YY Brook Trout Project: Abel Creek, NV

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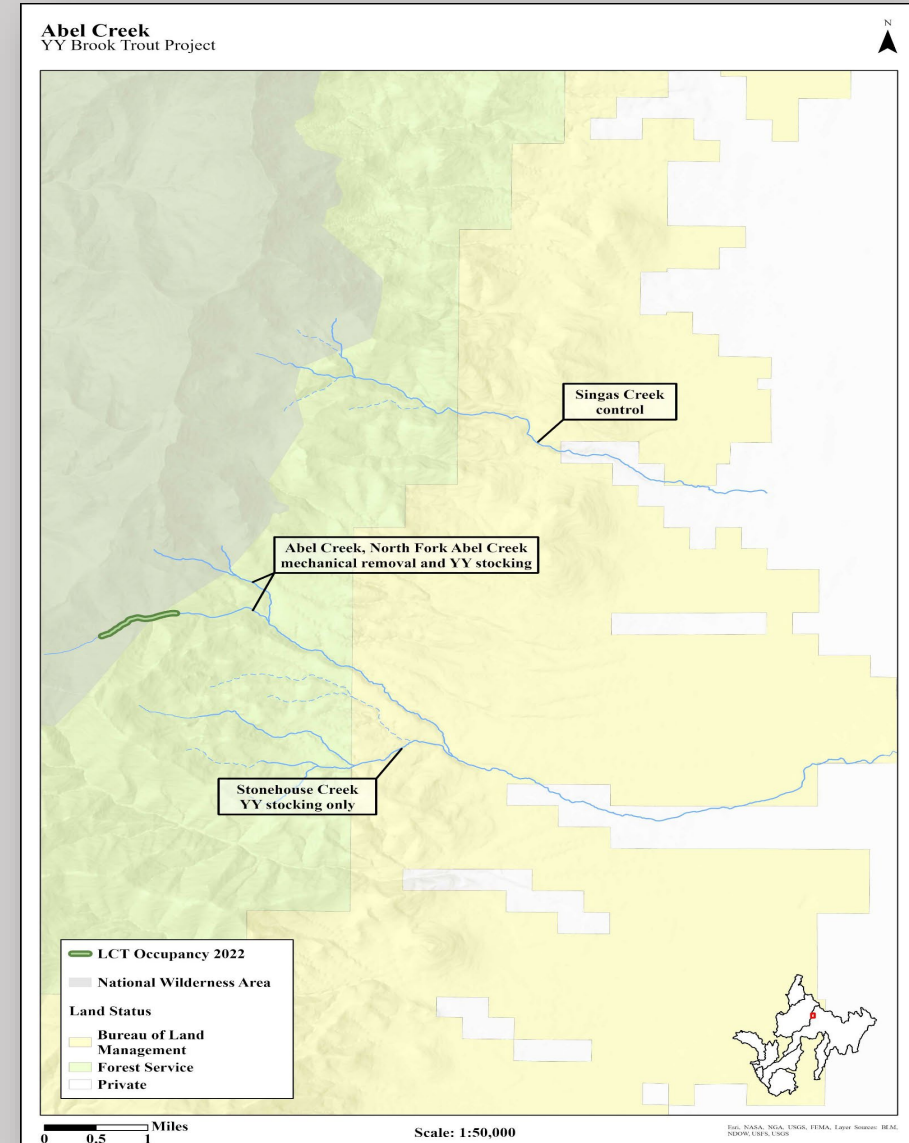April 18th, 2024

Abel Creek Background

- Located on eastside of Santa Rosa Mountains in Humboldt County in northwest Nevada

- Humboldt MU – Little Humboldt Subbasin

- Supports endemic Lahontan cutthroat trout (LCT) population

- Brook trout introduced in 1900's

- > 9,000 BK removed since 2008

- Brook trout currently occupy ~12.1km

- LCT population size < 200 individuals and occupy < 2.4km of habitat
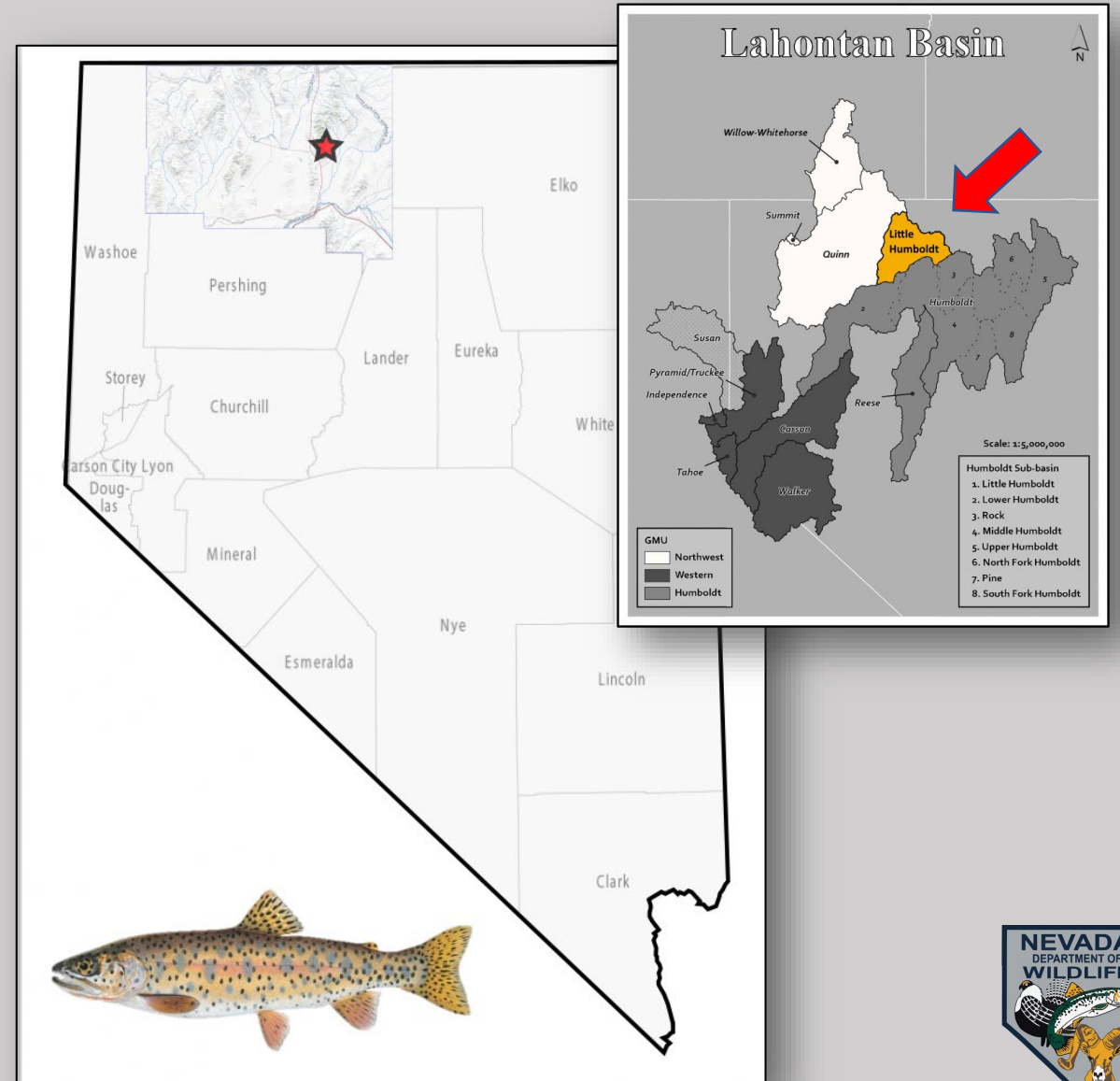
YY BK Project Background

- 2021
  - Study design
  - BK removals ($n = 1,887$)
  - Population surveys
    - Abel BK = 4,155
    - Abel LCT = 201
    - Singas BK+RBT = 2,161
- 2022
  - YY BK adipose clip
  - BK removals ($n = 1,469$)
  - Population surveys
    - Abel BK = 3,155
    - Abel LCT = 157
  - YY stocking
    - ~ 6,900 YY BK
    - Average 1.8:1 (YY/wild) across sections
  - 3 days, 4 person teams per treatment section

Abel Creek
YY Brook Trout Project

Singas Creek control

Abel Creek, North Fork Abel Creek mechanical removal and YY stocking

Stonehouse Creek YY stocking only

LCT Occupancy 2022
National Wilderness Area
Land Status
  Bureau of Land Management
  Forest Service
  Private

Miles
0   0.5   1

Scale: 1:50,000

YY BK Project 2023

- Project accomplishments:
  - 2023
    - YY BK adipose clip
    - BK removals n = 995
      - 32% reduction from 2022
    - Population surveys
      - Abel BK = 1,227 (35% decline)
      - Abel LCT = 66 (58% decline)
    - YY stocking
      - ~ 3,402 YY BK
      - Average 1:1 (YY/wild) across sections
        - 33%-211%
      - 35% survival on 2022 YY
    - Initiated Genetic Rescue (12 fish)
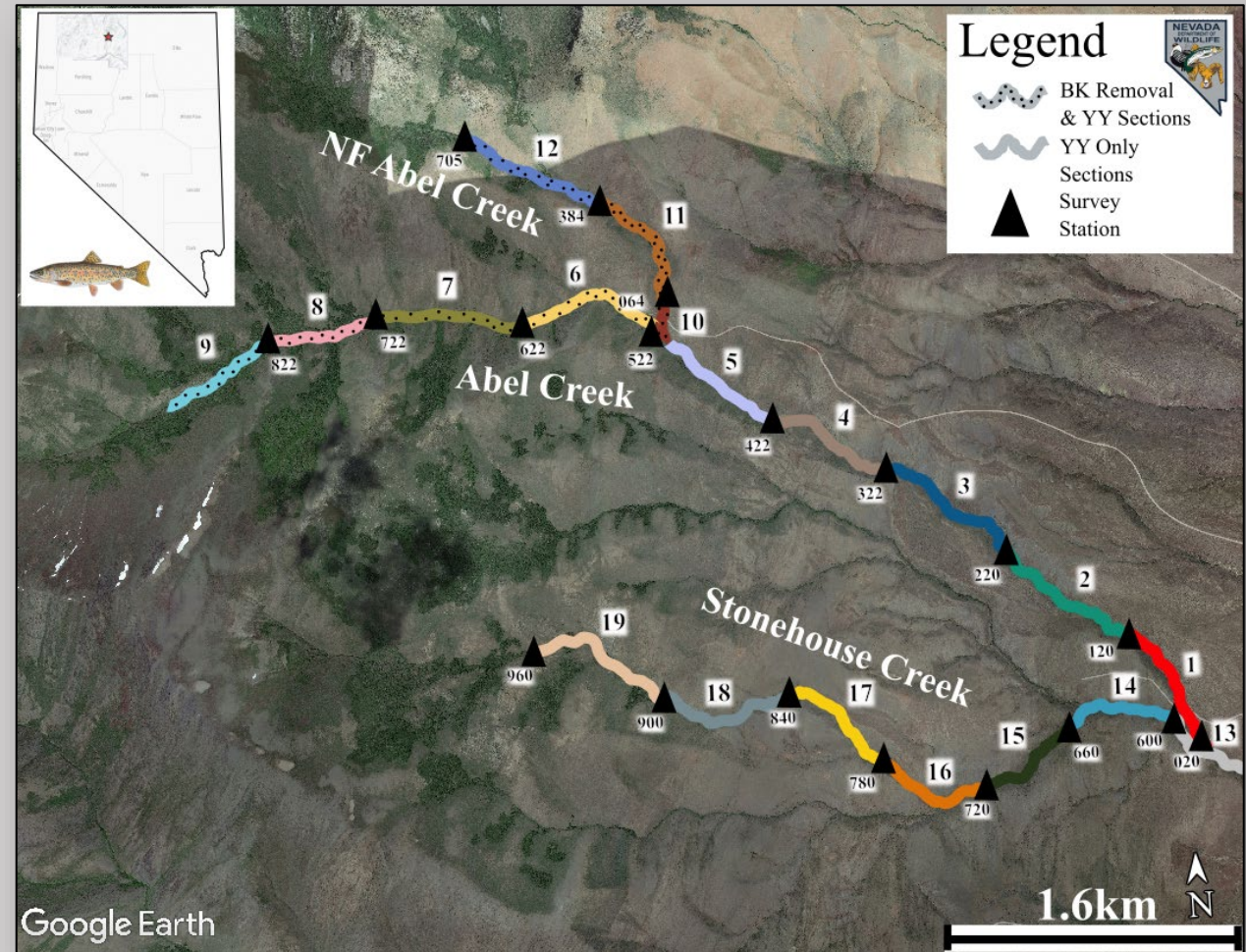
YY BK Project 2021-2023
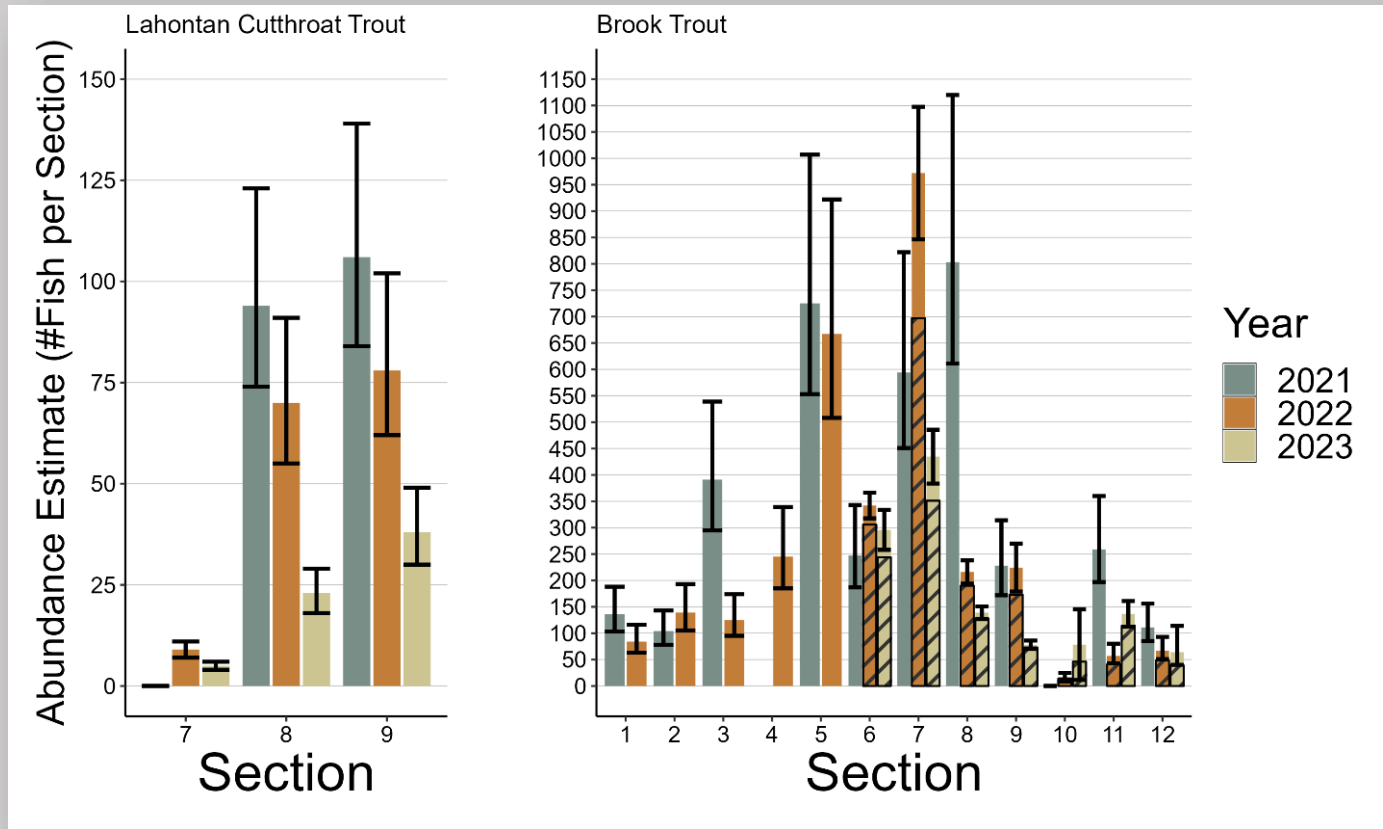
Next Steps

