

2022 State of the Teton River Fishery



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OUR MISSION

- ▶ At Friends of the Teton River our mission is to restore and conserve the Teton River Watershed, ensuring a lasting legacy of **clean water, healthy streams, and a vibrant wild fishery.**
- ▶ We implement programs and projects founded on sound science, community education, and cooperation with landowners, citizens and agency partners.

FRIENDS OF THE TETON RIVER

Strategic Plan 2021-2025

The **mission** of Friends of the Teton River is to restore and conserve the Teton River Watershed, ensuring a lasting legacy of clean water, healthy streams, and a thriving wild fishery. We implement programs and projects founded on sound science, community education, and cooperation with landowners, citizens, and agency partners.

WATER QUALITY

Restore and conserve surface and groundwater quality in the Teton Watershed.

- Maintain science-based accurate data collection

EDUCATION

Provide watershed education to promote community engagement

- Offer youth and teachers watershed science field and classroom programs through the Teton Watershed Schools.

STREAM CHANNELS

Protect and restore healthy, functioning stream channels, floodplains, riparian areas, and natural wetlands in the Teton Watershed.

- Work with community partners to develop, prioritize and implement integrated stream restoration and stream flow restoration projects.

FISHERIES

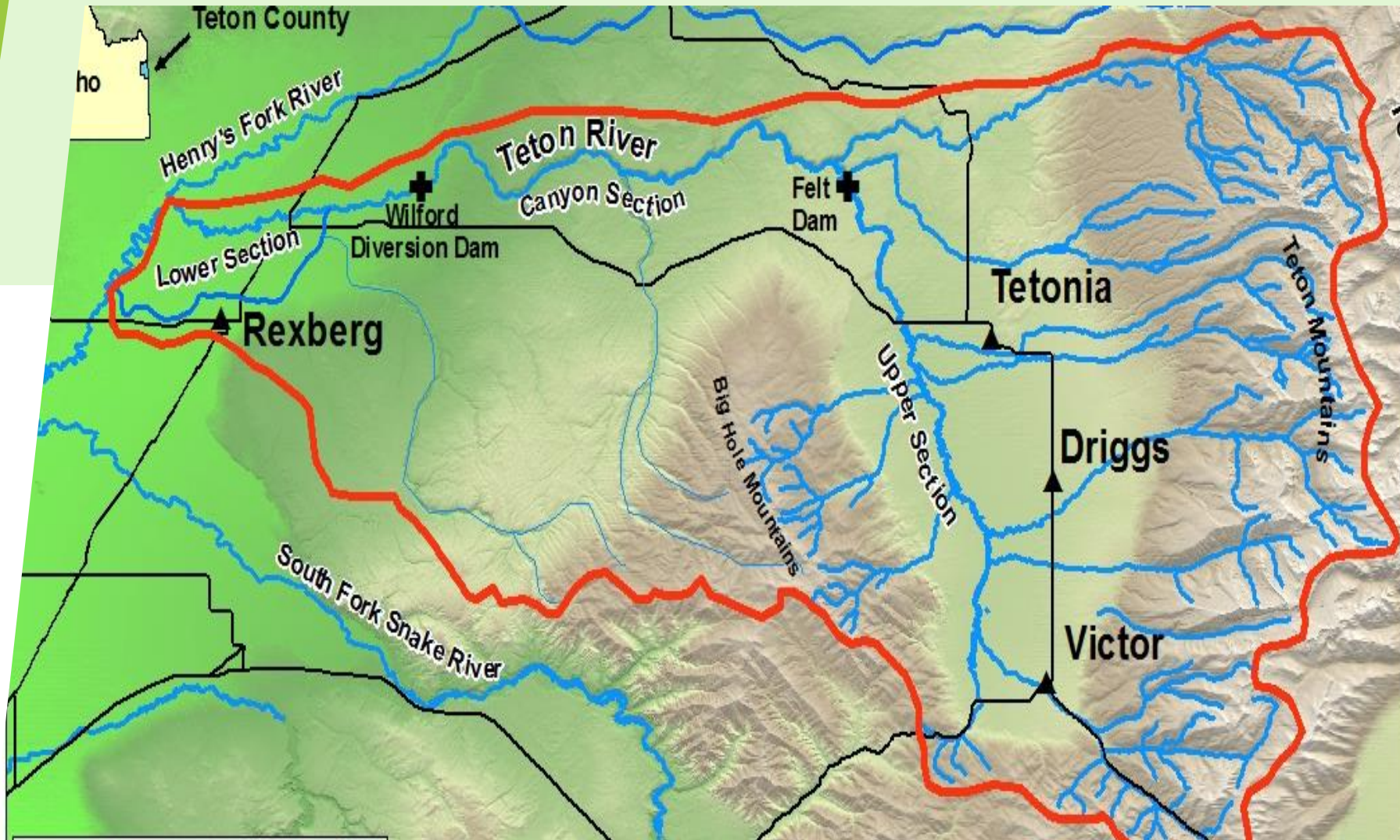
Protect and restore Yellowstone Cutthroat Trout in the Teton Watershed.

- Monitor the status and health of the Teton Watershed fishery.
- Restore fish passage in high priority locations.
- Maintain appropriate existing fish barriers and screens. Evaluate new construction options based on the best available science.

PARTNERSHIPS

Establish and maintain partnerships to protect and restore watershed health.

- Work with producers to implement mutually-beneficial best management practices that improve watershed health.
- Engage with stakeholders to inform community growth in a manner that protects and restores watershed health and honors regional heritage.
- Support policies and practices that recognize that a healthy Teton Watershed is dependent on mutual understanding, respect, and cooperation.



TETON RIVER WATERSHED

Our Partners



BUREAU OF RECLAMATION



FTR'S FISHERIES PROGRAM GOALS

-Determine long-term trout population trends.

-Provide the agencies with additional data on the Teton River watershed.

