TRAIL MONITORING 2022

Presented by the Wood River Trails Coalition

Trail Monitoring: What is it, and why do we do it?

Systematic way of collecting data on trail use

- Supports WRTC mission and programming
- Builds partner capacity for trail resource improvements and informed management
- Cool information for you, the public!

Presentation Outline

- Background and Goals

- Project Structure and Scope

- 2022 Trail Counter Data

- 2022 Totals and Year to Year Comparisons

- Impacts of Trail Monitoring Data

From pilot project, to established program

2012   Wood River Valley Trail Study

2013   Beaver Creek Fire

2014-18   Greenhorn, Osberg, Deer Creek, Alden
Gulch Rehab/Rebuild work

2019   Wood River Bicycle Coalition restructures, rebrands
☐ **Wood River Trails Coalition is born!!**

2021   Wood River Valley Trail Survey
conducted
- 7%* population growth from 2020-2021
- **1,628 (approx.) new residents, first
time over 24K**

2022   **WRTC Trail Monitoring
Program formally established**

Changes in 2022:

- More trail counters, new style of trail counter
- Increased geographic scope
- No survey questionnaire

2022 Trail Monitoring Goals

Common theme: Better range of data, improved estimates, more representative results.

GOAL #1: User Groups

Increase data precision for user-group breakdowns (Adams Gulch and Greenhorn Gulch trail systems).

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GOAL #2: Trail Use Patterns

Increase data precision for trail use patterns in longer, multi-access trail systems.

GOAL #3: Better Data

Improve the accuracy of trail monitoring data and produce estimates with increased precision, compared to 2021.

Partners and Support

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

ERC
ENVIRONMENTAL RESOURCE CENTER

Spur

OPEN TO BIKE TRAFFIC ONLY
(All other users please continue up Eve Gulch Trail)

Trail adopted by the
Wood River Trails Coalition

Infrared Counter

Bike Counter

No external tubes or wires

Tools and Timeline

May 30th: start of trail use "peak season"

October 11th: Monitoring Program closeout

Collecting data, moving counters

April 27th: field-testing begins

September 5th: end of trail use "peak season"
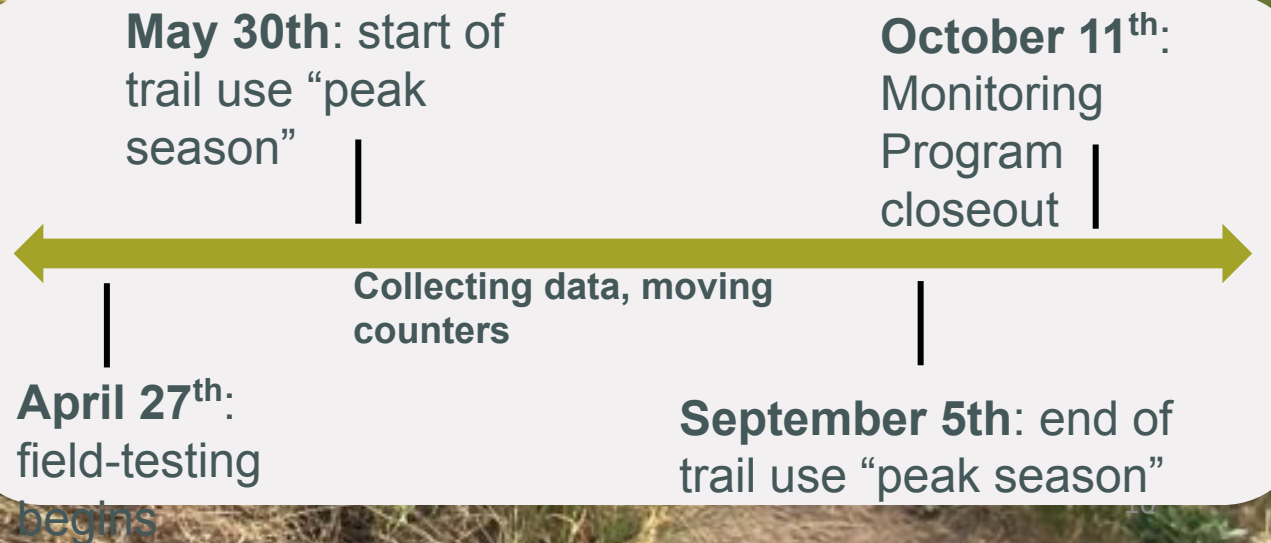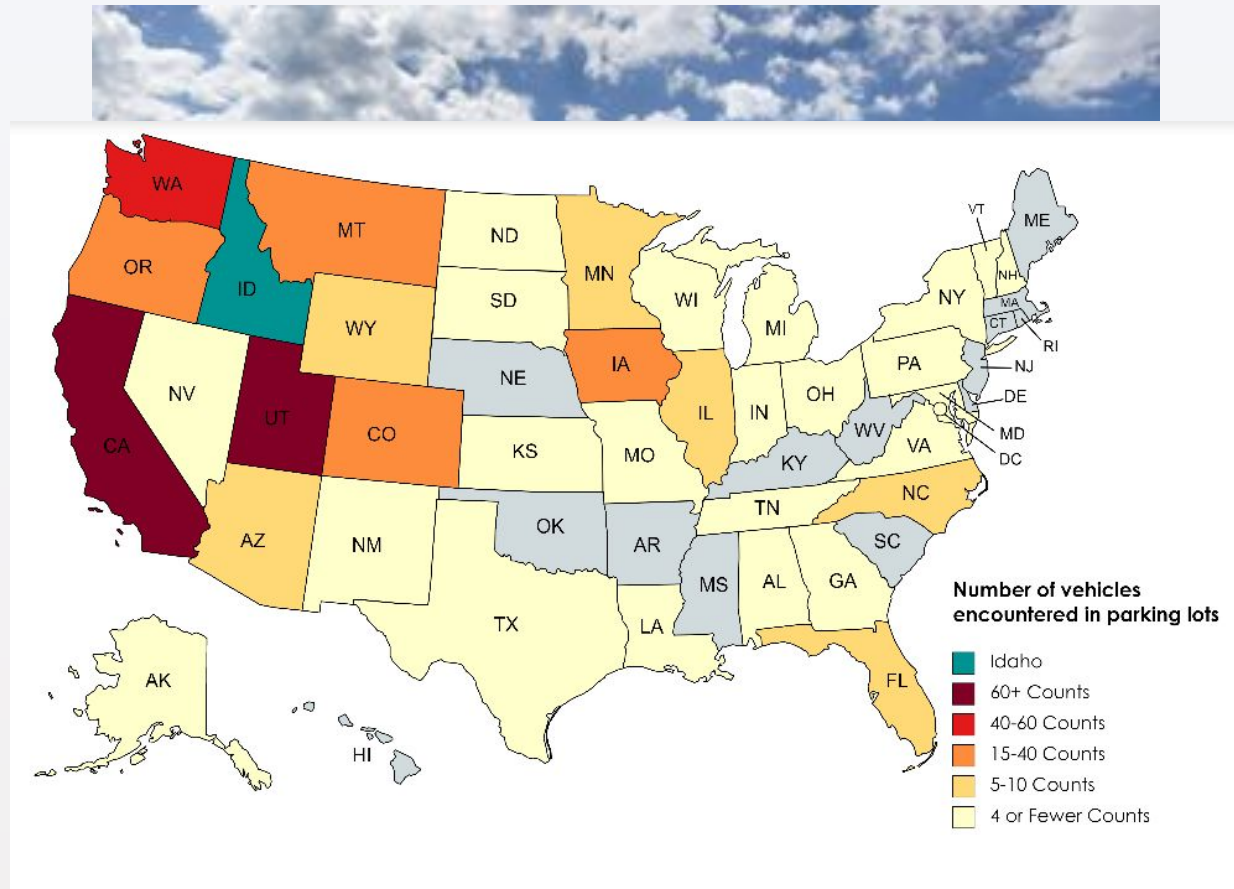
Parking Lot Counts

- Helps assess balance between trailhead facilities and trail use

- "Low lift" means of collecting in-state vs. out-of-state trail user data

- With more data, parking lot counts could be used to estimate trail traffic levels during periods with no counters ☐ builds capacity for growing trail monitoring and data set

Number of vehicles encountered in parking lots

- Idaho
- 60+ Counts
- 40-60 Counts
- 15-40 Counts
- 5-10 Counts
- 4 or Fewer Counts

Ground Truthing

Making direct, visual observations of trail use at trail counter locations ➡ Comparing observation data to counter data

Pros:
- Helps assess equipment reliability
- Impact of dogs on data
- Directionality, specific user group breakdowns, etc.

Cons:
- Big time-sink
- Requires A LOT of data to be effective (but we're working on this!)

TRAFx Trail Counters: One tool in the tool kit

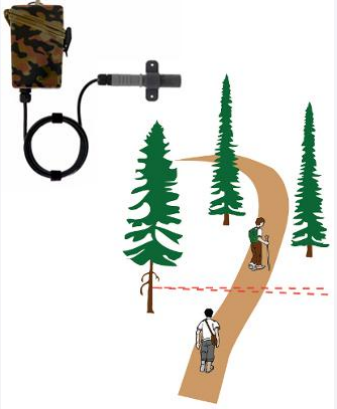
No external tubes or wires

+

Photo courtesy of Perry Boyle, ground truther extraordinaire

Ground truthing, parking lot counts

Key things to keep in mind with trail counters and monitoring:

- Counters don't distinguish direction of travel

- Counters CAN detect animals – but not always*

- Average Daily Total ☐ Other Totals

- Peak Summer Season= 100 days (on average, 99 days from Memorial Day to Labor Day)

Scope and Scale
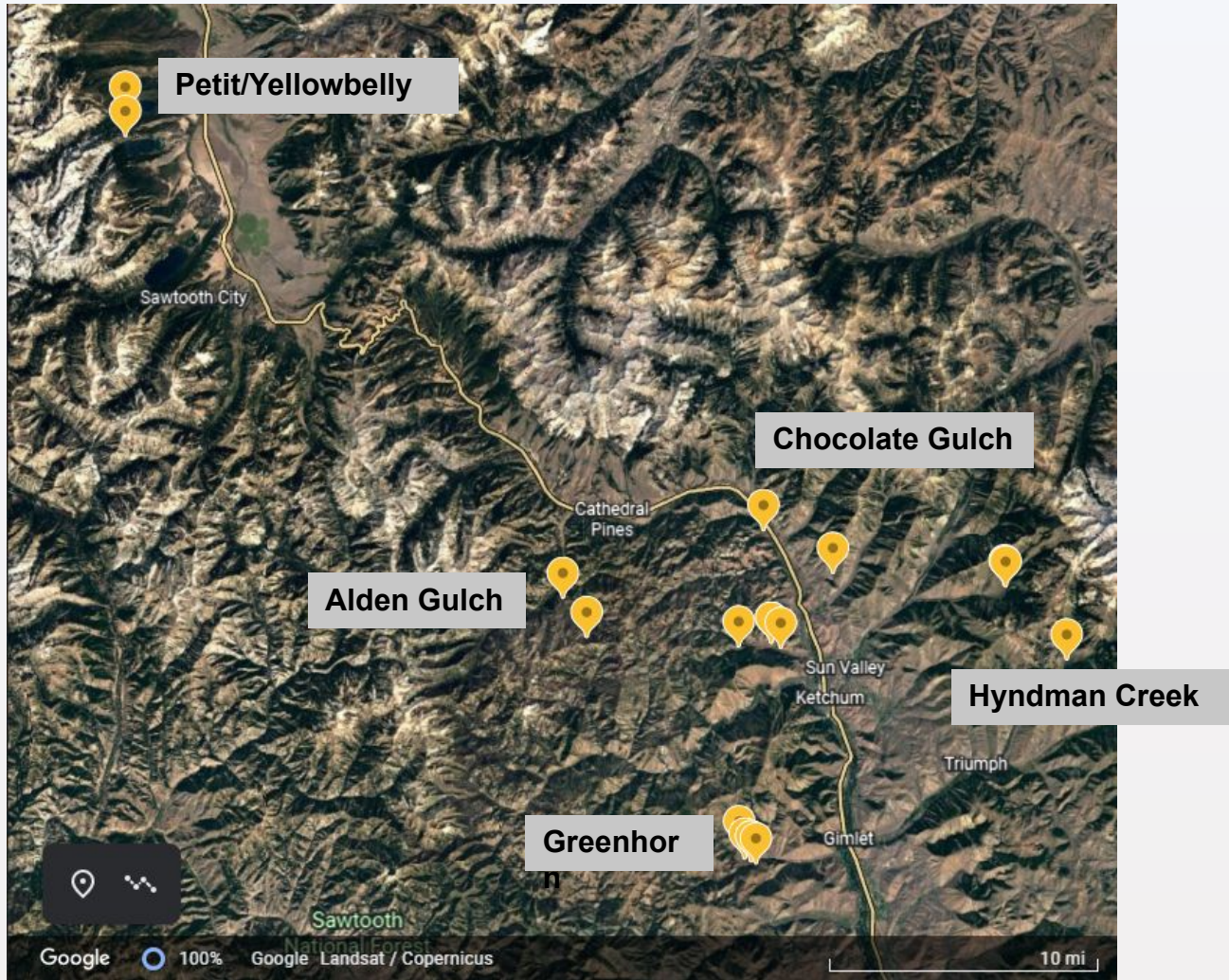
- 15 Locations

- 8 New Locations in 2022

- 1552 Days of Data (2022)

- 24 total trail locations monitored to date

Trail Monitoring Locations, 2022

- **Greenhorn Tr. #156**
- **Imperial Gulch Tr. 315**
- **Cowhorn/Cow Creek Connector Tr. #153**

- **Hyndman Creek Tr. # 166**

- **Old Adams Road Tr. #177 – Inner and outer (Proximal and Distal)**
- **Forbidden Fruit Tr. # 159 – "Low Hanging Fruit"/ New Section**

- **Pioneer Cabin Tr. # 122**
- **Long Gulch Tr. # 123**

- **Taylor Canyon Tr. # 324**

- **Chocolate Gulch Tr. # 312**

- **Alden Gulch Tr. # 144 – Top and Bottom**

- **Petit Creek Tr. #095**
- **Yellowbelly Tr. #096**
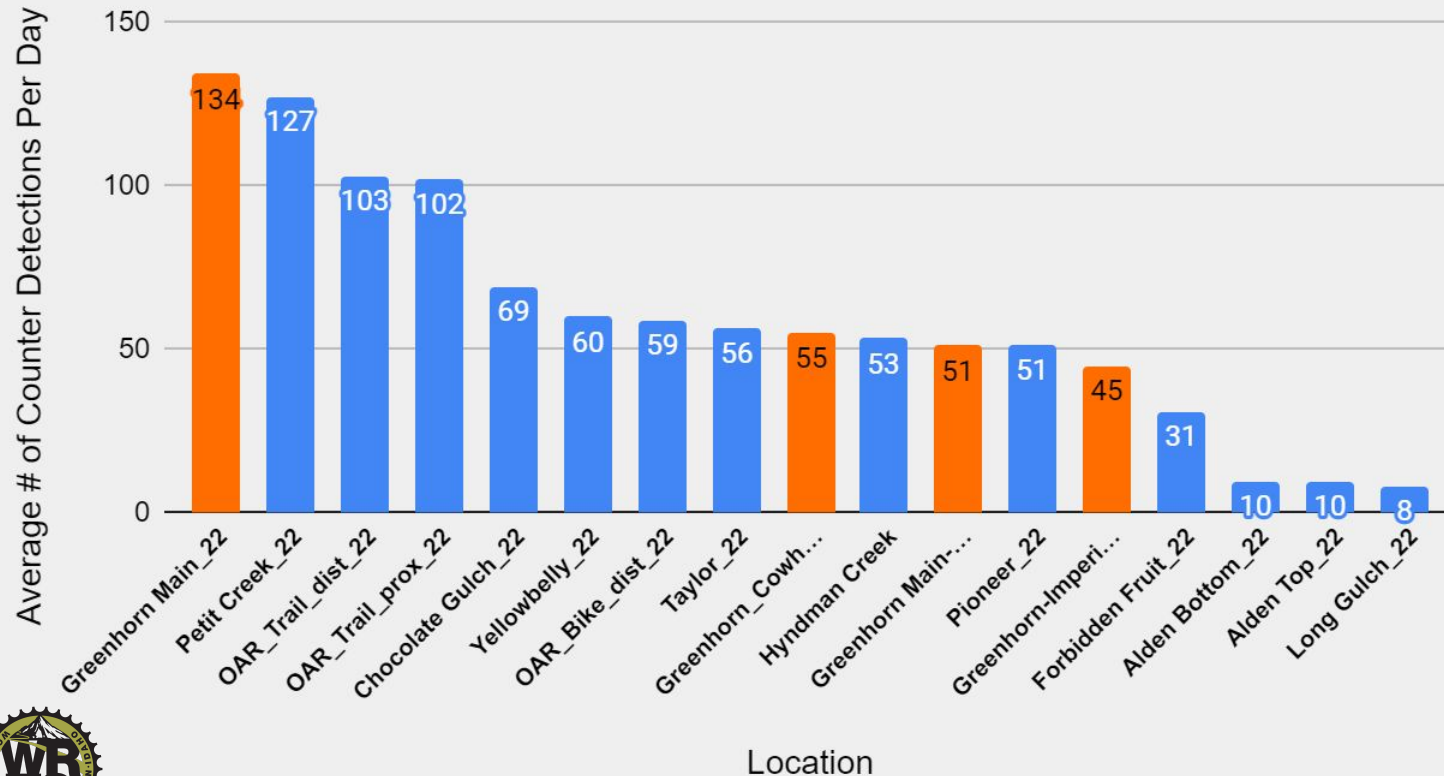
2022 Trail Counter Data

GREENHORN GULCH TRAILHEAD:
GREENHORN TR. #156, IMPERIAL GULCH TR. #315, COWHORN TR. (no number)

Greenhorn Tr. #156 monitored with **both infrared and bike counter**

Comparing Average Daily Traffic Values

Average # of Counter Detections Per Day vs Location

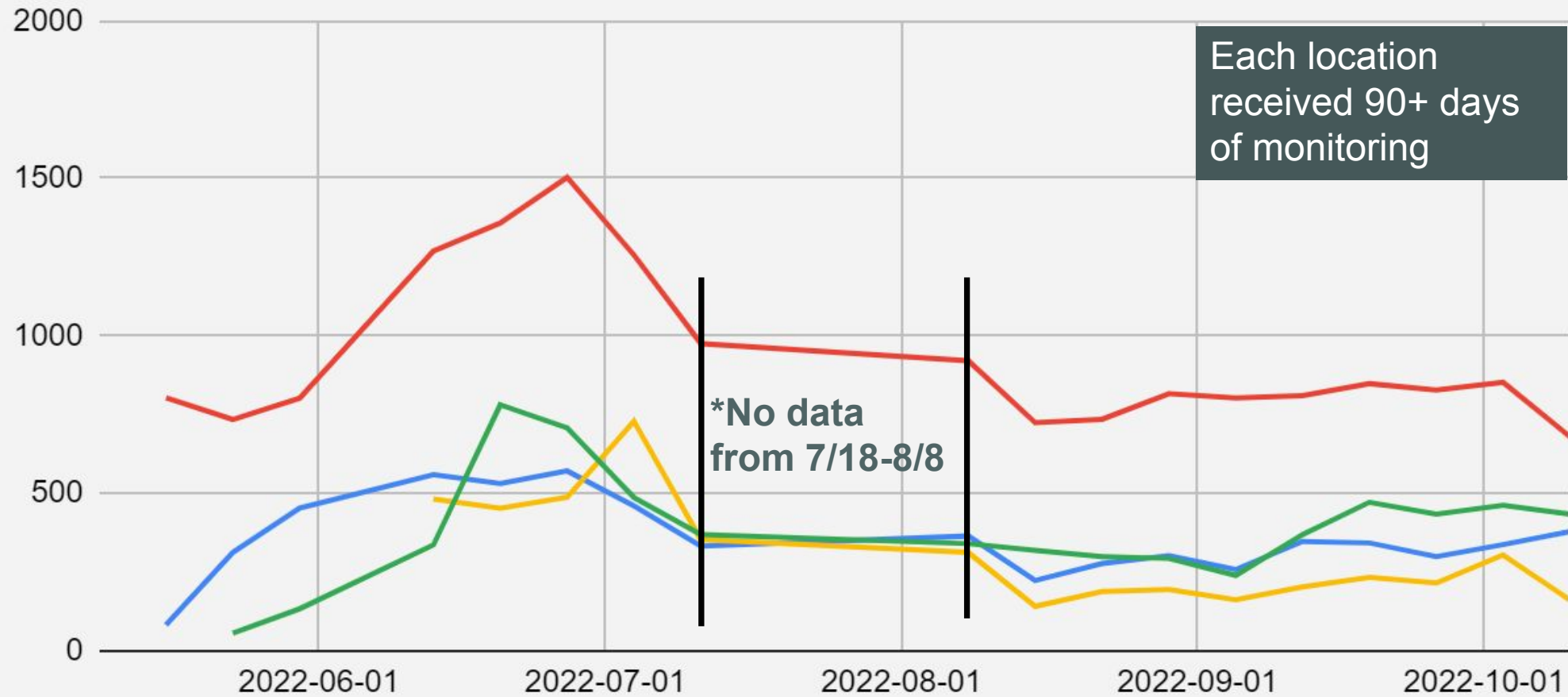| Location	Value
Greenhorn Main_22	134
Petit Creek_22	127
OAR_Trail_dist_22	103
OAR_Trail_prox_22	102
Chocolate Gulch_22	69
Yellowbelly_22	60
OAR_Bike_dist_22	59
Taylor_22	56
Greenhorn_Cowh...	55
Hyndman Creek	53
Greenhorn Main-...	51
Pioneer_22	51
Greenhorn-Imperi...	45
Forbidden Fruit_22	31
Alden Bottom_22	10
Alden Top_22	10
Long Gulch_22	8

Highest recorded counts:

GH-Main: 308 (July 3rd)
GH Bike: 158 (July 3rd)
Imperial: 157 (July 9th)
Cowhorn: 161 (July 3rd)

Greenhorn Gulch Weekly Trail Traffic Totals* - 2022 Trail Monitoring

Legend:
- Greenhorn Main - Bike_22
- Greenhorn Main_22
- Greenhorn-Imperial_22
- Greenhorn_Cowhorn_22

Y-axis: Approx. Number of Counter Detections (0, 500, 1000, 1500, 2000)

X-axis: Week of the Season (2022-06-01, 2022-07-01, 2022-08-01, 2022-09-01, 2022-10-01)

*No data from 7/18-8/8

Each location received 90+ days of monitoring

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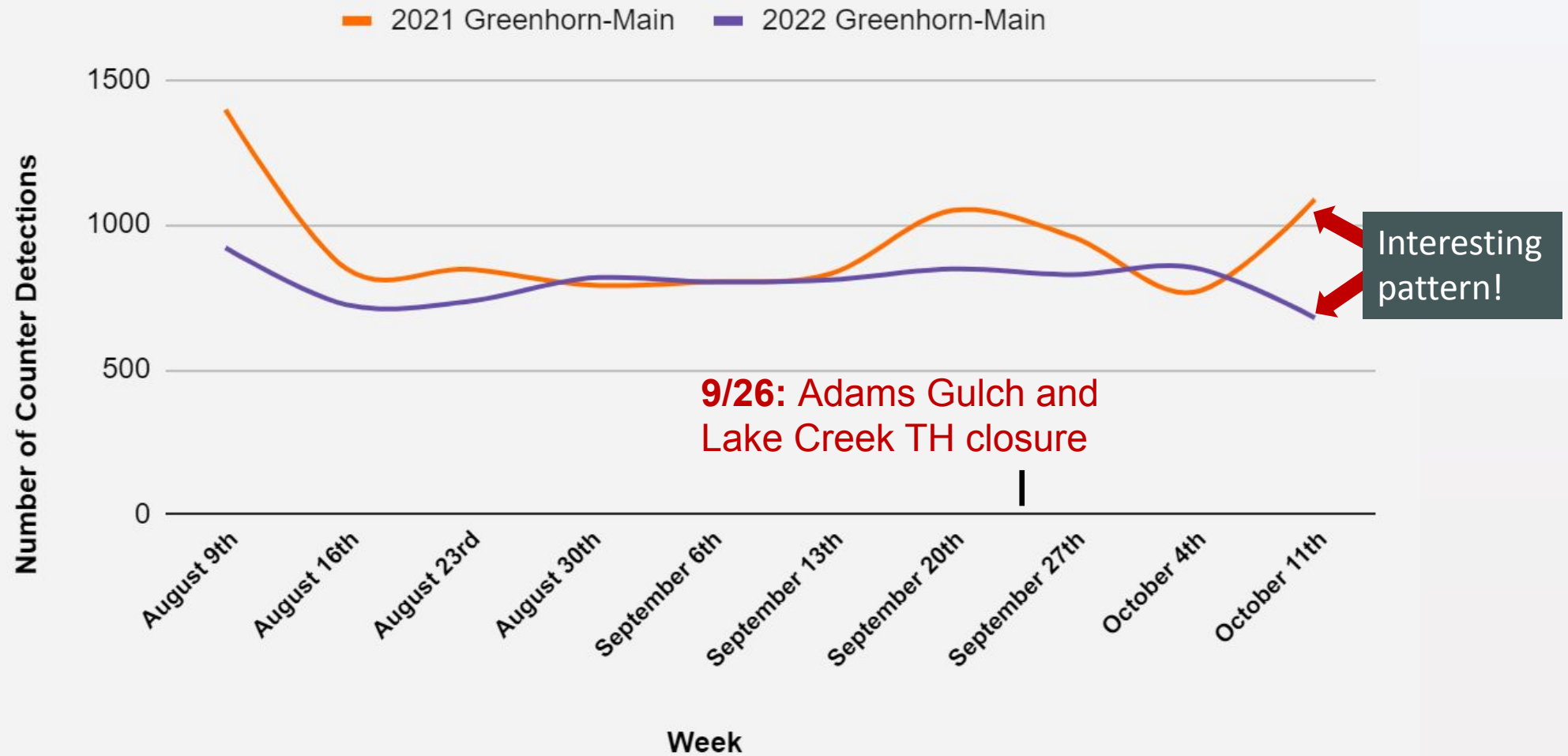
# Comparing Trail Traffic at Greenhorn Year to Year

Weekly Trail Traffic on Greenhorn Tr. # 156 - 2021 vs. 2022

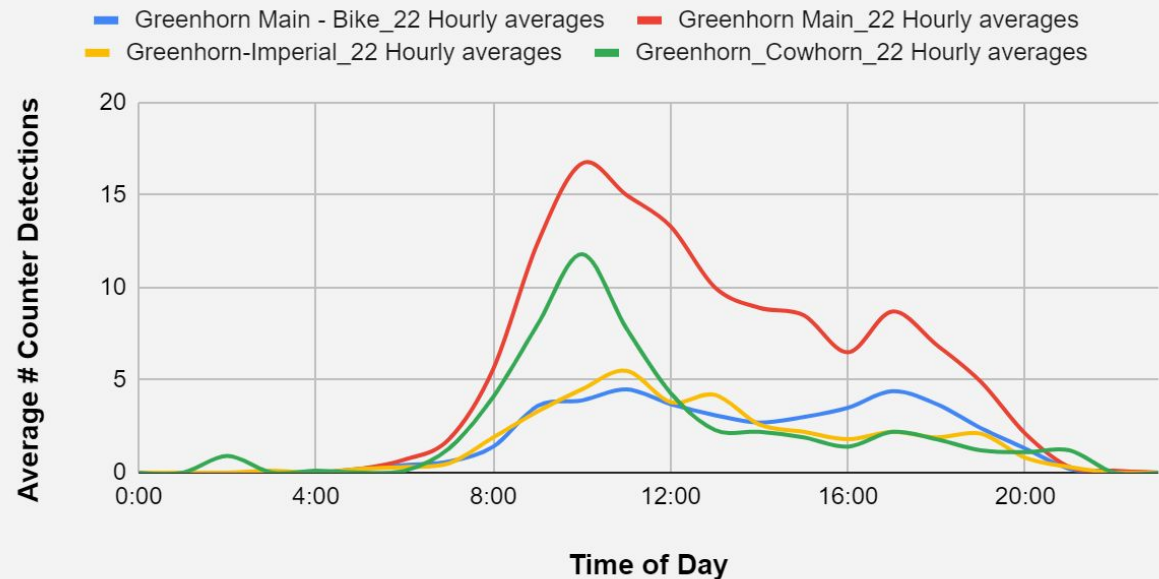— 2021 Greenhorn-Main   — 2022 Greenhorn-Main

Number of Counter Detections

1500
1000
500
0

August 9th, August 16th, August 23rd, August 30th, September 6th, September 13th, September 20th, September 27th, October 4th, October 11th

Week

9/26: Adams Gulch and Lake Creek TH closure

Interesting pattern!

