

Navigation Northwest

A Quarterly Publication of the Seattle Navigation Committee Volume 8, Number 2 Summer 2020

-- Navigation Northwest Features --

Navigation Summit April 26 2020 The Wilderness Navigation Small Group Option Reflections on Digital Navigation & Trip Planning Course Editor Peter Hendrickson Travis Prescott

Courses, Classes, