

Statewide Fisheries Assessments and Surveys
Federal Aid Project F-86-R-31



Federal Aid in Fish and Wildlife Restoration

Job Progress Report

Colorado Parks & Wildlife

Aquatic Research Section

Fort Collins, Colorado

September 2018

STATE OF COLORADO

John W. Hickenlooper, Governor

COLORADO DEPARTMENT OF NATURAL RESOURCES

Bob Randall, Executive Director

COLORADO PARKS & WILDLIFE

Bob Broscheid, Director

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ANNUAL PERFORMANCE REPORT

State: COLORADO

Project#: F-86-R-31

Project Title: Statewide Fisheries Inventory and Surveys

Period Covered: *January 1, 2017 – December 31, 2017*

Project Objective:

To conduct monitoring and creel surveys on recreational fisheries to track fish population status and angler use on lakes and streams across Colorado.

Relationship with Other Grants:

This project is also strongly tied to Federal Aid Grant F-239 – Aquatic Data Analysis. While the F-86 grant provides the funding for the field work and data entry to be completed (sportfish only), the data collected from those and other efforts are stored in CPW's aquatic data management system and covered under the F-239 grant. The statistics for this report are generated from data stored within the aquatics database. Additional sources of data (aquatic species conservation surveys, aquatic research data and scientific collection permit data) are also held in ADAMAS, but are not included in this report.

Job No. 1. Statewide Stream and lake inventory and data collection

Inventory fish populations on selected public lakes and streams. Compilation of this data allows Colorado Parks and Wildlife (CPW) to assess and evaluate the success of fisheries management activities including fish stocking, special regulations and fish removal on selected lakes and streams.

Job Objective: The development, implementation, and evaluation of management strategies for those fish populations and waters managed to provide recreational sport fishing, or those waters having the potential for enhancement based on an evaluation of results of inventory and data collection.

Need: Management of the state's vast aquatic resources requires standardized data collection and analysis procedures, as well as a centralized data source that is easily accessible to biologists, managers, and researchers.

Specific Objectives:

1. Gather population and biomass estimates of recreational fish species by conducting backpack, barge and shore-based electrofishing surveys on select stream reaches
2. Collect vital population statistics of recreational fish species using Catch Per Unit Effort surveys (involving boat electrofishing, gill nets, and trap nets) on select lakes and reservoirs

Approach:

Action #1- Maintain current and accurate data from aquatic biological surveys statewide

- Level 1 Action Category – Data Collection and Analysis
- Level 2 Action Strategy – Research, Survey or monitoring-fish & wildlife populations
- Level 3 Action Activity – N/A

A total of 593 surveys were conducted on 218 lakes, 154 stream segments during the grant period. A breakdown of these surveys by region and water type is provided in Table 1. A total of 116,926 fish were enumerated and 95,126 were individually measured in these surveys. These surveys can be divided into 3 general categories; 32% generated a population estimate for at least some of the species captured in the survey, 53% provided a Catch Per Unit Effort (CPUE) index and 13% just looked at what species were present or absent at the specific site (2% of surveys defined as ‘other’). A spatial summary of this work is provided in Figures 1 and 2. This level of effort is on par with that which has been performed in previous years in Colorado (Table 2).

Table 1. Breakdown by region of fisheries surveys conducted by CPW in 2017.

Year	Region	WaterType	#Surveys	#Creels
2017	Northeast	Lake	116	1
2017	Northeast	Stream	58	
2017	Northwest	Ditch	1	
2017	Northwest	Lake	103	2
2017	Northwest	Stream	60	
2017	Southeast	Lake	57	
2017	Southeast	Stream	56	4
2017	Southwest	Ditch	2	
2017	Southwest	Lake	53	
2017	Southwest	Stream	120	1

Table 2. Comparison of fisheries assessment effort by CPW in recent years.

Year	#Surveys	#Fish Enumerated	#Creels
2012	598	123,433	19
2013	625	150,012	22
2014	638	114,062	4
2015	611	137,713	10
2016	578	130,205	4
2017	593	124,953	8