Greenhorn Gulch - Weekend Hourly Trail Traffic Averages - 2022 Trail Monitoring

- Greenhorn Main - Bike_22 Hourly averages
- Greenhorn Main_22 Hourly averages
- Greenhorn-Imperial_22 Hourly averages
- Greenhorn_Cowhorn_22 Hourly averages
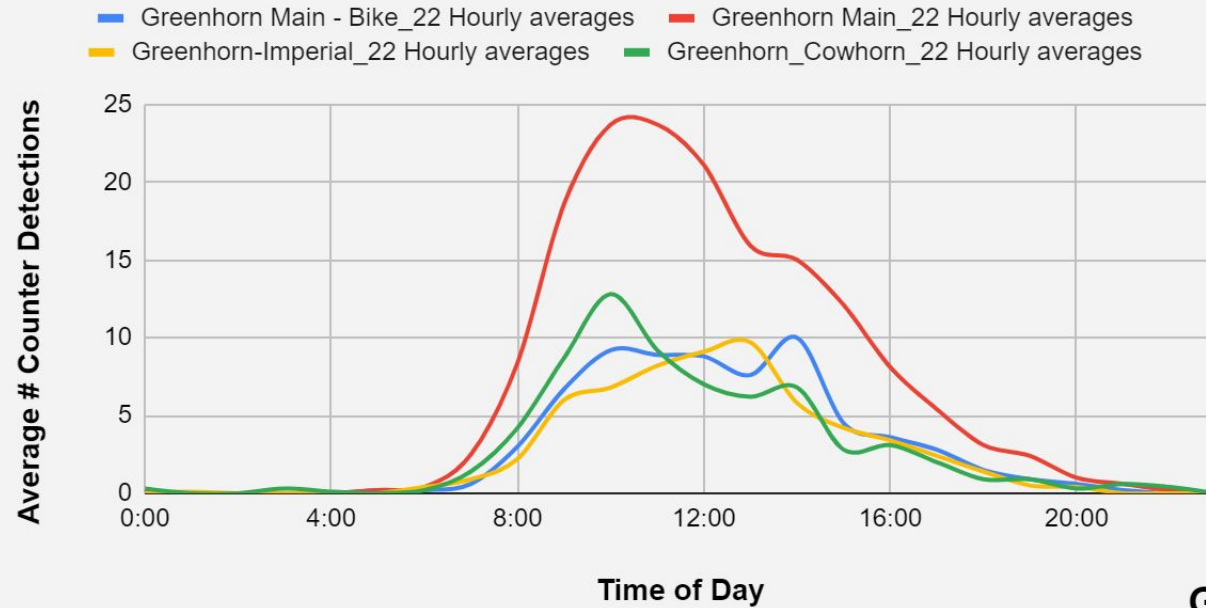
Weekend vs. Weekday Hourly Trail Traffic Patterns at Greenhorn

Greenhorn Gulch - Weekday Hourly Trail Traffic Averages - 2022 Trail Monitoring

- Greenhorn Main - Bike_22 Hourly averages
- Greenhorn Main_22 Hourly averages
- Greenhorn-Imperial_22 Hourly averages
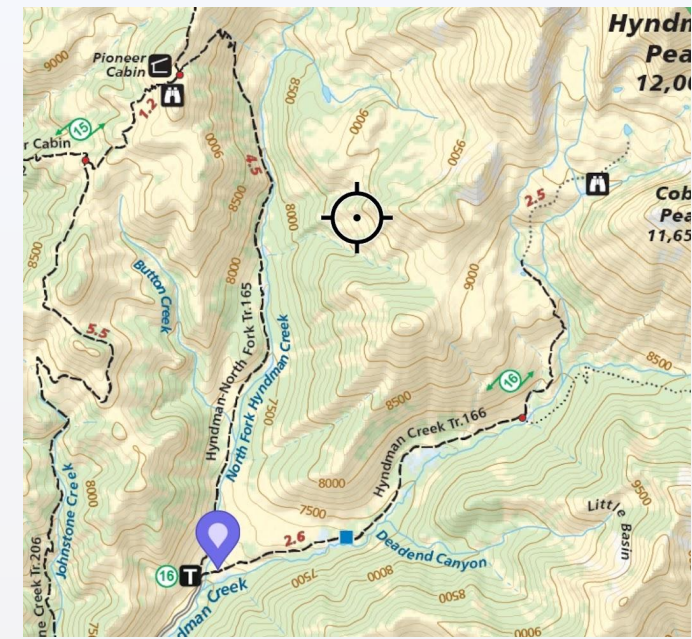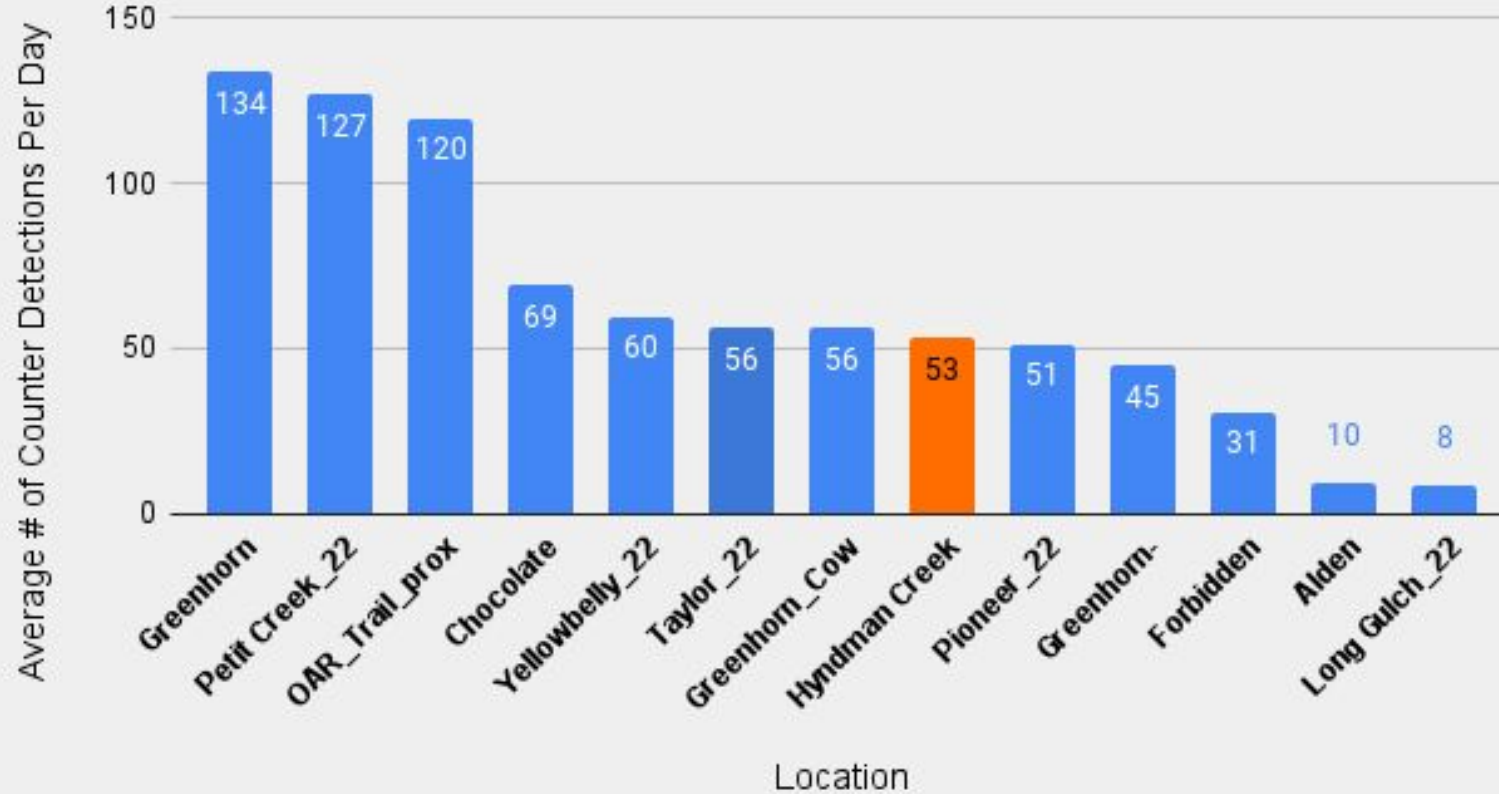- Greenhorn_Cowhorn_22 Hourly averages

- Use in highest from 10AM-12PM – **typical across majority of monitoring locations**
- Imperial Gulch experiences more significant traffic changes weekend to weekday
- Afternoon weekday trail traffic on Greenhorn-Main is interesting (Post work? Cooler temps?)

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HYNDMAN CREEK TR.
#166

Comparing Average Daily Traffic Values

(Average # of Counter Detections Per Day vs. Location)

- Greenhorn: 134
- Petit Creek_22: 127
- OAR_Trail_prox: 120
- Chocolate: 69
- Yellowbelly_22: 60
- Taylor_22: 56
- Greenhorn_Cow: 56
- Hyndman Creek: 53
- Pioneer_22: 51
- Greenhorn-: 45
- Forbidden: 31
- Alden: 10
- Long Gulch_22: 8

Highest recorded count:
159 (July 30th)

Lowest recorded count:
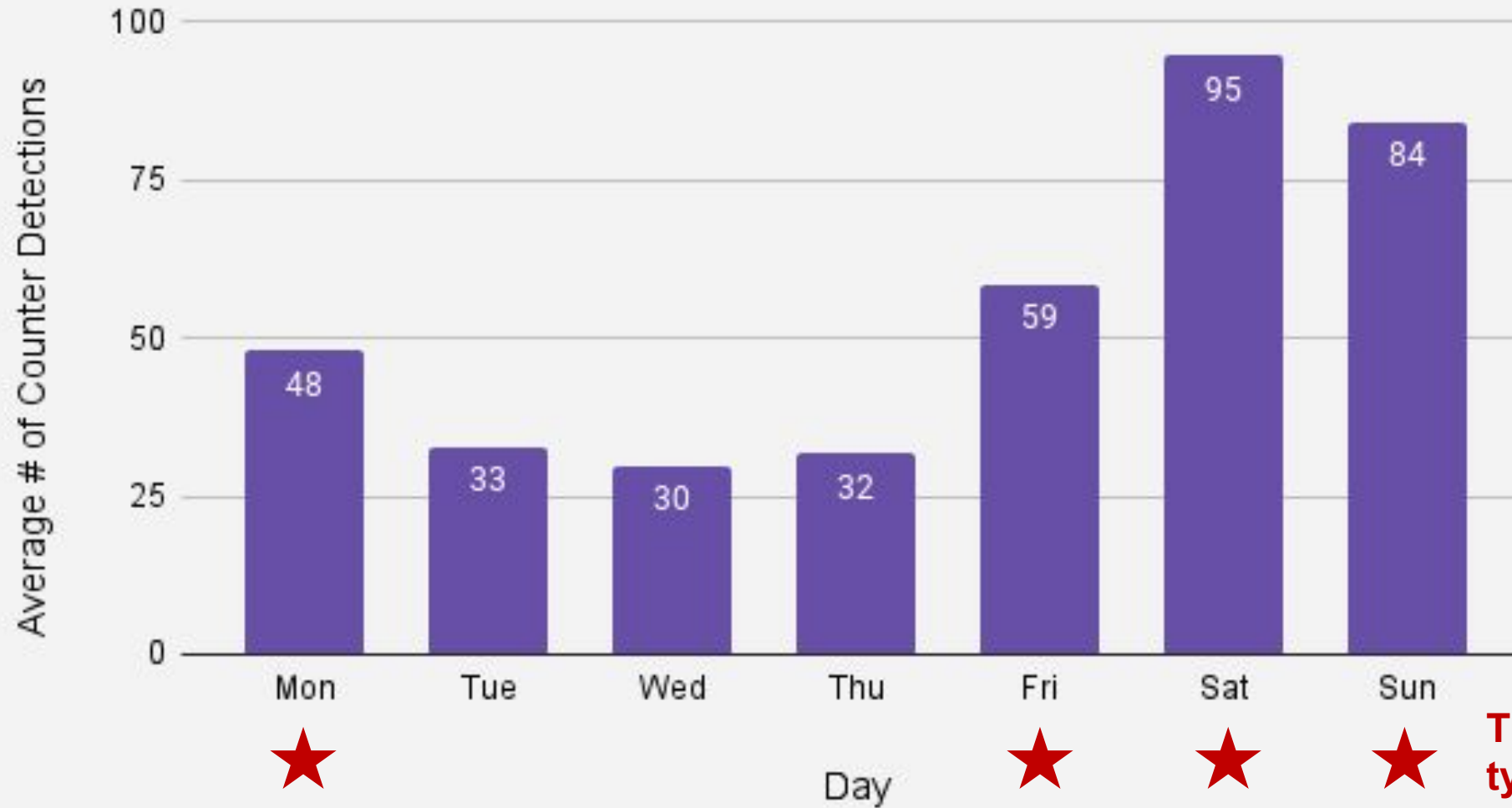**8** (June 20th, August 23rd)

Busiest day on avg: **Saturday**

Busiest time on avg: **10AM-12P**

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Hyndman Creek Trail - Daily Trail Traffic

51 days of monitoring

Counters not present

Counters not present

22
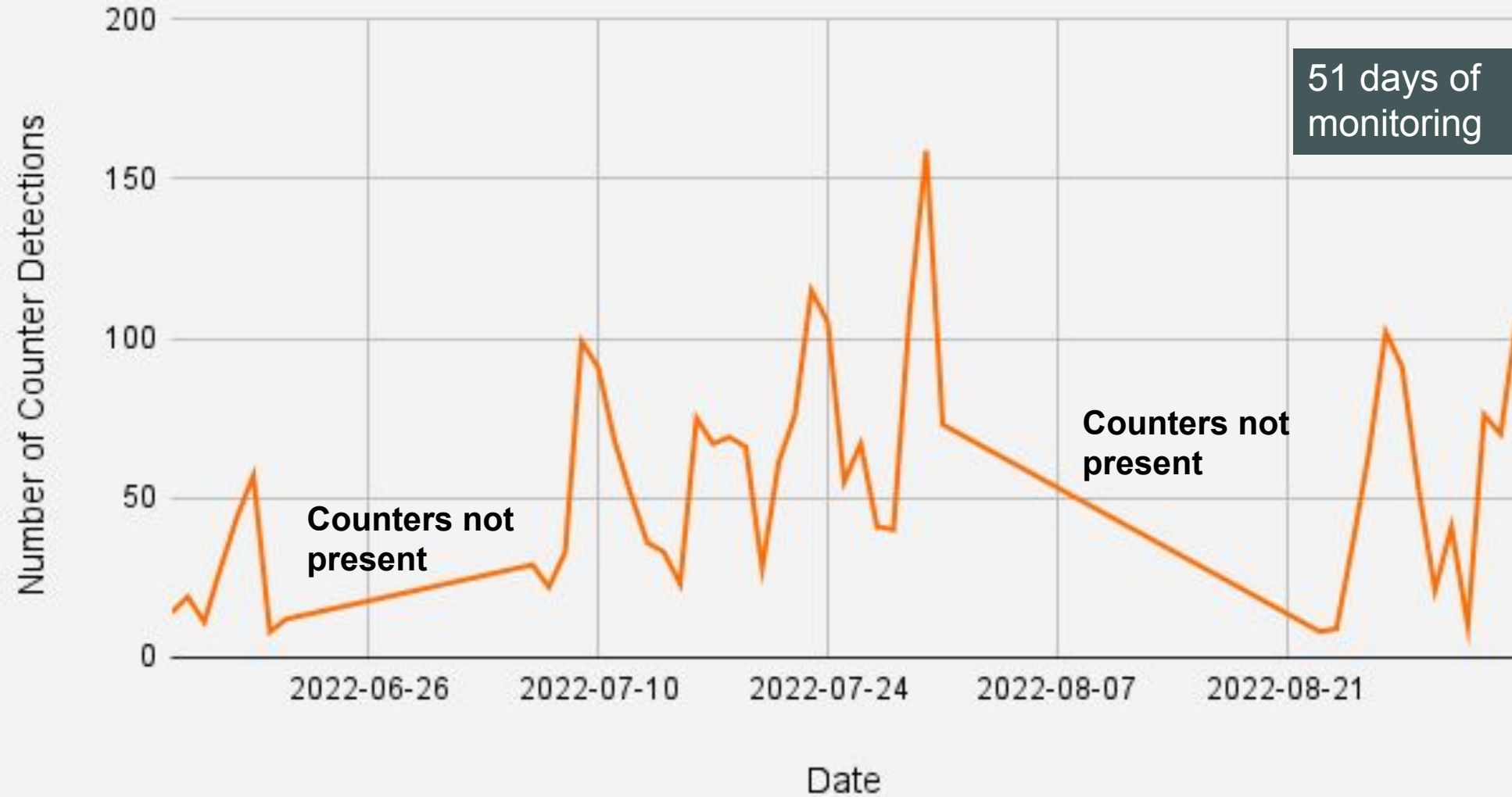
Hyndman Creek 7-Day Trail Traffic Averages

This 7-Day pattern is typical across majority of locations

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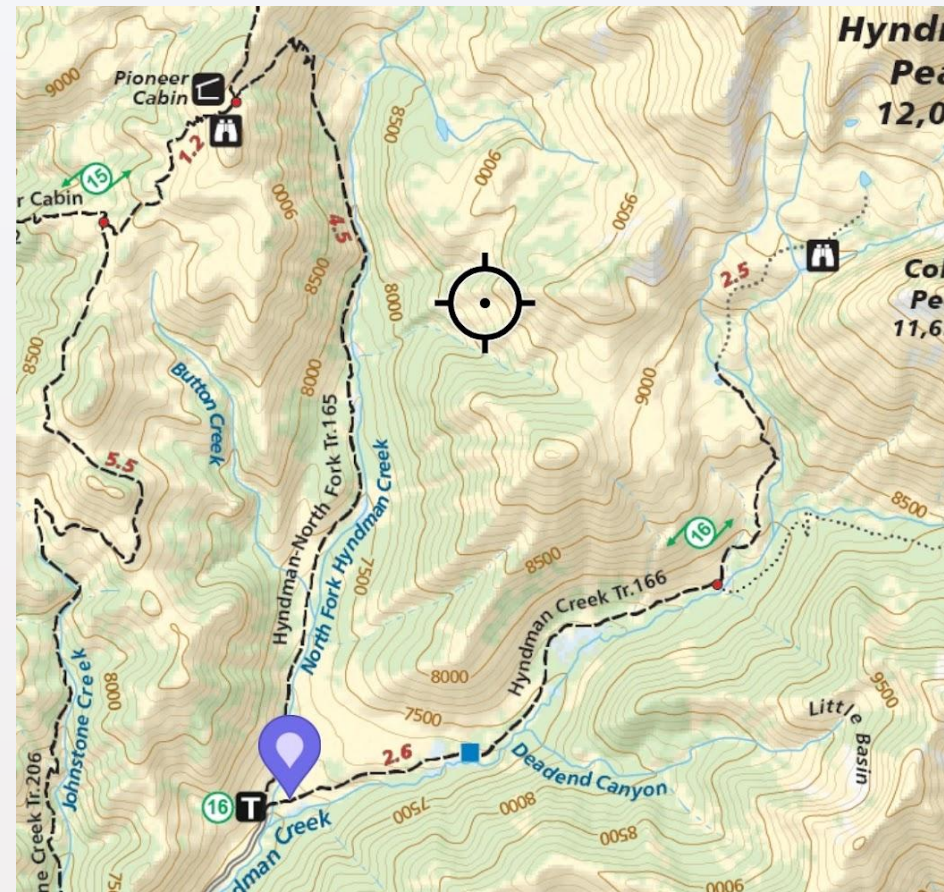# Unique Opportunity for Analysis at Hyndman Creek

Using "Average Daily Detections" value (53) for days with no data...

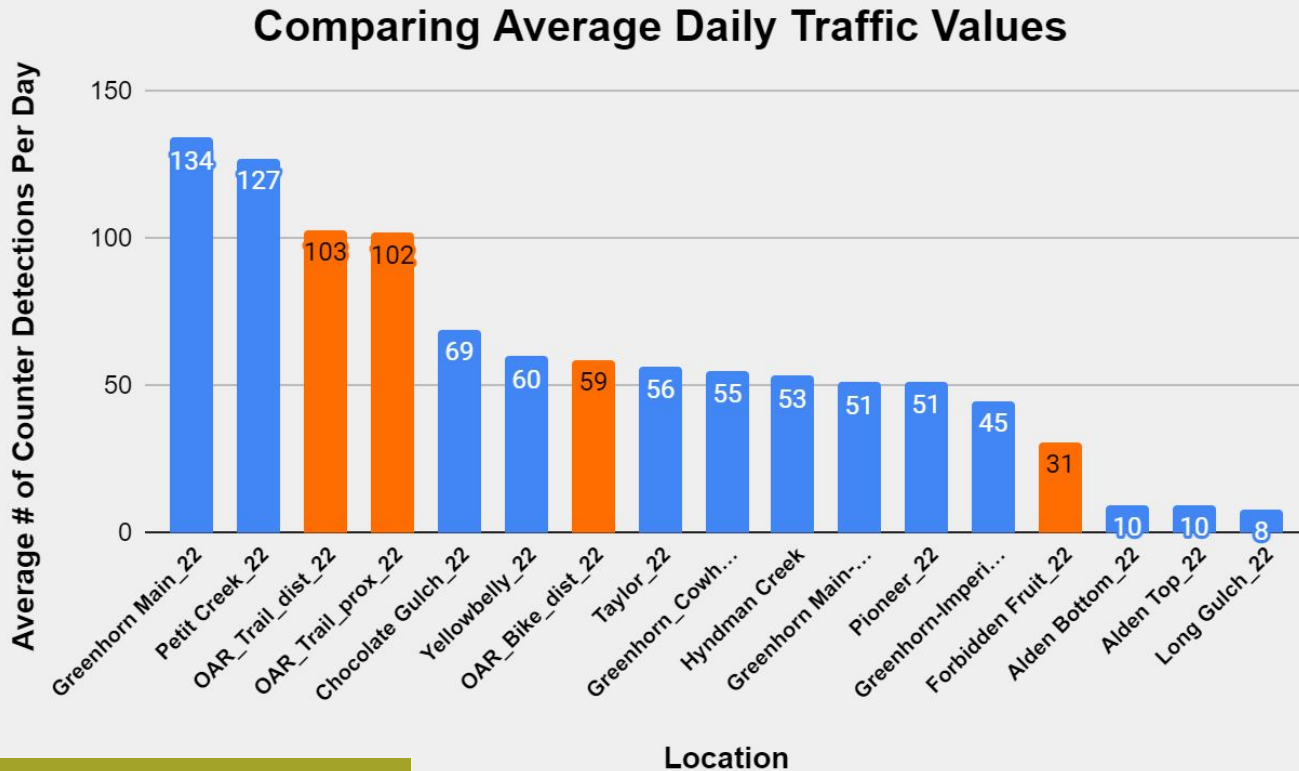Peak Season, Total Approximate Traffic: **5,328 Detections**

Assumption: "All users travel out and back on Hyndman Creek Tr. #166"

Estimated number of individual user days, Peak Season:

2664

ADAMS GULCH (Old Adams Road Tr. #146 - inner and outer; Forbidden Fruit Tr. #159)

Comparing Average Daily Traffic Values

Average # of Counter Detections Per Day

Location	Value
Greenhorn Main_22	134
Petit Creek_22	127
OAR_Trail_dist_22	103
OAR_Trail_prox_22	102
Chocolate Gulch_22	69
Yellowbelly_22	60
OAR_Bike_dist_22	59
Taylor_22	56
Greenhorn_Cowh...	55
Hyndman Creek	53
Greenhorn Main-...	51
Pioneer_22	51
Greenhorn-Imperi...	45
Forbidden Fruit_22	31
Alden Bottom_22	10
Alden Top_22	10
Long Gulch_22	8

2021 Avg. Daily Detection: 156

Note: Adams Gulch averages include data following trailhead closure
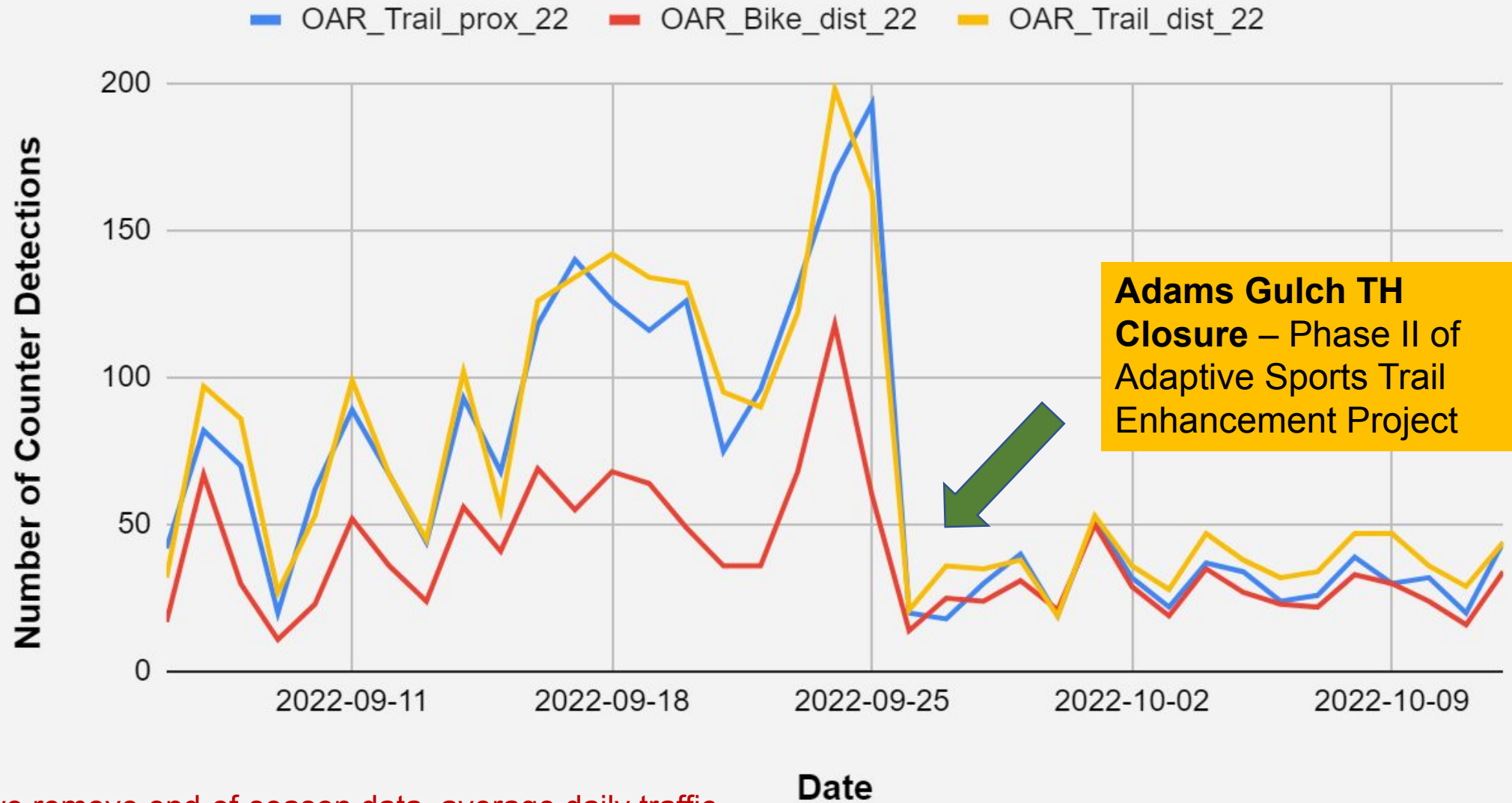

Forbidden Fruit:
- Only open to non-moto bike traffic
- Only open to 1-way travel (1 detection=1 user day)
- Counter placed at beginning of new "Low Hanging Fruit Section"

End-of-Season Daily Trail Traffic on Old Adams Road

— OAR_Trail_prox_22   — OAR_Bike_dist_22   — OAR_Trail_dist_22

Adams Gulch TH Closure – Phase II of Adaptive Sports Trail Enhancement Project

Number of Counter Detections

200
150
100
50
0

2022-09-11   2022-09-18   2022-09-25   2022-10-02   2022-10-09

Date

*If we remove end-of-season data, average daily traffic value only increases by 6-10 detections across sites, respectively ☐ **not a huge effect on totals***

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Interpretations for trail system traffic patterns, provided by trail monitoring data

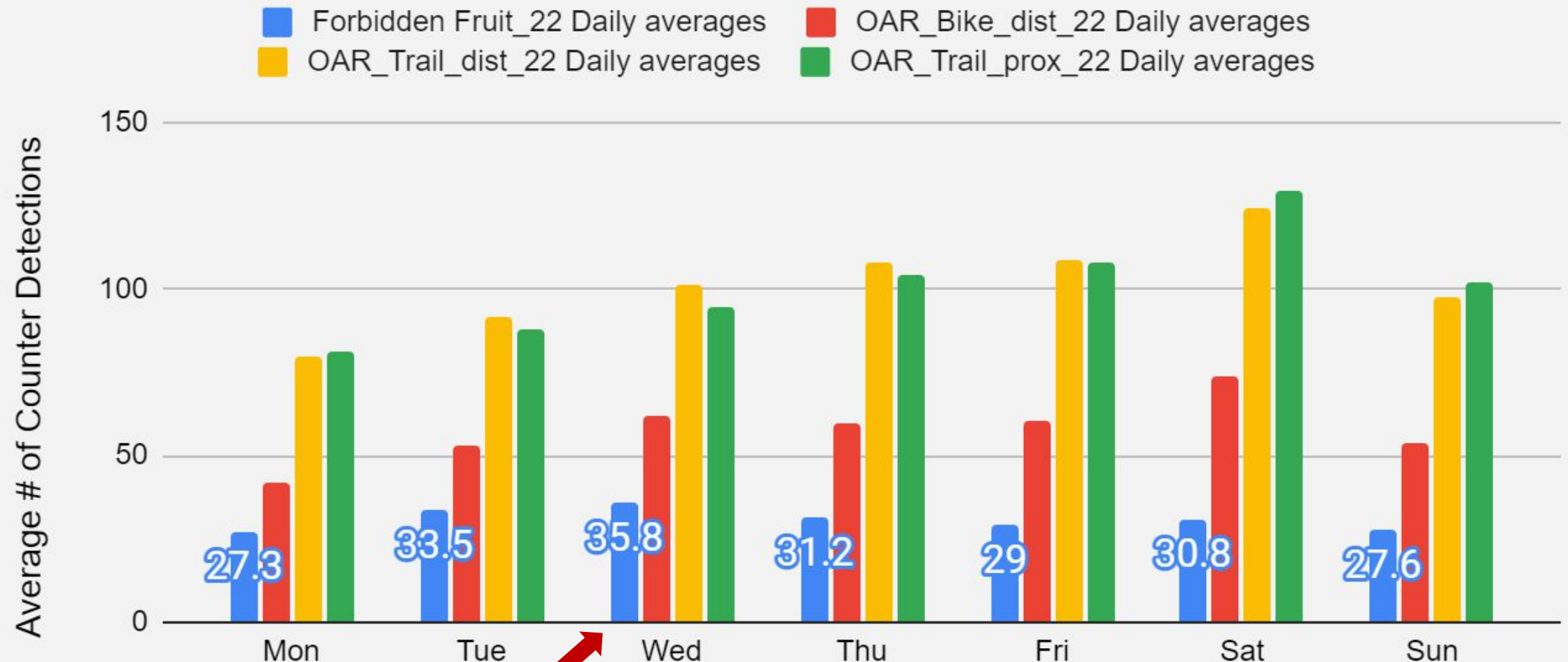## Adams Gulch Daily Trail Traffic - July 19th-August 7th, 2022

