deliverable: Task partially completed due to COVID-19 agency guidelines. See below for information regarding work that was completed.

Task 5. Complete main channel and backwater electrofishing within the study area to remove northern pike and smallmouth bass. Assist CSU with the Surge to target smallmouth bass utilizing raft electrofishing and other methods during the spawning period and low hydrograph conditions.

Schedule: Early to Mid June; Early July

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Deliverable: Task partially completed due to COVID-19 agency guidelines. See below for information regarding work that was completed.

Study Area

The study area includes 47.3 river miles of the middle Yampa River from just downstream of Craig, Colorado (RM 134.2) to just upstream of Cross Mountain Canyon (RM 60.6) (Figure 1). Specific river segments include: South Beach: RM 134.2 (South Beach launch) to RM 124.0 (Round Bottom), Juniper: RM 100.0 (upstream of Government bridge) to RM 91.0 (mouth of Little Juniper Canyon), Juniper Canyon: RM 91 to RM 89.5 (downstream end of Little Juniper Canyon), Upper Maybell: RM 88.7 (downstream of Juniper Canyon) to RM 79.2 (Maybell bridge launch), Lower Maybell: RM 79.2 to RM 71.0 (Sunbeam launch), and Sunbeam: RM 71.0 to RM 60.6 (just upstream of Cross Mountain launch).

Northern pike were not removed by CPW in 24 miles of river through Little Yampa Canyon, RM 124.0 (Round Bottom) to RM 100.0 (near Government Bridge). CSU has established this reach as a smallmouth bass study area. These 24 miles have also been included in previous studies for northern pike removal. Therefore, CSU removed northern pike within these stretches in conjunction with their smallmouth bass study. CSU also removed smallmouth bass and northern pike from downstream of Cross Mountain Canyon (RM 55.5) to just downstream of the Little Snake River confluence (RM 50.5). CPW and CSU's combined study area includes a total of 77.8 river miles. CSU's northern pike data were collated with CPW data and reported by CPW in this report. CPW also removed smallmouth bass across the entire CPW study area. CPW's smallmouth bass data were collated with CSU data and reported by CSU in the 2020 Annual Report for Project #125. Please note that modifications to the study area were made by both CPW and CSU in 2020 due to COVID-19 agency guidelines, i.e. not all sections were sampled as generally would be the case.

Study Methods/Approach

Early Spring Backwater Gill Netting

Northern pike can be exploited from early April to mid-May as fish seek backwater habitat for spawning (Hill 2005). Backwater areas in Project #98a and #98b sections of the Yampa River, where CPW has obtained permission from landowners, are netted annually as the ice recedes and hydrological conditions allow. The goal of this effort is to remove northern pike from the backwater areas before fish have a chance to spawn and thus reduce the annual cohort contributed to the Yampa River northern pike population.

In 2020, CPW was unable to complete the early spring backwater gill netting project. This work requires that at least two people work together in close contact, which was not allowed due to agency guidelines related to COVID-19 at that time.

Mid-April through Mid-August: Mainstem Electrofishing and Backwater Block-and-Shock

Main channel electrofishing and block-and-shock techniques in backwaters to target northern pike and smallmouth bass were the focus of the sampling effort that began June 2nd and continued through July 12th. Crews conducted removal passes between RMs 134.2 and 50.5, although not every reach was

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sampled in 2020. Crews focused their efforts on reaches where captures of target species would be the greatest.

Two electrofishing crews utilized jon boats with outboard jet units to perform sampling in the main channel. Each crew simultaneously sampled the left and right shorelines in a downstream direction using ETS electrofishing equipment. Island perimeters were also electrofished. No river segments were electrofished on consecutive days to allow for fish recovery and redistribution. A third, chase boat, was operated by two additional crew members to process fish captured. Electrofishing effort was recorded by reach sampled, habitat type (main channel or backwater), and by date. Water conductivity and temperature were recorded at the beginning of each sampling day.

Backwaters where CPW obtained permission to sample were also included within this sampling effort, when feasible. Crews sampled backwater areas along both sides of the river. A gill net was used with a block-and-shock technique. Backwater habitats were sampled until the river receded and habitats were no longer accessible. Output power within backwaters was adjusted based upon changes in river conductivity. Additionally, output power was reduced during the boat approach to the blocked mouth. Both processes minimized the potential for electrofishing injuries to fish.