SurveyMap

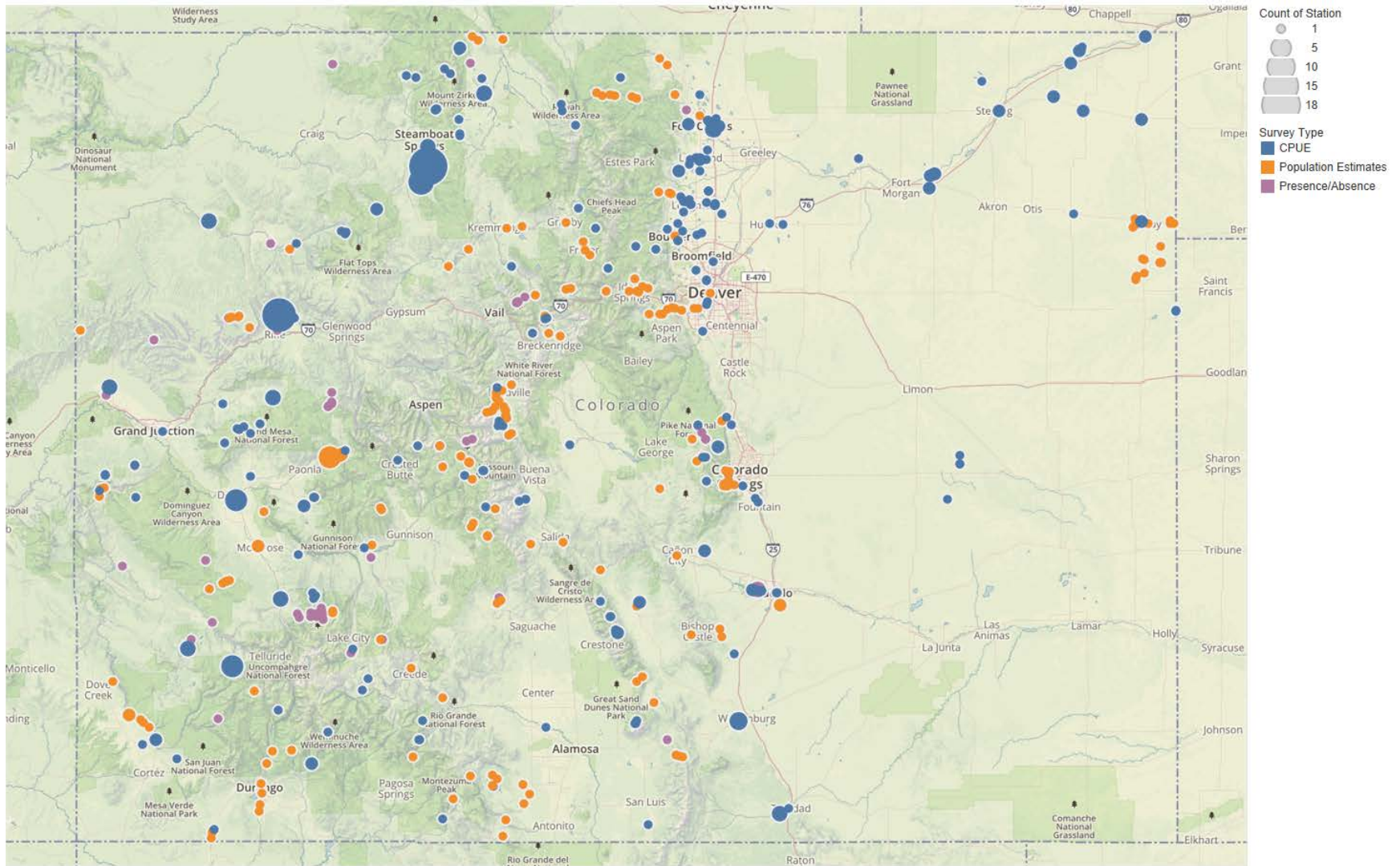


Figure 1. Location and type of surveys conducted by CPW biologists in 2017. A summary of catch for the two most popular recreational sport fish families is provided in Figure 3.