Legend: Forbidden Fruit_22, OAR_Bike_dist_22, OAR_Trail_dist_22, OAR_Trail_prox_22
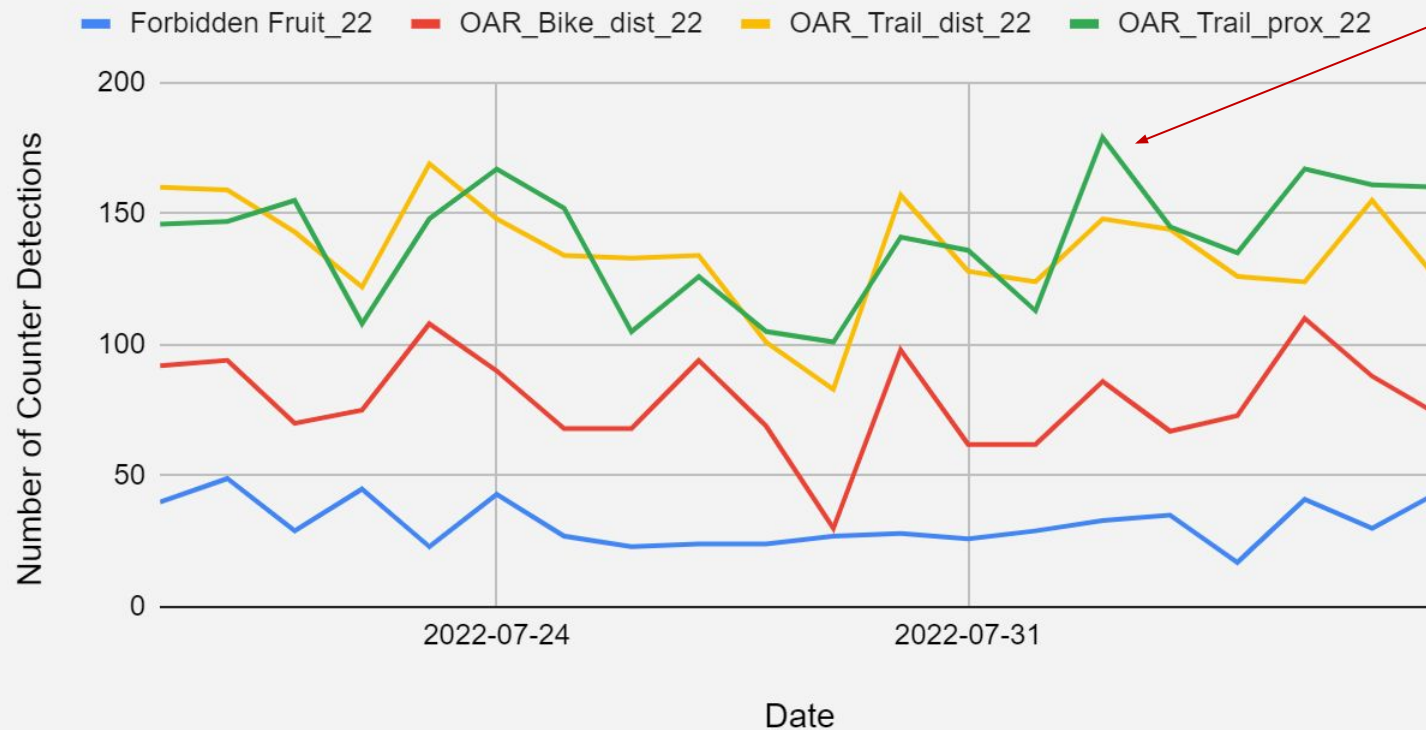
Possible indicator of higher "inner gulch" trail traffic

Looking to apply similar strategy at even further extents in future years ☐ **growing dataset and understanding**
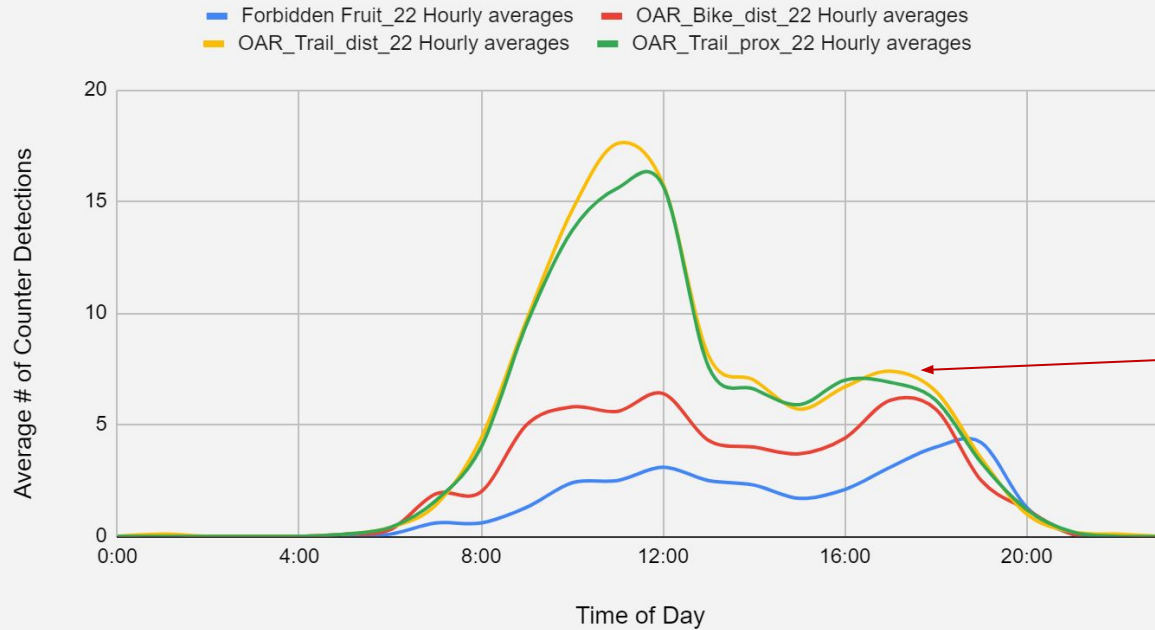
Adams Gulch 7-Day Trail Traffic Averages - Trail Monitoring 2022

Forbidden Fruit_22 Daily averages
OAR_Bike_dist_22 Daily averages
OAR_Trail_dist_22 Daily averages
OAR_Trail_prox_22 Daily averages

Forbidden Fruit: The **only location** whose highest 7-day average is **not on a Sat/Sun!**

Adams Gulch Weekday Hourly Trail Traffic - Trail Monitoring 2022

Legend:
- Forbidden Fruit_22 Hourly averages
- OAR_Bike_dist_22 Hourly averages
- OAR_Trail_dist_22 Hourly averages
- OAR_Trail_prox_22 Hourly averages

Hourly trail traffic patterns at Adams Gulch – Weekday vs. Weekend

Late afternoon/early evening rise on weekdays (post-work, post-school).

Forbidden Fruit has highest trail traffic average on Wednesdays

➕

Forbidden Fruit weekday hourly avg. peak occurs at 7PM

⬇

Forbidden Fruit use can be heavily attributed to those with quick, convenient access ☐ **WRV locals**

Adams Gulch Weekend Hourly Trail Traffic - Trail Monitoring 2022

Legend:
- Forbidden Fruit_22 Hourly averages
- OAR_Bike_dist_22 Hourly averages
- OAR_Trail_dist_22 Hourly averages
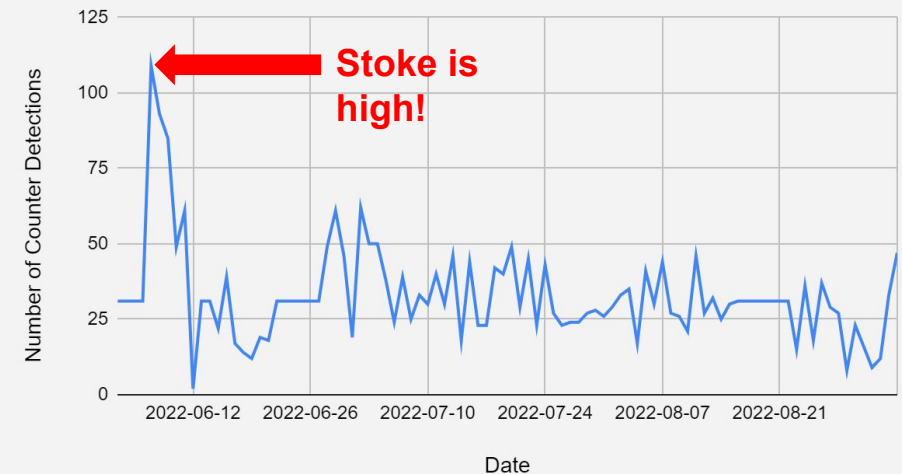- OAR_Trail_prox_22 Hourly averages
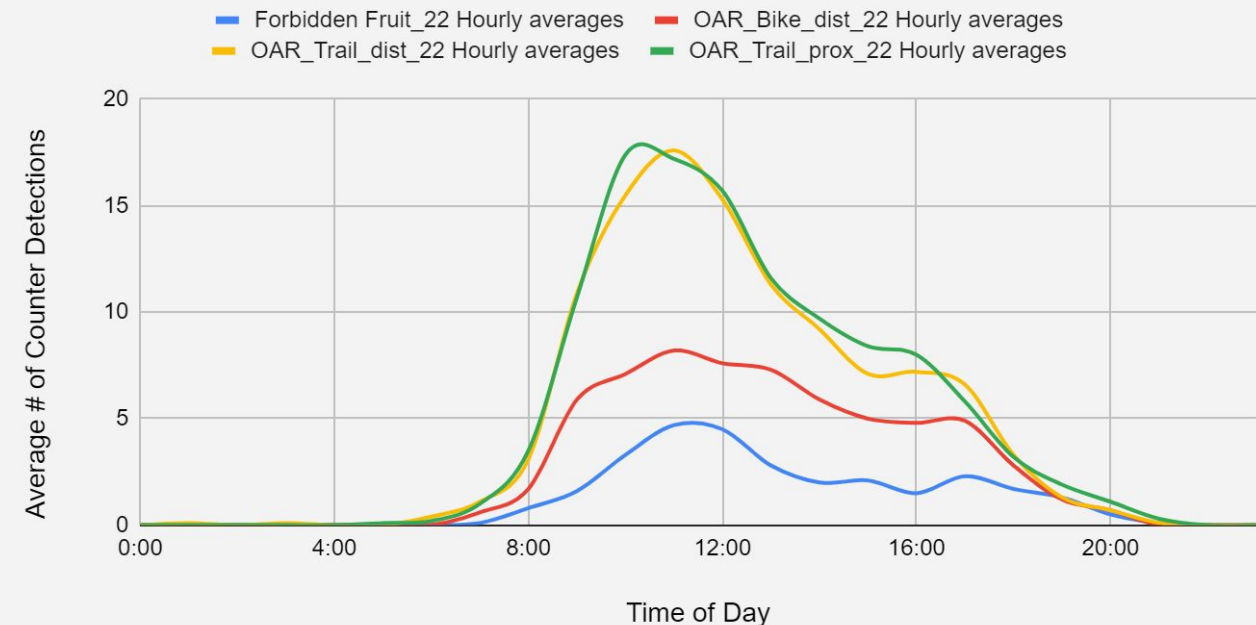
The Lifecycle of a Trail: Trail Monitoring on the new Forbidden Fruit Tr. #159

- Fresh trail □ how are folks engaging?

- Newly constructed trail is ROUGH – a lot of work and attention is needed at the beginning

- Ideal trail conditions take multiple seasons of steady use to be achieved

- Plan: keep monitoring use annually, include counters on upper section, increase volunteer trail work days (and keep riding!!)
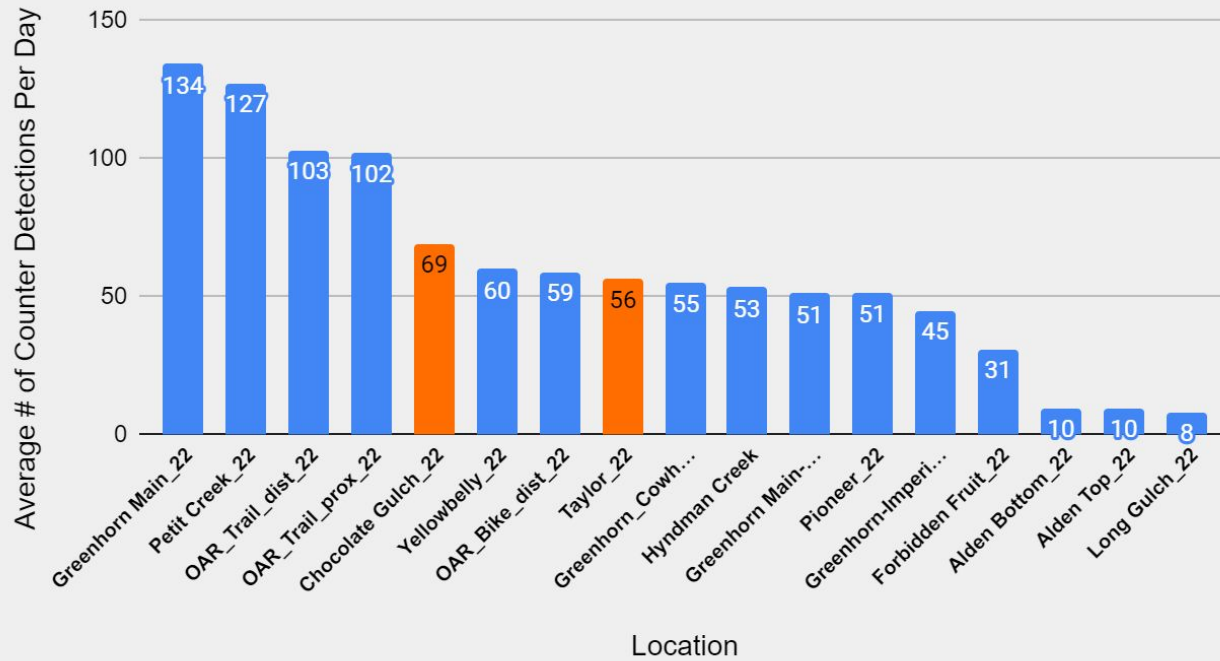

National Forest Foundation   HG HIGHER GROUND   WRTC

Adams Gulch Adaptive Sports Trail Enhancement Project
Sawtooth *National Forest*

Forbidden Fruit Daily Trail Traffic - Trail Monitoring 2022

Stoke is high!

TAYLOR CANYON TR. #324; CHOCOLATE GULCH TR. #312

Comparing Average Daily Traffic Values — Average # of Counter Detections Per Day by Location:
Greenhorn Main_22: 134, Petit Creek_22: 127, OAR_Trail_dist_22: 103, OAR_Trail_prox_22: 102, Chocolate Gulch_22: 69, Yellowbelly_22: 60, OAR_Bike_dist_22: 59, Taylor_22: 56, Greenhorn_Cowh...: 55, Hyndman Creek: 53, Greenhorn Main...: 51, Pioneer_22: 51, Greenhorn-Imperi...: 45, Forbidden Fruit_22: 31, Alden Bottom_22: 10, Alden Top_22: 10, Long Gulch_22: 8

# of Days with Data:
Taylor: 75
Chocolate: 117
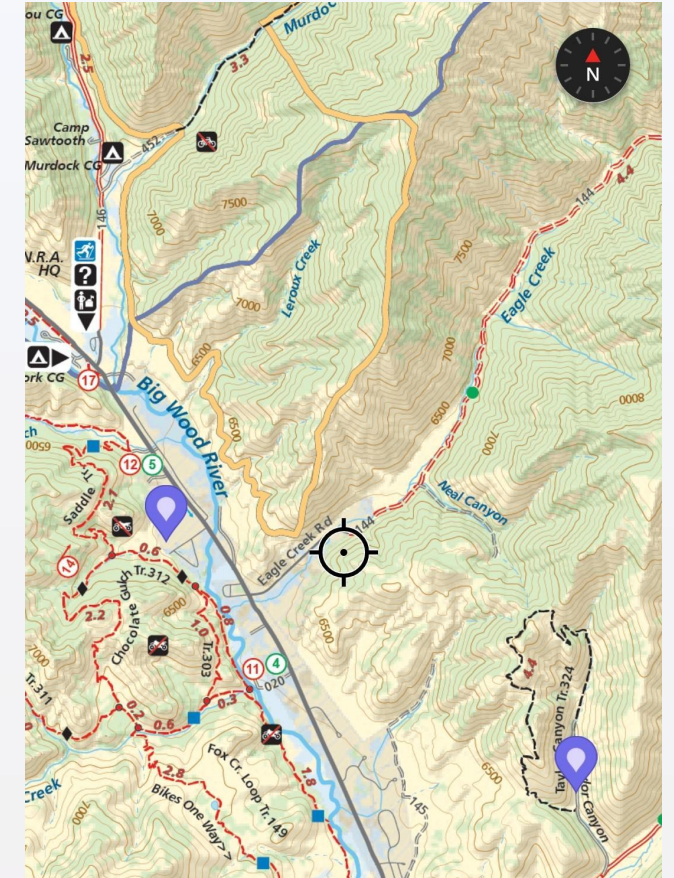
Highest recorded count:
Taylor: **226** (June 17th)
Choco Gulch: **222** (July 4th)

