



July 21, 2021

To: Fred Taylor

Cowlitz County Sheriff's Office

From: Paul M Burke

Virtual Search LLC

PO Box 15907

Reno, NV 89511

Re: Brian Yang Search

Fred:

Today , at 0715 hrs, you contacted me regarding the search for Brian Yang. The purpose of the call was to see if I and other Virtual Search Analysts would be able to offer assistance or support for the search.

Virtual Search Planning is a process of determining a subject's location (usually within the first operational period) through the rapid analysis of approximately thirteen points of information. More on that later.

1. Analysis

Probability	Event	Investigative Effort
High Probability	Yang was injured while on a long distance run in the search area. He is likely immobile and unresponsive due to a fall of significance. At this time he could be viable and will need immediate medical care.	Examine trail intersections and routes <i>within the</i> 50% probability zone and in Segment E , and those areas indicated in Green on the <u>attached mapping</u> . (Seg a, A-1) Examine all fall lines and at the bottom of these locations. Examine routes associated with these locations in YDS Class 1-3 (Grade I-III) See Conclusion below <a href="#">Yosemite Decimal System - Wikipedia</a>
Medium Probability	Yang has become lost within the environment due to disorientation. Less likely given his experience and his ability to use his cell phone (if coverage	Expand the search area out to 4.0 Mikes (75%+ for Hikers from the IPP) examine YDS

	exists). Additionally, Yang’s experience would likely include basic navigational skills allowing him to find his location and self - recover. He may have also fallen in one of the lake systems but the likelihood of serious injury is remote.	routes in classes I-III within this area,
Low Probability	Yang’s loss was the subject of criminal actions. There is no open source information or evidence to indicate this.	Monitor financial and legal actions regarding the subject. Monitor social media.

2. Subject Data:

Brian Yang is a 25 year old Asian male adult, images available through open source appears him to be fit and in good health. There is no indications that he has any physical or emotional diagnosis’. Recent photographs (see below) fixes his physical description at 68”, 165 lbs, black hair, brown eyes. He is reportedly wearing a red shirt, black running shorts, blue shoes with a blue hydropack for water.”



3. Medical / Psychological / Medications:



There is no medical, psychological, or medication history data available in this case. There is no indication there are any significant issues regarding health. Subject is very fit and is a long distance cross country runner.

4. Subject Category:

Subject is classified as a **Hiker (568 cases)/Runner(14 Cases)**, Mountainous Temperate Terrain. Statistical Data regarding this class and type is: **25% found 0.7 / 0.9 miles from the IPP, 50% at 1.9 / 1.7 miles, and 75% at 3.6 / 2.1 miles.** Subject has no other classifications.

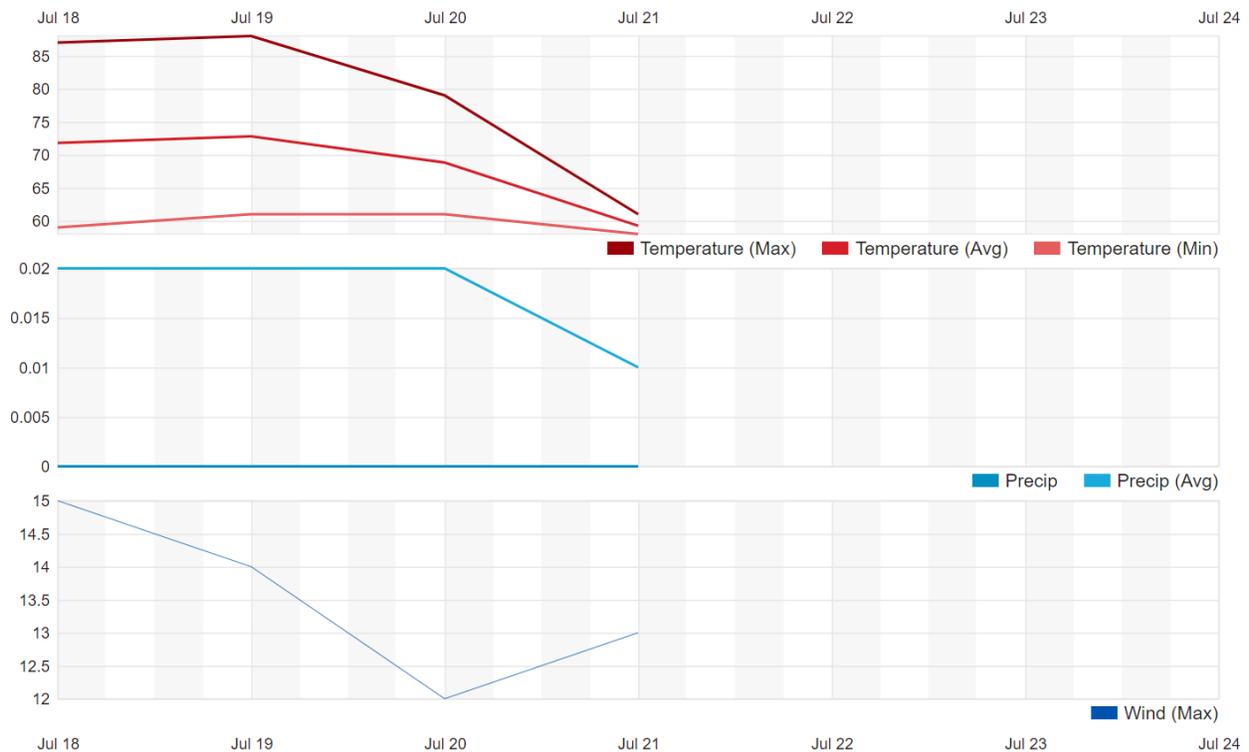
“Lost Person Behavior, Robert Koester, 2008, dbS Productions LLC

5. Social Media:

There is no social media data on Yang beyond what is being produced through news media and Cowlitz Co. S.O that is relevant to this incident.

6. Weather:

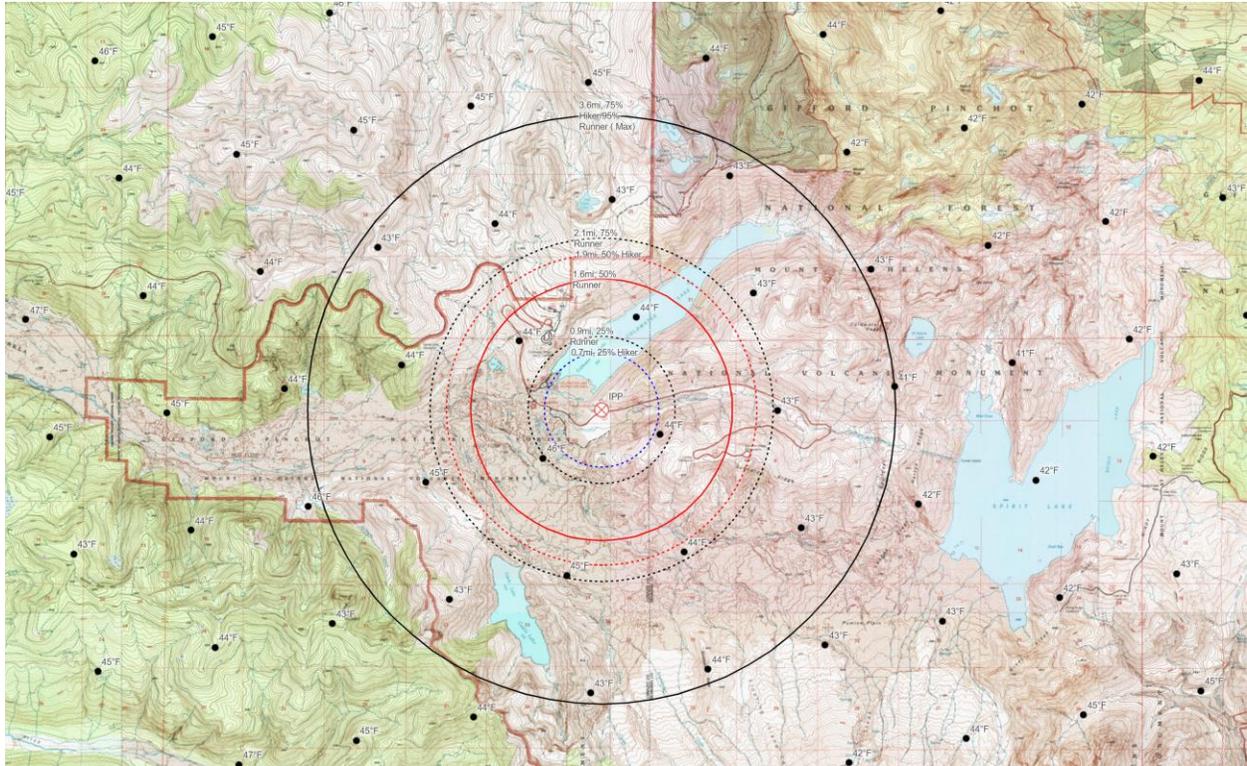
There was minor precipitation on July 18, tapering through July 21, Cloud cover and adverse weather are otherwise not impactful as they are reported. Yang should have sufficient protection for this type of weather, with winds also being insignificant to drive the subject to seek shelter. Elevation is not a factor for the possibilities of altitude sickness.