All fish captured were identified to species, measured for total length (tl) to the nearest millimeter (mm), and weighed to the nearest gram (g). Bluehead sucker, flannelmouth sucker, roundtail chub, and Colorado pikeminnow captured were also scanned to determine the presence of passive integrated transponder (PIT) tags. PIT tag number was recorded and stored in the PIT tag reader for those fish encountered with PIT tags. Individuals without PIT tags were implanted with a new PIT tag following the appropriate protocol. Capture locations for these species were recorded to the nearest tenth of a river mile. UTM coordinates associated with capture locations were also recorded, when possible. All native species captured were released alive, immediately. Any native fish captured that was visibly stressed was not processed, but rather returned to the location of capture within the river, immediately.

All nonnative fish collected, excluding salmonids and channel catfish, were lethally removed, and either provided to landowners and/or licensed anglers, or euthanized and disposed of in a landfill. Northern pike collected were scanned to determine the presence of PIT tags and examined for FLOY tags. Smallmouth bass collected were examined for the presence of FLOY tags and fin clips. PIT tag number, FLOY tag number and color, and any fin clips were recorded. Nonnative species of unusual occurrence, i.e. walleye, burbot, grass carp, etc. that were collected had their otoliths extracted prior to disposal.

CPUE was reported in terms of the number of northern pike captured per electrofishing hour for the entire study area. In addition to overall CPUE, catch effort was reported for all seven river reaches within the study area. For these reaches, CPUE was split into four categories and reported for each pass. The four categories for which CPUE was reported included northern pike: (1) < 300mm tl, (2) 300-449mm tl, (3) ≥ 450mm tl, and (4) total number.

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Results and Discussion

General Overview - Mainstem Electrofishing and Backwater Block-and-Shock

A total of eight different fish species were captured by CPW during mainstem electrofishing (Table 1). From June 2nd through July 29th, 170 hours were expended by CPW and CSU electrofishing the study area (Table 2). Electrofishing effort in 2020 (170.0 hours) decreased drastically compared to 2019 when crews expended 622.9 hours (Eyre 2019). The greatest amount of effort was completed by CSU in the largest sampling reach area of Little Yampa Canyon (131.5 hours or 5 passes). Lower Maybell, Sunbeam, and Lilly Park were not sampled by electrofishing in 2020.

Northern Pike Population Overview and Size Structure

Overall, CPW and CSU captured 117 individual northern pike during electrofishing operations in 2020 (Table 2). This was a substantial decrease compared to individual northern pike captured in 2019 (n=751) (Eyre 2019). This decrease in individual northern pike captures may be explained by the large reduction in electrofishing effort expended in 2020 compared to 2019. Only 170.0 hours of electrofishing were completed in 2020 with efforts lasting from June 2nd through July 12th. In 2019 622.9 hours of electrofishing effort was expended from April 17th through August 12th (Eyre 2019).

Since the 2020 electrofishing season was much shorter than the 2019 electrofishing season, we calculated the number of northern pike captured during the same timeframe in 2020 and 2019. Sixty one northern pike were captured from June 2nd 2019 – July 12th 2019, compared to 117 northern pike captured during the 2020 electrofishing season (June 2nd 2020 – July 12th 2020).

The majority (n=111 of 117 or 95%) of northern pike captured in 2020 were adult fish (≥ 300 mm tl) (Table 2, Figure 2). Of the 111 adult northern pike captured, 14 (12%) were classified as piscivores (≥ 450 mm tl). Only six (5%) northern pike captured were classified as juveniles (< 300 mm tl).

Northern Pike Catch-Per-Unit-Effort (CPUE)

CPW and CSU combined electrofishing CPUE for northern pike for all river reaches in 2020 was 0.69 northern pike/hour (Figure 3). CPUE decreased from 2019 to 2020 although comparison between the two years is likely not reliable since total electrofishing effort was greatly decreased in 2020 and not all sampling reaches in the study area were sampled. CPUE is not uniform across sampling reaches nor is it uniform between passes of the same sampling reach. Generally, northern pike CPUE is high on the first pass through a given reach because northern pike have not been removed from that reach since the previous year (Eyre 2019). Three of the four reaches (South Beach, Little Yampa Canyon, Lower Juniper, Upper Maybell) sampled in 2020 had only one pass completed which likely inflated CPUE. Additionally, electrofishing passes started much later in the season in 2020 compared to 2019 (June 2, 2020 vs April 3, 2019, respectively) which likely decreased electrofishing CPUE since northern pike appear to be most vulnerable to capture early in the electrofishing season (Eyre 2019). When the 2019 electrofishing CPUE for northern pike is recalculated to only account for the timeframe in which electrofishing also occurred in 2020 (June 2nd 2019 – July 12th 2019), the 2019 CPUE is 0.24 compared to 0.69 in 2020. Overall, the inconsistent number of passes completed throughout the study area and the shortened duration of the electrofishing season likely render CPUE analysis unreliable as a metric to evaluate northern pike abundance when compared to previous sampling years.