Chocolate Gulch and Taylor Canyon 7-Day Trail Traffic Averages
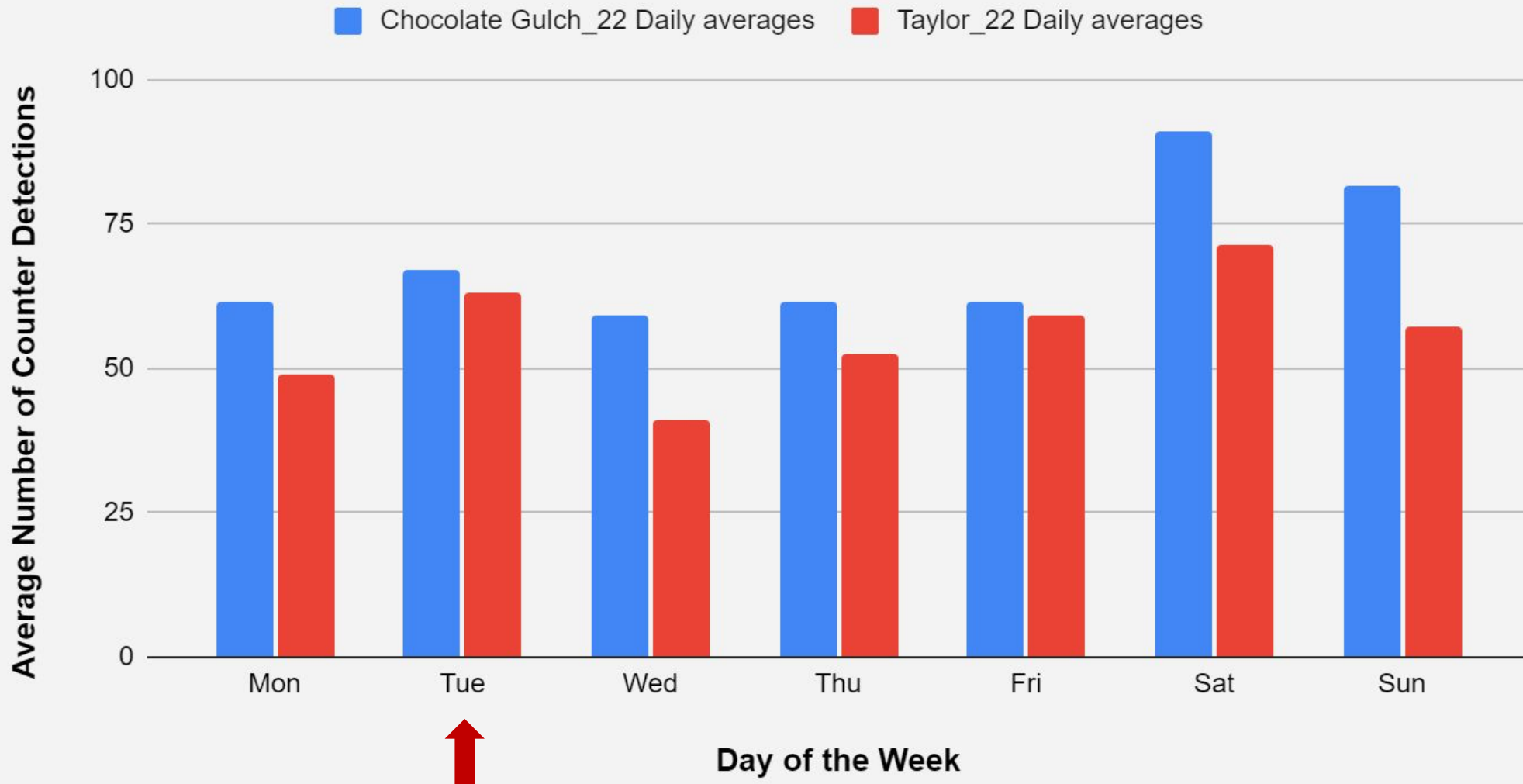
Notable that the next highest day for average use
for Taylor Canyon is a Tuesday/midweek

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PIONEER CABIN TRAILHEAD:
PIONEER CABIN TR. #122, LONG GULCH TR. #123

of Data Days: **83**

Comparing Average Daily Traffic Values
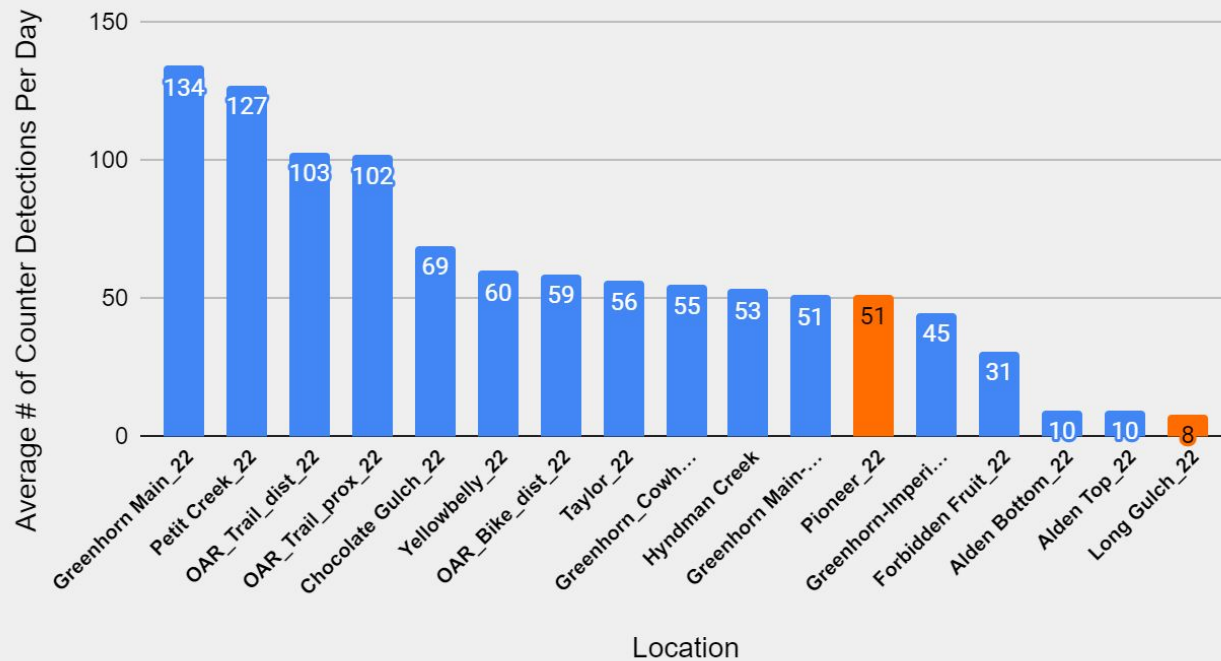
Highest recorded count:
Pioneer: **147** (June 25th)
Long Gulch: **37** (June 3rd)

2021 Average Daily Traffic for Pioneer: **81**
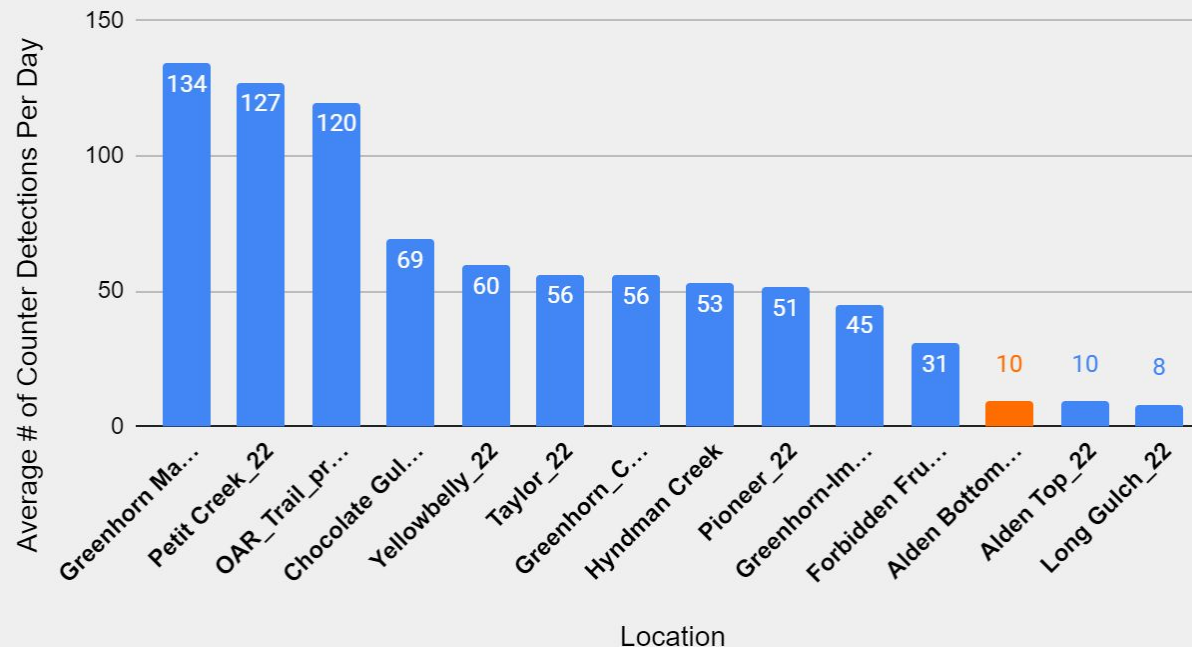
ALDEN GULCH TR. #144 (2 counters, top and bottom)

Average Daily Detections:
10*

# of Data Days:
99

Alden Counter in 2021:
Average Daily Detections: 172 (!)
Highest recorded count: 297 (!)

Comparing Average Daily Traffic Values

Average # of Counter Detections Per Day vs. Location

- Greenhorn Ma...: 134
- Petit Creek_22: 127
- OAR_Trail_pr...: 120
- Chocolate Gul...: 69
- Yellowbelly_22: 60
- Taylor_22: 56
- Greenhorn_C...: 56
- Hyndman Creek: 53
- Pioneer_22: 51
- Greenhorn-Im...: 45
- Forbidden Fru...: 31
- Alden Bottom...: 10
- Alden Top_22: 10
- Long Gulch_22: 8

Highest recorded count:
39 (July 30th)

Lowest recorded count:
0 (4+ days in June)

*Results represent only the "Alden Bottom_22" data, unless otherwise specified.

Comparing Trail Traffic at Top and Bottom of Alden Gulch, 2022
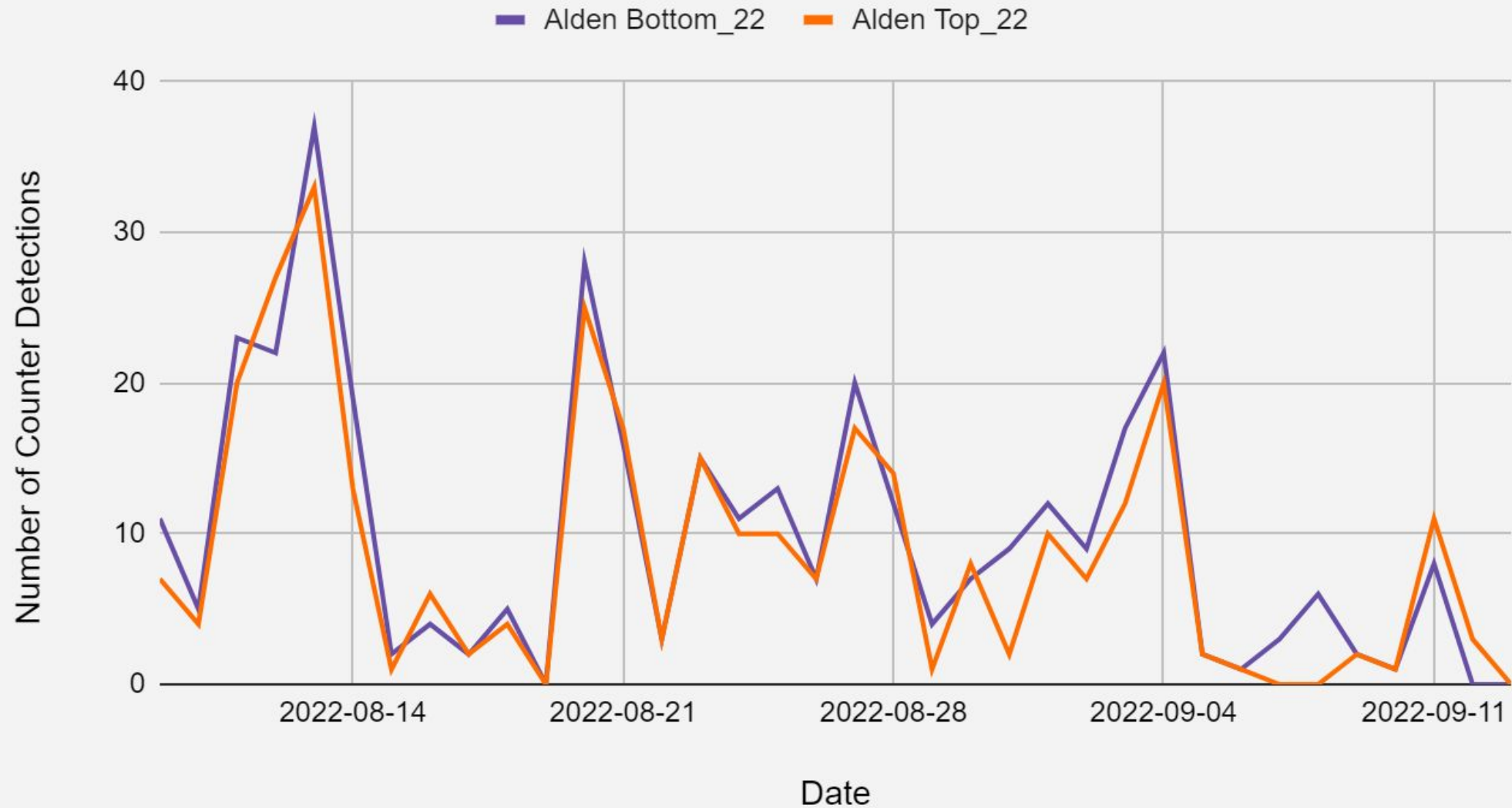
Alden Gulch Average Hourly Trail Traffic
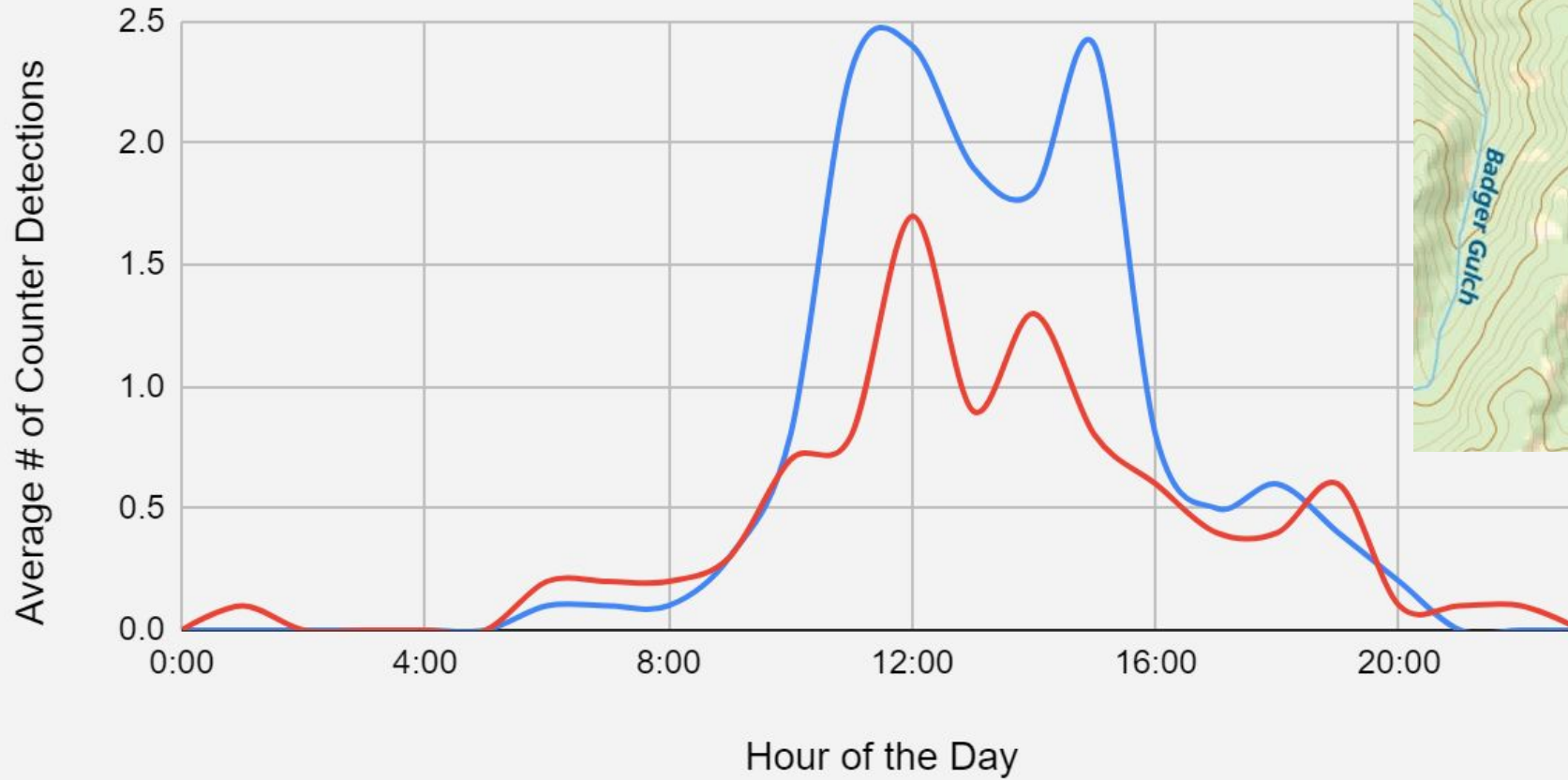
ALDEN GULCH TR. #144 (2 counters, top and bottom)