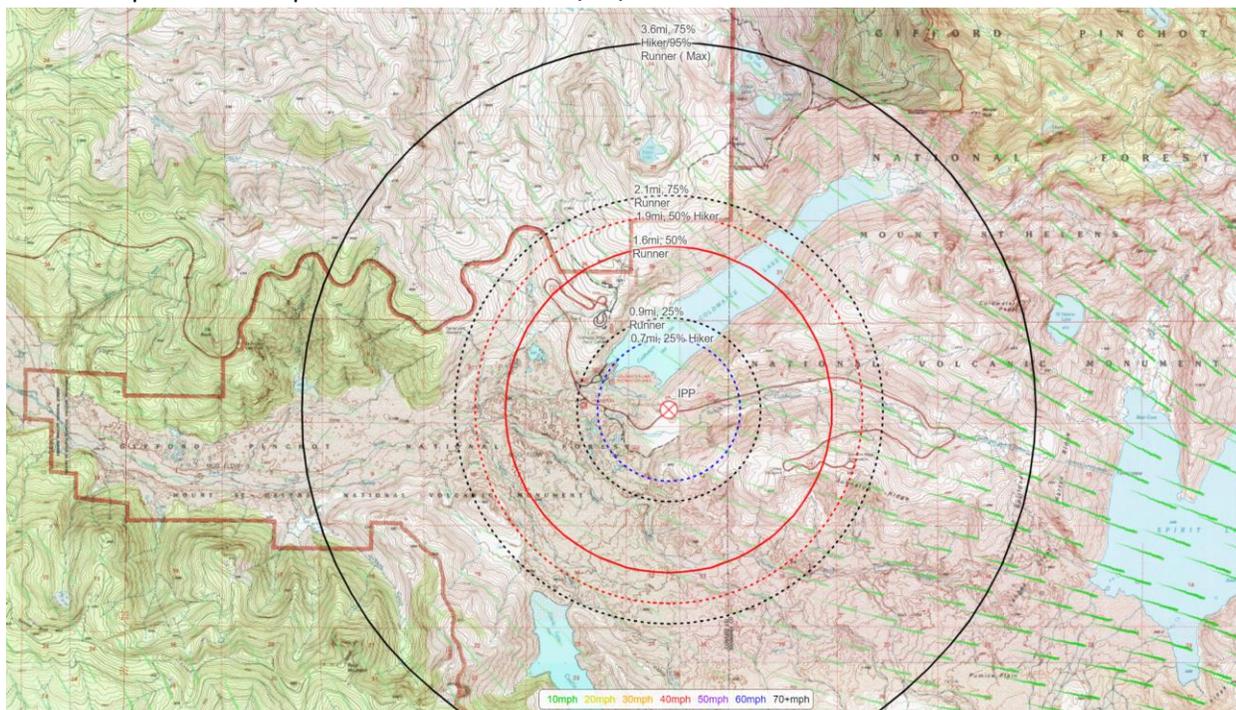
# Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)			Pressure (Hg)			Precipitation
	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	
Jul 18	87	71.8	59	57	51.3	44	72	51.4	22	15	7.8	0	30.1	30.1	30.0	0.00
19	88	72.8	61	55	51.1	49	68	49.0	26	14	7.4	3	30.1	30.1	30.0	0.00
20	79	68.8	61	56	52.9	47	78	58.6	33	12	7.3	0	30.2	30.1	30.0	0.00
21	61	59.3	58	50	48.9	48	75	68.5	62	13	7.1	3	30.1	30.1	30.1	0.00

Below is a plot of low temperatures for the search area 7/20/21:



Below is a plot of wind speed and direction for 7/20/21:



7. Terrain and IPP data:

Mapping Data is available at :

<https://www.sartopo.com/m/TH1G>

IPP/ ICS Coordinates and conversions:

**Latitude** 46 17.143' N  
**Longitude** 122 15.204 W

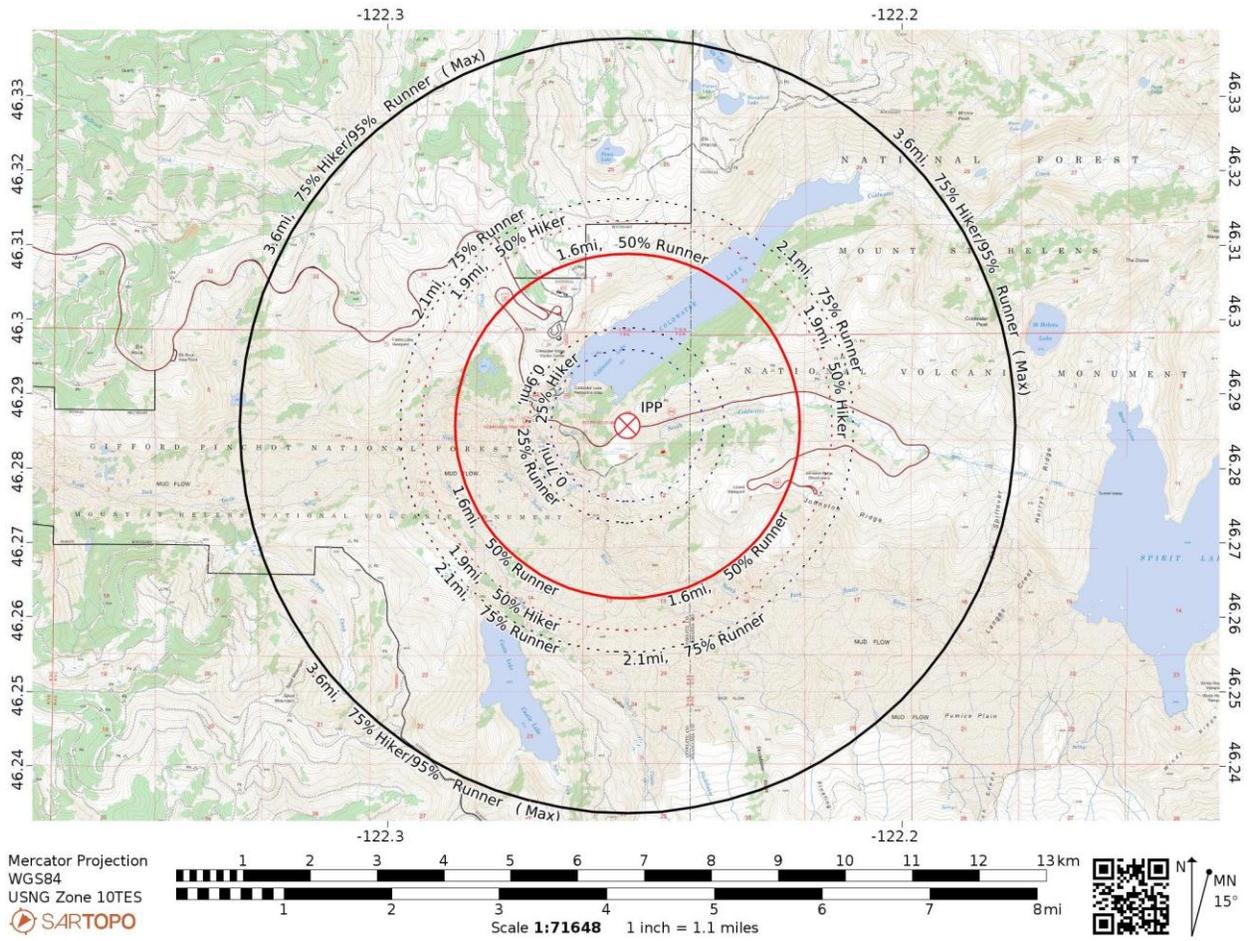
Calculated Values - based on Degrees Lat Long to seven decimal places.