- Project timeline:
  - 2024
    - YY BK adipose clip
    - BK removals
    - Population surveys (Abel + Singas)
    - YY stocking
  - 2025
    - YY BK adipose clip
    - Population surveys (Abel + Singas)
    - YY stocking
    - **Sex ratio analyses**

YY Brook Trout Project: Abel Creek, NV

| Section | Year | Removals | | | Capture Probability | Estimated Abundances | | | | % BK Removed | # YY Stocked | % YY Stocked |
		Day 1	Day 2	Total		LCT	LCT 95% CIs	BK	BK 95% CIs			
1	2021	NA	NA	NA	NA	0	0	136	103-188	NA	NA	NA
	2022*	NA	NA	NA	NA	0	0	84	63-116	NA	151	111%
	2023	NA	NA	NA	NA	0	0	NA	NA	NA	120	143%
2	2021	NA	NA	NA	NA	0	0	104	78-143	NA	NA	NA
	2022*	NA	NA	NA	NA	0	0	139	105-193	NA	226	217%
	2023	NA	NA	NA	NA	0	0	NA	NA	NA	120	86%
3	2021	NA	NA	NA	NA	0	0	391	295-539	NA	NA	NA
	2022*	NA	NA	NA	NA	0	0	125	95-174	NA	226	58%
	2023	NA	NA	NA	NA	0	0	NA	NA	NA	120	96%
4	2021	NA	NA	NA	NA	0	0	NA	NA	NA	NA	NA
	2022*	NA	NA	NA	NA	0	0	245	185-339	NA	186	NA
	2023	NA	NA	NA	NA	0	0	NA	NA	NA	240	98%
5	2021	NA	NA	NA	NA	0	0	725	553-1007	NA	NA	NA
	2022*	NA	NA	NA	NA	0	0	667	508-922	NA	1686[2]	233%
	2023	NA	NA	NA	NA	0	0	NA	NA	NA	660	99%
6	2021	NA	NA	NA	NA	0	0	247	187-343	NA	NA	NA
	2022*	231	75	306	0.68	0	0	342	317-366	89%	2161[2]	875%
	2023	172	72	244	0.58	0	0	296	256-334	82%	360	105%
7	2021	NA	NA	NA	NA	0	0	594	451-822	NA	NA	NA
	2022*	455	242	697	0.47	9	7-11	972	846-1097	72%	470	79%
	2023	244	107	351	0.56	5	4-6	435	384-486	81%	720	74%
8	2021	NA	NA	NA	NA	94	74-123	803	611-1120	NA	NA	NA
	2022*	141	49	190	0.65	70	55-91	216	194-238	88%	470	59%
	2023	100	28	128	0.72	23	18-29	139	127-151	92%	90	42%
9	2021	NA	NA	NA	NA	106	84-139	228	172-314	NA	NA	NA
	2022*	117	56	173	0.52	78	62-102	224	179-270	77%	284	125%
	2023	58	15	73	0.74	38	30-49	78	70-86	94%	75	33%
10	2021	NA	NA	NA	NA	0	0	0	0	NA	NA	NA
	2022*	10	4	14	0.60	0	0	17	9-25	82%	52	306%[1]
	2023	28	18	46	0.36	0	0	78	11-145	59%	17	100%
11	2021	NA	NA	NA	NA	0	0	259	197-360	NA	NA	NA
	2022*	23	18	41	0.22	0	0	57	43-80	72%	168	65%
	2023	81	33	114	0.59	0	0	137	112-161	83%	120	211%
12	2021	NA	NA	NA	NA	0	0	111	85-156	NA	NA	NA
	2022*	15	33	48	NA	0	0	67	51-93	72%	197	177%
	2023	13	26	39	NA	0	0	64	19-40	61%	60	90%
2022 Totals Sections 6-12		992	477	1469	0.522	157		3155		0.789	6977	182%
2023 Totals Sections 6-12		696	299	995	0.592	66		1227		0.788	3402	98%

* First YY stocking year , [1] % YY Stocked estimated using 2022 section abundance , [2] Locations where extra YY BK were translocated

- **Project Notes**
  - **Large fluctuations in populations experienced**
    - **Possibly due to >200%average winter**
  - **Adjusted stocking rate in occupied sections**
  - **Effort and capture efficiency is highly variable between year and section**
  - **Anecdotal id of yy**

Questions?