

The UYWG Recreation & Tourism and Water Planning Committees present...

RECREATIONAL USE DATA

Whitney Tilt, Jeff Reed & Max Hjortsberg

<https://www.upperyellowstone.org/recreational-use>



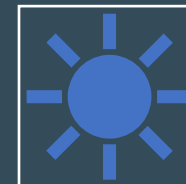
UPPER YELLOWSTONE

W A T E R S H E D G R O U P

AGENDA



Purpose & Methodology



Preliminary 2020 Data



Summary

Observations



Discussion

THE WAY TO GET STARTED IS TO QUIT
TALKING AND BEGIN DOING.

Walt Disney

INTRODUCTION

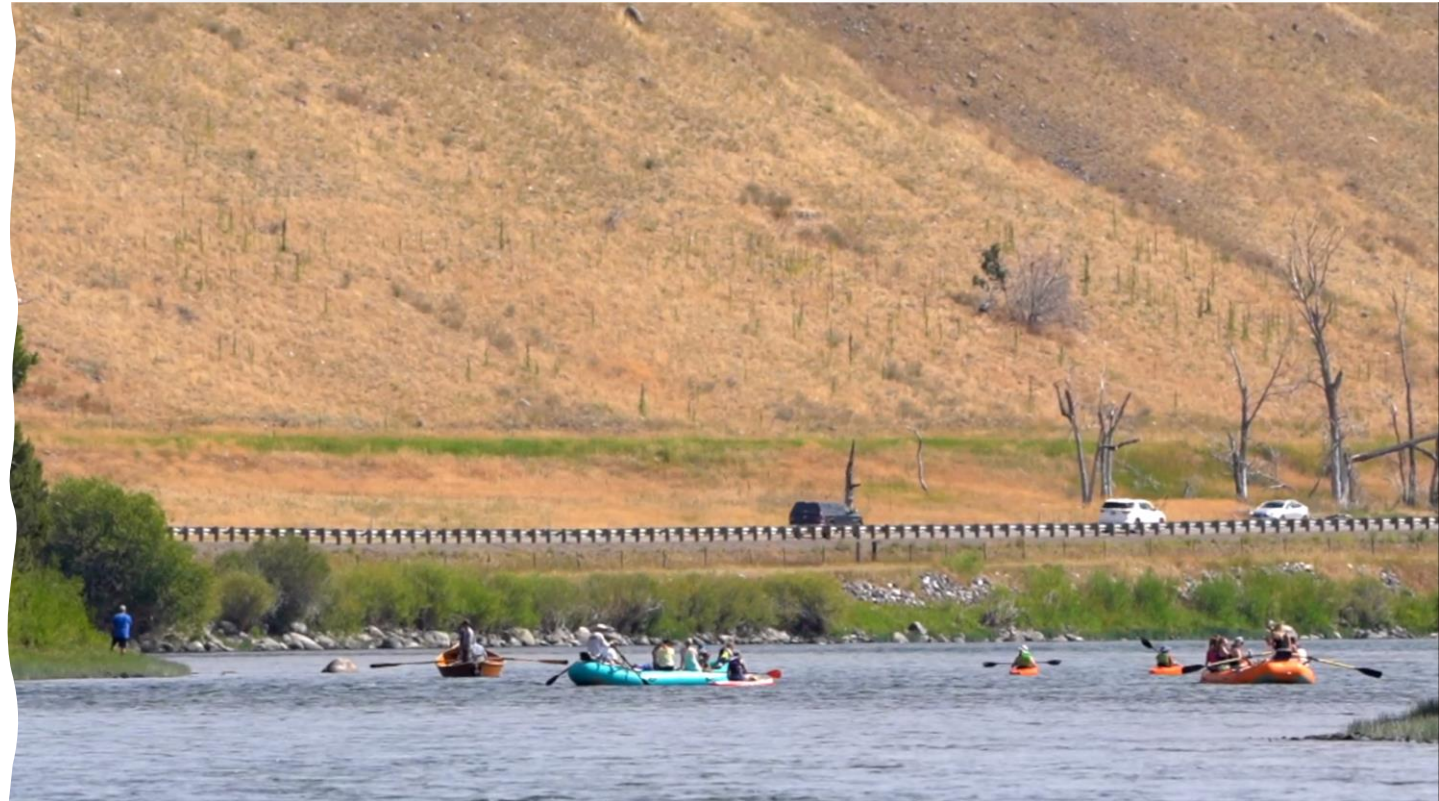
What do these two articles in the *New York Times*, written in 2016 and 2020, have in common? They talk about a problem but stop short of any solution.

Neither is based on any actual data about how many people use the river, and what those uses entail.

Recognizing the need for having a basic understanding of the level of recreational use on the [Upper Yellowstone Watershed Group](#) led a cooperative project to collect recreational use of the Upper Yellowstone River. This project is not being undertaken as a result of any planned effort by the state or other entity to formulate any new regulations and policy changes.

It is intended to gather baseline information (who, what, where, to what extent) that will be shared with all river stakeholders. A Phase I "Field Test" was undertaken during the 2020 river season. The project was conducted cooperatively with the [Institute for Tourism and Recreational Research at University of Montana](#), [Montana Fish, Wildlife & Parks](#), [PCEC](#), [AMB West](#) and a host of volunteers, including the active involvement of [river stakeholders \(including private landowners and recreational businesses\)](#) and the [general public](#).