<b>Position Type</b>	Lat Lon
<b>Degrees Lat Long</b>	46.2857167°, -122.2534000°
<b>Degrees Minutes</b>	46°17.14300', -122°15.20400'
<b>Degrees Minutes Seconds</b>	46°17'08.5800", -122°15'12.2400"
<b>UTM</b>	10T 557512mE 5126064mN
<b>UTM centimeter</b>	10T 557512.61mE 5126064.21mN
<b>MGRS</b>	10TES5751226064
<b>Grid North</b>	0.5°
<b>GARS</b>	116MJ19
<b>Maidenhead</b>	CN86UG98ON27
<b>GEOREF</b>	DKNB44791714



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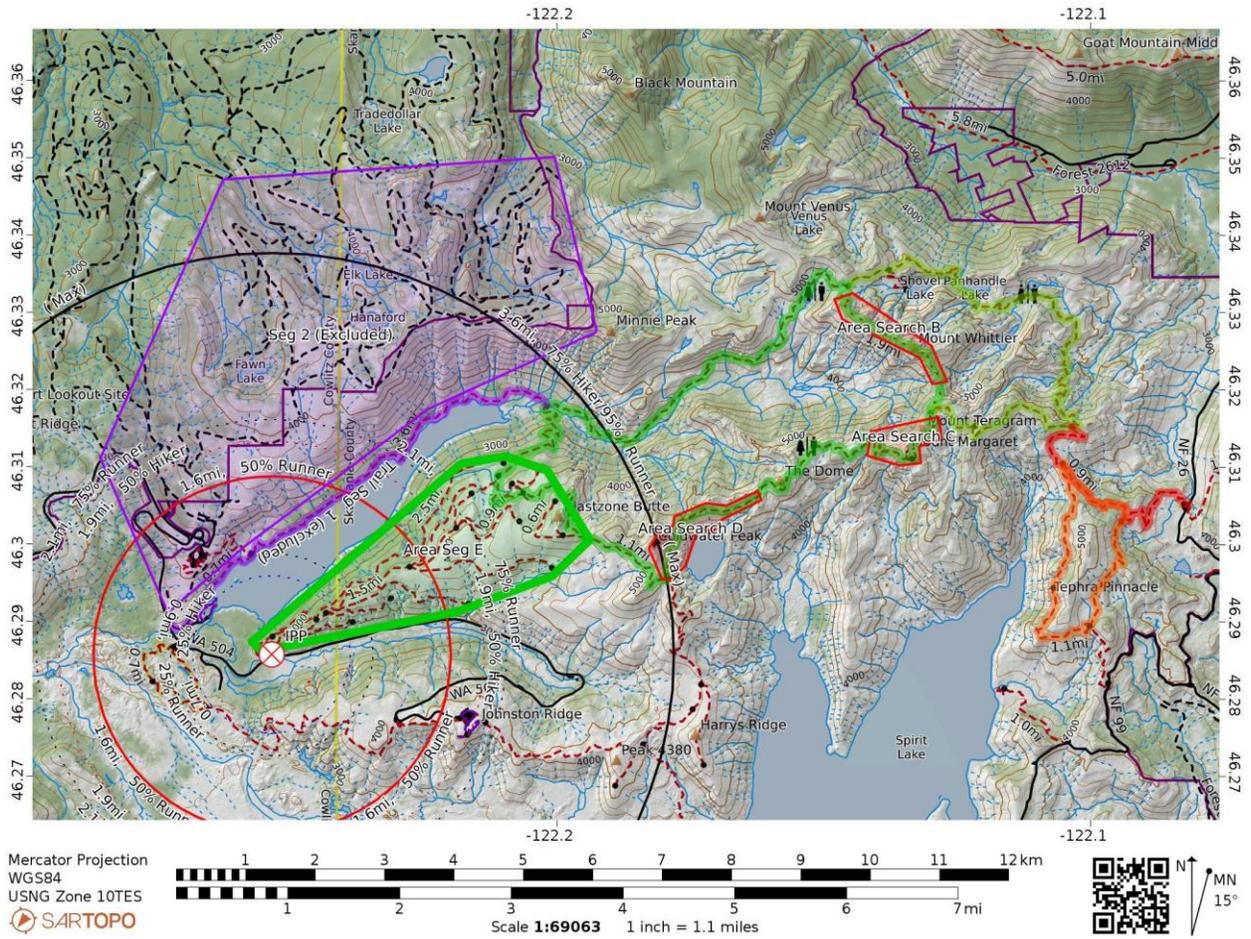
### Yang General Search Area with Statistical Data:



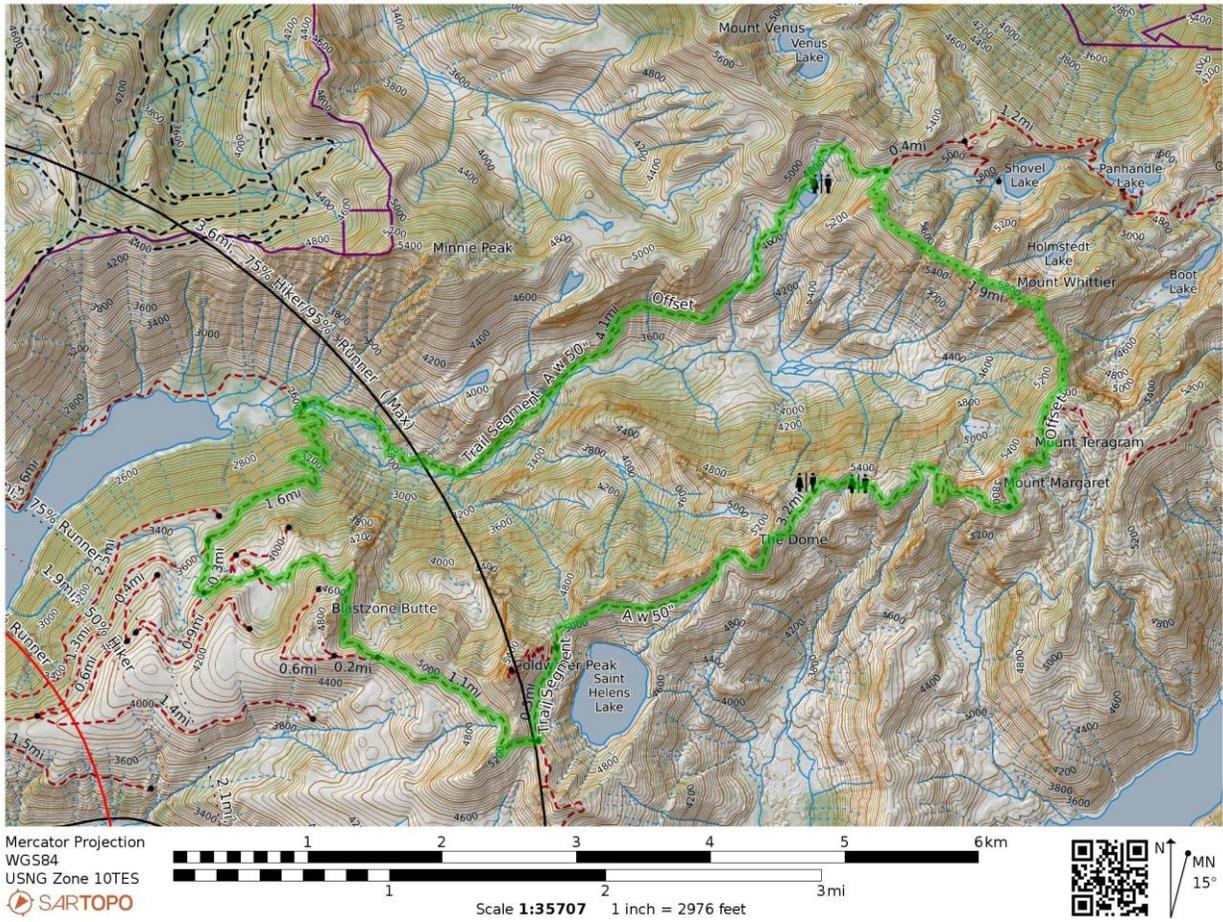


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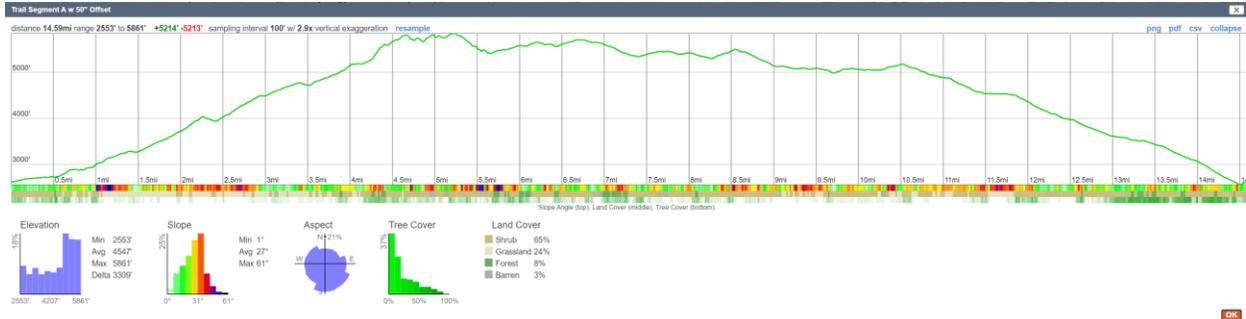
### Yang Search area Mapping-Final:





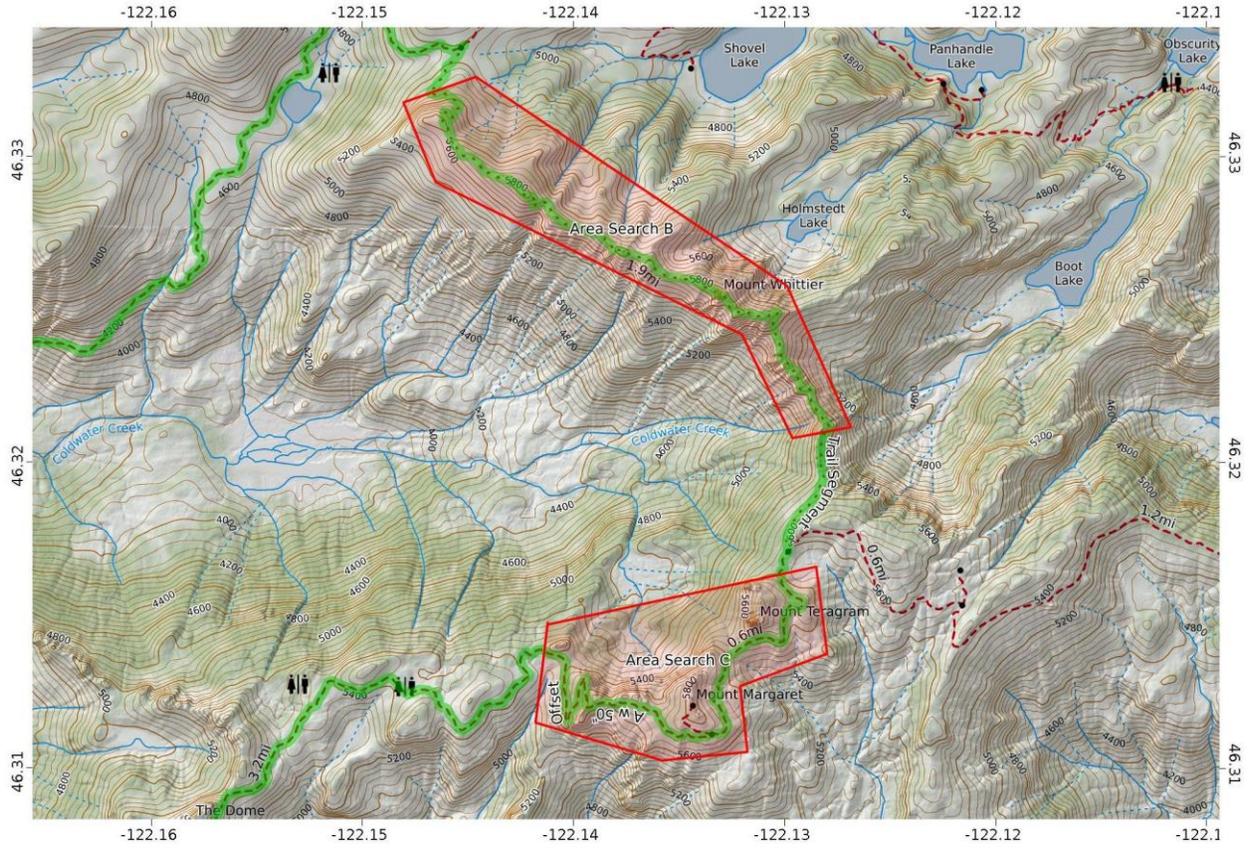


Trail Seg A Profile:





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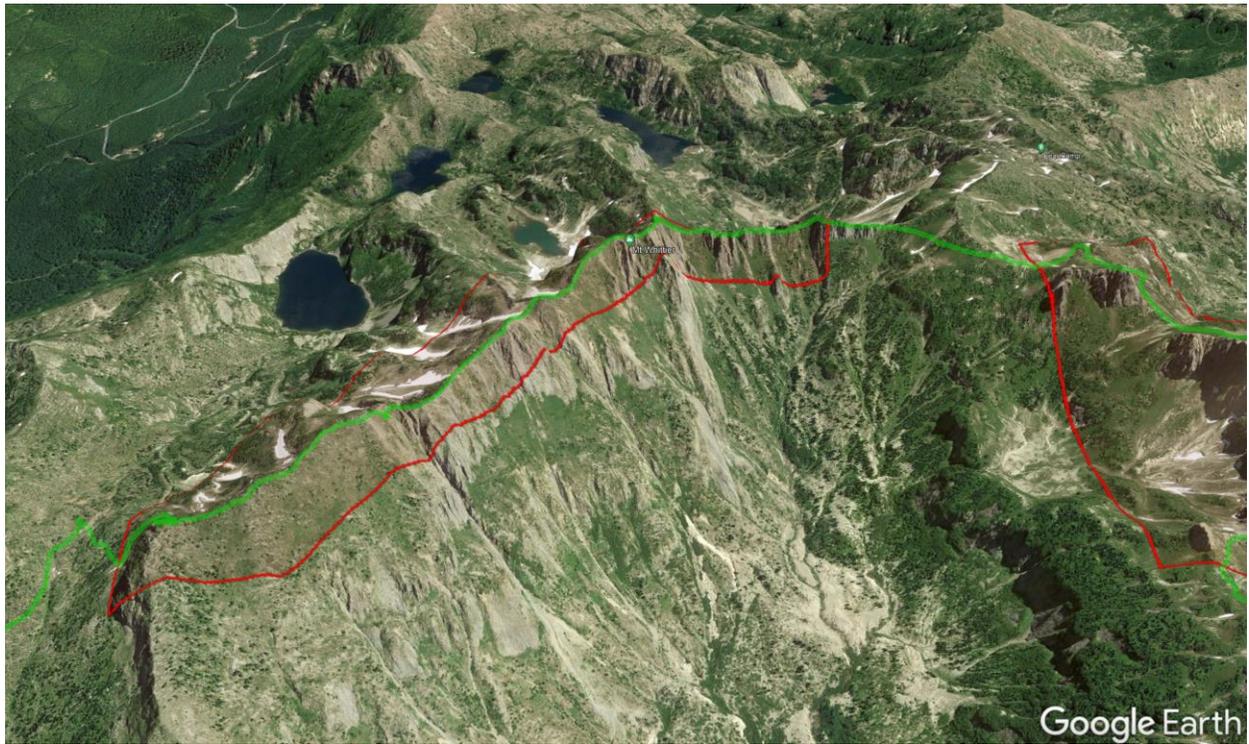
Mercator Projection  
WGS84  
USNG Zone 10TES  
SARTOPO



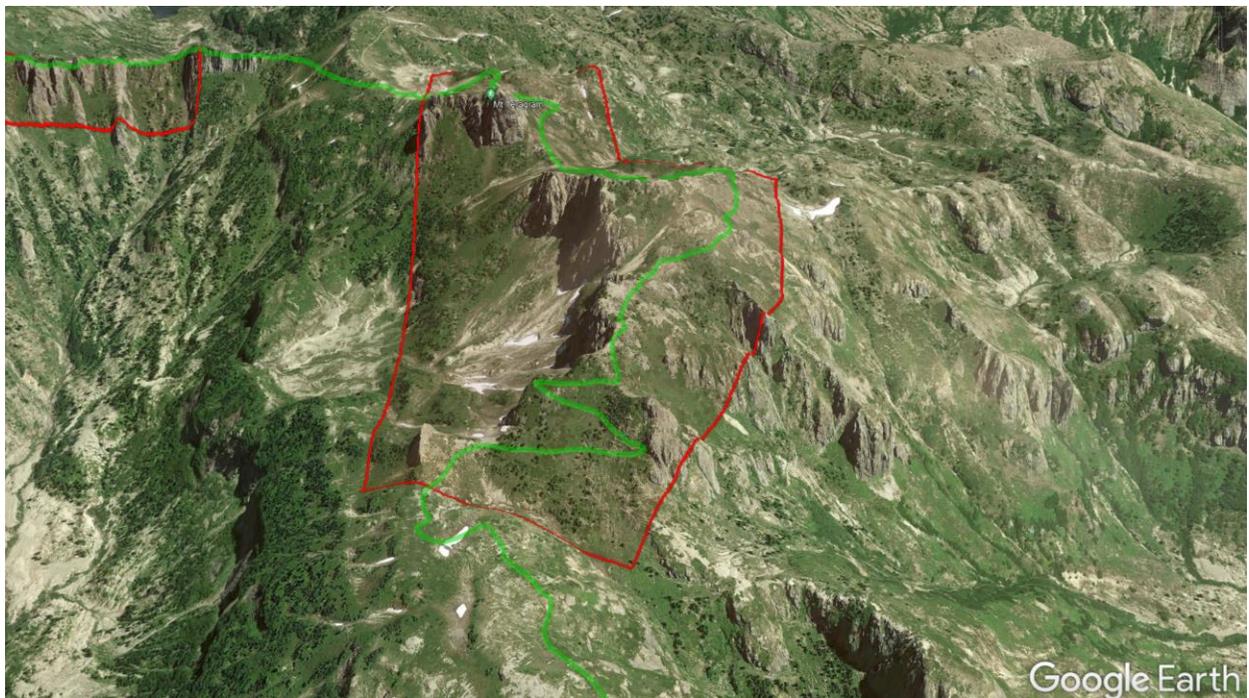


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Seg B on Google Earth

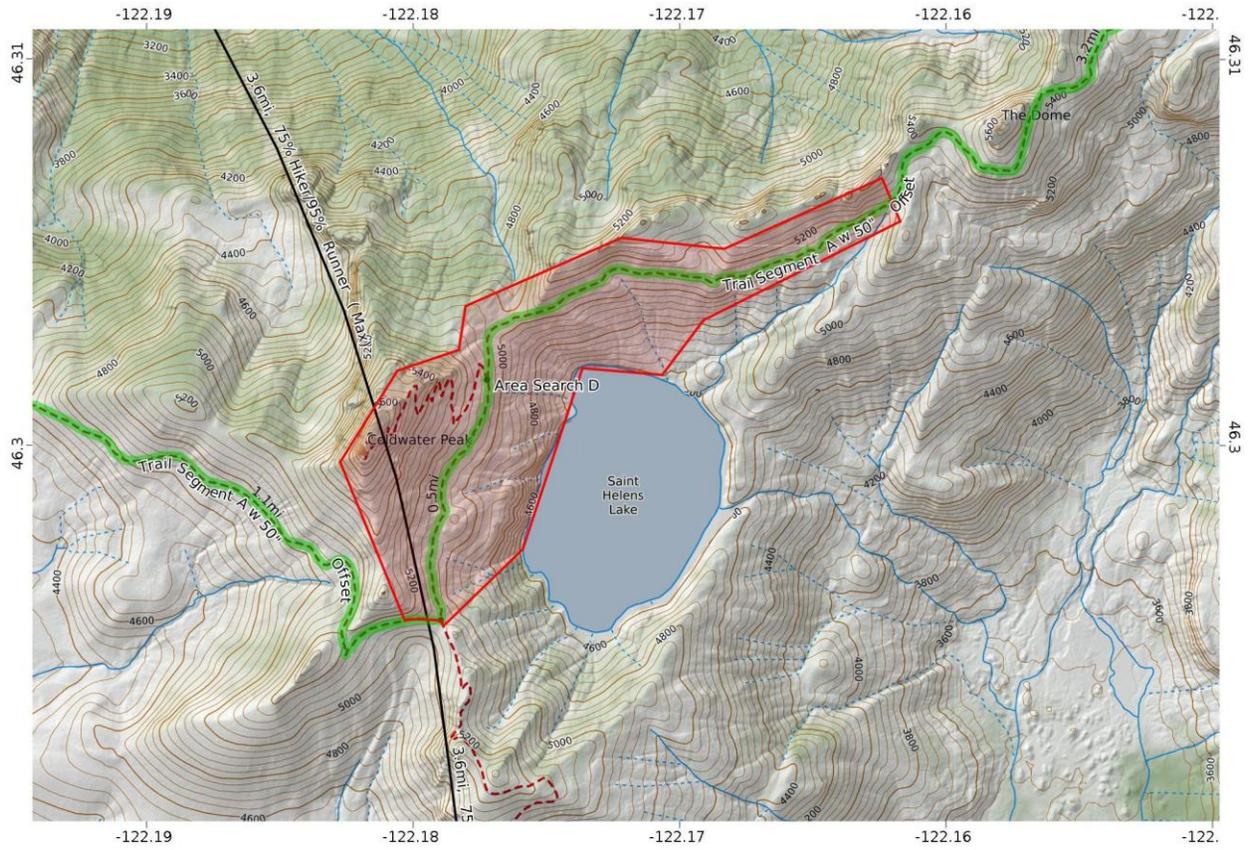


Seg C on Google Earth





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Mercator Projection  
WGS84  
USNG Zone 10TES  
SARTOPO

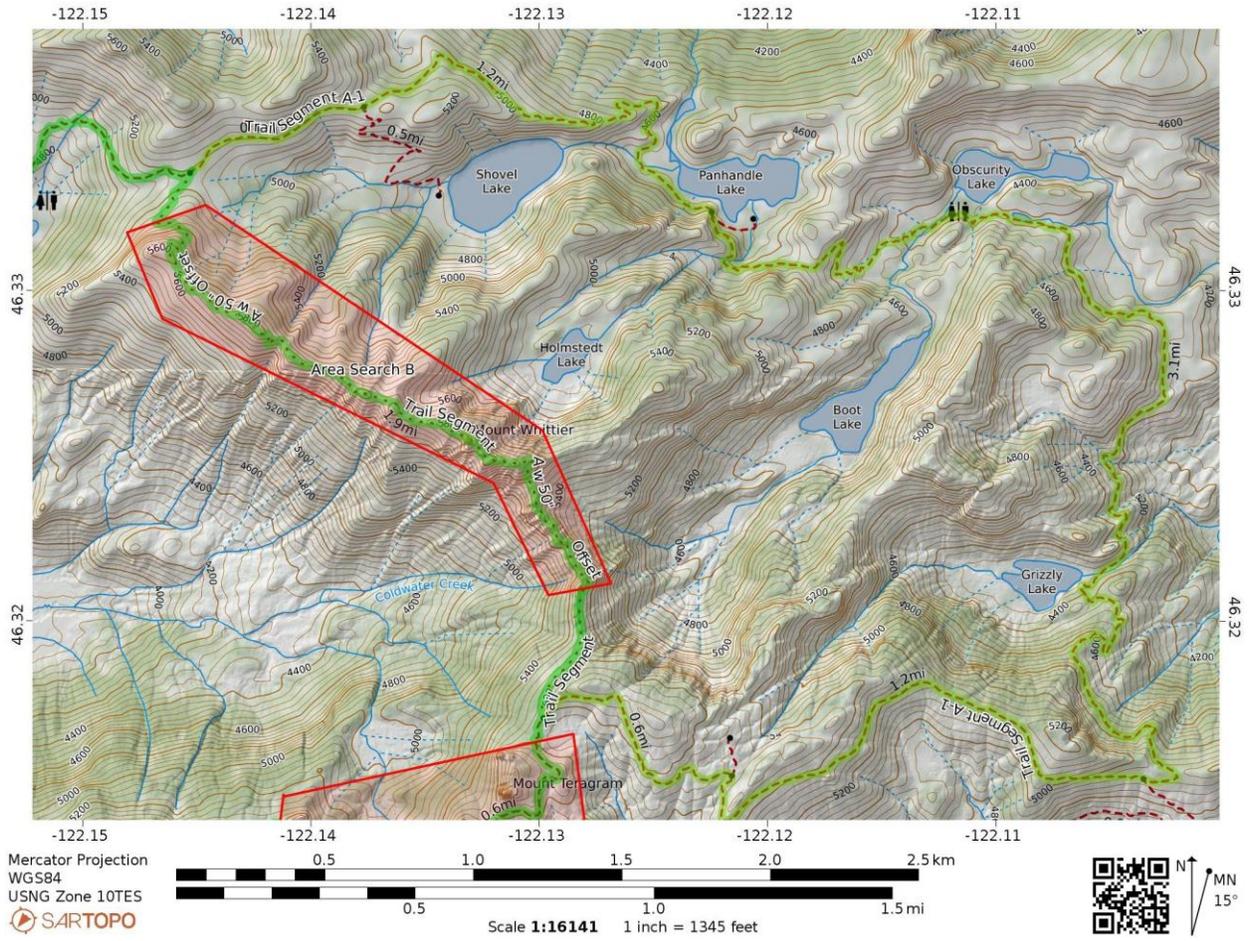


Segment D on Google Earth:

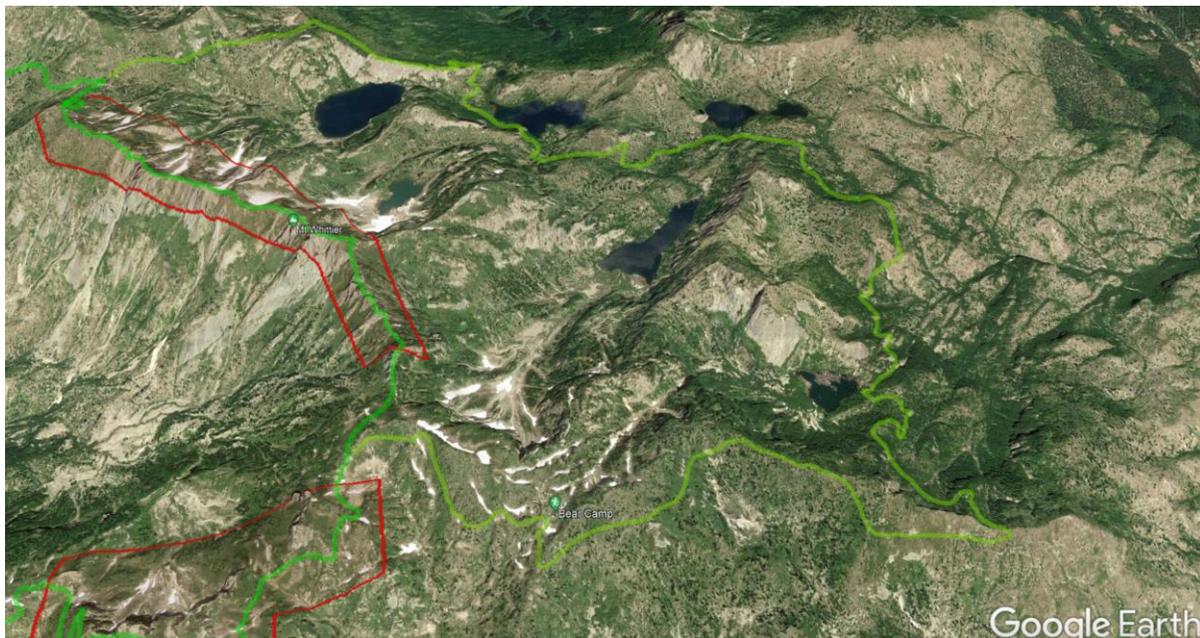


Virtual Search, LLC. This document is based on the known information provided to the Analyst at the time of the request. It is subject to change based upon new or corrected information, or data provided from verifiable sources.

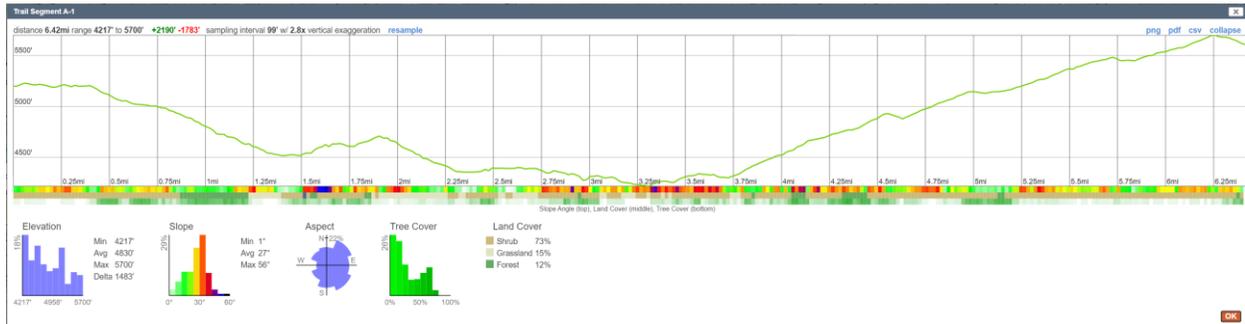
### Trail Segment A-1



Segment A-1 on Google Earth



## Trail Segment A-1 Profile



**Trail Segment A-1 allows for additional mileage for the subject to run without significant challenges such as slope angle. This should be searched by air if possible, or with ground resource dropped into the area that can navigate this terrain.**

### 8. Vehicle Data

There is no vehicle data relevant to this search, vehicle was recovered.

### 9. Cell Phone Data:

Yang's cell phone is 651.410.9560 / T-Mobile. Taylor indicated cell forensics were obtained on this line however at 0926 hrs. this date that data was not located. It is being looked for at the time of this report and will be added when received. The data may alter the current analysis when received.

### 10. Aerial Photography:

It is recommended that a resource photograph with GPS coordinates, the search area in question for possible analysis. This may be done via a request through the State SAR Coordinator to the Air Force Rescue Coordination Center at 1-800-851-3051. This would be performed by the Civil Air Patrol. This will only be performed if the subject is not wanted for criminal actions by the police and if the subject is still viable, so time is of the essence. There is no cost to the AHJ for this service.

### 11. Conclusion:

**Yang is an A-typical search subject due to his physical capabilities and his intended activities. His capability is above the average hiker, and even trail runner, and I have no specific data sets that cover his type of subject. Given this, he is still likely to be on or very close to trail systems, His diversions would be at trail junctions and fall areas on the trail. It is difficult to predict a specific location beyond being at, or near, the trail.**

**ALL TRAILS SHOULD BE SEARCHED WITH AN OFFSET OF 25m, or 100' where possible.**

**Yang is more than likely to be within the upper trail systems, but all the approach trails in Area Segment E to Trail Segments A, A-1 should be searched. Trail Segments B-C should be examined in the event YANG attempted a self-recovery out of the area to the nearest road system. He may have also diverted off of Trail Segment A-1 at the upper end of these inadvertently.**



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**Trail Segment 1 and Area Segment 2 in Purple are excluded from this search as the trail poses no challenge and is a short loop, while Area Segment 2 is not justified due to access issues from the parking area where Yang was parked.**

Given the passing of time in this search, the subject may still be viable and alive for another 48 hours if injuries are not significant enough to cause blood loss, shock, or hypothermia. Yang may in fact be immobile and unconscious, and yet survivability is highly underestimated for many subjects.

Given the totality of the situation, and the rapid onset of loss once in the area, it is likely Yang was severely injured and is immobile/unresponsive due to factors such as blood loss, blunt force trauma, or hypothermia.

You may contact me at any time should you wish to discuss this analysis.

