

Update: Non-native Fish in the Glen Canyon Reach Below Glen Canyon Dam

Glen Canyon National Recreation Area,
National Park Service

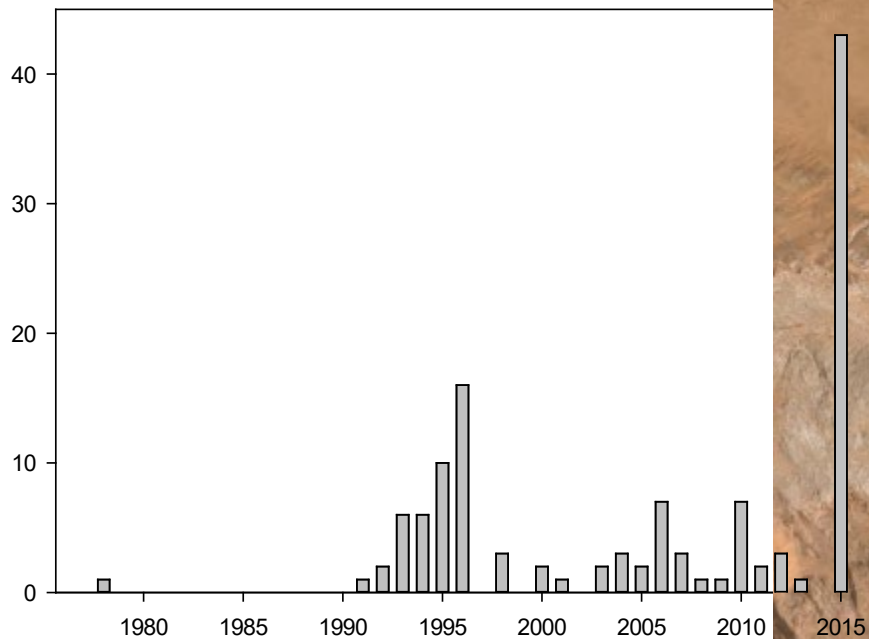
Bud Fazio – Manager, Science and Resources
Jeff Arnold – Fisheries Biologist