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Colorado Pikeminnow

Colorado pikeminnow were not captured by CPW in 2020. The last year in which a Colorado pikeminnow was captured by CPW was in 2016, when two Colorado pikeminnow were captured.

Roundtail Chub

Roundtail chub were not captured by CPW in 2020. In 2019, 12 roundtail chub were captured. Roundtail chub are captured in the study area fairly infrequently and the failure to capture roundtail chub in 2020 is likely due to decreased electrofishing effort in 2020.

Significant Work Outside of Scope of Work: 5th Annual Elkhead Reservoir Fishing Classic

The management goal of CPW within Elkhead Reservoir is to reduce populations of smallmouth bass and northern pike, and replace these species with those that are compatible (largemouth bass, black crappie, and bluegill) with native fish conservation and recovery efforts downstream. Reducing smallmouth bass and northern pike from Elkhead Reservoir will minimize escapement risk and mitigate potential impacts on native fishes downstream. One tool used by CPW to disadvantage these two species is incentivized angler harvest.

Various methods can be used to incentivize harvest of a species; in the case of Elkhead Reservoir, and for the fifth year in a row, CPW has offered a free fishing tournament with valuable prizes awarded to anglers who harvest smallmouth bass and northern pike. The 2020 tournament was held from June 27th through July 5th, which included nine days and two weekends. Across the tournament, 219 anglers removed 525 smallmouth bass and 606 northern pike from the reservoir (Table 3).

In order to evaluate smallmouth bass harvest success as a result of the tournament, CPW conducted a mark-recapture population estimate for adult smallmouth bass, utilizing Chapman's modification of the Lincoln-Petersen estimator. The first Elkhead Reservoir Fishing Classic was held in 2016, but population estimates were not generated until 2017. To generate a population estimate, biologists capture, mark, and release smallmouth bass prior to the tournament (recapture event), and anglers' catch of marked fish factors into the recapture portion of the estimate. Anglers have assisted in reducing the adult smallmouth bass ($\geq 200\text{mm tl}$) population in Elkhead Reservoir from an estimated 1,917 \pm 415 (95% confidence interval) fish prior to the 2017 tournament to an estimated 752 \pm 255 (95% confidence interval) fish after the 2020 tournament (Figure 4).

In order to evaluate northern pike harvest success as a result of the tournament, CPW planned to conduct a mark-recapture population estimate for adult northern pike, as well. Northern pike are most easily captured in early spring during their spawning season. CPW was not able to capture enough northern pike in 2020 to conduct a mark-recapture population estimate because COVID-19 health concerns prevented any efforts to capture, mark, and release northern pike in Elkhead Reservoir during their spawning season, and prior to the 2020 Elkhead Reservoir Fishing Classic.

In 2019, 335 adult northern pike ($\geq 300\text{mm tl}$) were marked prior to the tournament. During the 2019 tournament, 284 adult northern pike were turned in by anglers, of which 27 had been marked before the tournament. The adult population was estimated at 3,419 \pm 1,131 (95% confidence interval) northern

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pike prior to the tournament, and 3,135 +/- 1,131 (95% confidence interval) after anglers harvested 284 fish during the tournament (Figure 5).

In 2020, cash awards, ranging from \$50 to \$1500 were provided as part of a program with the Colorado Water Conservation Board. \$150 was awarded to anglers who caught the 20 northern pike that were uniquely tagged and released by CPW prior to the tournament. \$150 was awarded to the 20 anglers who caught smallmouth bass that were uniquely tagged and released by CPW prior to the tournament. \$50 was awarded to the first 10 anglers to catch a smallmouth bass or northern pike that was tagged by CPW in prior years but never harvested. \$1500 was awarded to the angler who turned in the most northern pike during the tournament and another \$1500 went to the angler who turned in the most smallmouth bass during the tournament. Anglers were given one ticket into the angler drawing for every smallmouth bass or northern pike they harvested and turned in to CPW. Any cash prizes not won during the tournament were awarded at the conclusion of the tournament through a drawing of angler tickets. Overall, the tournament was well-received by anglers and continues to serve as a mechanism to reduce smallmouth bass and northern pike populations within Elkhead Reservoir while offering anglers an opportunity to participate in fisheries management of the reservoir.