Warm Regards,

Paul M Burke

Developer / Lead Analyst

Virtual Search, LLC

(775) 501-0685

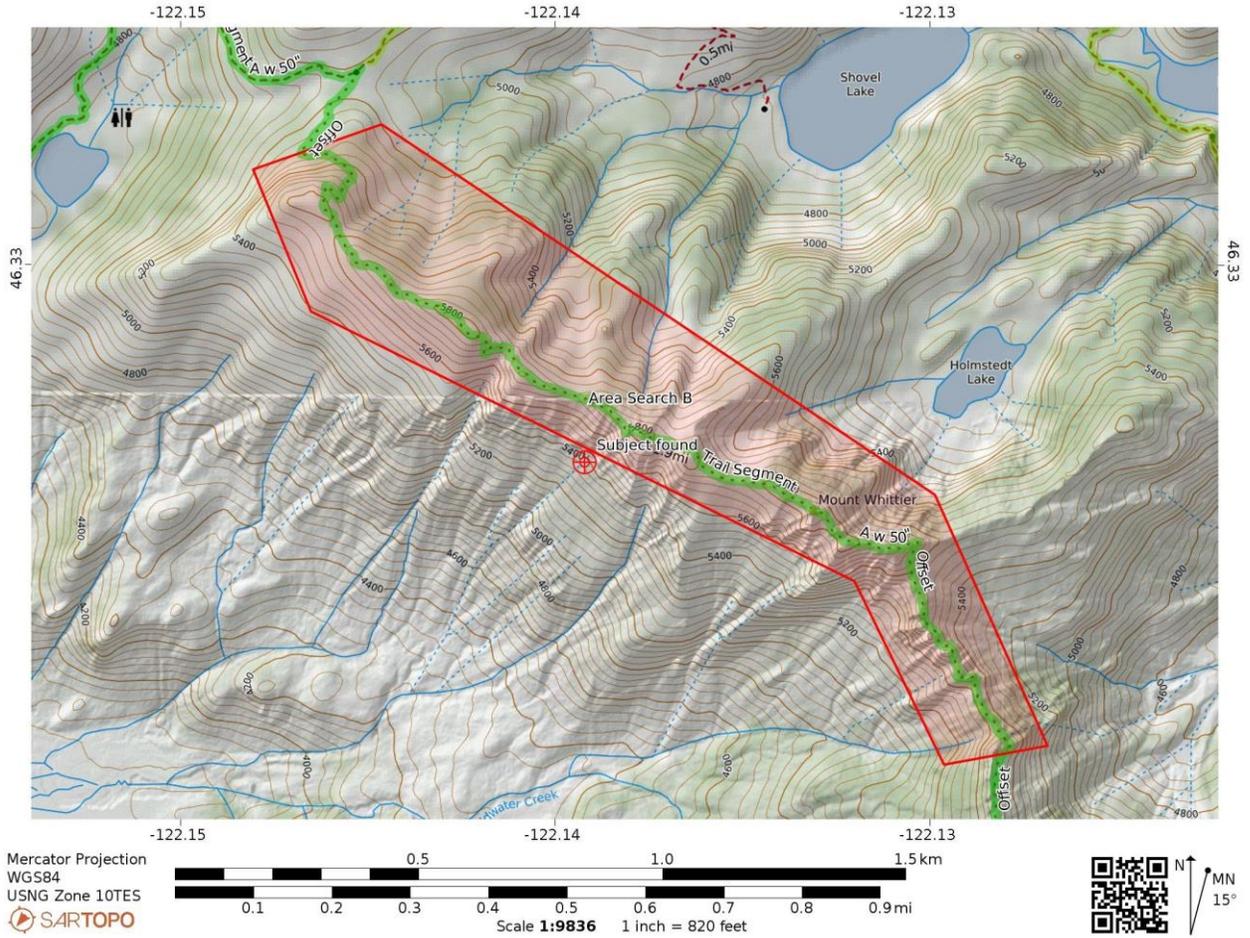
Amendment to report:

Cell Data Received at 1212 pm Pacific time from Dep Taylor of Cowlitz Co. SO:

Cell Data Mapped

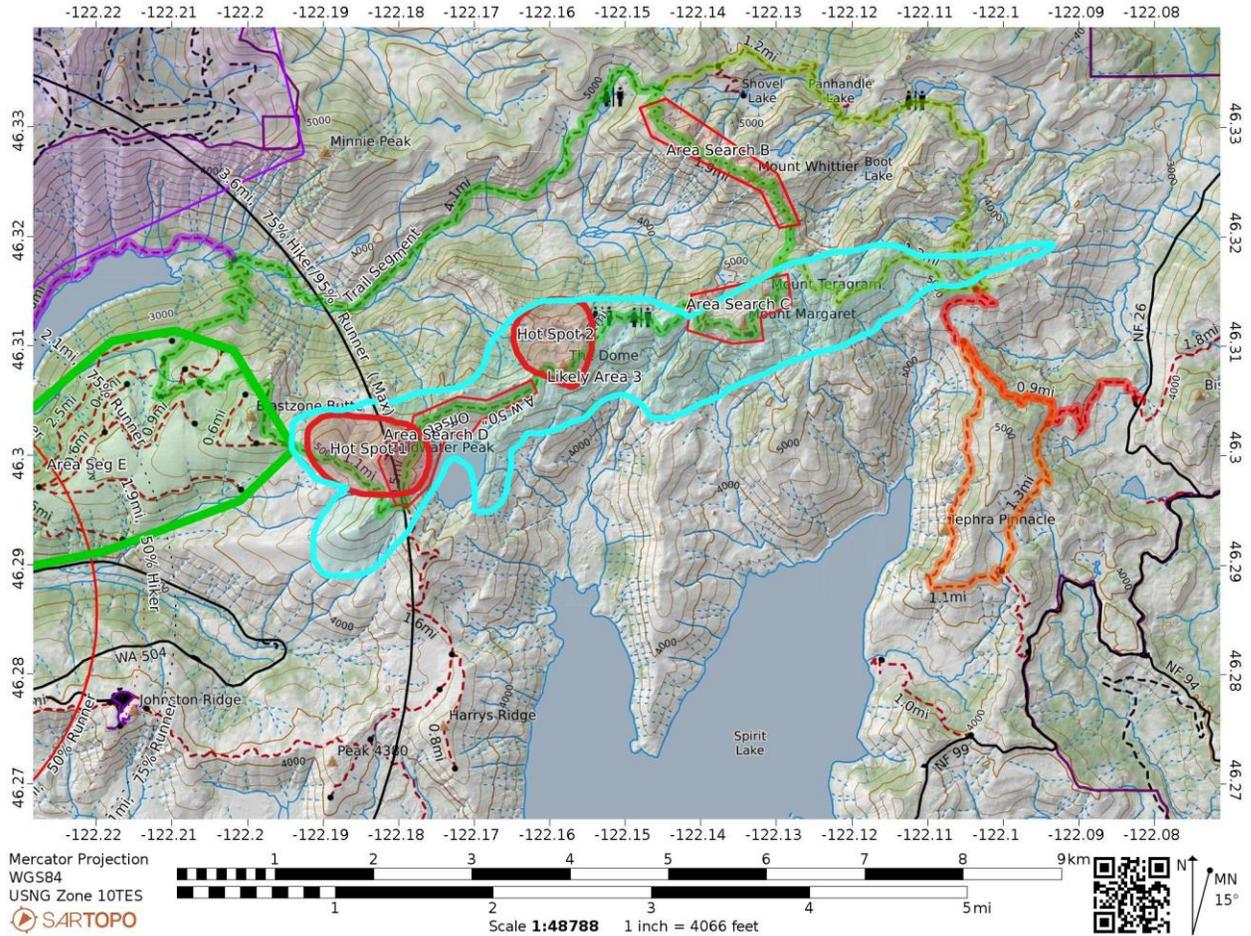


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Cell forensics completed ( Mission 21M-0360) by the Civil Air Patrol Cell Forensics Team with the AFRCC concluded after their review, that HotSpots1-2 are high points where the subject may have been , and the likely area for search includes those points as well as the southern section of Trail Segment A. This is consistent with the current analysis.

Additionally, there was an UltraMarathon race at this location, with the following link:

<https://ultrasignup.com/register.aspx?did=80804>

Please determine if he was registered for this event. There were two aid stations set up for this race. Please determine if he checked in or out at this race and all details if he was involved.

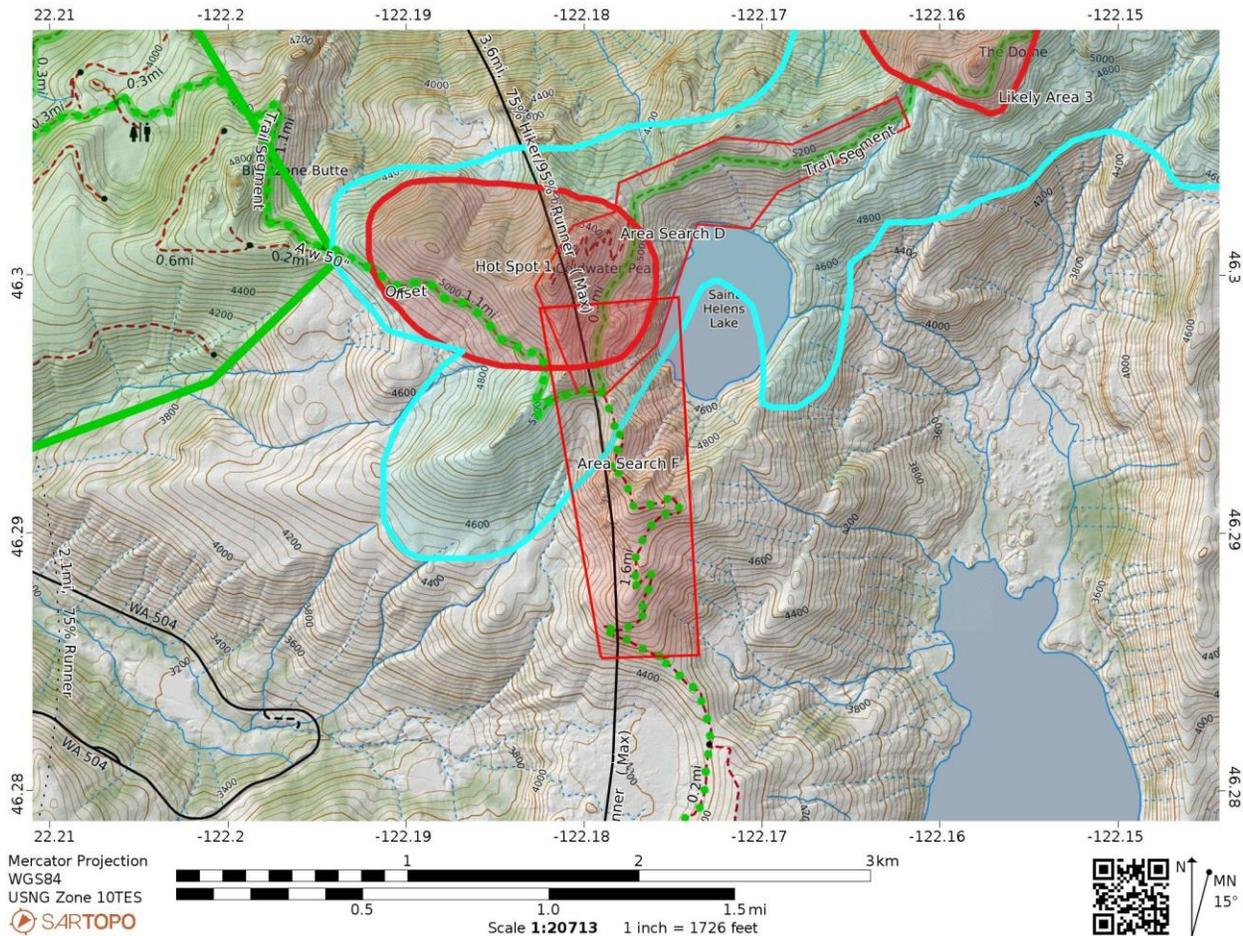
Amendment:

7-21-21@ 1340 hrs:

Lead Analyst Ben McMinn from Mississippi reviewed the data and did some research with All Trails. There is a loop trail named "Boundary Trail #1" which is a single-track loop trail whose parking lot is the same as where the subjects car was located. If he took this trail and ran counterclockwise from west-southwest and then headed east, it would take roughly 4-4.5 hours to reach Hotspot 1/Search Area F/Likely Area 3. This is approximately 10 counterclockwise, and 6.34 miles clockwise from the subject's vehicle. It has a great deal of elevation change and would extend the route times accordingly.

This location is consistent with the time lapse of -4.5 hours at the subject's speed of 2.8-4.0 mph in the given terrain. Baring other data, this location has risen above others with less data to take the lead.

**Boundary Trail Map and Search Area F:**





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Boundary Trail to Coldwater Peak is a 11.9 mile moderately trafficked out and back trail located near Toutle, Washington that features a lake and is only recommended for very experienced adventurers. The trail is primarily used for hiking, rock climbing, and horses and is best used from May until C [Show more](#)

Length **11.9 mi**      Elevation gain **2,785 ft**      Route type **Out & back**

- Hiking
- Horseback riding
- Rock climbing
- Lake
- Views
- Wildflowers
- Wildlife
- Blowdown
- Rocky
- Snow
- No shade
- No dogs

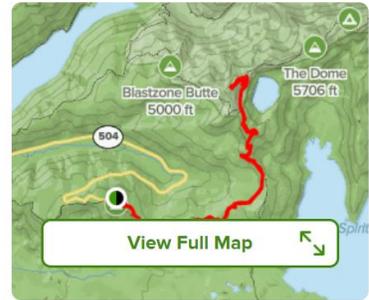
- Description**
- Waypoints (0)
- Facilities
- Contact
- Getting TI >

The first few miles of this hike snakes around the hills across from the crater on steep hillsides that were scoured by the 600mph blast. It's not until you reach the St. Helens Lake area (formed by the eruption) that more than splintered tree bases can be found. In the winter time, the area between St. Helens Lake and Coldwater Peak tend [Show more](#)

- Weather**
- UV Index
- Daylight

Wednesday	Thursday	Friday	Saturday	Sunday
61° / 41° F	67° / 46° F	71° / 50° F	76° / 51° F	75° / 49° F

- Reviews (247)**
- Photos (877)
- Activities (190)
- Completed (489) >



[Suggest Edit](#)

**Nearby trails**



**Harry's Ridge Trail**  
 Mount Saint Helens National Volcanic Monument  
 moderate ★★★★★ (822)  
 Length: 7.8 mi • Est. 4 h 12 m

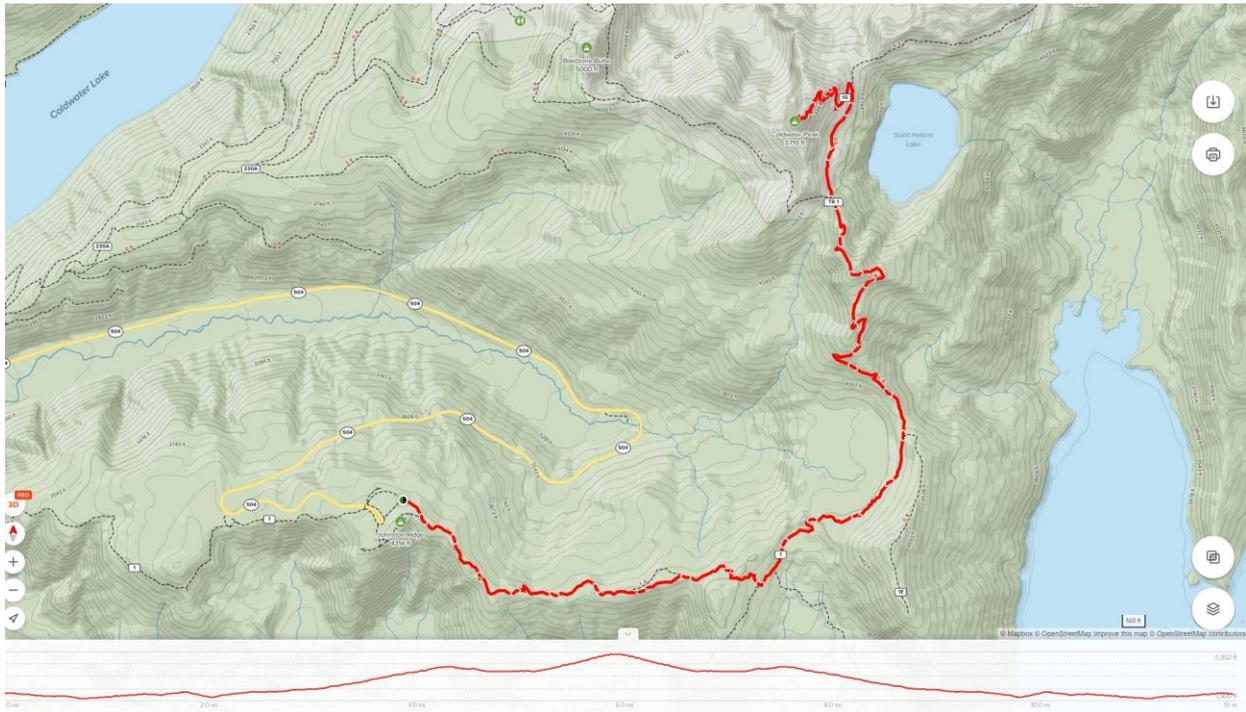


**Coldwater Lake Trail**  
 Mount Saint Helens National Volcanic Monument  
 moderate ★★★★★ (408)  
 Length: 8.8 mi • Est. 4 h 4 m



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## Mapping of Boundary Trail #1



Photos:

### Lakes Trail #211 Portion





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## Boundary Trail #1 in Area Search F overlooking St. Helens Lake



### Note:

Yang was located deceased at 46.32637 N, -122.13921 W, 361ft downslope west from the trail through Segment B. It initially appears the cause factor was blunt force and the manner was a fall from the trail downslope. This is indicated on the final mapping below.