Upper Slough, Lower Slough and Lee's Ferry

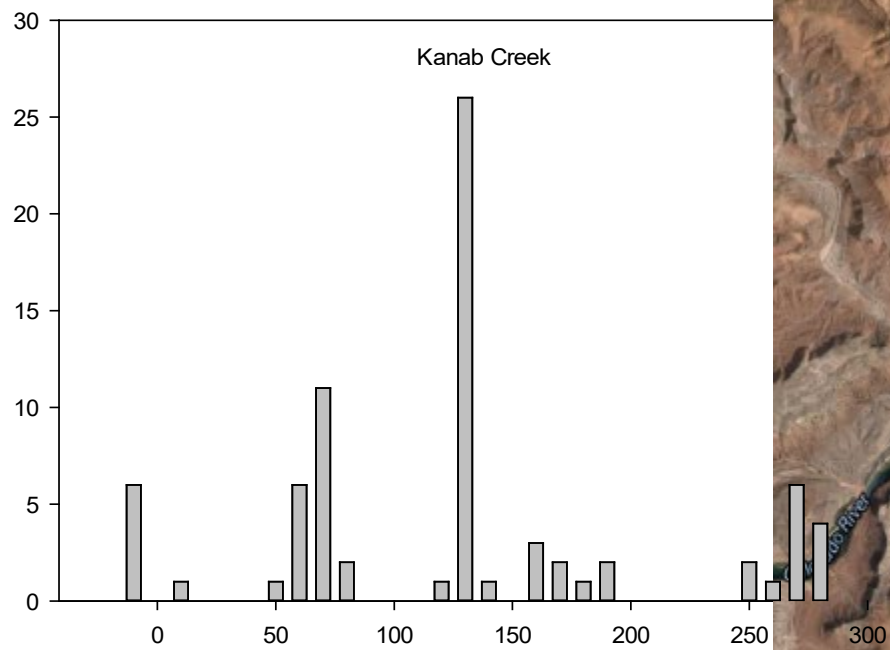


Number of Green Sunfish



Year

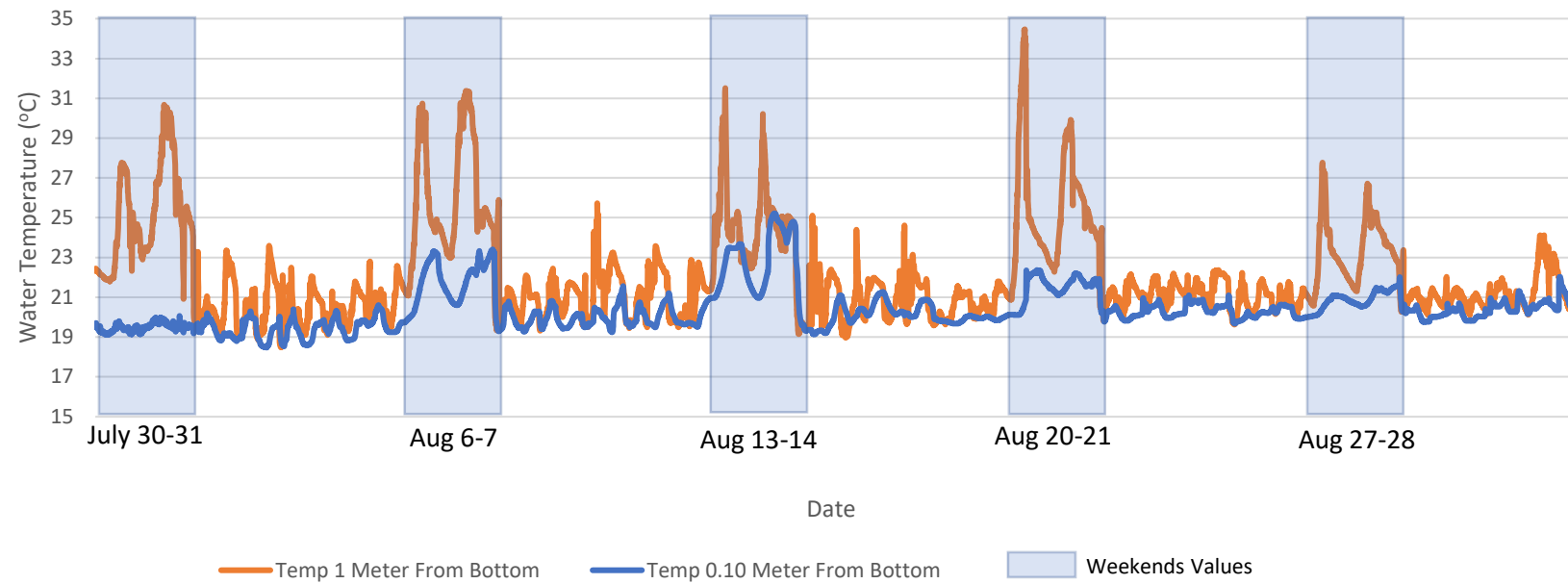
Frequency



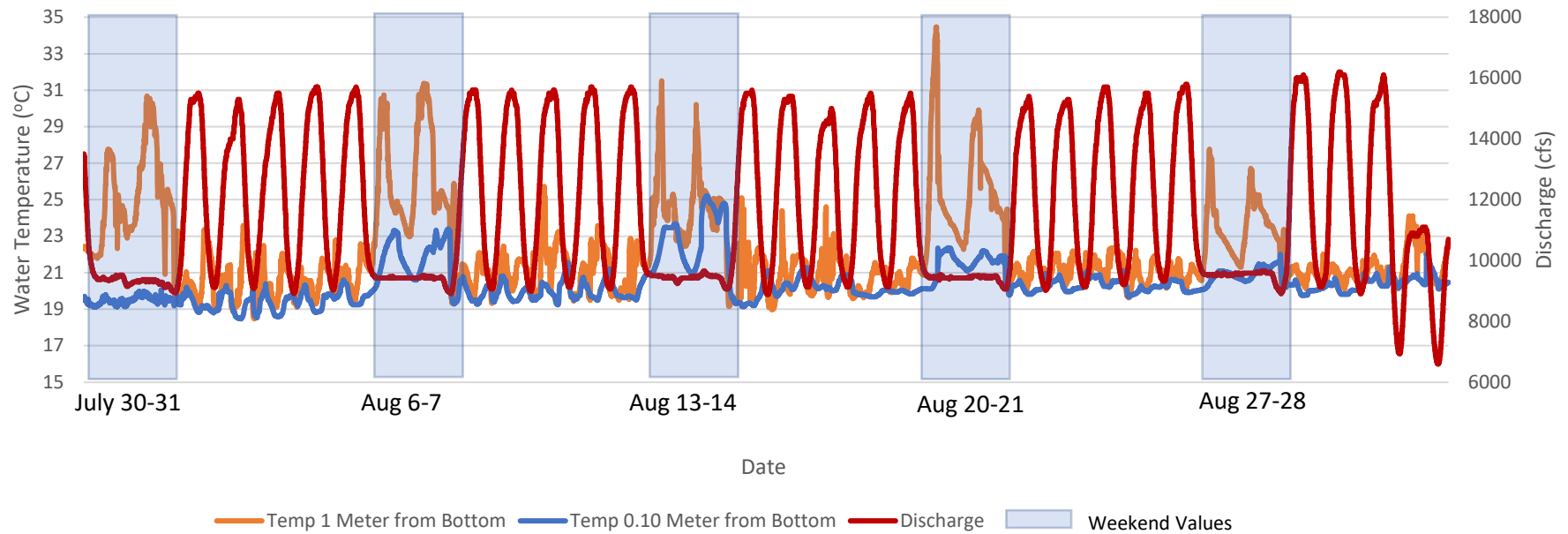
River Mile



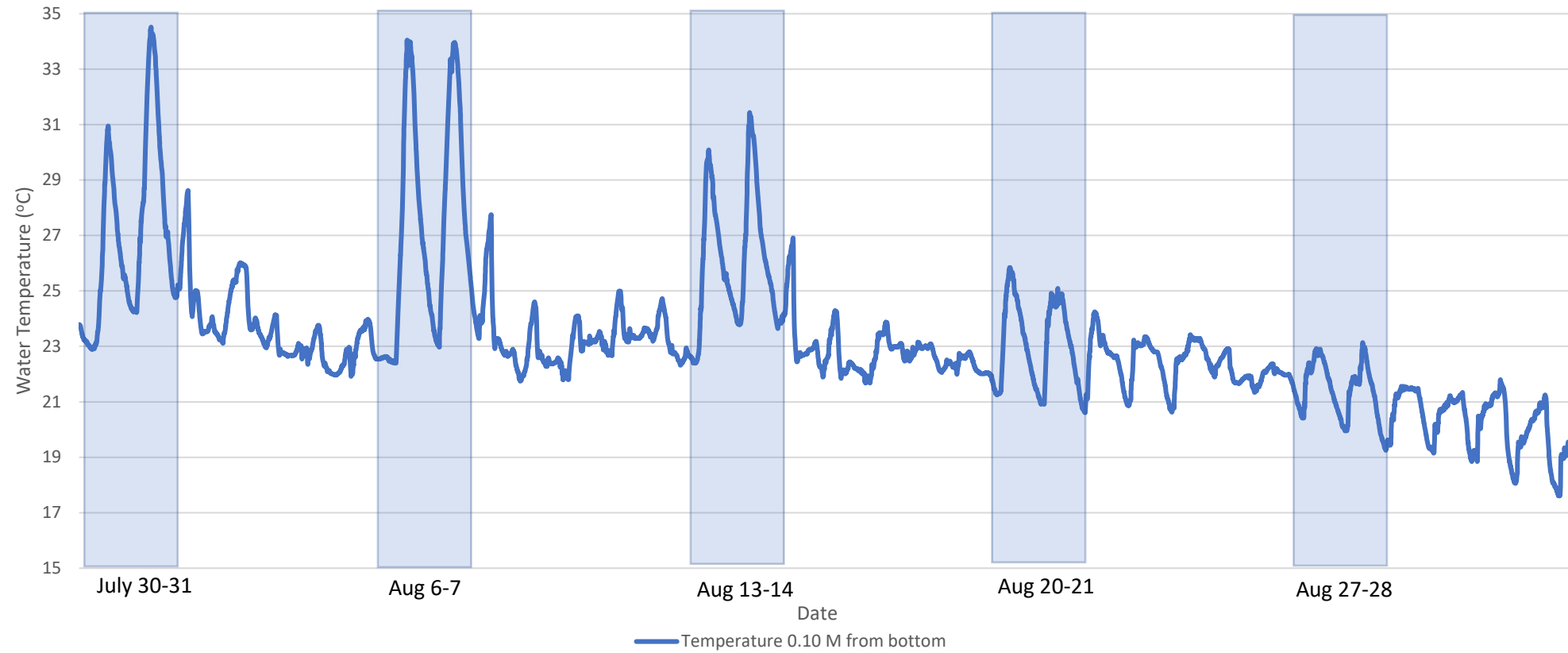
2022 Water Temperatures At Lower End of Slough (-12 mile) – Colorado River



Water Temperatures (°C) at Lower End of Slough (-12 mile) – Colorado River Discharge (cfs) at Lees Ferry (0.0 mile) 2022



2022 Water Temperatures in Upper Slough (-12 mile) – Colorado River



Timeline for Non-Native Fish Management Upper and Lower SLOUGH (-12 Mile) in 2022

April 27
Slough Pump-out



May 31
Large Num. YOY Carp
Discovered in Lower
Slough



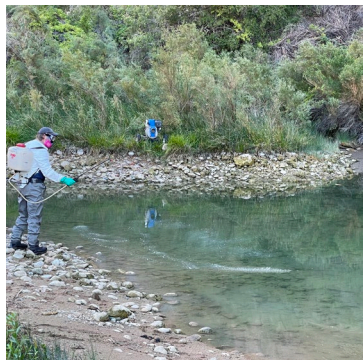
June 30 - SMB YOY
Discovered in Lower
Slough



Aug 17 – Block Net
Installed at Mouth of
Slough



Sep 17 – Chemical Treatment
of Upper and Lower Slough



April

May

June

July

Aug

Sep

Oct



May 10
155 GSF Translocated to
Lake Powell



June 1 – NPS Implements a
Netting Program – (Minifykes {3})



Aug 10 – Attempted to Install
Turbidity to Prevent Fish
Movement



Sep 14 – Second Slough Pump-
out



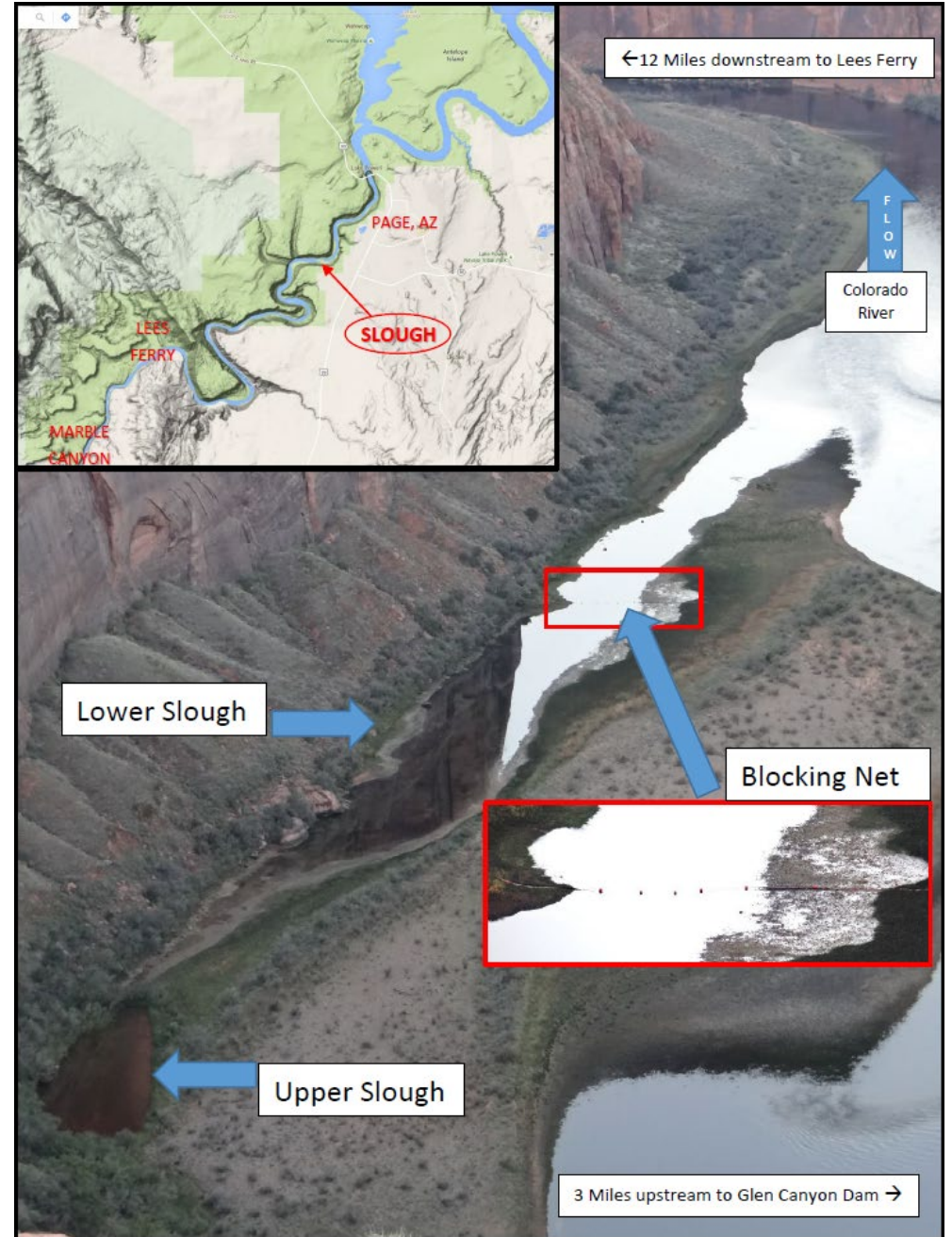
Oct 3
159 GSF Translocated to
Lake Powell

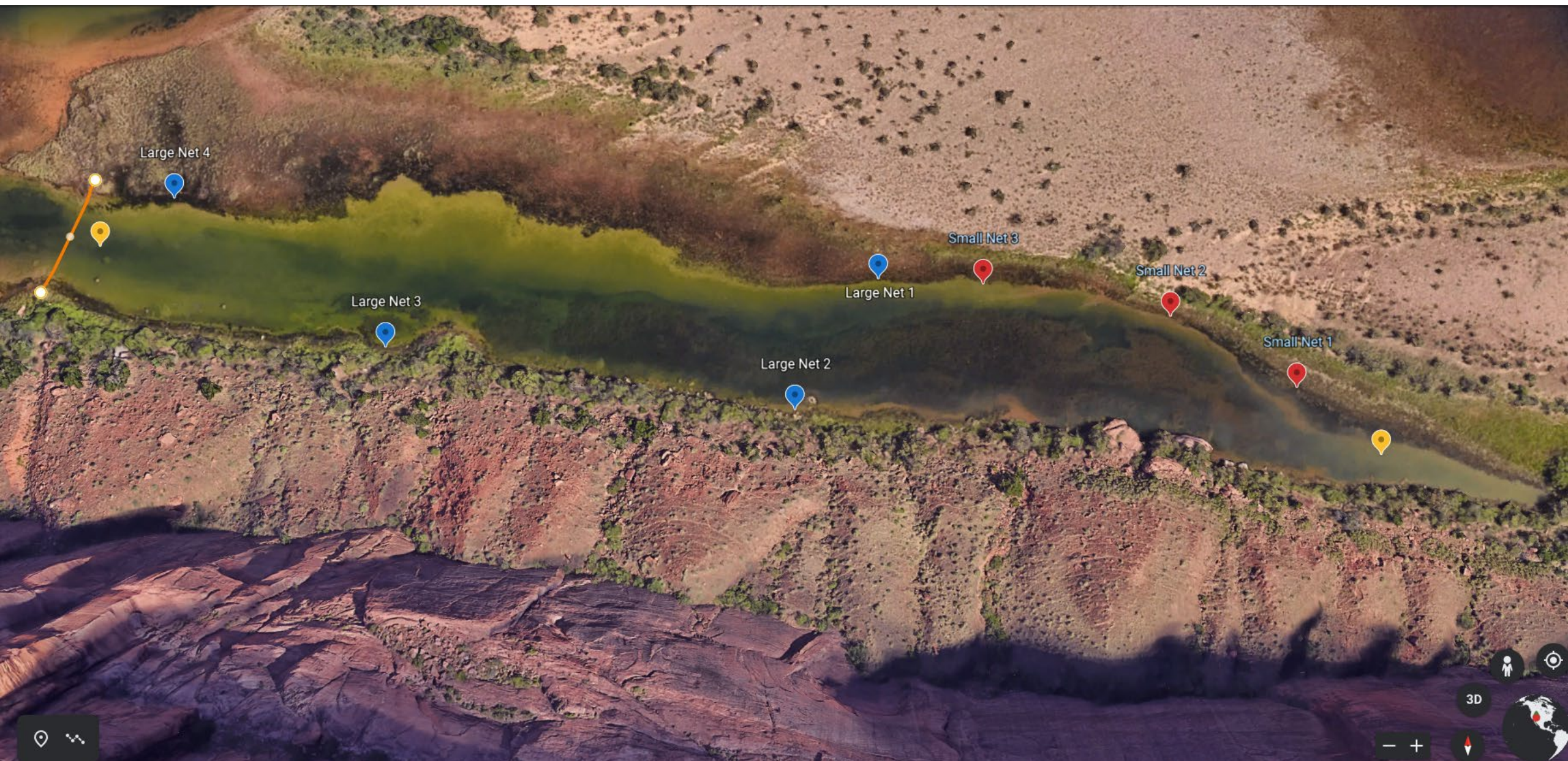
YOY Small
Mouth Bass
confirmed in
Lower Slough
on June 30,
2022