Task 6. Maintenance of equipment, data entry, data analysis, and preparation of final report. Present findings during the Annual Nonnative Fish Control Workshop/Coordination Conference Calls, and at the Annual Recovery Program Researchers Meeting.

Schedule: August- January

Deliverable: Annual Report Completed. Findings will be discussed during the Annual Nonnative Fish Control Coordination Conference Calls.

Additional Noteworthy Observations:

The majority of northern pike removal efforts in 2020 did not begin until after the spawning season. CPW was not able to complete the spring backwater netting project, and electrofishing efforts began later in the season compared to previous years. Even with reduced northern pike removal efforts during the spawning season, few young-of-year northern pike were captured in 2020 compared to 2019 (Figure 2). It is possible northern pike had below average spawn success in 2020. It is also possible that flow conditions receded to the point that electrofishing boats could no longer navigate the river prior to young-of-year northern pike reaching a size large enough to become susceptible to capture by electrofishing. Either way, the minimal number of young-of-year northern pike captured in 2020 is notable.

Recommendations:

Some of the reaches within the study area were not sampled in 2020. Crews should plan to complete a pass through all 98a reaches in 2021 as soon as hydrological conditions allow. This effort may likely result in high catch rates since northern pike in some of those reaches were not depleted in 2020.

Project Status:

This project is considered on track, with minor revisions to be considered. Additional evaluation of project commitments and efforts will be made internally by CPW in 2020. Additional refinement of the techniques used in the study is appropriate and will serve to further increase the efficiency of removal effort.

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FY 2020 Budget Status

Funds Provided: \$94,429 for all projects (including 98a and 126b/167b)

Funds Expended: \$63,659 for all projects (including 98a and 126b/167b)

Difference: \$30,770 Funds expended include expenditures through September 30th, 2020. Additional expenditures may have occurred during this time period, but have not posted as of this reporting date.

Those expenditures will be reported in the FY 2021 budget status report.-

Percent of the FY 2020 work completed, and projected costs to complete: Approximately 30%

Recovery Program funds spent for publication charges: -\$0-

Status of Data Submission

Data will be uploaded into STReAMS by the end of March, 2021.

Signed:

Tory Eyre

Principal Investigator

11/15/2020

Acknowledgements: The author wishes to thank Jenn Logan (CPW) for providing important assistance and expertise to field work. Thank you to Harry Crockett (CPW) and Lori Martin (CPW) for reviewing and providing valuable feedback for drafts of this report.

Literature Cited:

Eyre, T. 2019. Middle Yampa River northern pike removal and evaluation. Annual Report to the Colorado River Recovery and Implementation Program

Hill, C.G. 2005. Dynamics of northern pike spawning and nursery habitat in the Yampa River. Report to the Colorado River Recovery Implementation Program

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Table #1.

A summary of the total number of individuals captured during electrofishing in the middle Yampa River in 2020. Nonnative fish that were lethally removed included northern pike, smallmouth bass, black bullhead, creek chub, green sunfish, and white sucker.

Species	Number of Individuals Captured
Northern Pike	117 (CSU 102 + CPW 15)
Smallmouth Bass	137
Black Bullhead	1
Bluehead Sucker	2
Creek Chub	2
Green Sunfish	1
Mountain Whitefish	1
White Sucker	531
Total Individual Fish Processed	792

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Table #2.

The number of northern pike (NPK) captured during electrofishing for each river reach in the middle Yampa River study area along with total electrofishing effort (hour) and catch-per-unit-effort (CPUE) in 2020. Each parameter by river reach is split further to show number of northern pike captured in three separate size categories by millimeters (mm) in total length (tl).

	South Beach	Little Yampa Canyon	Juniper Canyon	Juniper Canyon	Upper Maybell	Lower Maybell	Sunbeam	Lily Park	Total: All Reaches
# of NPK Captured	35	64	1	0	17	0	0	0	117
< 300mm tl	4	2	0	0	0	0	0	0	6
300-449 mm tl	22	59	1	0	15	0	0	0	97
≥ 450mm tl	9	3	0	0	2	0	0	0	14
Effort (hr.)	13.5	131.5	11.8	3.4	9.8	0	0	0	170.0
NPK CPUE	2.59	0.49	0.09	0	1.74	0	0	0	
< 300mm tl	0.30	0.02	0.00	0	0.00	0	0	0	
300-449 mm tl	1.63	0.45	0.09	0	1.53	0	0	0	
≥ 450mm tl	0.67	0.02	0.00	0	0.20	0	0	0	

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Table #3.