Figure 2. Number of surveys conducted by CPW staff in 2017 by drainage basin

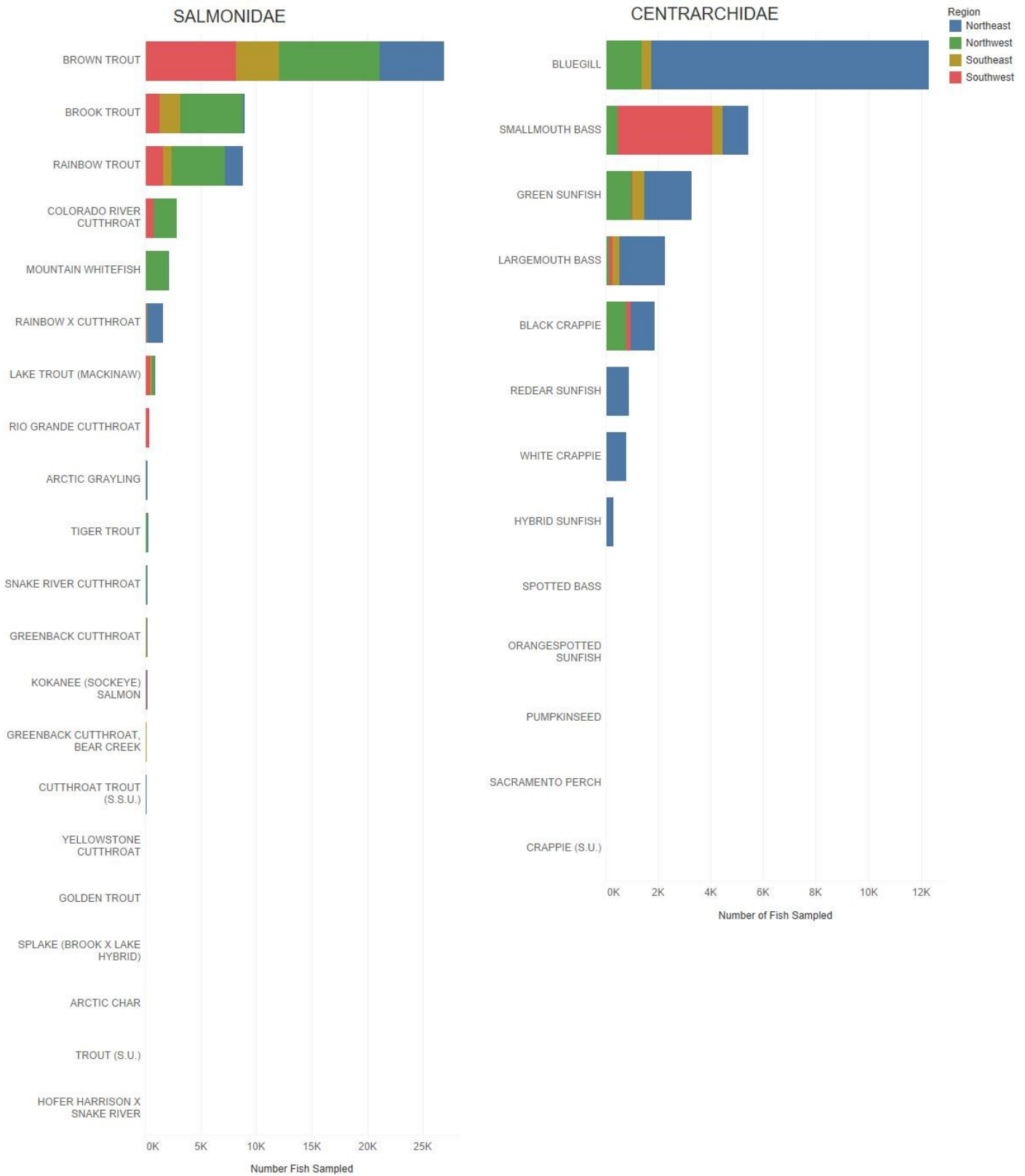


Figure 3. Catch of fish from the two most popular recreational sportfish families during 2017 CPW fisheries assessment surveys.

Fisheries data from across the state is maintained by the collecting biologist within each of the regional CPW offices, but is also submitted to the centralized Aquatic Data Management System (ADAMAS), managed by the Aquatic Research Section of CPW in Fort Collins, CO. This data is integrated with data from the aquatic species conservation program, the aquatic research program, CPW's water quality program, as well as data submitted from external scientific collection permit holders.

CPW explains the rationale for conducting fishery surveys and publishes results of these surveys on our website:

<http://cpw.state.co.us/thingstodo/Pages/FisheryManagementSurveys.aspx>

Job No. 2. Angler harvest and effort statistics (Creel)

Survey anglers at select lakes and streams across Colorado. Obtain counts of shore fisherman and boat fisherman, counts and measurements of fish species harvested and estimates of those released. Conduct interviews with anglers to find out how long they fished, what they were fishing with, what their preferred species is, and what level of satisfaction they would assign to their trip.

Job Objective: Estimate angler effort and harvest

Need: Historic trends and current status of fish populations only provide half of the information needed to effectively manage recreational fisheries in Colorado. Accurate estimates of angler harvest and effort are needed to ensure both sustainable fisheries and satisfied anglers.

Specific Objectives:

1. Efficient and accurate estimation of angler harvest and effort on select lakes and rivers across Colorado.
2. Collection of information on angler demographics and preferred species being targeted by different

Approach:

Action #1- Maintain current and accurate data from aquatic biological surveys statewide

- Level 1 Action Category – Data Collection and Analysis
- Level 2 Action Strategy – Research, Survey or monitoring-fish & wildlife populations
- Level 3 Action Activity – N/A

Budget cutbacks in 2015 reduced the number of creel surveys that CPW performs across the state. Seven creels were conducted in 2017; 4 stream surveys and 3 lake/reservoir surveys. A summary of creel effort across the state over the past 5 years is provided in Table 3. A breakdown of where the creel surveys were conducted in 2016 is provided in Table 4.

Table 3. Summary of creel survey effort in Colorado

<u>Year</u>	<u>#Creels</u>
2012	19
2013	22
2014	4
2015	10
2016	4
2017	8

Table 4. Waters on which creel surveys were performed by CPW in 2017

Year	WaterType	WaterCode	WaterName
2017	Stream	33807	Arkansas River #9B (Site 1) ¹
2017	Stream	33807	Arkansas River #9B (Site 2) ¹
2017	Stream	33807	Arkansas River #9B (Site 3) ¹
2017	Stream	29048	Arkansas River #9C ¹
2017	Lake	81771	11 Mile Reservoir ¹
2017	Lake	66160	Jerry Creek Reservoir #1 ²
2017	Lake	66162	Jerry Creek Reservoir #2 ²
2017	River		Piedra River (all reaches) ²

¹ standard creel

² voluntary creel card

Creel data is currently analyzed using an aging software package (C-SAP) programmed by CPW and computer science and statistics staff at Colorado State University. Individual creel surveys are housed on the area biologist's computers, scattered across the state. A project to develop a new centralized creel data storage and analysis program is currently in testing and should be deployed in the coming year. This new software will improve CPW's analysis of current and historic trends in fisheries usage.

PERSONNEL:

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APPENDIX 1. CPW AQUATIC SENIOR AND AREA BIOLOGISTS:

LORI MARTIN – SENIOR AQUATIC BIOLOGIST

NORTHWEST REGION - COLO RIVER DRAINAGES

Northwest Region Service Center

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NAME	AREA	TELEPHONE / FAX	ADDRESS
ATKINSON, Billy (Area 10 Mgmt. Biologist)	Upper Yampa River drainage	(970) 871-2868 (Office) (970) 871-2853 (FAX) (970) 846-9381 (Cell)	Steamboat Springs SC 925 Weiss Dr. Steamboat Sprgs. 80477
BAKICH, Kendall (Area 8 Mgmt. Biologist)	Eagle, Roaring Fork, Fryingpan, and middle Colorado river drainages	(970) 947-2924 (Office) (970) 947-2936 (FAX) (970) 355-4771 (Cell)	Glenwood Springs SC 0088 Wildlife Way Glenwood Spgs. 81601
EWERT, Jon (Area 9 Mgmt. Biologist)	Upper Colorado and Blue river drainages	(970) 725-6214 (Office) (970) 725-6217 (FAX) (970) 509-9150 (Cell)	Hot Sulphur Springs SC 346 Grand Co. Rd. 362 Hot Sulphur Spgs. 80451
EYRE, Tory (Area 6 Mgmt. Biologist)	Lower Yampa, White, and Green river drainages	(970) 878-6074 (Office) (970) 878-6077 (FAX) (970) 942-3053 (Cell)	Meeker SC 73485 Hwy.64 Meeker 81641
FELT, Ben (Area 7 Mgmt. Biologist)	Lower Colorado & Gunnison R. drainages; Grand Mesa (Grand Cnty)	(970) 255-6126 (Office) (970) 255-6111 (FAX) (970) 778-2481 (Cell)	Grand Junction Office 711 Independent Ave. Grand Junction 81505
LOGAN, Jenn (Region Native Species Biologist)	NW Region (Areas 6-10)	(970) 947-2923 (Office) (970) 947-2936 (FAX) (970) 309-9397 (Cell)	Glenwood Springs SC 0088 Wildlife Way Glenwood Spgs. 81601

JOSH NEHRING – SENIOR AQUATIC BIOLOGIST
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RAMSAY, Jim (Area 12 Mgmt. Biologist)	Lower Arkansas	(719) 336-6607 (Office) (719) 336-6623 (FAX) (719) 940-0263 (Cell)	Lamar Service Center 2500 S. Main St. Lamar, CO 81052
NOBLE, Cory (Area 14 Mgmt. Biologist)	Upper Ark, Front Range & Plains	(719) 227-5222 (Office) (719) 227-5297 (FAX) (719) 396-4235 (Cell)	Colorado Springs SC 4255 Sinton Rd. Colorado Springs, CO 80907
TUCKER, Carrie (Area 11 Mgmt. Biologist)	Middle Ark, Huerfano, Purgatoire	(719) 561-5312 (Office) (719) 561-5321 (FAX) (719) 940-6352 (Cell)	Pueblo Service Center 600 Reservoir Rd. Pueblo, CO 81005
ATWOOD, Michael (Area 13 Mgmt. Biologist)	Upper Arkansas Headwaters	(719) 530-5525 (Office) (719) 530-5554 (FAX) (719) 539-5805 (Cell)	Salida Service Center 7405 Hwy 50 Salida, CO 81201
FOUTZ, Paul (Region Native Species Biologist)	SE Region (Areas 11-14)	(719) 227-5217 (Office) (719) 227-5297 (FAX) (719) 482-5697 (Cell)	Colorado Springs SC 4255 Sinton Rd. Colorado Springs, CO 80907

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NAME	AREA	TELEPHONE / FAX	ADDRESS
WINKLE, Paul (Area 5 Mgmt. Biologist)	All aquatic resources in Denver area including Clear Creek and Bear Creek drainages.	(303) 291-7232 (Office) (303) 291-7114 (FAX) (303) 916-1043 (Cell)	Denver Headquarters 6060 Broadway Denver, CO 80216
SWARR, Tyler (Area 1 Mgmt. Biologist)	All aquatic resources in South Platte River drainage from Park County downstream to Chatfield Reservoir including the North Fork of the South Platte River drainage.	(303) 838-5305 (Office) (303) 291-7114 (FAX) (303) 981-3634 (Cell)	Denver Headquarters 6060 Broadway Denver, CO 80216
SWIGLE, Ben (Area 2 Mgmt. Biologist)	All aquatic resources in the St. Vrain, Big Thompson and Boulder Creek Drainages.	(970) 472-4364 (970) 472-4458 (FAX) (970) 227-4892 (Cell)	Northeast Service Center 317 West Prospect Ft. Collins, CO 80526
BRANDT, Mandi (Area 3 Mgmt. Biologist)	All aquatic resources in lower South Platte drainage and the North Fork of the Republican River, including waters in CPW Area 3.	(970) 842-6330 (Office) (970) 842-6329 (FAX) (970) 768-9649 (Cell)	Brush Service Center 122 East Edison Brush, CO 80723
BATTIGE, Kyle (Area 4,10 Mgmt. Biologist)	All aquatic resources- North Platte, Poudre and Laramie River Drainages.	(970) 472-4396 (Office) (970) 472-4457 (FAX) (970) 217-9513 (Cell)	Northeast Service Center 317 West Prospect Ft. Collins, CO 80526
WRIGHT, Boyd (Region Native Species Biologist)	NE Region (Areas 1-5)	(970) 472-4366 (office) (970) 472-4458 (FAX) (970) 261-4366 (Cell)	Northeast Service Center 317 West Prospect Ft. Collins, CO 80526

JOHN ALVES – SENIOR AQUATIC BIOLOGIST

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VIGIL, Estevan (Area 17 Mgmt. Biologist)	Rio Grande River	(719) 587-6908 (Office) (719) 587-6934 (FAX) 719-588-3204 (CELL)	Monte Vista Service Center 0722 S. Road 1E Monte Vista, CO 81144
BRAUCH, Dan (Area 16 Mgmt. Biologist)	Upper Gunnison River	(970) 641-7070 (Office) (970) 641-7883 (FAX) 970-497-9722 (CELL)	Gunnison Service Center 300 W. New York Ave. Gunnison, CO 81230
WHITE, Jim (Area 15 Mgmt. Biologist)	San Juan Basin, Upper Dolores River Basin	(970) 375-6712 (Office) (970) 382-6672 (FAX) 970-903-1073 (CELL)	Durango Service Center 151 E. 16 th St. Durango, CO 81301
GARDUNIO, Eric (Area 18 Mgmt. Biologist)	Lower Gunnison, Uncompahgre, San Miguel, Lower Dolores Rivers	(970) 252-6017 (Office) (970) 252-6053 (FAX) (970) 596-2901 (Cell)	Montrose Service Center 2300 South Townsend Montrose, CO 81401
VACANT (Region Native Species Biologist)	SW Region (Areas 15- 18)	(970) 641-7070 (Office) (970) 641-7883 (FAX)	Gunnison Service Center 300 W. New York Ave. Gunnison, CO 81230

Appendix 2. List of fisheries surveys conducted in 2017 by CPW employees

<u>Huc10</u>	<u>WaterType</u>	<u>Protocol</u>	<u>#Surveys</u>	<u>#Species</u>	<u>#Fish</u>
Northeast Region - North Platte River					
North Platte Headwaters					
Canadian River	Lake	CPUE	2	1	42
Headwaters North Platte River	Lake	CPUE	9	7	787
North Fork North Platte River	Lake	CPUE	1	3	220
North Fork North Platte River	Stream	PRESENCE/ABSENCE	1	3	83
Upper North Platte					
Big Creek	Lake	CPUE	3	6	159
Big Creek	Stream	TWO-PASS REMOVAL	2	3	245
North Platte River-Douglas Creek	Stream	MARK/RECAPTURE	1	8	938
Northeast Region - Republican River					
Arikaree					
Black Wolf Creek	Stream	FULL HABITAT	3	8	1,856
Dry Willow Creek-Arikaree River	Stream	FULL HABITAT	2	5	1,932
Spring Canyon-Arikaree River	Stream	FULL HABITAT	5	8	4,079
Frenchman					
Sand Creek	Lake	CPUE	2	6	984
Upper Frenchman Creek	Lake	CPUE	4	7	1,706
North Fork Republican					
Chief Creek	Lake	CPUE	3	10	4,780
Chief Creek	Stream	FULL HABITAT	3	12	170
Headwaters North Fork Republican River	Stream	FULL HABITAT	2	6	156
Rush Creek-North Fork Republican River	Stream	FULL HABITAT	4	13	537
Northeast Region - South Platte River					
Beaver					
Lower Beaver Creek	Lake	CPUE	2	7	1,991
Big Thompson					
Dry Creek-Little Thompson River	Lake	CPUE	1	1	1
Outlet Big Thompson River	Lake	CPUE	12	24	2,277
Cache La Poudre					
Boxelder Creek	Lake	CPUE	1	12	190
City of Greeley-Cache La Poudre River	Lake	CPUE	8	20	1,082
Gordon Creek-Cache La Poudre River	Stream	TWO-PASS REMOVAL	1	5	197
Headwaters Cache La Poudre River	Lake	CPUE	1	5	209
Headwaters Cache La Poudre River	Stream	TWO-PASS REMOVAL	6	6	1,272
Horsetooth Reservoir-Cache La Poudre	Lake	CPUE	9	20	1,606
Horsetooth Reservoir-Cache La Poudre	Stream	PRESENCE/ABSENCE	2	4	27
Horsetooth Reservoir-Cache La Poudre	Stream	TWO-PASS REMOVAL	1	6	271
Lone Pine Creek	Lake	CPUE	1	2	20
Rabbit Creek-North Fork Cache La Poudre	Stream	TWO-PASS REMOVAL	2	8	449
South Fork Cache La Poudre River	Stream	PRESENCE/ABSENCE	1	2	15

<u>Huc10</u>	<u>WaterType</u>	<u>Protocol</u>	<u>#Surveys</u>	<u>#Species</u>	<u>#Fish</u>
Clear Creek					
Lower Clear Creek	Lake	CPUE	2	7	228
Middle Clear Creek	Stream	THREE-PASS REMOVAL	1	4	28
Middle Clear Creek	Stream	TWO-PASS REMOVAL	6	3	661
Upper Clear Creek	Stream	TWO-PASS REMOVAL	1	2	85
Lower South Platte					
Hartley Draw-South Platte River	Lake	CPUE	2	12	1,185
Middle South Platte-Cherry Creek					
Beebe Seep Canal	Lake	CPUE	1	0	0
Big Dry Creek-South Platte River	Lake	CPUE	2	7	272
Cottonwood Draw-South Platte River	Lake	CPUE	1	11	450
Outlet Box Elder Creek	Lake	CPUE	1	3	29
Middle South Platte-Sterling					
Cedar Creek	Lake	CPUE	1	15	521
City of Sterling-South Platte River	Lake	CPUE	2	14	1,469
Cottonwood Creek-South Platte River	Lake	CPUE	5	21	2,425
Dead Horse Draw-South Platte River	Lake	CPUE	6	13	1,350
South Platte Headwater					
South Fork South Platte River	Lake	CPUE	1	6	386
St. Vrain					
Boulder Creek-Saint Vrain Creek	Lake	CPUE	21	24	2,499
Boulder Creek-Saint Vrain Creek	Stream	TWO-PASS REMOVAL	1	3	180
Coal Creek-Boulder Creek	Lake	CPUE	3	12	141
Headwaters Boulder Creek	Lake	CPUE	2	13	295
Headwaters Boulder Creek	Stream	TWO-PASS REMOVAL	1	4	177
North Saint Vrain Creek	Stream	TWO-PASS REMOVAL	2	5	409
South Boulder Creek	Lake	CPUE	4	14	297
Upper South Platte					
Bear Creek	Stream	TWO-PASS REMOVAL	9	9	2,698
Chatfield Reservoir-South Platte River	Lake	CPUE	1	11	800
City of Lakewood-South Platte River	Lake	CPUE	2	5	663
City of Lakewood-South Platte River	Stream	MARK/RECAPTURE	1	8	310
Northwest Region - Colorado River					
Blue					
Dillon Reservoir	Lake	CPUE	1	6	147
Middle Blue River	Lake	CPUE	2	8	300
Middle Blue River	Lake	PRESENCE/ABSENCE	4	2	85
Middle Blue River	Stream	MARK/RECAPTURE	2	6	1,227
Middle Blue River	Stream	PRESENCE/ABSENCE	2	2	26
Tenmile Creek	Lake	CPUE	1	2	165
Upper Blue River	Stream	TWO-PASS REMOVAL	3	5	742
Colorado Headwaters					
Big Alkali Creek-Colorado River	Stream	MARK/RECAPTURE	1	9	1,572
Deep Creek	Lake	CPUE	1	2	38
Fraser River	Lake	CPUE	1	2	190
Fraser River	Stream	TWO-PASS REMOVAL	4	8	1,980
Headwaters Colorado River	Lake	CPUE	3	6	276
Sheephorn Creek-Colorado River	Stream	MARK/RECAPTURE	1	7	2,212

<u>Huc10</u>	<u>WaterType</u>	<u>Protocol</u>	<u>#Surveys</u>	<u>#Species</u>	<u>#Fish</u>
Troublesome Creek-Colorado River	Stream	MARK/RECAPTURE	2	8	1,971
Williams Fork	Stream	FULL HABITAT	2	2	742
Colorado Headwaters-Plateau					
Big Creek-Plateau Creek	Lake	CPUE	5	5	1,180
Canyon Creek-Colorado River	Stream	MARK/RECAPTURE	1	17	1,203
Clear Creek-Roan Creek	Stream	PRESENCE/ABSENCE	1	3	663
East Salt Creek	Lake	CPUE	3	12	519
East Salt Creek	Stream	PRESENCE/ABSENCE	2	11	317
Garfield Creek-Colorado River	Lake	CPUE	1	3	16
Parachute Creek	Stream	PRESENCE/ABSENCE	1	0	0
Parachute Creek	Stream	TWO-PASS REMOVAL	5	3	893
Rifle Creek	Lake	CPUE	14	10	3,975
Rifle Creek	Stream	PRESENCE/ABSENCE	3	11	416
Sink Creek-Colorado River	Lake	CPUE	1	0	0
Vega Reservoir-Plateau Creek	Lake	CPUE	3	4	233
Eagle					
Brush Creek	Lake	CPUE	1	2	882
Brush Creek	Stream	PRESENCE/ABSENCE	1	3	11
Brush Creek	Stream	TWO-PASS REMOVAL	4	5	295
Lower Eagle River	Lake	CPUE	2	13	1,531
Lower Eagle River	Stream	OTHER	1	4	79
Middle Eagle River	Stream	TWO-PASS REMOVAL	1	5	326
Roaring Fork					
Crystal River	Stream	PRESENCE/ABSENCE	1	2	905
Crystal River	Stream	TWO-PASS REMOVAL	5	2	241
Fryingpan River	Lake	CPUE	9	13	1,316
Fryingpan River	Stream	PRESENCE/ABSENCE	2	3	541
Fryingpan River	Stream	THREE-PASS REMOVAL	1	2	44
Outlet Roaring Fork River	Stream	PRESENCE/ABSENCE	1	1	1
Outlet Roaring Fork River	Stream	THREE-PASS REMOVAL	1	1	94
Upper Roaring Fork River	Stream	PRESENCE/ABSENCE	1	3	520
Northwest Region - Dolores River					
Lower Dolores					
West Creek	Lake	CPUE	2	1	6
Northwest Region - Gunnison River					
Lower Gunnison					
East Creek	Lake	CPUE	1	1	1
East Creek	Stream	PRESENCE/ABSENCE	1	2	13
Kannah Creek-Gunnison River	Lake	CPUE	1	1	33
Northwest Region - White River					
Lower White					
Bitter Creek	Stream	OTHER	2	1	1
Bitter Creek	Stream	THREE-PASS REMOVAL	1	2	38
Upper White					
Coal Creek-White River	Ditch	OTHER	1	7	853
Coal Creek-White River	Lake	CPUE	1	8	928

<u>Huc10</u>	<u>WaterType</u>	<u>Protocol</u>	<u>#Surveys</u>	<u>#Species</u>	<u>#Fish</u>
Coal Creek-White River	Stream	MARK/RECAPTURE	1	6	956
Crooked Wash-White River	Lake	CPUE	3	6	65
North Fork White River	Lake	CPUE	3	3	79
South Fork White River	Stream	TWO-PASS REMOVAL	1	1	14

Northwest Region - Yampa River

Little Snake

Little Snake River-Willow Creek	Stream	PRESENCE/ABSENCE	1	1	158
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Upper Yampa

Headwaters Elk River	Lake	CPUE	4	6	318
Headwaters Yampa River	Lake	CPUE	8	5	802
Headwaters Yampa River	Stream	TWO-PASS REMOVAL	3	5	2,269
Oak Creek-Yampa River	Lake	CPUE	22	6	3,334
Oak Creek-Yampa River	Stream	THREE-PASS REMOVAL	1	6	446
Outlet Elk River	Lake	CPUE	4	2	40
Trout Creek-Yampa River	Lake	CPUE	2	4	213

Southeast Region - Arkansas River

Arkansas Headwaters

Big Cottonwood Creek-Arkansas River	Stream	MARK/RECAPTURE	1	4	995
Chalk Creek	Lake	CPUE	2	4	113
Chalk Creek	Stream	THREE-PASS REMOVAL	1	1	11
Clear Creek-Arkansas River	Stream	TWO-PASS REMOVAL	2	2	203
Headwaters Arkansas River	Lake	CPUE	2	5	726
Headwaters Arkansas River	Stream	THREE-PASS REMOVAL	1	3	161
Headwaters Arkansas River	Stream	TWO-PASS REMOVAL	15	6	2,453
Headwaters Grape Creek	Lake	CPUE	8	9	514
Headwaters Grape Creek	Stream	TWO-PASS REMOVAL	1	7	124
Lake Creek	Lake	CPUE	2	6	307
Lake Creek	Stream	PRESENCE/ABSENCE	2	2	91
Royal Gorge-Arkansas River	Stream	MARK/RECAPTURE	1	4	594
South Arkansas River	Stream	TWO-PASS REMOVAL	1	2	57
Texas Creek	Lake	CPUE	1	2	8

Fountain

Middle Fountain Creek	Lake	CPUE	3	14	445
Middle Fountain Creek	Stream	THREE-PASS REMOVAL	4	4	141
Middle Fountain Creek	Stream	TWO-PASS REMOVAL	5	3	276
Monument Creek	Lake	CPUE	3	12	475
Monument Creek	Stream	THREE-PASS REMOVAL	1	3	187
Upper Fountain Creek	Lake	CPUE	2	5	421
Upper Fountain Creek	Stream	PRESENCE/ABSENCE	1	2	224
Upper Fountain Creek	Stream	THREE-PASS REMOVAL	2	4	40
Upper Fountain Creek	Stream	TWO-PASS REMOVAL	2	3	163

Huerfano

Headwaters Huerfano River	Lake	CPUE	3	1	86
Headwaters Huerfano River	Stream	THREE-PASS REMOVAL	1	1	64
Upper Cucharas River	Lake	CPUE	6	17	264

Purgatorie

Frijole Creek-Purgatorie River	Lake	CPUE	1	4	112
Trinidad Lake-Purgatorie River	Lake	CPUE	3	11	1,770

<u>Huc10</u>	<u>WaterType</u>	<u>Protocol</u>	<u>#Surveys</u>	<u>#Species</u>	<u>#Fish</u>
Rush					
Upper Rush Creek	Lake	CPUE	3	5	430
Upper Arkansas					
Beaver Creek	Lake	CPUE	1	1	15
Dry Creek-Arkansas River	Lake	CPUE	7	18	612
Dry Creek-Arkansas River	Stream	PRESENCE/ABSENCE	3	7	856
Eightmile Creek-Arkansas River	Lake	CPUE	2	12	268
Eightmile Creek-Arkansas River	Stream	MARK/RECAPTURE	1	4	67
Greenhorn Creek	Lake	CPUE	1	10	146
Headwaters Four Mile Creek	Stream	TWO-PASS REMOVAL	1	2	112
Headwaters Saint Charles River	Stream	THREE-PASS REMOVAL	2	4	123
Headwaters Saint Charles River	Stream	TWO-PASS REMOVAL	1	3	33
Pueblo Reservoir-Arkansas River	Lake	CPUE	2	17	519
Saint Charles River-Arkansas River	Stream	TWO-PASS REMOVAL	2	9	326
Upper Arkansas-John Martin Reservoir					
Headwaters Adobe Creek	Lake	CPUE	1	1	5
Southeast Region - Republican River					
South Fork Republican					
Bonny Reservoir-South Fork Republican	Lake	CPUE	2	10	232
Southeast Region - South Platte River					
Upper South Platte					
East Plum Creek	Lake	CPUE	1	2	51
Trout Creek-West Creek	Lake	CPUE	1	4	476
Trout Creek-West Creek	Stream	OTHER	4	0	0
Trout Creek-West Creek	Stream	TWO-PASS REMOVAL	1	1	303
Southwest Region - Dolores River					
Lower Dolores					
West Creek	Lake	CPUE	1	0	0
West Creek	Stream	CPUE	1	3	37
West Creek	Stream	THREE-PASS REMOVAL	2	4	696
West Creek	Stream	TWO-PASS REMOVAL	1	3	226
San Miguel					
Beaver-Mckenzie Creeks-San Miguel River	Stream	OTHER	1	2	53
Cottonwood Creek-San Miguel River	Stream	OTHER	1	0	0
Horsefly Creek	Stream	TWO-PASS REMOVAL	1	1	6
Naturita Creek	Lake	CPUE	3	5	658
Naturita Creek	Stream	OTHER	1	1	18
Upper San Miguel River	Lake	CPUE	6	1	344
Upper San Miguel River	Stream	PRESENCE/ABSENCE	4	3	34
Upper Dolores					
Headwaters Dolores River	Stream	PRESENCE/ABSENCE	1	3	415
Headwaters Dolores River	Stream	TWO-PASS REMOVAL	1	1	26
McPhee Reservoir-Dolores River	Lake	CPUE	2	10	746
Ponderosa Gorge-Dolores River	Stream	TWO-PASS REMOVAL	6	10	1,664

<u>Huc10</u>	<u>WaterType</u>	<u>Protocol</u>	<u>#Surveys</u>	<u>#Species</u>	<u>#Fish</u>
Southwest Region - Gunnison River					
East-Taylor					
East River	Lake	CPUE	2	2	51
Taylor River	Lake	CPUE	3	7	238
Taylor River	Stream	PRESENCE/ABSENCE	1	1	26
Taylor River	Stream	TWO-PASS REMOVAL	7	5	601
Lower Gunnison					
Roubideau Creek	Stream	OTHER	1	0	0
Tongue Creek-Gunnison River	Lake	CPUE	2	8	433
North Fork Gunnison					
Anthracite Creek	Stream	THREE-PASS REMOVAL	2	6	221
East Muddy Creek	Stream	PRESENCE/ABSENCE	7	3	228
Hubbard Creek-North Fork Gunnison River	Lake	CPUE	1	3	3
Hubbard Creek-North Fork Gunnison River	Stream	THREE-PASS REMOVAL	10	11	585
Hubbard Creek-North Fork Gunnison River	Stream	TWO-PASS REMOVAL	2	8	387
Tomichi					
Headwaters Tomichi Creek	Stream	THREE-PASS REMOVAL	2	2	86
Quartz Creek	Lake	CPUE	1	0	0
Quartz Creek	Stream	TWO-PASS REMOVAL	2	3	341
Uncompahgre					
Cow Creek	Stream	PRESENCE/ABSENCE	2	2	210
Dry Creek	Stream	PRESENCE/ABSENCE	1	0	0
Dry Creek	Stream	TWO-PASS REMOVAL	3	1	62
Happy Canyon Creek-Uncompahgre River	Lake	CPUE	1	2	30
Happy Canyon Creek-Uncompahgre River	Stream	THREE-PASS REMOVAL	2	3	289
Lower Uncompahgre River	Ditch	PRESENCE/ABSENCE	2	0	0
Lower Uncompahgre River	Lake	CPUE	6	5	42
Upper Uncompahgre River	Lake	CPUE	3	5	3,649
Upper Gunnison					
Beaver Creek-Blue Mesa Reservoir	Stream	TWO-PASS REMOVAL	2	2	60
Black Canyon of the Gunnison	Stream	MARK/RECAPTURE	1	3	3,306
Blue Creek	Stream	TWO-PASS REMOVAL	2	1	37
Cebolla Creek	Stream	PRESENCE/ABSENCE	2	5	118
Cebolla Creek	Stream	TWO-PASS REMOVAL	1	1	10
Cimarron River	Lake	CPUE	3	4	80
Cimarron River	Stream	PRESENCE/ABSENCE	11	3	15
Lake Fork	Lake	CPUE	1	5	531
Lake Fork	Stream	PRESENCE/ABSENCE	1	5	190
Smith Fork-Gunnison River	Lake	CPUE	2	8	612
Smith Fork-Gunnison River	Stream	CPUE	2	4	45
Smith Fork-Gunnison River	Stream	TWO-PASS REMOVAL	1	3	30
Soap Creek-Blue Mesa Reservoir	Lake	CPUE	1	7	1,752
Soap Creek-Blue Mesa Reservoir	Stream	TWO-PASS REMOVAL	1	3	79
Southwest Region - Rio Grande River					
Alamosa-Trinchera					
City of Alamosa-Rio Grande	Lake	CPUE	1	9	348
Headwaters Sangre de Cristo Creek	Stream	PRESENCE/ABSENCE	1	7	95
Headwaters Sangre de Cristo Creek	Stream	TWO-PASS REMOVAL	4	4	295

<u>Huc10</u>	<u>WaterType</u>	<u>Protocol</u>	<u>#Surveys</u>	<u>#Species</u>	<u>#Fish</u>
La Jara Creek	Stream	PRESENCE/ABSENCE	1	1	7
La Jara Creek	Stream	TWO-PASS REMOVAL	6	8	194
Sanchez Reservoir	Lake	CPUE	1	6	325
Conejos					
Conejos River Headwaters	Stream	TWO-PASS REMOVAL	1	1	50
Outlet Conejos River	Stream	MARK/RECAPTURE	1	5	660
Rio de Los Pinos	Stream	TWO-PASS REMOVAL	1	1	42
Rio Grande Headwaters					
Clear Creek	Lake	CPUE	1	3	132
Shallow Creek-Rio Grande	Stream	MARK/RECAPTURE	1	4	1,405
South Fork Rio Grande	Lake	CPUE	3	2	68
Spring Creek-Rio Grande	Lake	CPUE	1	4	94
Willow Creek	Stream	TWO-PASS REMOVAL	1	1	30
Saguache					
Middle Creek-Saguache Creek	Stream	PRESENCE/ABSENCE	1	1	19
Middle Creek-Saguache Creek	Stream	TWO-PASS REMOVAL	2	1	81
San Luis					
Sand Creek-San Luis Creek	Stream	THREE-PASS REMOVAL	1	2	149
Sand Creek-San Luis Creek	Stream	TWO-PASS REMOVAL	1	1	69

Southwest Region - San Juan River

Animas

Cascade Creek	Lake	CPUE	1	1	4
Electra Lake-Animas River	Stream	THREE-PASS REMOVAL	2	4	60
Headwaters Florida River	Stream	TWO-PASS REMOVAL	1	3	62
Lightner Creek-Animas River	Stream	THREE-PASS REMOVAL	1	6	130
Middle Animas Valley	Stream	THREE-PASS REMOVAL	3	8	367

McElmo

Upper McElmo Creek	Lake	CPUE	2	7	138
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Middle San Juan

Headwaters La Plata River	Lake	CPUE	1	2	106
Headwaters La Plata River	Stream	PRESENCE/ABSENCE	1	3	23
Headwaters La Plata River	Stream	TWO-PASS REMOVAL	2	8	634

Upper San Juan

Navajo River	Lake	CPUE	1	0	0
Navajo River	Stream	TWO-PASS REMOVAL	1	1	19
Upper Los Pinos River	Lake	CPUE	1	1	83
Vallecito Creek	Lake	CPUE	2	6	89
West Fork San Juan River	Stream	TWO-PASS REMOVAL	1	2	26