Slough YOY SMB
available for otolith
or genetic analysis

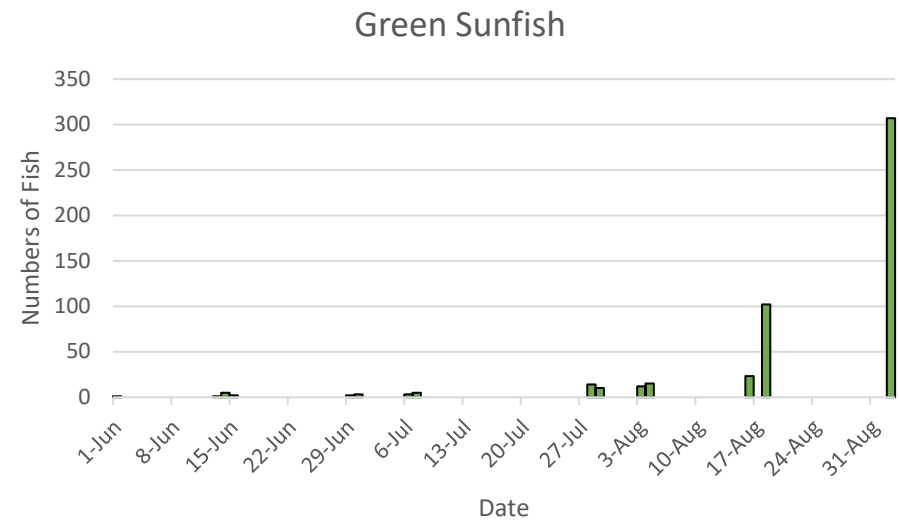
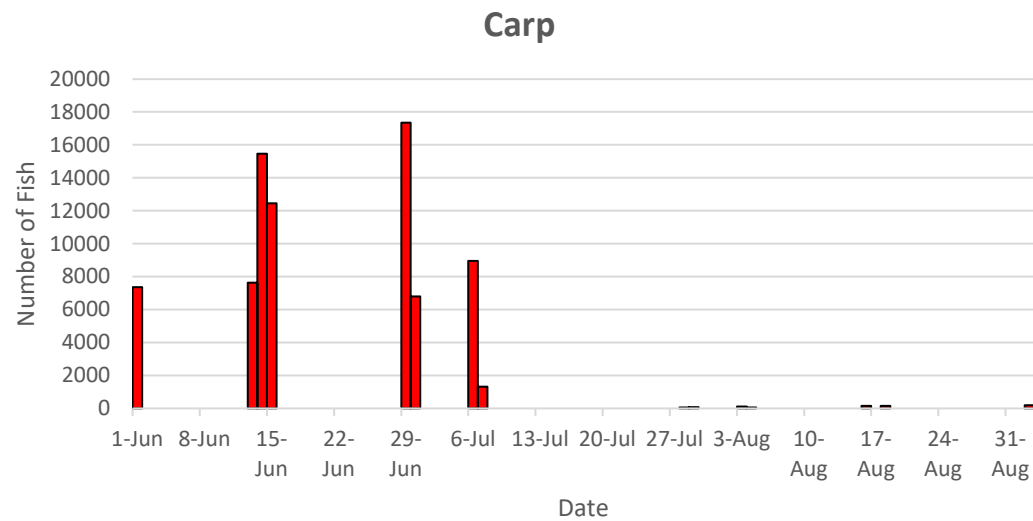




Lower Slough showing location of minifyke nets (red), large fyke nets (blue), and temperature loggers (yellow).