-Identify, prioritize and design YCT conservation projects

-Monitor the efficacy of conservation projects



Annual Monitoring

- ▶ PIT tagging
- ▶ PIT tag array maintenance
- ▶ YCT Redd Surveys
- ▶ BNT Redd Surveys
- ▶ Fish Screen operation
- ▶ Electrofishing surveys
- ▶ Special Projects



Will Stubblefield Photo

PIT Tagging

- ▶ Over 5,000 fish have been PIT tagged in the watershed
- ▶ Tags monitor fish movements and effectiveness of watershed restoration



PIT Tag Interrogation Site

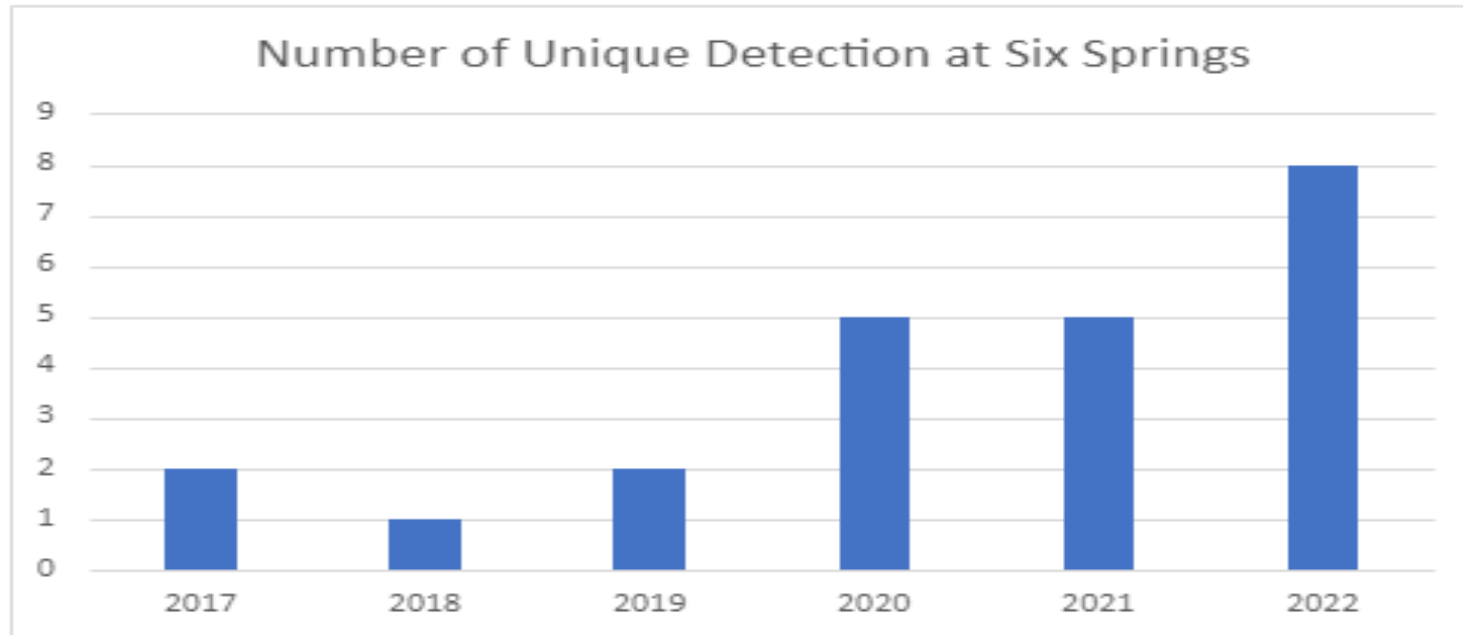




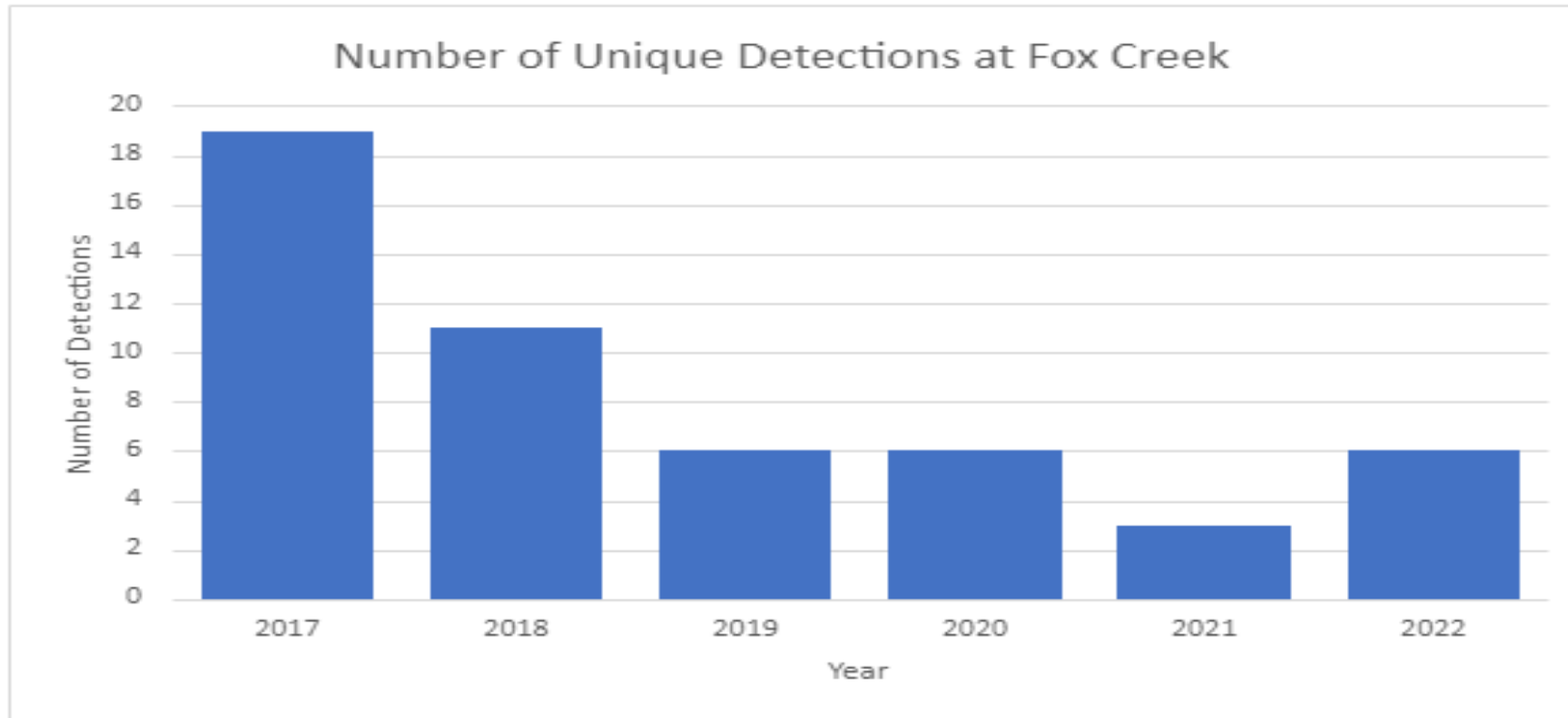
Before



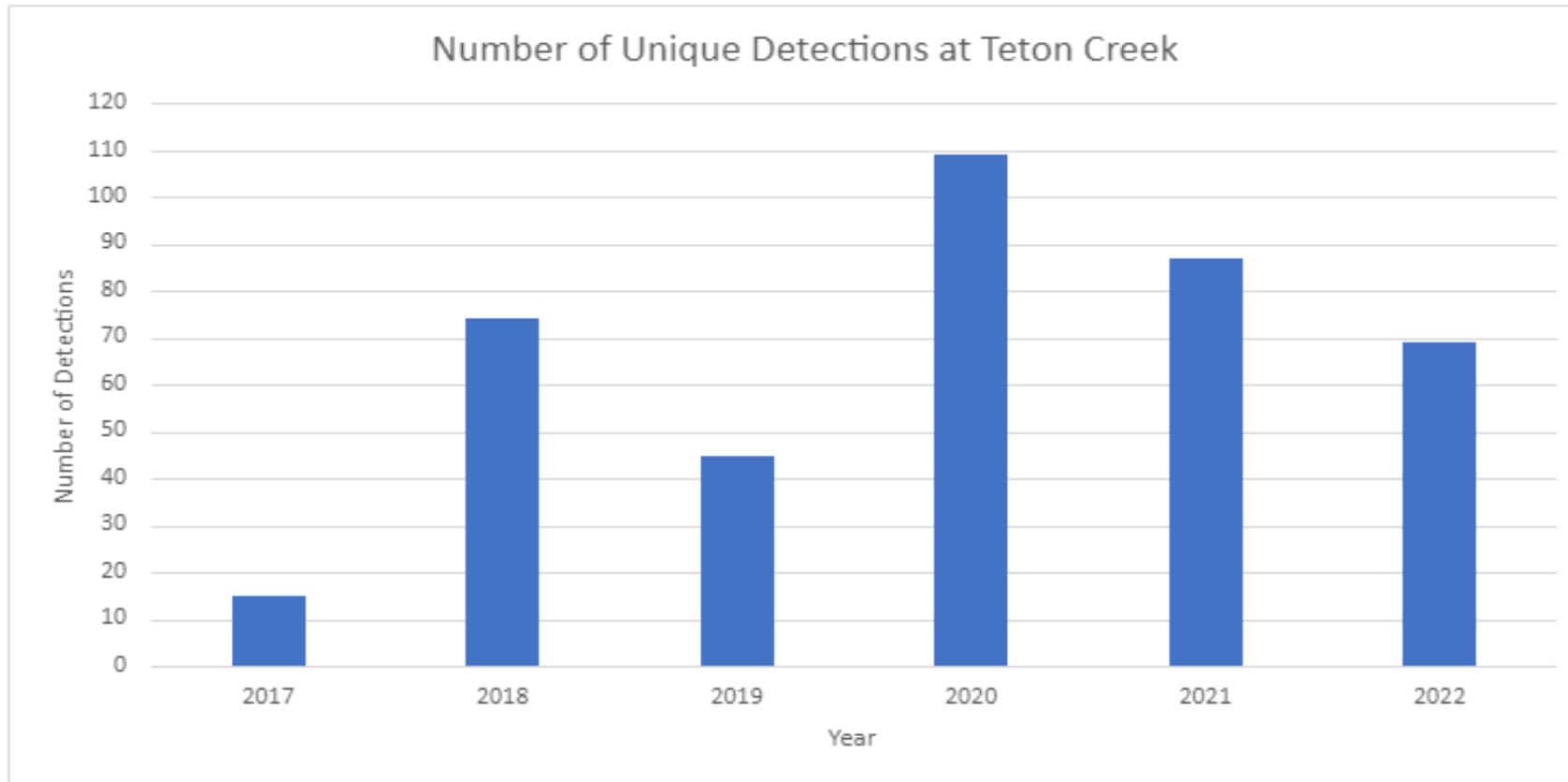
After



Number of Unique Detections at Six Springs



Number of Unique Detections at Fox Creek



Unique PIT Detections At Teton Creek (Steel Bridge)

YCT Redd Surveys

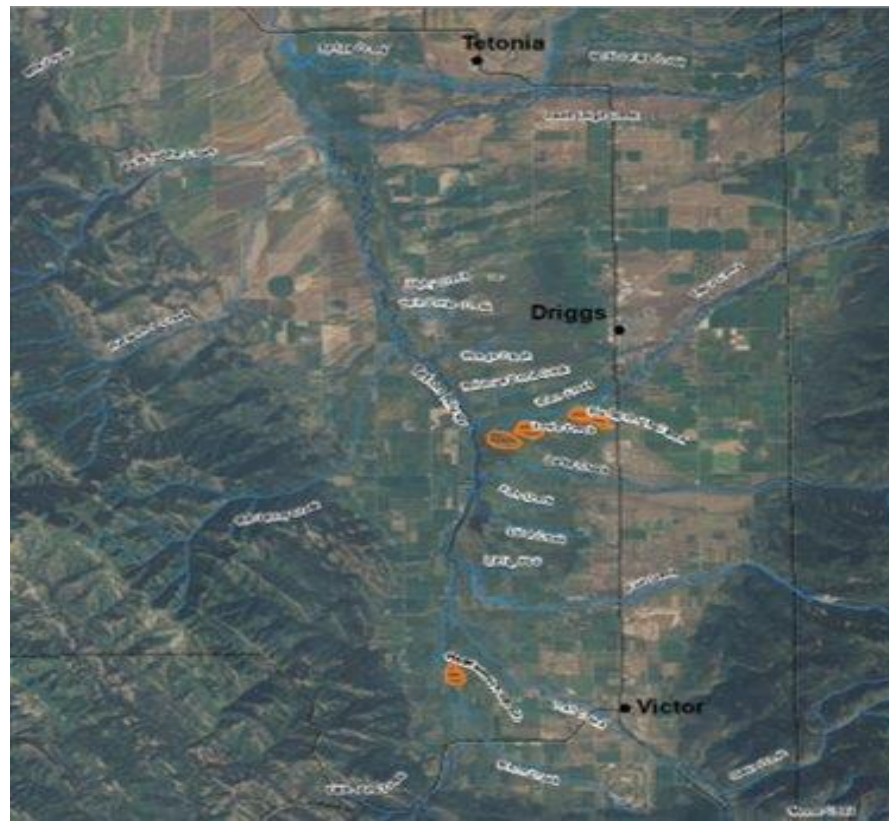


Table 1. Number of redds observed in Six Springs Creek, by year.