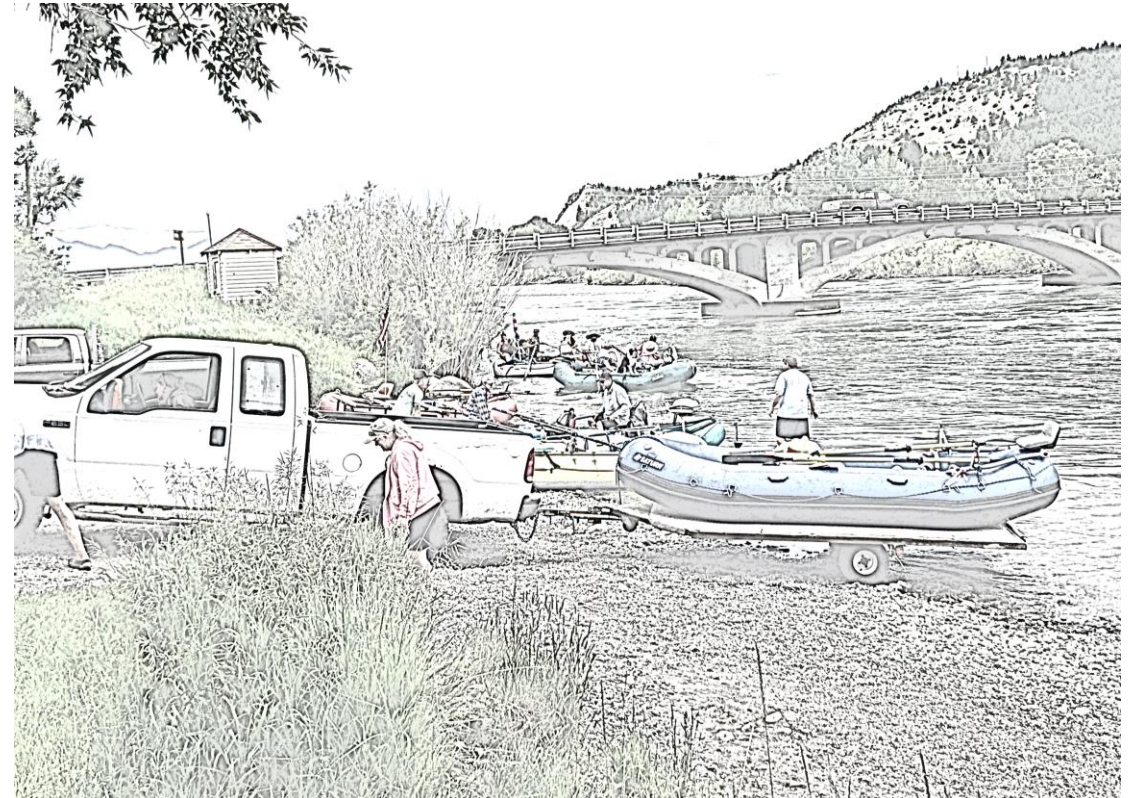
A vital part of the project design is keeping river stakeholders and the general public fully informed of the findings and incorporating their perspectives into the project design, conduct, and outcomes. A full field season is planned for 2021.



METHODOLOGY

Types of Data Collected in 2020

- **Intercept Surveys (Specific Time of Day Data)**
 - Interviews (1000+) at Fishing Access Sites (FAS) from Emigrant to Mayors
 - Boat Counts at FAS and Private Property Locations
- **Sweep Data (Certain Time of Day Data)**
 - Snapshot in Time counts of vehicles & trailers from McConnell to Carter's Bridge
- **Cameras (The Holy Grail)**
 - 24x7 Counts of boats on the river @ 4 sites using motion-activated & time-lapse (250,000 images)
- Conducted by UYWG, FWP, ITRR, PCEC interns, and Volunteers!

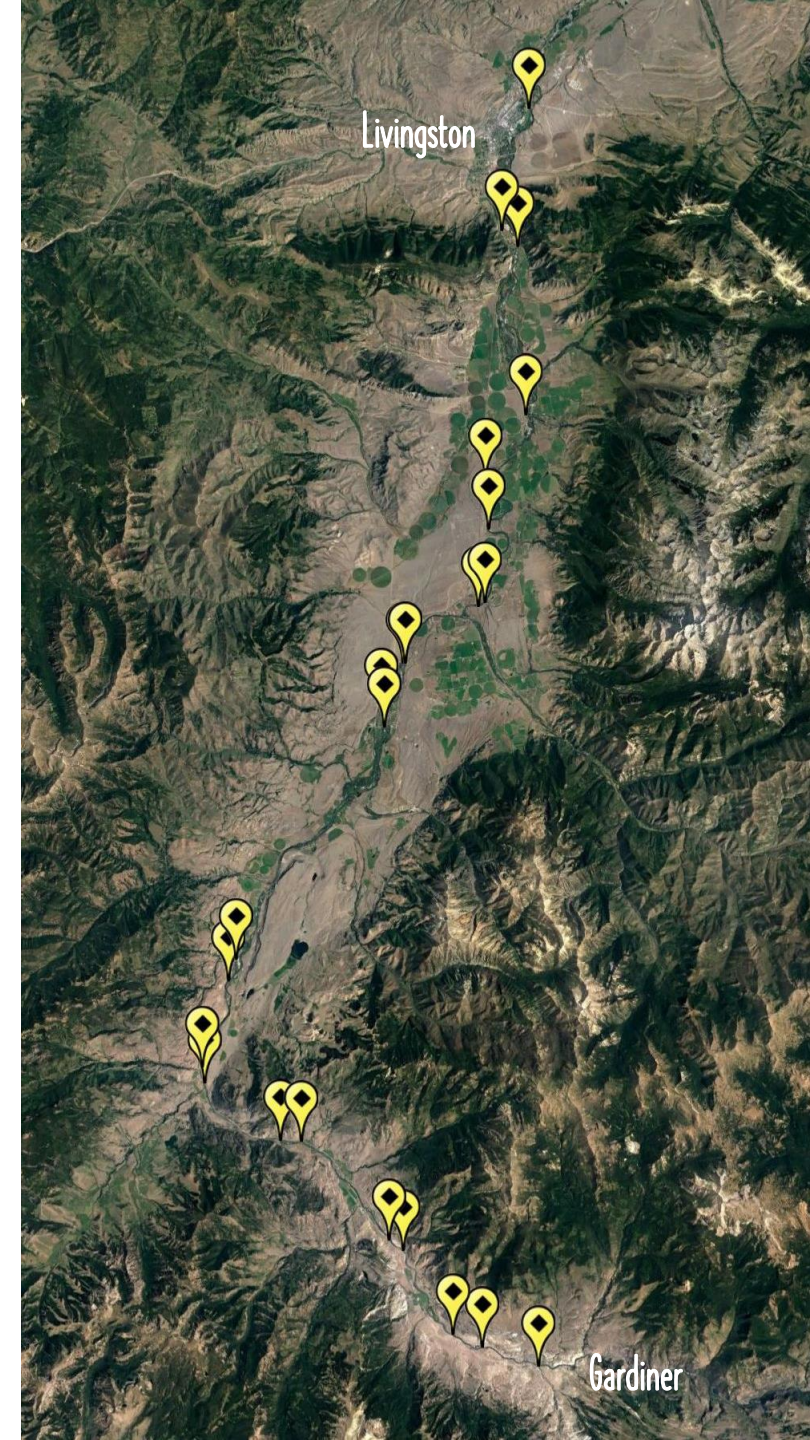


DATA COLLECTION SITES*

* Primary manager: Montana FWP, U.S. Forest Service, Bureau of Land Management, Park County, Private

Data collected varied from site to site.

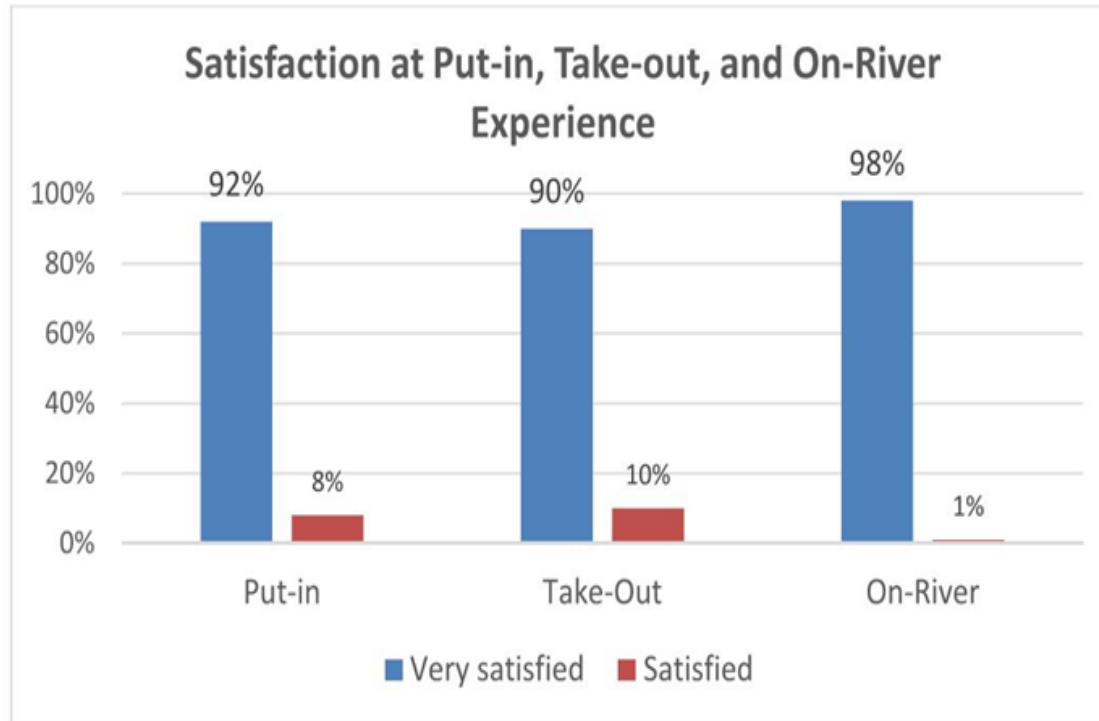
- Gardiner Town access (mile 0)
- Queen of the Waters (mile 2.2)
- McConnell Landing (mile 3.5)
- Brogan's Landing (mile 7.4)
- Cinnabar/Corwin Springs (mile 8)
- Slip & Slide (mile 12.9)
- Yankee Jim (mile 13.7)
- Crystal Cross (mile 17.5)
- Carbella (mile 18)
- Point of Rocks/Hookum (mile 21.6)
- Point of Rocks MDT (mile 22.5)
- Emigrant Rest Area (mile 25.2)
- Emigrant (mile 33.5)
- Emigrant West (mile 34.1)
- Grey Owl (mile 36)
- Chicory (mile 36)
- Mill Creek/Pray Bridge (mile 40)
- Dan Bailey/Paradise (mile 40.3)
- Loch Leven (mile 44.4)
- Mallard's Rest (mile 47.3)
- Pine Creek (mile 50.7)
- Carter's Bridge (mile 58.5)
- Free River (mile 58)
- Mayor's Landing (mile 64.7)
- Various Private Property Sites



INTERCEPT SURVEY

SOME RESULTS-1

- Observation and recording of on-going activity at the fishing access sites
- Intercept surveys (interviews) of 1,031 recreationists at the fishing access sites