The number of northern pike (NPK) and smallmouth bass (SMB) harvested by anglers during each Elkhead Reservoir Fishing Classic tournament (2016-2020). Each parameter is split further to show number of fish caught in three separate size categories by millimeters (mm) in total length (tl).

	2020	2019	2018	2017	2016
NPK	606	419	319	395	53
NPK <300mm tl	133	135	117	32	0
NPK 300-449 mm tl	329	186	93	87	15
NPK ≥450 mm tl	144	98	109	276	38
SMB	525	492	540	961	529
SMB <200mm tl	219	251	291	419	261
SMB 200-324 mm tl	258	206	213	453	224
SMB ≥325 mm tl	48	35	36	89	44
Total # Fish	1131	911	859	1356	582

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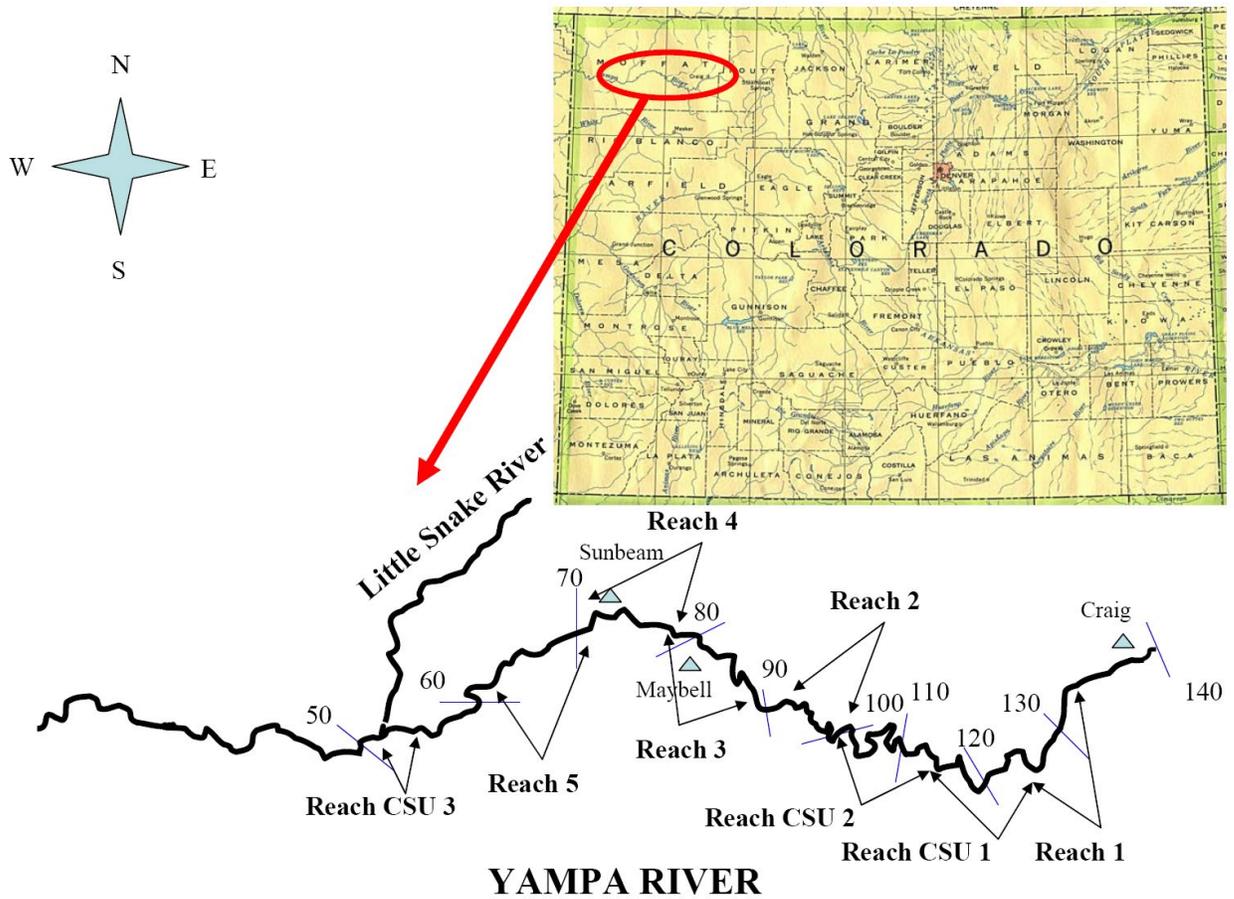


Figure #1.