Year	Redd count
2018	28
2019	9
2020	26
2021	30
2022	21

Brown Trout Redd Surveys



►-In October of 2021 FTR began conducting a raft/drift boat based redd survey between Rainey (Big Eddy) and the Packsaddle Bridge.

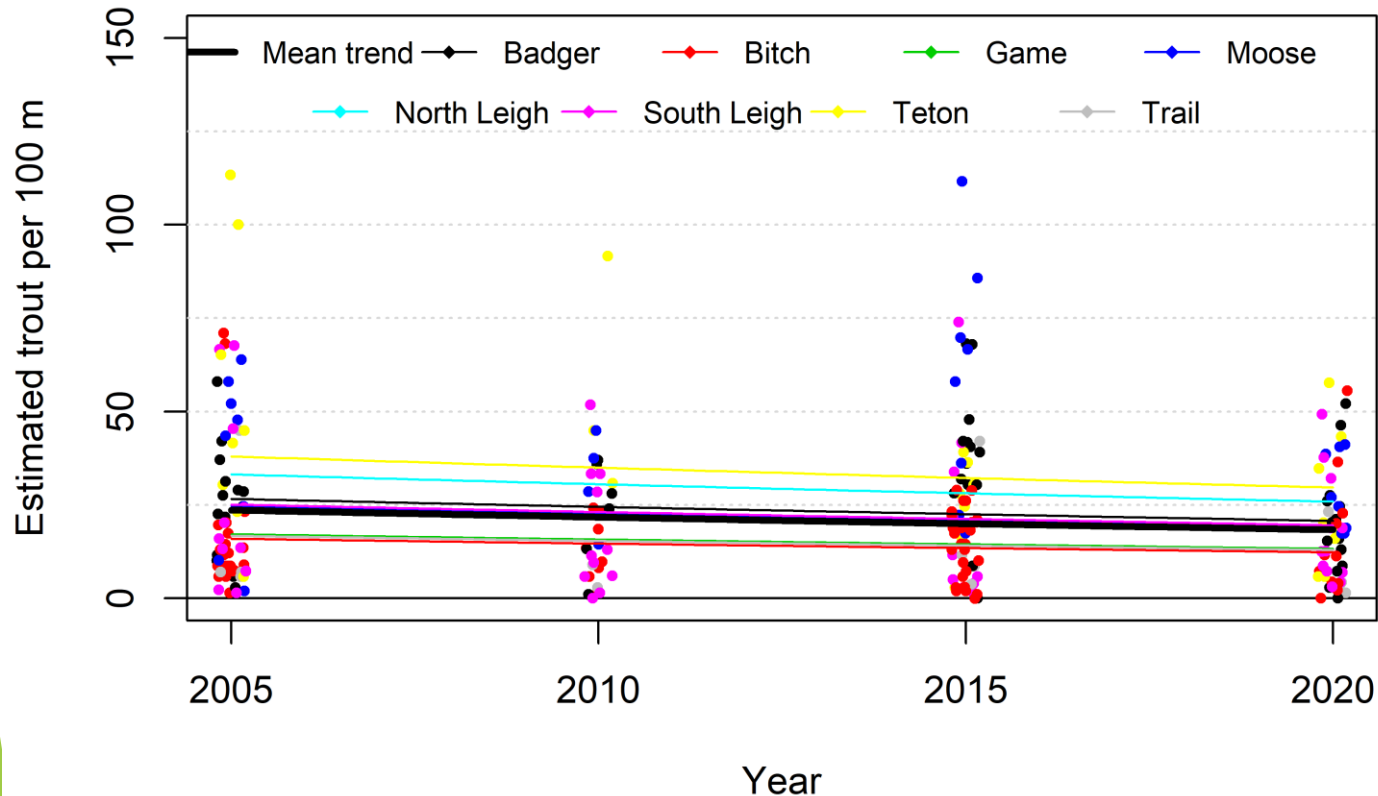
►-During that initial survey and again in 2022 FTR identified 16 redds.

Trout Assessment Surveys



2020 Tributary Trout Assessment Survey Results

Trout Abundance: Streams Sampled in All Years



This graph and supporting statistical analysis was created by Rob Van Kirk of the Henrys Fork Foundation

- 15 years of data reveal an annual 2% decrease in trout abundance
- Over time YCT have stayed stable at 45% of trout captured

SOUTH FORK OF THE TETON RIVER POPULATION ESTIMATE

ORANGE BRIDGE (REXBURG) TETON RIVER TO THE HENRY'S FORK

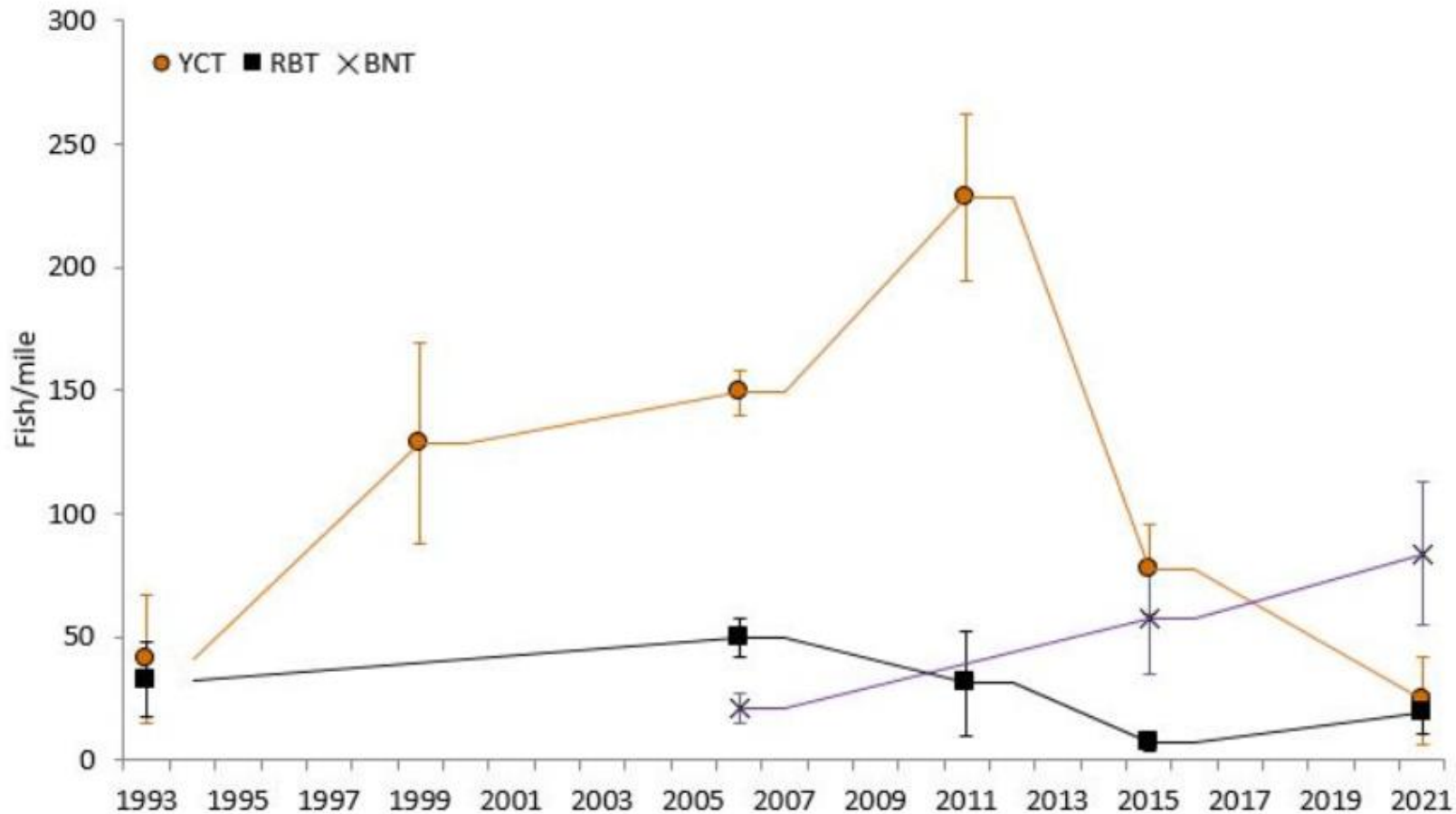


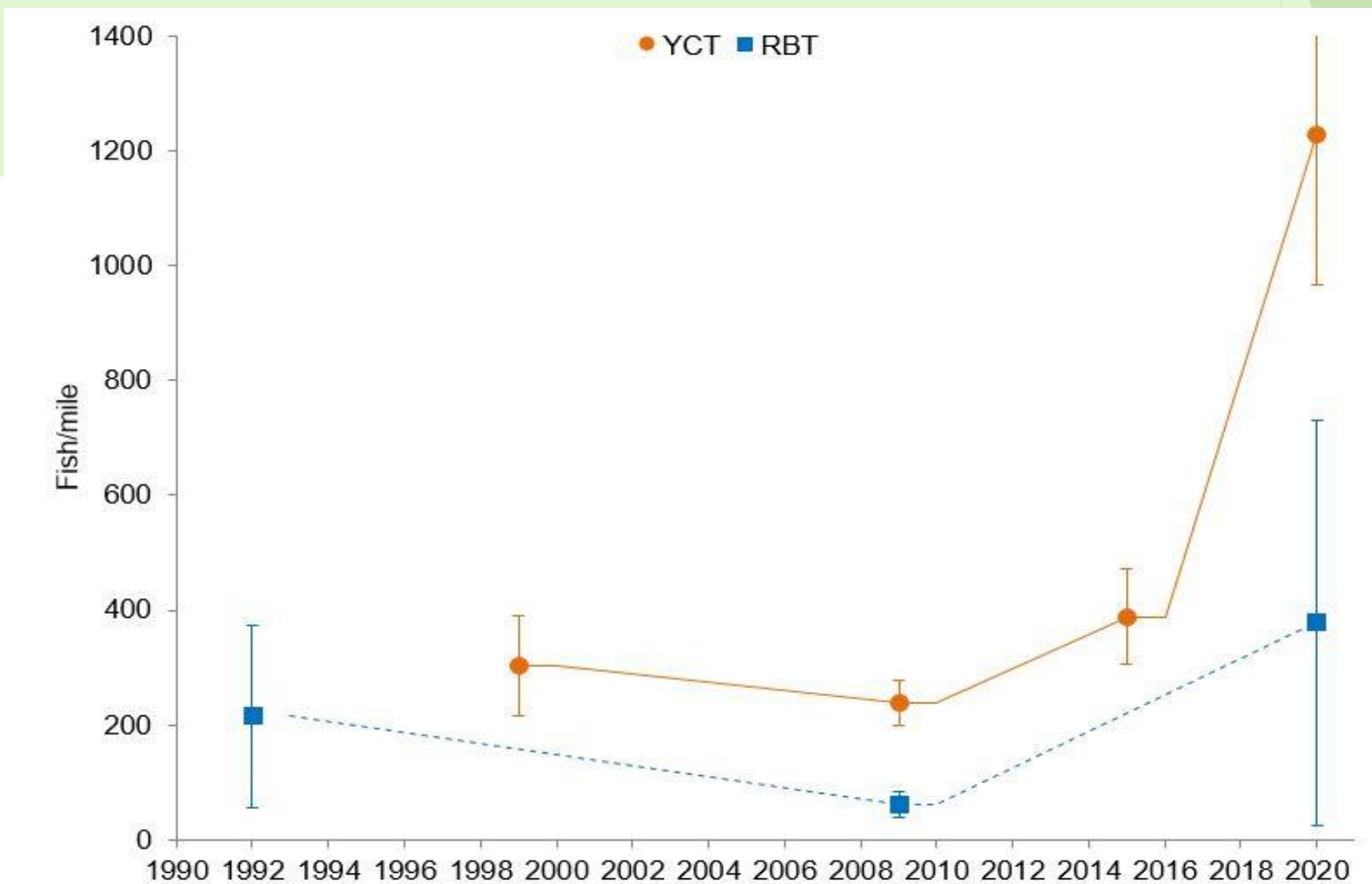
Figure 3. Abundance estimates and 95% confidence intervals from 1993 through 2021 for trout in the South Fork Teton River monitoring reach. YCT = Yellowstone Cutthroat Trout, RBT = Rainbow Trout, and BNT = Brown Trout.