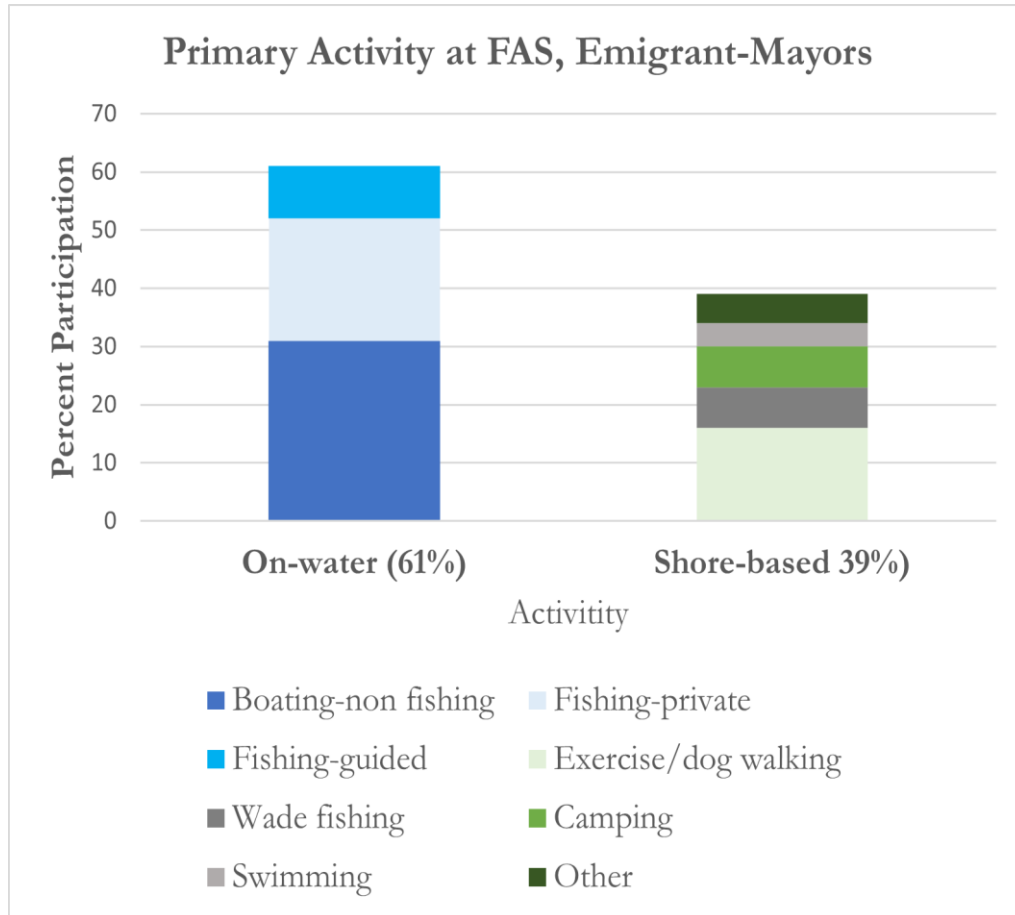


Note: one person said very unsatisfied at the put-in, take-out, and on-river; two people said unsatisfied at put-in.

Respondents per Fishing Access

Access Site	#	%
Mayor's Landing	189	18
Carter's Bridge	159	15
Grey Owl	129	13
Mallard's Rest	127	12
Pine Creek	119	12
Loch Leven	109	11
Emigrant	105	10
Dan Bailey's	49	5
Mill Creek Bridge	45	4
	1,031	100%

INTERCEPT SURVEY SOME RESULTS-2



Why were you satisfied (or not)?*

Being on the water	103	27
Time with family/friends	90	24
Caught fish/good fishing	89	23
Natural surrounding/scenery	51	13
Relaxing	33	9
Wildlife	7	2
Solitude	4	1
Learning to fish/row/kayak,	4	1
Beats work	2	1
Other – Few people	1	<1
	384	100%

*Unaided responses (#=385 of 1036)

Full report: Upper Yellowstone River Monitoring, Norma Nickerson and Kara Grau, Institute for Tourism and Recreation Research, University of Montana, 2020. Available at <https://www.upperyellowstone.org/recreational-use>

SWEEPS (AKA FAS COUNTS)

Goal: Acquire overall "snapshot" of use on the entire stretch of the river on a specific day at a specific time.

- Start at McConnell, End at Carter's Bridge
- 28 counts of all vehicles and trailers in river access points
- Note overall condition of site, parking capacity, areas of potential improvement



Start time: 10:53 AM/PM End time: 1:13 AM/PM Observer's Initials WT

Weather- indicate for beginning of shift (B) and end of shift (E)

TEMP	B	E	WIND	B	E	PERCIP	B	E	RIVER CONDITION	B
Cool/cold			Calm	✓	✓	Threatening			Clear water	✓
Warm			Breezy			Rainy			Off-color water	
Hot	✓	✓	Windy			Stormy			Muddy water	

SITE 1 -McConnell 10:53 : TOTAL

1. # of vehicles in parking area/site 7
2. # of boat trailers in parking area 3

SITE 2 -Brogan's Landing 11:00 : TOTAL

3. # of vehicles in parking area/site not bus / 7
4. # of boat trailers in parking area 2

SITE 3 -Cinnabar 11:07 : TOTAL

5. # of vehicles in parking area/site 1
6. # of boat trailers in parking area 1

SITE 4 -Joe Brown 11:10 : TOTAL

7. # of vehicles in parking area/site 9
8. # of boat trailers in parking area 6

SITE 5 -Carbella 11:22 : TOTAL

9. # of vehicles in parking area/site 14
10. # of boat trailers in parking area 6

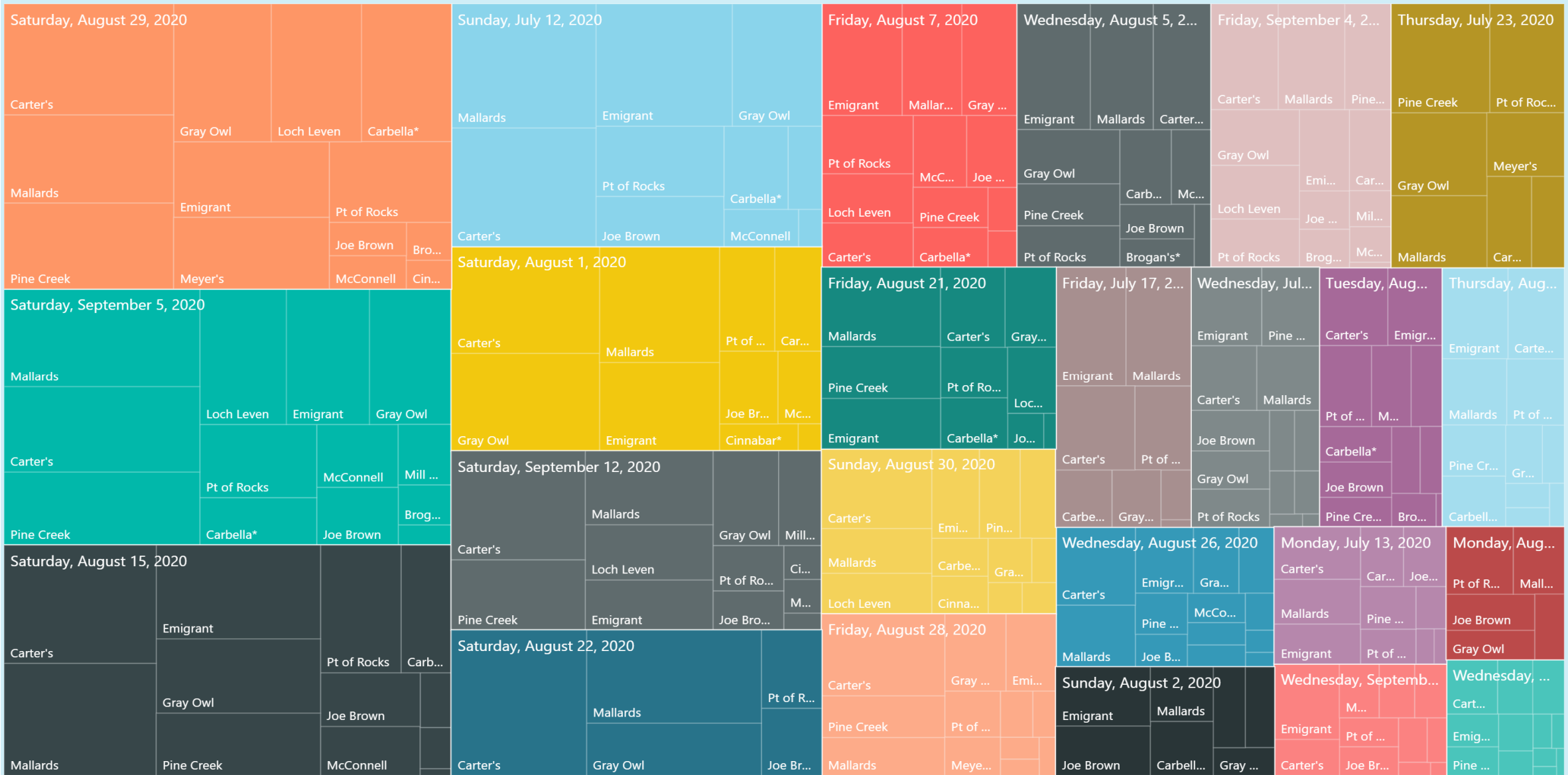
FAS SWEEP DATA BY DATE BY SITE

<https://www.upperyellowstone.org/recreational-use>



FAS SWEEP BUSIEST DAYS

<https://www.upperyellowstone.org/recreational-use>



TOP 5 VEHICLE/TRAILER DAYS @ FAS

Carter's: 92/46 on August 22nd

Mallard's: 90/33 on September 5th

Carter's: 88/26 on August 29th

Emigrant: 78/36 on July 12th

Emigrant: 72/26 on August 15th



Emigrant "spill-over" parking, July 12, 2020

CAMERAS

Goal: determine level and type of use by
24x7 counts (not surveillance!)

- Camera Locations:
 - Point of Rocks–Emigrant (2)
 - Dan Bailey–Loch Leven
 - Pine Creek–Carter's Bridge
- Triggered/Continuous
 - Mixed results/labor intensive



24X7 CAMERA DATA

- Over 210,000 images collected at four locations
- Tallied "actively fishing" vs "non-fishing". Other data categories included type of craft (drift boat, raft, other), date/time, air/water temp.
- Impossible to accurately count **Commercial vs. Private** boats due to difficulty seeing tags.
- Manually counted selected days of images at 4 sites.
- **Learnings:**
 - **Real-time manual** counts are accurate, but labor-intensive and difficult to ensure adequate coverage of multiple sites consistently over study period.
 - **Triggered camera** counts were as much as 25-50% less accurate than manual counts(missed far shore smaller craft, i.e., tubes, paddle boards). Newer technology hold promise of improved accuracy and decreased labor for counting/auditing.
 - **Time lapsed** (every 5-10 seconds) cameras are nearly as accurate as manual counts but loss of image quality and large number of images to count. Using AI in the cloud can reduce the need of humans to "count" boats.
 - **Next Generation low-power AI cameras** will (a) eliminate the need to take continuous photos and (b) automate the counting process, thereby achieving the BHAG.