Changes in Carp and Green Sunfish Densities (Minifyke Nets)

June 1 – September 2, 2022



CHEMICAL TREATMENT



Net
Barrier

Rotenone piscicide treatment

Colorado River

Colorado River

Colorado River

Colorado River

Summary of Fish Caught/Removed in Lower Slough in 2022

Before Treatment (Jun 1 – Sep 2)

- Common Carp – 84,045
- Green Sunfish – 1,397
- Bluegill – 57
- Black Crappie – 7
- Smallmouth Bass – 20
- Rainbow Trout – 5 (Released)
- Flannelmouth Sucker – 530 (Released)

After Treatment (Sep 18)

- Common Carp – 3,331
- Green Sunfish – 810
- Bluegill - 4
- Rainbow Trout - 4



Colorado River

Colorado River

Colorado River

Colorado River

Barrier

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e?

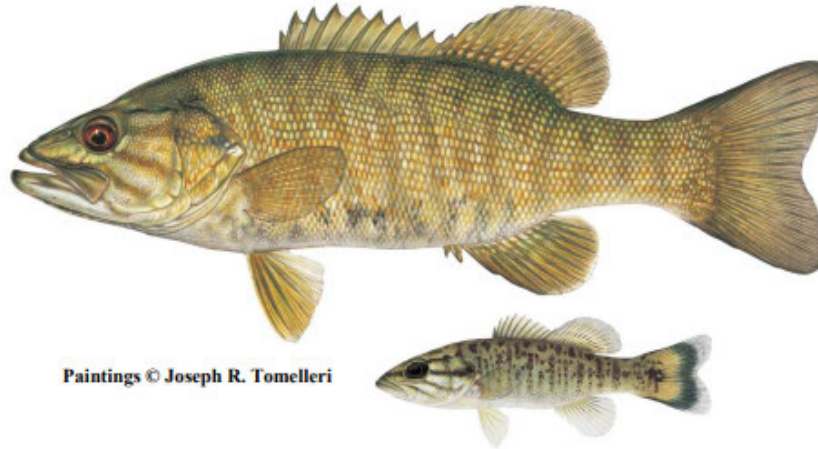
Flow Through - Long Term Solution?

Help us detect invasive Smallmouth Bass

Smallmouth bass are a dire threat to the Lees Ferry rainbow trout fishery and Grand Canyon's native fishes, including humpback chub



Male smallmouth bass guarding a nest



Paintings © Joseph R. Tomelleri

As Lake Powell levels lower, river water temperatures are rising, providing ideal conditions for smallmouth bass. Temperatures of 61° F (16° C) and above are ideal for spawning of these nonnative predators. They guard nests in calm habitats like backwaters or tributary pools

Watch for smallmouth bass in eddies, backwaters, and tributary mouths. Help us detect and remove these predators before it's too late. Harvest bass—do not release them alive. If you see or catch bass, please email an NPS fish biologist below with location and date. Photos greatly appreciated!