(CC) BY Jenn Vincent, IDFG

The data, graph, and data analysis in this graphic was created by the Idaho Fish and Game Department.

PARKINSON REACH POPULATION ESTIMATE

HOG HOLLOW TO THE FELT DAM, TETON RIVER



The data, graph, and data analysis in this graphic was created by the Idaho Fish and Game Department.

BRECKENRIDGE REACH POPULATION ESTIMATE

PACKSADDLE TO HARROPS BRIDGES, TETON RIVER

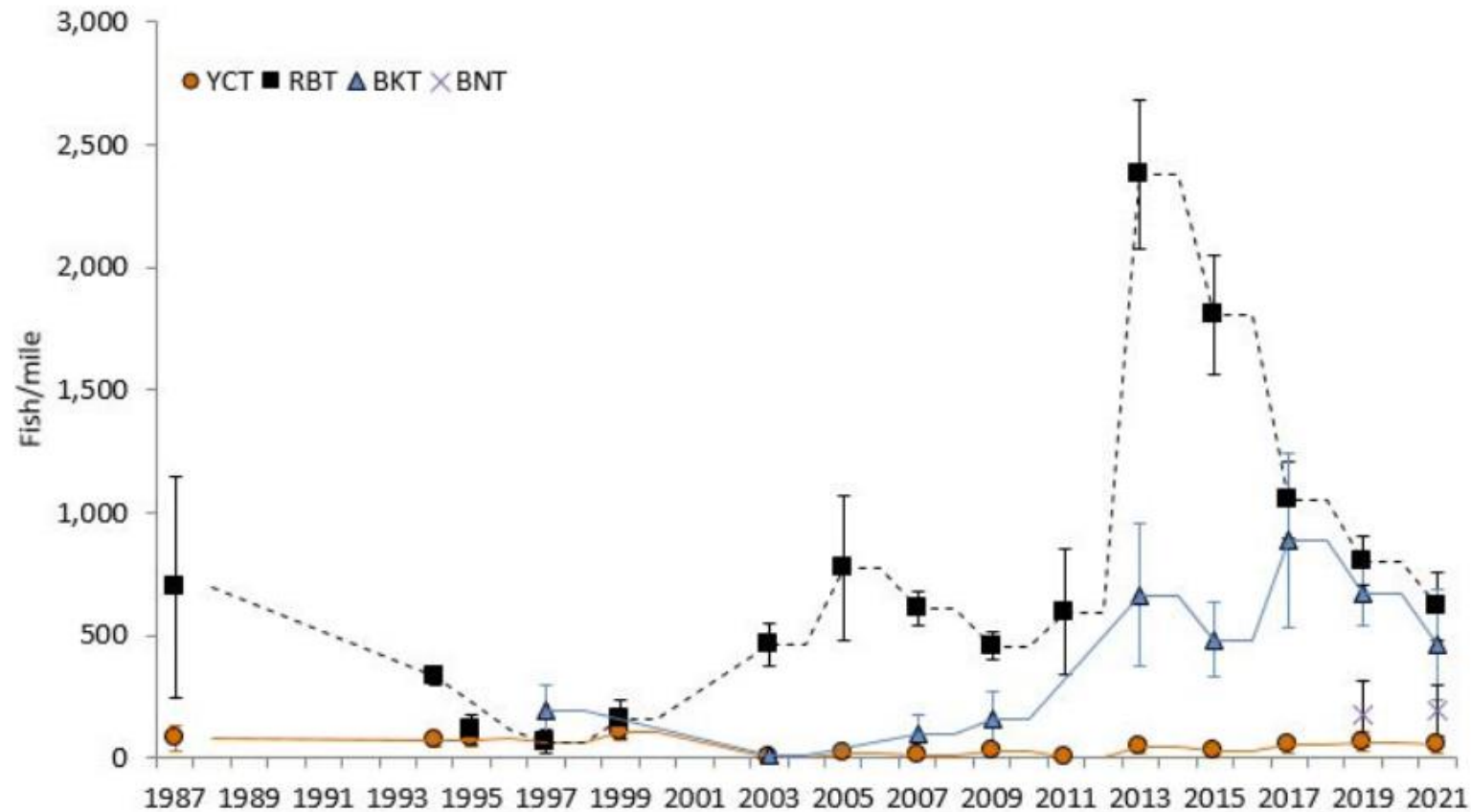


Figure 2. Abundance estimates and 95% confidence intervals from 1987 through 2021 for trout in the Breckenridge monitoring reach, Teton River. YCT = Yellowstone Cutthroat Trout, RBT = Rainbow Trout, BKT = Brook Trout, and BNT = Brown Trout.

NICKERSON REACH POPULATION ESTIMATE

SOUTH BATES TO BATES, TETON RIVER

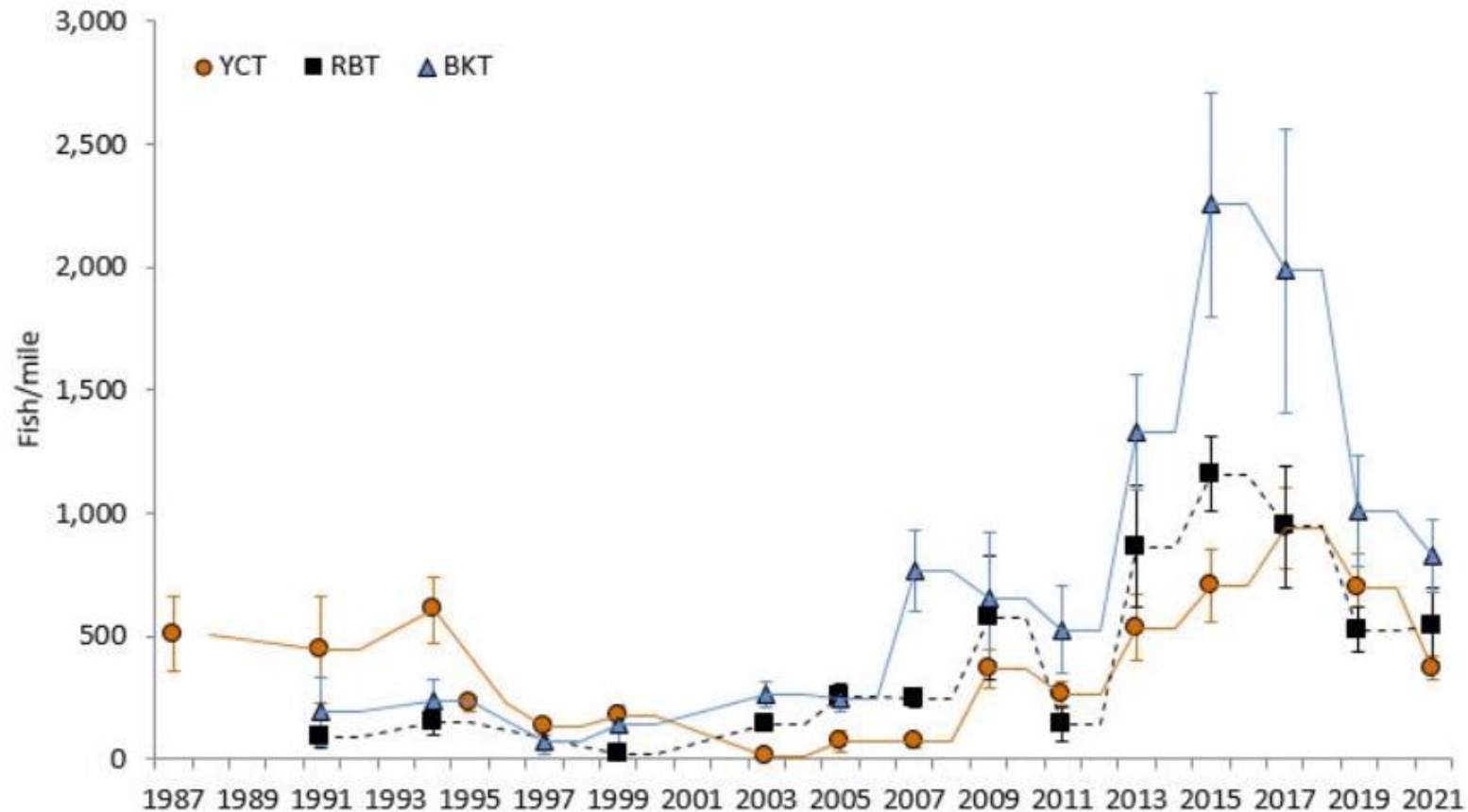
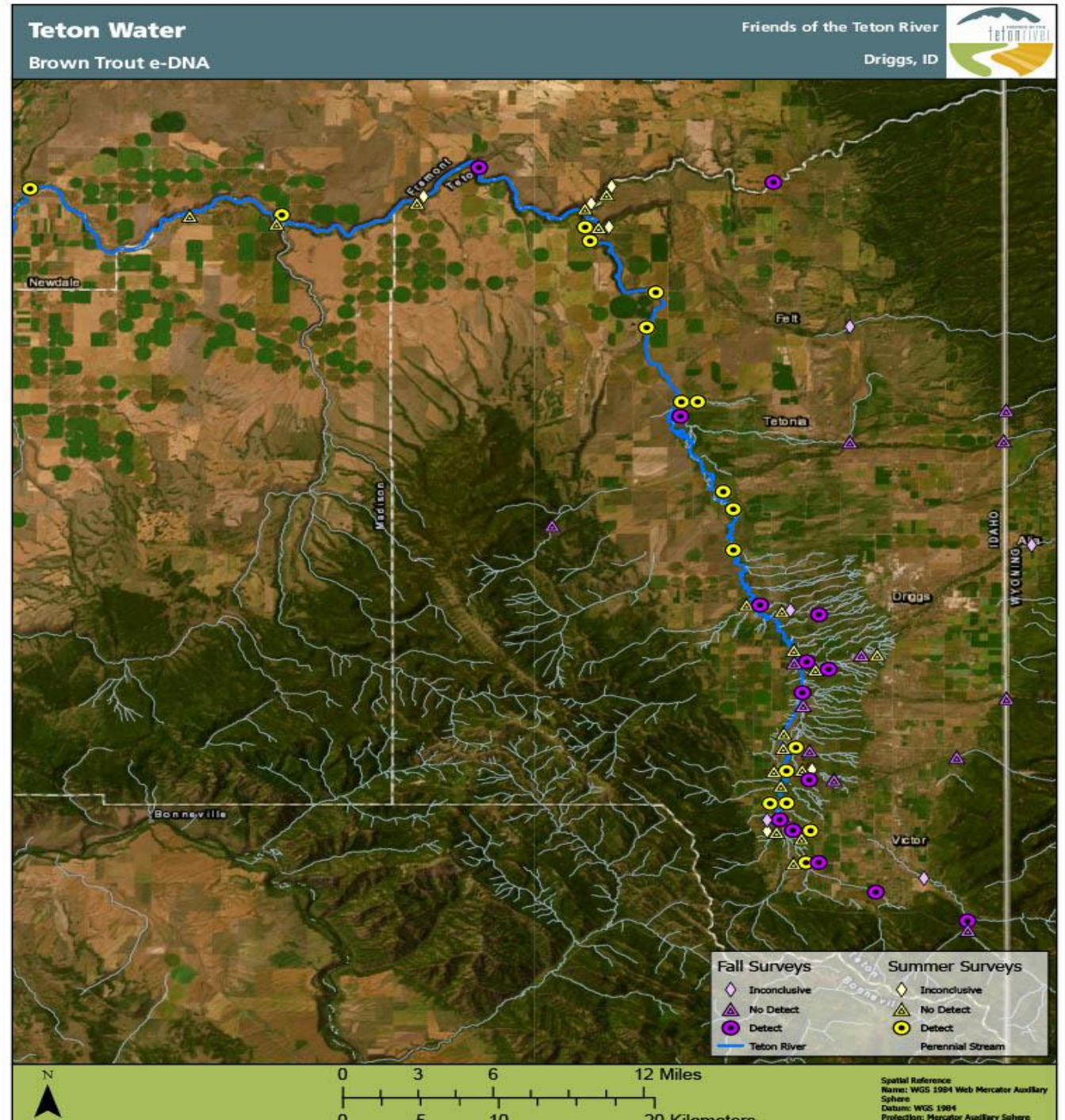
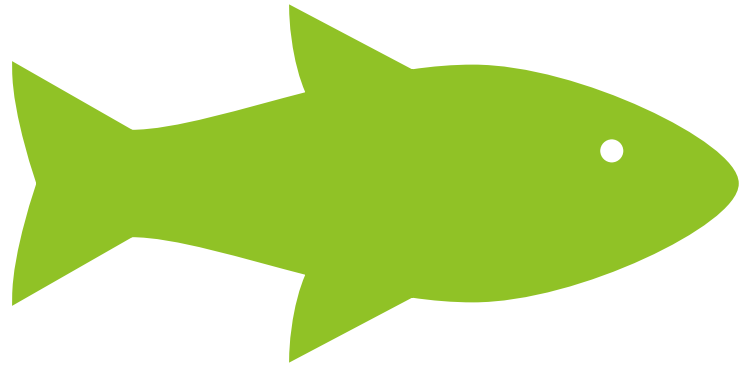