River reaches of the middle Yampa River sampled by Colorado Parks and Wildlife and Colorado State University (CSU) through 2020. Reaches, upstream to downstream, include: Reach 1 (South Beach), Reach CSU 1 and Reach CSU 2 (Little Yampa Canyon), Reach 2 (Juniper), Reach 3 (Upper Maybell), Reach 4 (Lower Maybell), Reach 5 (Sunbeam), and Reach CSU 3 (Lily Park) (Graphics courtesy of P. Martinez and R. Anderson).

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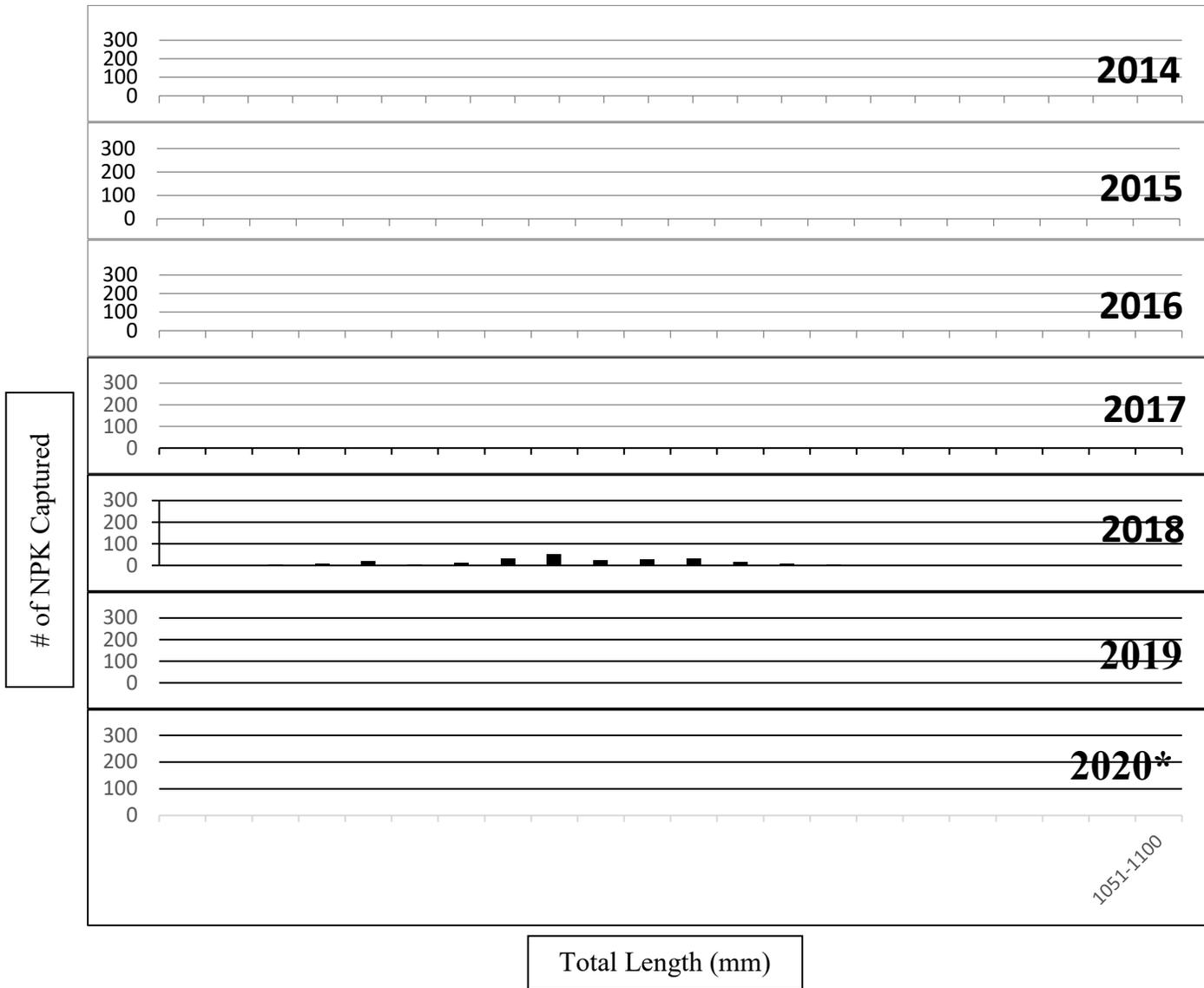


Figure #2.

Northern pike (NPK) total length frequency distributions in millimeters (mm), in the middle Yampa River from 2014-2020. Note: 2020 effort was greatly reduced and therefore not comparable to previous years.