Jeff Arnold, *Glen Canyon National Recreation Area*
jeff_arnold@nps.gov

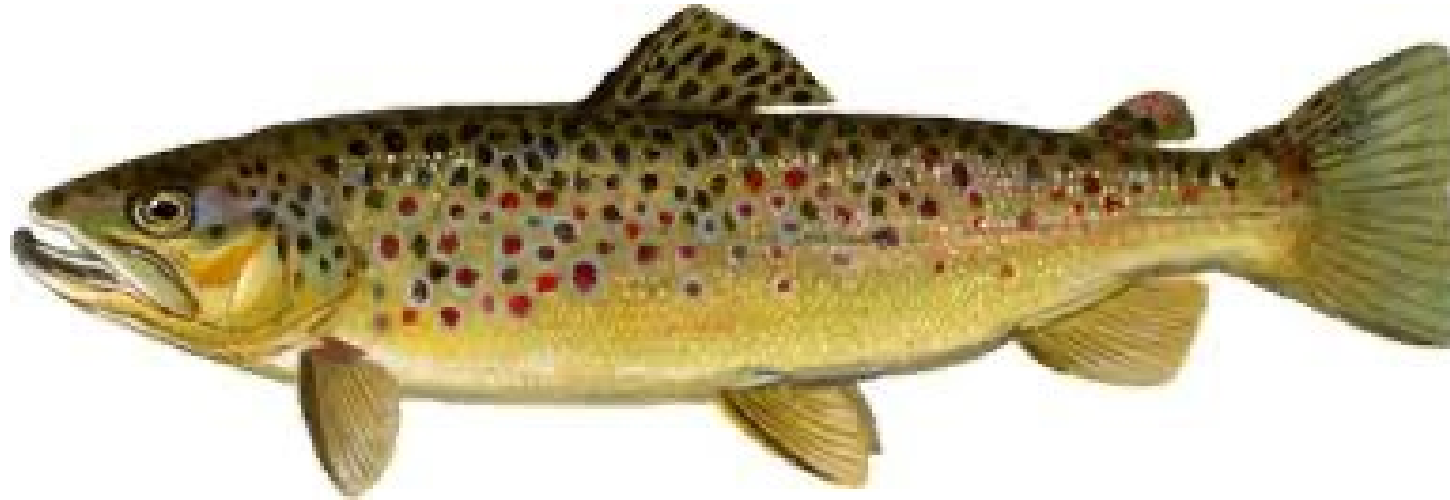
Brian Healy, *Grand Canyon National Park*
brian_healy@nps.gov



Brown Trout - Incentivized Harvest Program

Lees Ferry vicinity

Glen Canyon National Recreation Area



Jeff Arnold – Fisheries Biologist, NPS



Brown Trout Incentivized Harvest Program Nov 2020 – August 2022

Current Rewards

- \$33/fish
- \$50 every 3 fish
- \$300 Every PIT Tag

Summary

- 1408 BNT Harvested
- 153 PIT Returned
- \$109,443 Rewards Paid

Future (2022-2023)

- Youth Tribal Involvement
- Increased Rewards (Bonanza) During Spawning Season (Dec 22 – Feb 23 ?)

Month	Year	Monthly Payout	Top Angler Payout/Month	No. Anglers	Unknown Length	Fish Harvested 6-12 inches	Fish Harvest 12-18 inches	Fish Harvest 18-24 inches	Fish Harvested > 24 inches	Total Number of Brown Trout Harvested	Total Number of PIT tags returned
November	2020	\$1,025	\$150	21	0	11	22	8	0	41	2
December	2020	\$775	\$275	19	0	12	16	3	0	31	0
January	2021	\$1,150	\$125	19	4	5	23	14	0	46	2
February	2021	\$900	\$175	15	0	6	25	5	0	36	0
March	2021	\$1,452	\$429	17	1	12	24	17	1	55	1
April	2021	\$6,149	\$1,163	37	1	24	66	12	0	103	10
May	2021	\$1,650	\$231	24	0	17	24	9	0	50	2
June	2021	\$990	\$396	12	0	1	13	15	1	30	3
July	2021	\$1,254	\$231	18	2	13	19	4	0	38	2
August	2021	\$2,168	\$960	9	0	6	32	8	0	46	2
September	2021	\$4,200	\$1,978	18	0	14	29	7	0	50	7
October	2021	\$3,996	\$449	35	1	21	31	8	1	62	4
November	2021	\$793	\$183	12	0	2	14	5	0	21	0
December	2021	\$3,123	\$864	12	0	3	20	7	1	31	1
January	2022	\$7,504	\$3,186	19	0	8	57	23	0	88	8
February	2022	\$8,250	\$2,543	22	0	20	63	17	0	100	12
March	2022	\$6,510	\$1,939	24	12	5	70	32	1	120	3
April	2022	\$17,421	\$7,182	38	2	22	114	47	2	187	29
May	2022	\$16,529	\$9,876	34	9	31	105	16	2	163	30
June	2022	\$10,080	\$4,792	28	1	28	57	22	2	110	17
July	2022	\$8,408	\$2,239	28	5	22	68	31	1	127	9
August	2022	\$5,116	\$2,994	12	0	13	25	12	2	52	9
TOTAL		\$109,443	\$42,360	473	38	296	917	322	14	1408	153