Figure 1. Abundance estimates and 95% confidence intervals from 1987 through 2021 for trout in the Nickerson monitoring reach, Teton River. YCT = Yellowstone Cutthroat Trout, RBT = Rainbow Trout, and BKT = Brook Trout.

2022 BROWN TROUT E-DNA PRELIMINARY RESULTS

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YELLOWSTONE CUTTHROAT X RAINBOW TROUT GENETICS HYBRIDIZATION STUDY

BY ANALYZING FIN CLIPS OF YCT WE CAN POTENTIALLY SHED LIGHT ON THE FOLLOWING QUESTIONS:



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- ▶ What are the significant source populations of YCT across the watershed?
- ▶ What caused the divergence in the Teton Watershed YCT populations between the lower and upper watershed (Felt Dam, past stocking, or a previously unknown factor)?
- ▶ What, if anything should be done to provide genetic connectivity between the two populations which could include improving fish passage at Felt Dam?

HABITAT RESTORATION AND FISH SCREEN PROJECTS



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20XX

25





THREE FISH SCREENS WILL
NOW BE OPERATIONAL FOR
THE 2023 IRRIGATION
SEASON

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CLIMATE DATA TO DATE

- Earlier than average peak streamflow predicted with climate change, which could provide advantages to RBT

April 10, 2023		April 1-9 2023				Water year to date		
		Mean temp. (°F)		Total precip. (in)		accumulated precipitation (in)		
		Current	Average	Current	Average	Current	Average	% Average
Site	Elev. (ft)							
Grand Targhee	9,260	22	28	0.20	1.49	30.30	32.54	93
Phillips Bench	8,200	26	32	1.10	1.19	31.10	28.58	109
Pine Creek Pass	6,720	30	35	0.70	1.00	25.10	22.21	113
TETON RIVER		26	32	0.67	1.23	28.83	27.77	104
Lewis Lake Divide	7,850	25	32	2.30	1.49	40.20	35.17	114
Grassy Lake	7,265	26	31	2.00	1.51	39.30	36.23	108
FALL RIVER		25	31	2.15	1.50	39.75	35.70	111
Black Bear	8,170	24	30	1.40	1.74	42.60	38.98	109
White Elephant	7,710	25	32	1.70	1.37	37.90	29.85	127
Crab Creek	6,860	27	34	0.10	0.69	21.40	15.76	136
Island Park	6,290	29	34	0.90	0.68	23.50	18.40	128
UPPER HENRY'S		26	33	1.02	1.12	31.35	25.75	122
Alta (Teton Valley)	6,430	28	37	0.27	0.61	9.63	9.59	100
Ashton	5,299	28	38	0.13	0.42	10.35	7.89	131
Rexburg	4,874	30	41	0.03	0.36	6.47	5.40	120
VALLEY AREAS		29	38	0.14	0.46	8.82	7.63	116
HF WATERSHED		27	34	0.90	1.05	26.49	23.38	113

April 10, 2023		April 1-9 2023		Date of maximum		Water-year to date		
		change in SWE (in)		SWE accumulation		accumulated SWE (in)		
Site	Elev. (ft)	Current	Mean	Current yr.	Mean	Current	Mean	% Mean
Grand Targhee	9,260	0.8	2.3	9-Apr	7-May	45.6	43.9	104
Phillips Bench	8,200	1.1	0.9	9-Apr	20-Apr	30.6	27.1	113
Pine Creek Pass	6,720	-0.4	-0.9	6-Apr	30-Mar	19.6	13.9	141
TETON RIVER		0.5	0.8	7-Apr	15-Apr	31.9	28.3	113
Lewis Lake Divide	7,850	2.4	1.0	8-Apr	16-Apr	38.1	32.5	117
Grassy Lake	7,265	1.7	0.5	9-Apr	12-Apr	36.3	32.1	113
FALL RIVER		2.1	0.7	9-Apr	14-Apr	37.2	32.3	115
Black Bear	8,170	-0.4	1.2	8-Apr	26-Apr	44.4	39.5	112
White Elephant	7,710	1.5	0.7	7-Apr	17-Apr	37.4	27.5	136
Crab Creek	6,860	-0.5	-0.3	6-Apr	6-Apr	17.1	12.7	135
Island Park	6,290	0.4	-1.3	6-Apr	26-Mar	20.8	12.6	165
UPPER HENRY'S		0.2	0.1	6-Apr	7-Apr	29.9	23.0	130
HF WATERSHED		0.7	0.5	7-Apr	12-Apr	32.2	26.9	120



Summary and Take-home Messaging!

- ▶ FTR will continue to monitor the fishery, collect temperature and water quality data.
- ▶ Continue with meaningful restoration projects using the best available science.
- ▶ Our mission is to keep a thriving population of Yellowstone Cutthroat Trout! We are and will try to do everything we can to achieve that goal.
- ▶ There are a lot of places in this country and the world for that matter, where one can catch a Brown Trout, Brook Trout or Rainbow Trout. However, this ecosystem is the only place in the world you can still catch native Yellowstone Cutthroat Trout in significant numbers!
- ▶ When YCT numbers decline, we've seen elk calve numbers decline simultaneously due to higher-than-normal predation from bears in the spring because of a lack of high-quality proteins and fat that the fish provides
- ▶ Finally!!! Collaboration is our key to success! We can't do it without the help and partnerships we have and the ones yet to come.

Questions?

Thanks for Coming!!

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