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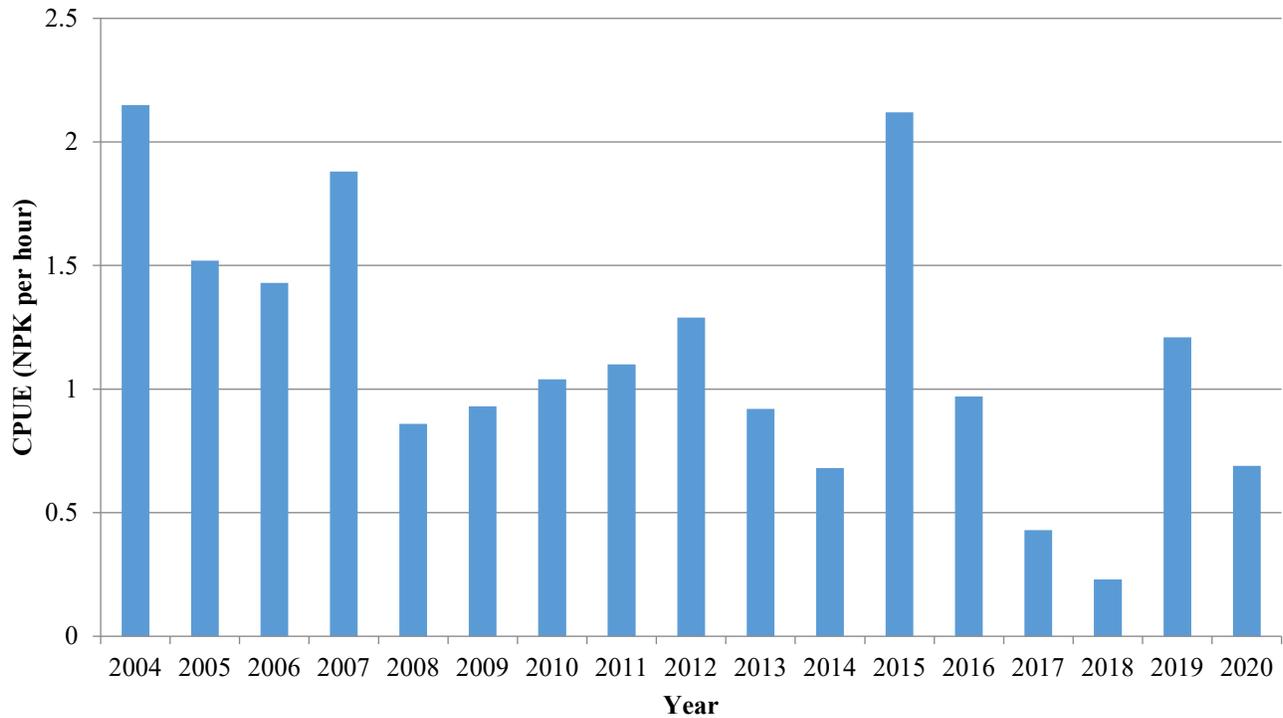


Figure #3.

Northern pike (NPK) electrofishing catch-per-unit-effort (CPUE) (NPK/hour) across all passes in the study area of the middle Yampa River sampled by Colorado Parks and Wildlife and Colorado State University, from 2004 through 2020. Note: 2020 effort was greatly reduced and therefore not comparable to previous years.

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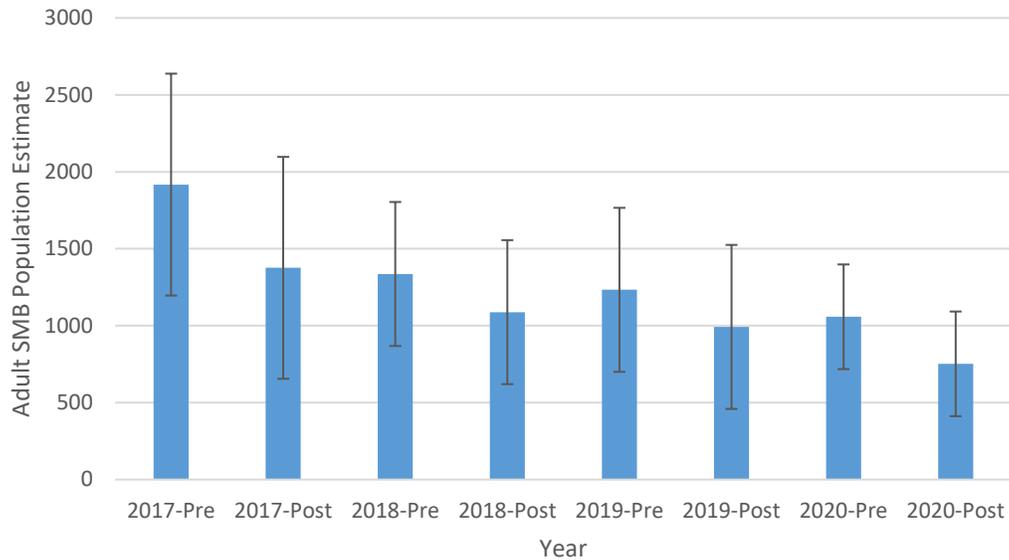