36°F

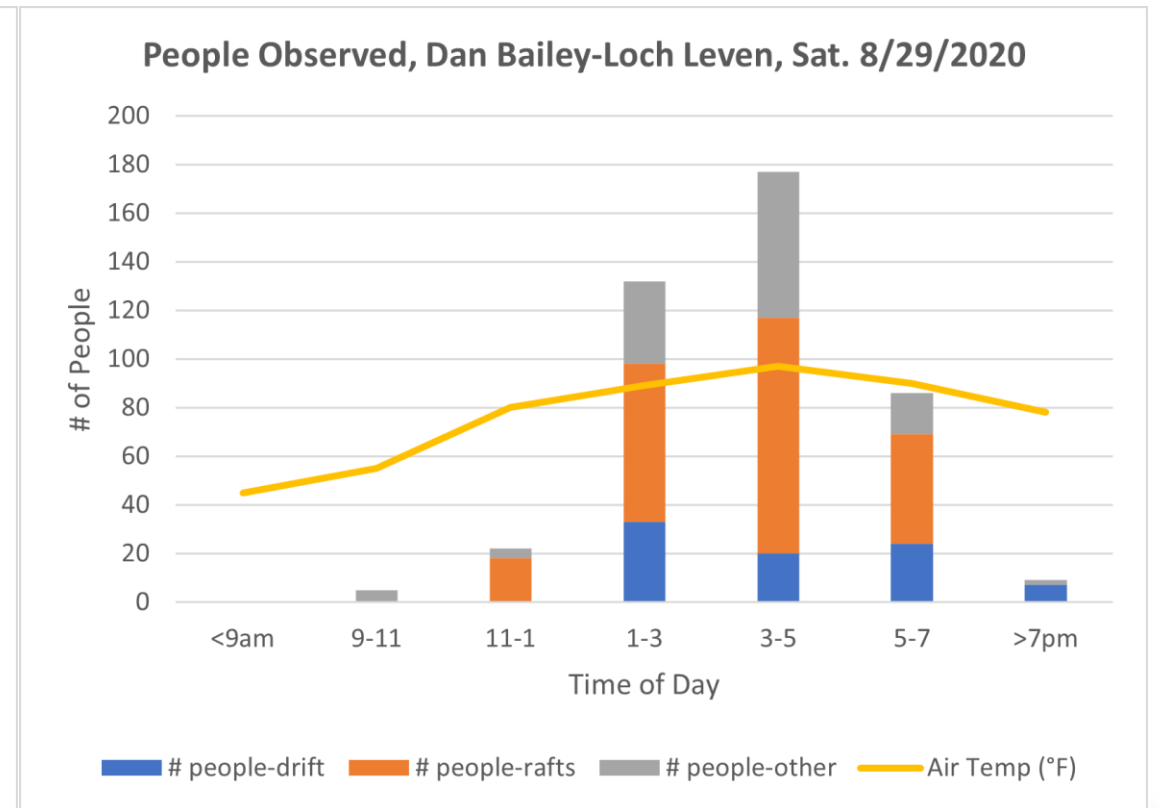
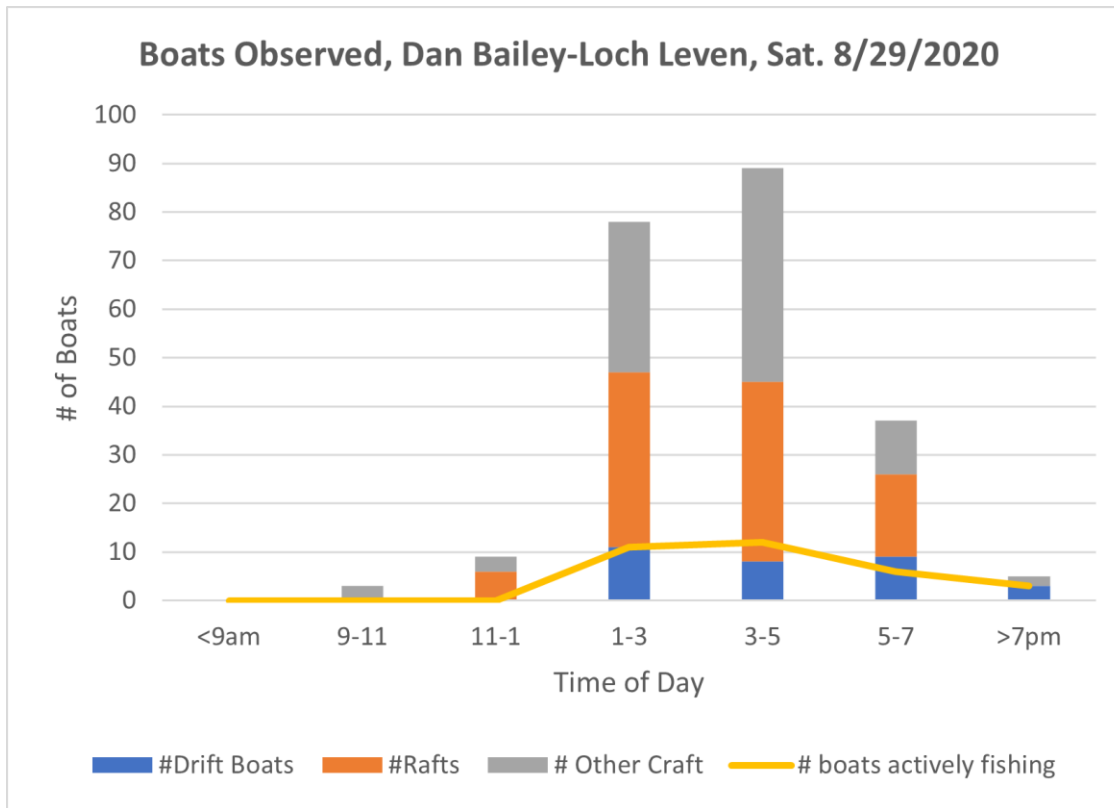