Using "Average Daily Detections" value for days with no data...
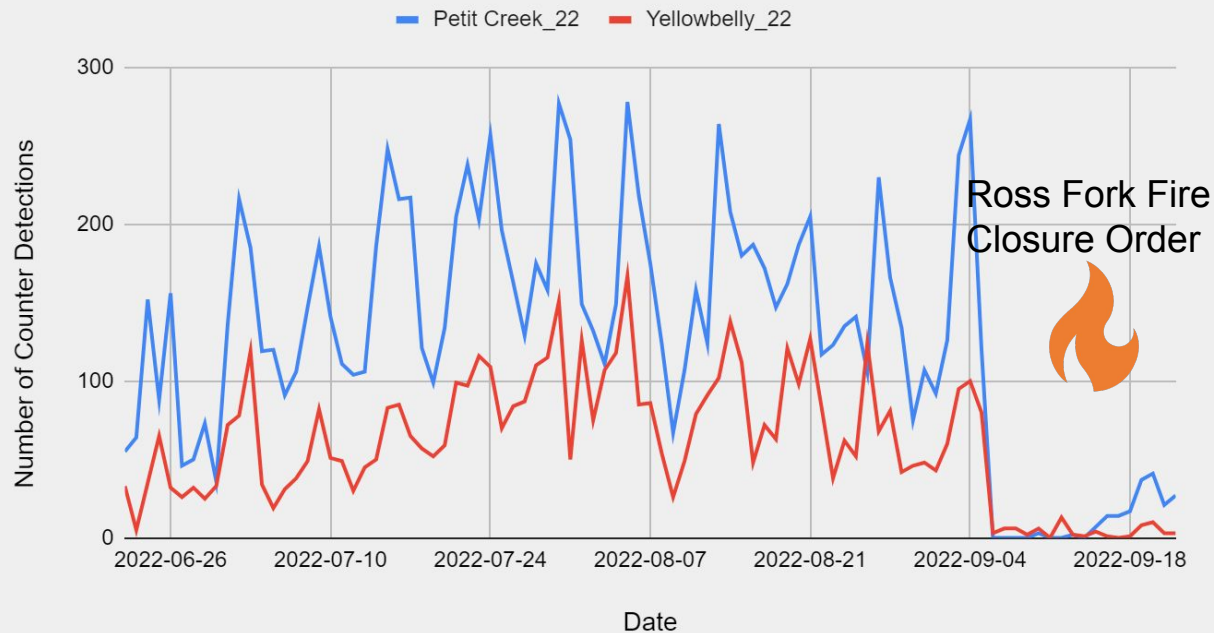
Peak Season, Total Approximate Traffic:

1,063 Detections*

TIN CUP TRAILHEAD: PETIT CREEK TR. #095, YELLOWBELLY TR. #096

# of Data Days: **93**

Tin Cup Trailhead - Daily Trail Traffic

Petit Creek_22 — Yellowbelly_22

Ross Fork Fire Closure Order

Highest recorded count:

Petit: **278** (August 5th)

Yellowbelly: **167** (August 5th)

Average Daily Traffic values, not including any data after September 4th closure order:

Petit: **154**

Yellowbelly: **72**

(slight rise)

Using "Average Daily Detections" value for days with no data...

Peak Season, Total Approximate Traffic:
- Petit: **14,572 Detections**
- Yellowbelly: **6,868 Detections**

Assumption: "Most detections at the Yellowbelly counter can be attributed to Alice-Toxaway loop users."

Conclusion: "Around half of all detections at the Petit Creek trail counter are overnight loop trail users (counted 1x) and half are day users/non-loop users (counted 2x)."

Estimated number of individual user days at Tin Cup Trailhead, Peak Season:
10,720
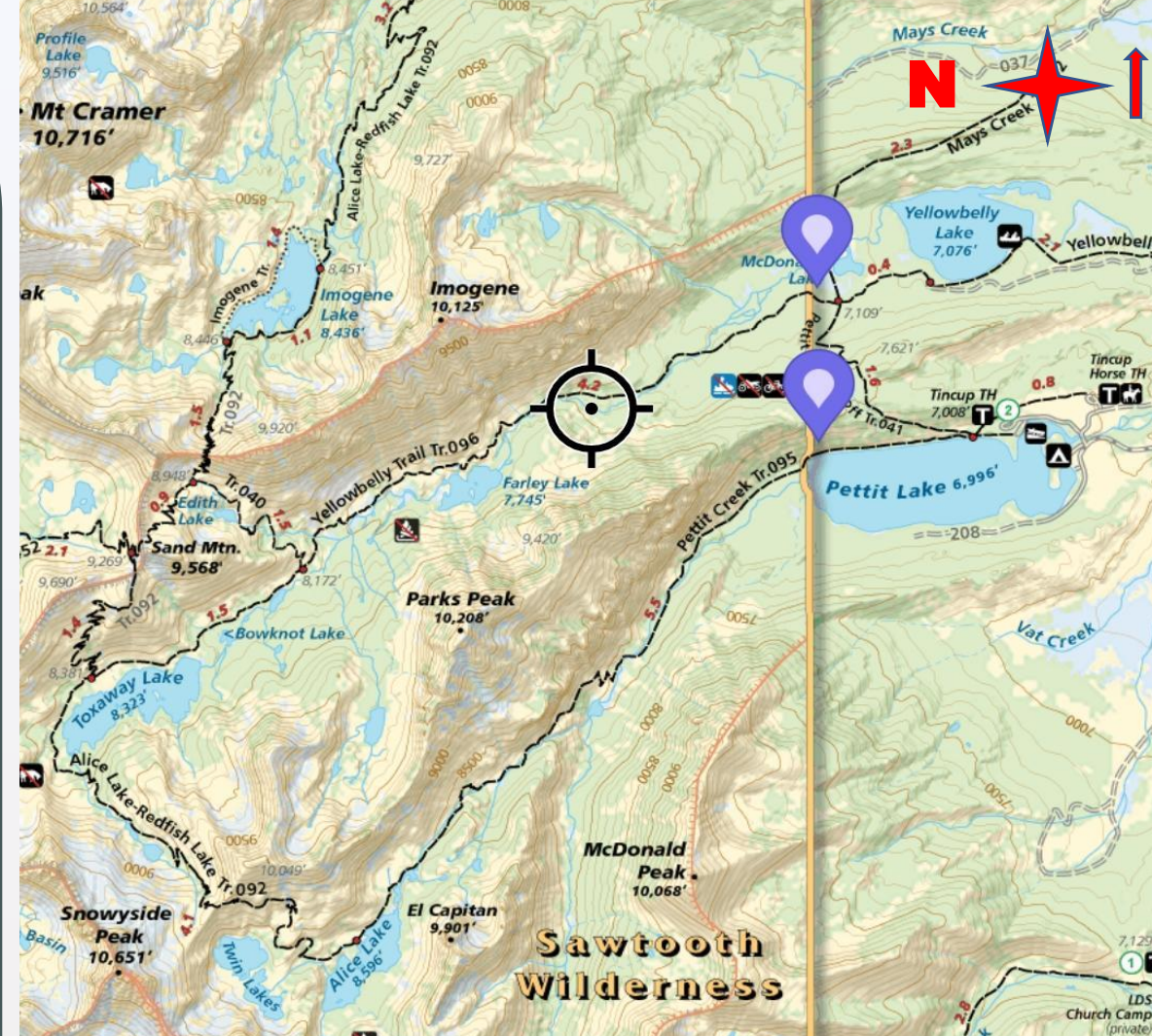
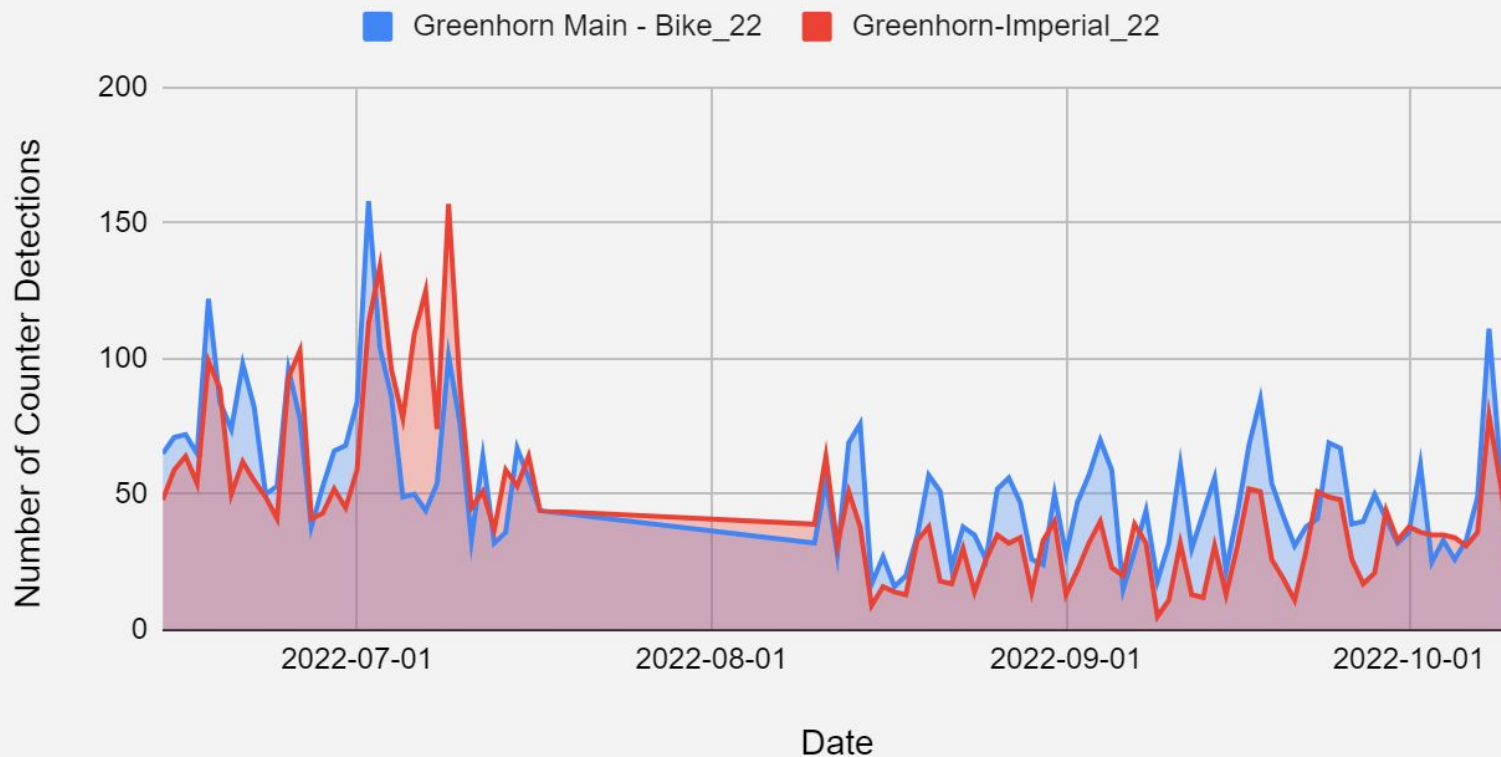# New Equipment and New Understandings

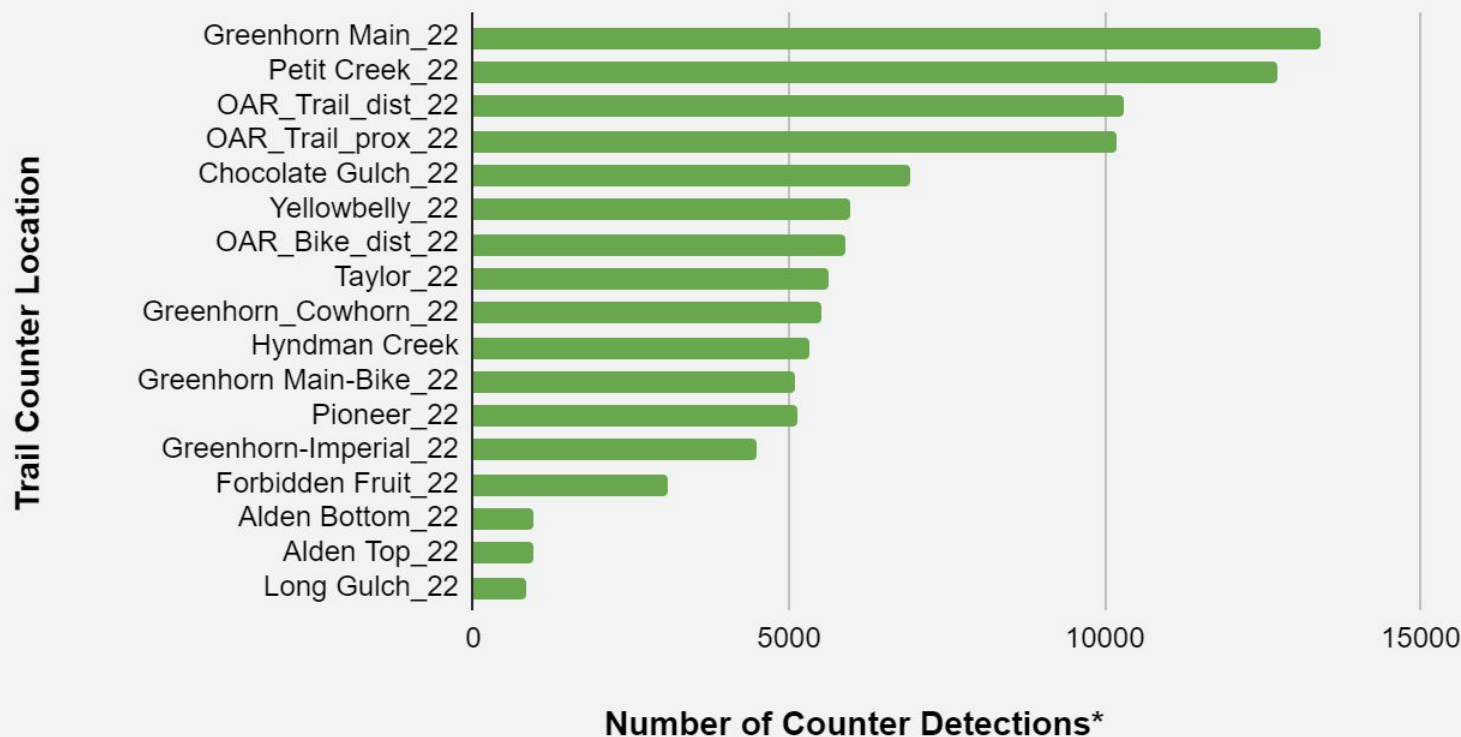# User Group Breakdowns, Unlocked by TRAFx

Bikes=37% of GH trail traffic, on avg.