Figure #4.

Adult smallmouth bass (≥ 200 millimeters in total length) (SMB) population estimates and 95% confidence intervals (represented by the black lines) generated for Elkhead Reservoir prior to (“pre”) and after (“post”) the Elkhead Reservoir Fishing Classic from 2017-2020. Population estimates after the fishing tournament account for smallmouth bass that anglers harvested during the tournament.

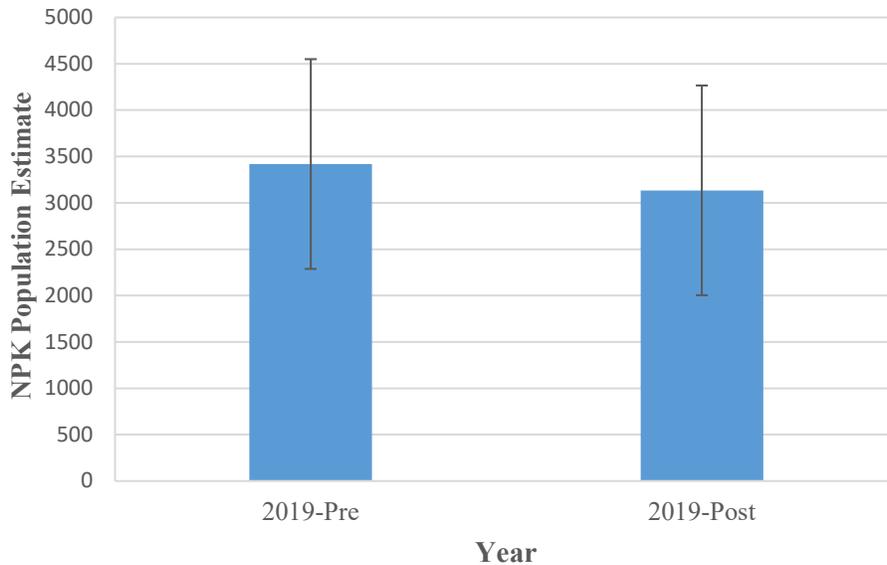


Figure #5.

Adult northern pike (≥ 300 millimeters in total length) (NPK) population estimates and 95% confidence intervals (represented by the black lines) generated for Elkhead Reservoir prior to (“pre”) and after (“post”) the Elkhead Reservoir Fishing Classic for 2019. Population estimates after the fishing tournament account for northern pike that anglers harvested during the tournament.

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ANNUAL PERFORMANCE PROGRESS REPORT (PPR)

BUREAU OF RECLAMATION AGREEMENT NUMBER: R17AP00301

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Project Title:

Middle Yampa River nonnative fish management

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Project/Grant Period:

Start date: 09/22/2017

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Reporting period end date: 11/15/2020

Is this the final report? Yes No

Performance:

This project is one of several designed to facilitate the removal of nonnative northern pike and smallmouth bass within the Yampa River Basin, with an evaluation of the efficiency of such efforts. The study area consisted of the middle Yampa River miles (RM) 134.2 to 50.5 which were sampled to capture and remove smallmouth bass and northern pike. Colorado Parks and Wildlife (CPW) and Colorado State University (CSU) removed 117 northern pike during electrofishing efforts which began June 2nd and continued through July 12th. The northern pike electrofishing catch rate was 0.69 fish/hour, which is a decrease in catch rate compared to 2019, although, comparing the 2020 catch rate to that of 2019 may not be reliable considering that total electrofishing effort expended in 2020 was far less. Crews were not able to complete as much electrofishing removal effort in 2020 due to COVID-19 health concerns and agency guidelines that restricted their ability to complete this work. Please see CSU's 2020 Annual Report for Project #125 for a detailed analysis of smallmouth bass data collected in the study area.