08 / 14 / 2020

06 : 32PM

UYR 002

"This looks like a good place to rub"



CAMERA DATA

TIME OF DAY INFORMATION

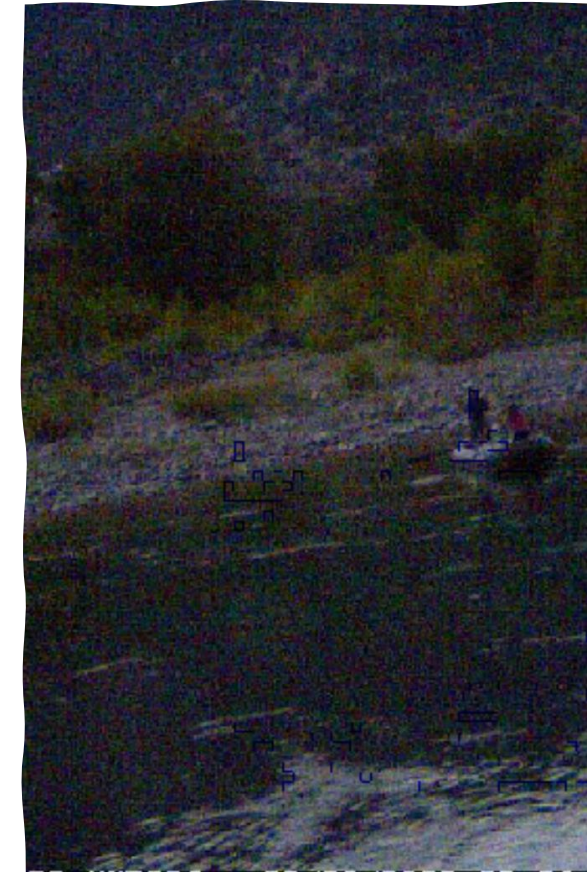


A DAY IN THE LIFE OF THE LOWER STRETCH

NEAR NELSON'S SPRING CREEK
SATURDAY, AUGUST 29TH CAMERA DATA



- Fishing Access Site Sweep Data
 - Pine Creek FAS (Noon): 68 Vehicles, 27 Trailers
 - Mallard's FAS (Noon): 70 Vehicles, 25 Trailers
 - Carter's Bridge FAS (Noon): 88 Vehicles, 26 Trailers
- Camera Data (5,000+ Images)
 - 1st Recreational Use: 11:37:18 AM
 - Last Recreational Use: 8:27:48 PM
 - # Fishing Boats: 23 # People: 59
 - # Non-Fishing Boats: 107 # People: 273
 - Estimated 5 Guided-fishing boats: 3.8% of traffic