Bikes = 54% of Old Adams Rd. trail traffic, on avg.

Proportion of Bike Traffic vs. All Traffic - Imperial Gulch 2022

■ Greenhorn Main - Bike_22   ■ Greenhorn-Imperial_22

2022 Peak Season Totals and Year-to-Year Comparisons

2022 Peak Season Trail Traffic Totals

Trail Counter Location (top to bottom):
- Greenhorn Main_22
- Petit Creek_22
- OAR_Trail_dist_22
- OAR_Trail_prox_22
- Chocolate Gulch_22
- Yellowbelly_22
- OAR_Bike_dist_22
- Taylor_22
- Greenhorn_Cowhorn_22
- Hyndman Creek
- Greenhorn Main-Bike_22
- Pioneer_22
- Greenhorn-Imperial_22
- Forbidden Fruit_22
- Alden Bottom_22
- Alden Top_22
- Long Gulch_22

X-axis: Number of Counter Detections* (0, 5000, 10000, 15000)

*Average Daily Total
X
100 Days in Peak Season

=102,426 Detections
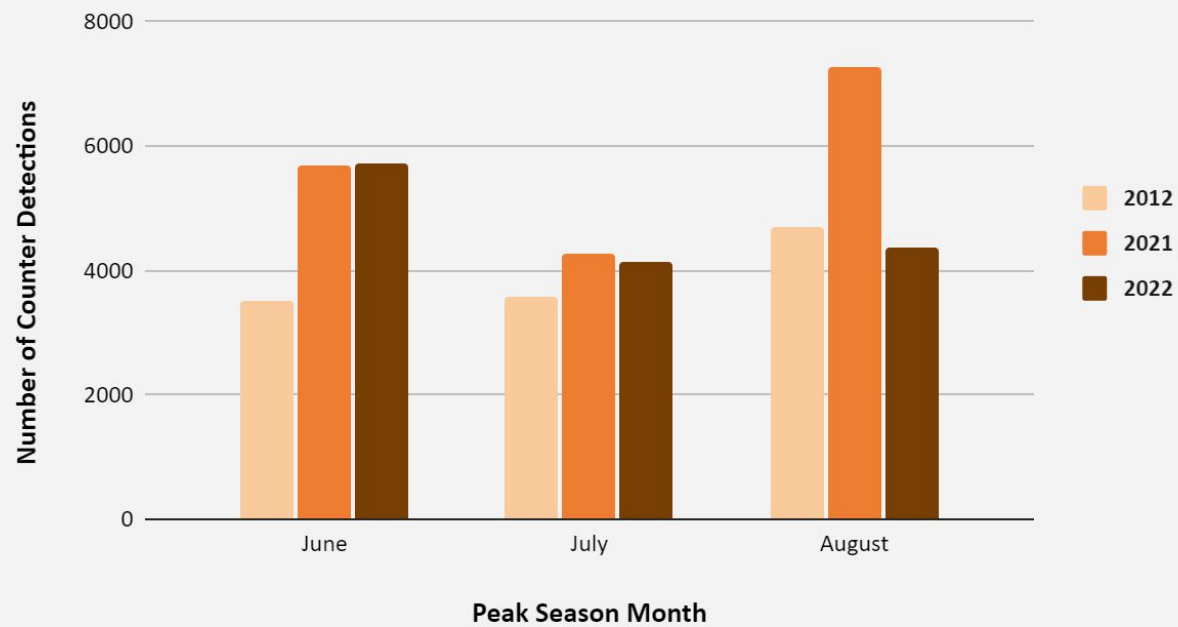(Across all sites)

80% "Out and Back" rate:
61,455 user days

50% "Out and Back" rate:
76,819 user days
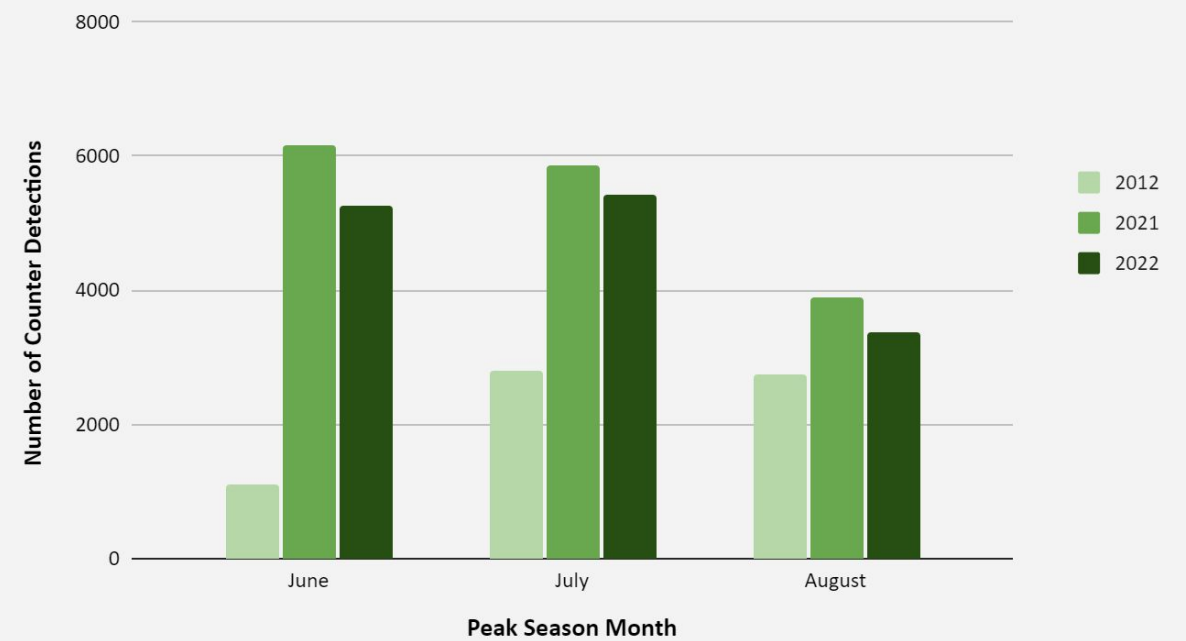
20% "Out and Back" rate:
92,183 user days

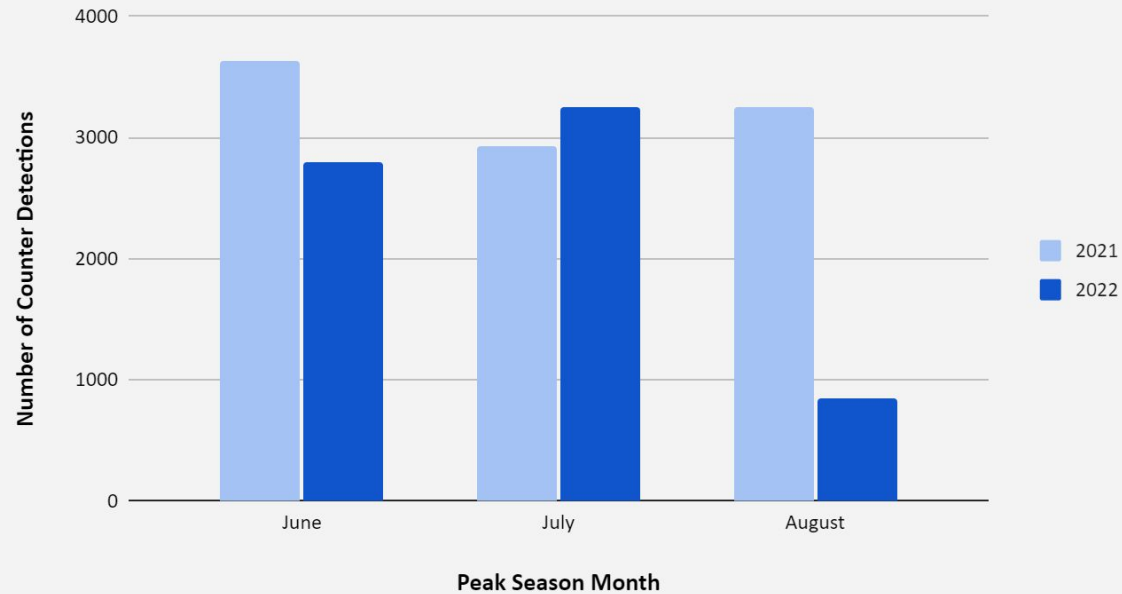Adams Gulch* Year-to-Year Trail Traffic Comparisons
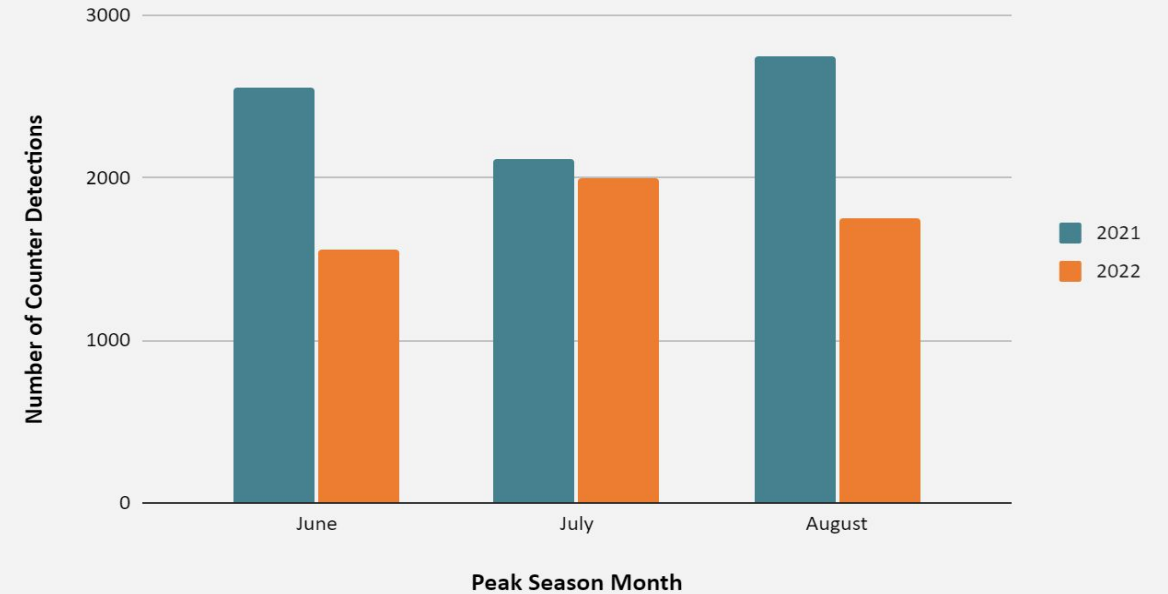
Greenhorn* Year-to-Year Trail Traffic Comparisons

*Comparing "OAR" site data ONLY

*Comparing "Greenhorn-Main" site data ONLY

Taylor Canyon, 2021-2022 % Change in Total Peak Season Detections: **-30%**

Pioneer Cabin, 2021-2022 % Change in Total Peak Season Detections: **-28%**

Impacts of Trail Monitoring Data

2021

 ERC ENVIRONMENTAL RESOURCE CENTER
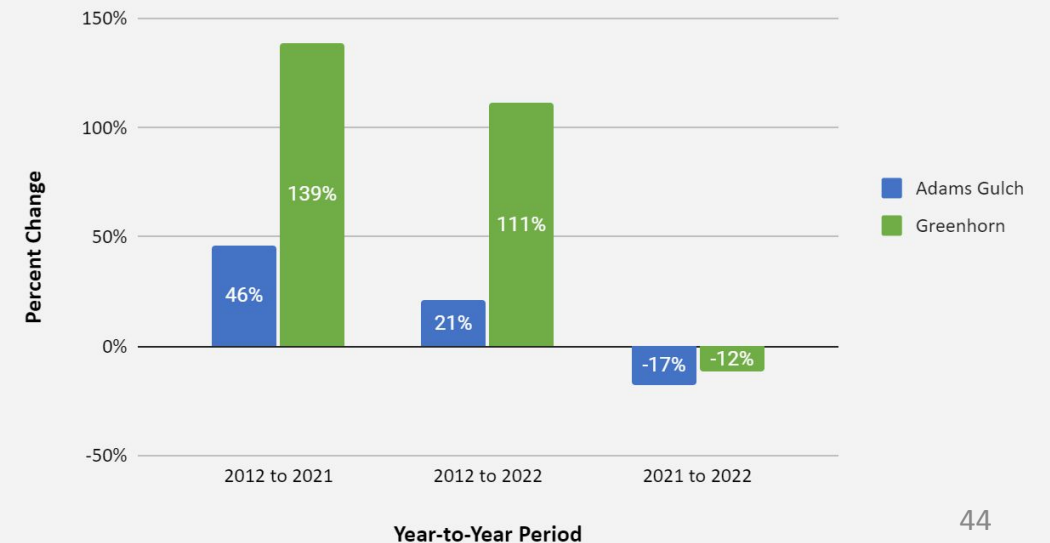
Partnership established

 WRTC — WOOD RIVER TRAILS COALITION IDAHO

Data collected and shared

New dog waste bin added

Ongoing partnership, collaboration, communication

Norton Creek TH

Taylor Canyon TH

Greenhorn TH

Alden Gulch TH

Pioneer Cabin TH

 FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

 WRTC — WOOD RIVER TRAILS COALITION IDAHO

Idaho Mountain Express

Popular trails could see upgrades, added capacity

Forest Service seeking comments on trails expansion and new trailhead parking by Oct. 21

By TONY TEKARONIAKE EVANS Express Staff Writer   Sep 21, 2022   💬 1

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Questions? Send a message to
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And THANK YOU Ketchum Community Library for hosting!