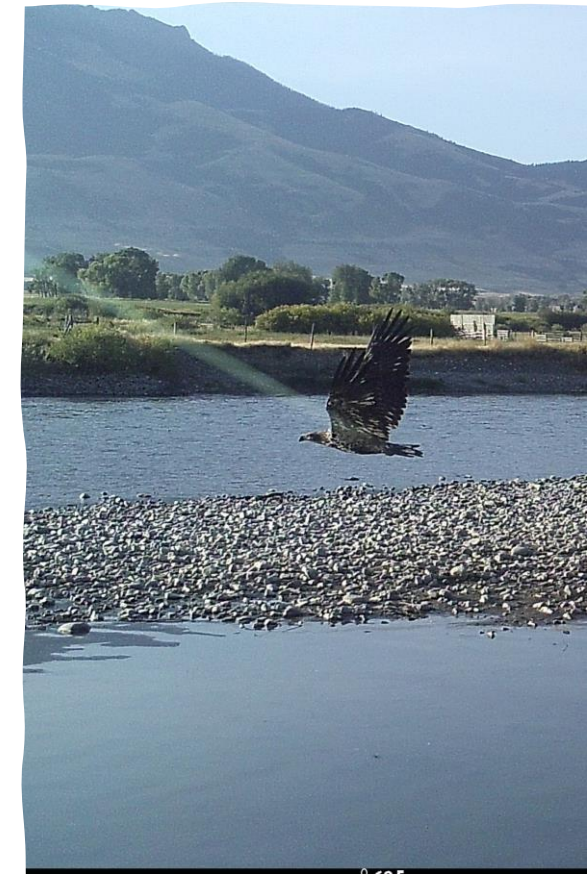


A DAY IN THE LIFE OF THE UPPER STRETCH

NEAR REST AREA
SUNDAY, AUGUST 30TH CAMERA DATA

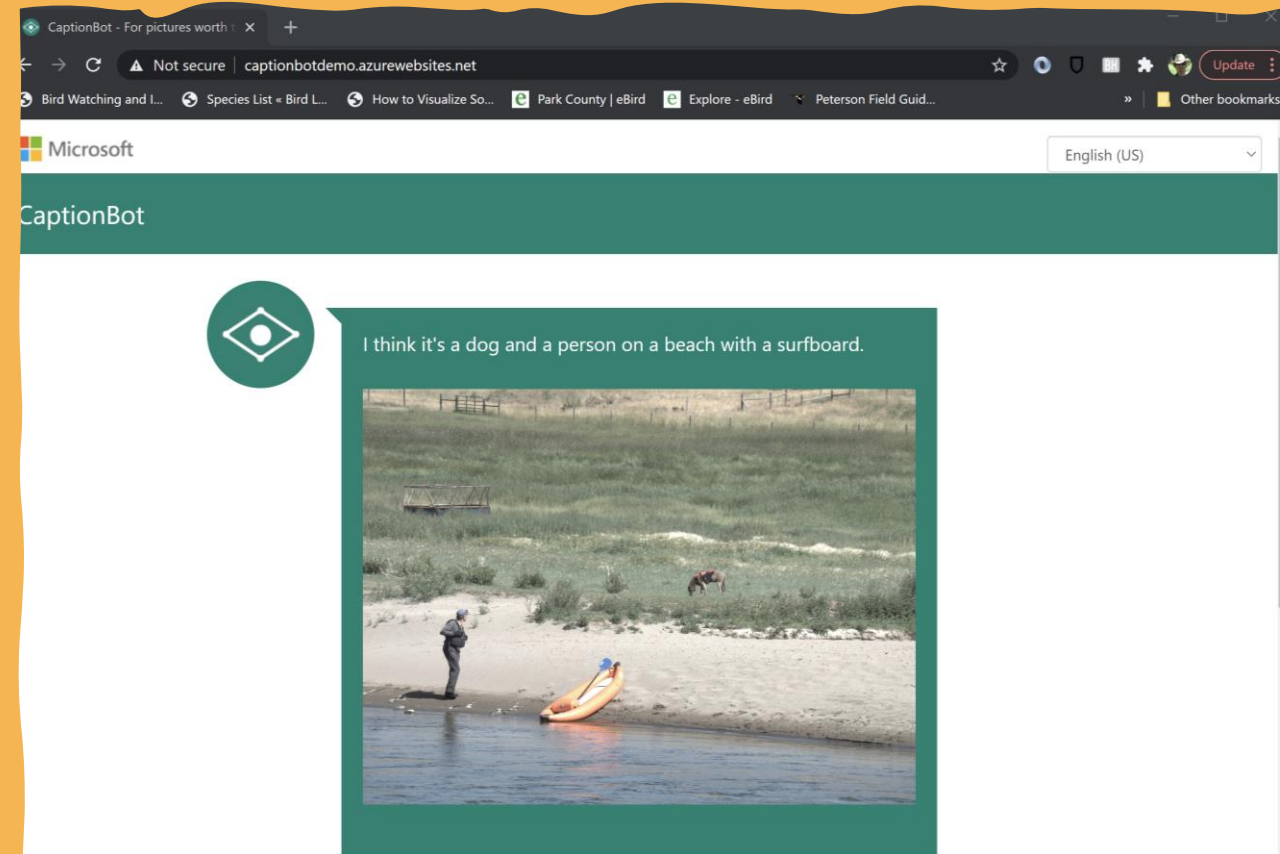


- Fishing Access Site Traffic Sweep Data
 - Carbella's FAS (Noon): 10 Vehicles, 5 Trailers
 - Point of Rocks FAS (Noon): 15 Vehicles, 5 Trailers
- Camera Data (triggered)
 - 1st Recreational Use: 9:11am
 - Last Recreational Use: 5:08pm
 - # Fishing Boats: 21 # People: 58
 - # Non-Fishing Boats: 18 # People: 48
 - Estimated 9 Guided-fishing boats: 23% of traffic



BHAG

Automated counting of various types of recreational river use that is low cost, easy to manage, dependable, widely-distributed, and always-on. One of our design goals was to make sure this type of data gathering can continue to provide baseline use data in the future.



THE 2020 RIVER EXPERIENCE

2020 has been a singular year. Barred from many other activities, Americans turned to the Paradise Valley outdoors in greater numbers than seen before and stayed longer into the year. As the temperatures warmed, quarantine restrictions were lifted, and the river cleared (the trifecta) more and more families turned to the Yellowstone River. Some were frequent users, wise in the ways of the boat ramp and river. Others were first timers with little experience or expectations except to get out of the house and out of the city.



Gray Owl FAS, Sunday September 13, 2020 (photo courtesy of Dave Thompson)

THE 2020 RIPARIAN LANDOWNERS EXPERIENCE

While the majority of river users interviewed greatly enjoyed their day on the water, such enjoyment did not extend to riparian landowners—many of whom reported increased issues.

- Trespass
- Campfires
- Sanitation
- Noise/profanity
- Ignorance/lack of concern/aggression when challenged

These issues, for the first time, significantly flowed into September and even October. Involving private land-owners in the discussion will be a focal point for this project going forward



2021 ACTIVITIES

- Create a plan on how to improve recreational use for all stakeholders (private landowners, local users, tourists, businesses, outfitters)
- Initiate monitoring by Father's Day, through September
- Deploy 10+ Camera Traps (including two next gen AI ones) along expanded stretch of river
- Riparian landowner survey (Spring 2021)
- Impacts Analysis Plan (e.g. sanitation, wildlife)
- Assess best practices from other river systems (e.g. poop bags, education, adopt FAS sites, sanitation, PDF loaners, etc.)
- Develop outreach/education on river etiquette (possible River Keepers)
- Ways to improve detection of commercial outfitter tags (fly fishing or rafting)
- Improved reporting to Montana Board of Outfitters (less work for guides/outfitters, more useful for river management, shared mobile app)
- What improvements are needed/desired for river access and access sites?

COMMUNITY DISCUSSION TIME TO LISTEN

Goal: have a community conversation on what we want and how to get there

- As river users what are your concerns?
- Who's not in this conversation that needs to be?
- Where's the resistance and how do we address?
- How do we make it better?
 - Infrastructure
 - Behavior
 - Do we need additional regulations...or is that futile.
- Who pays and how?
- What is the impact on the actual ecosystem (e.g. sanitation, wildlife) and who cares?
- Is there a River Use ethic "common ground".



THANK YOU



This is the start of the Conversation. Let's keep it going....



Whitney Tilt, whitneytilt@gmail.com
Jeff Reed, jeff@reedfly.com



upperyellowstone@gmail.com



www.upperyellowstone.org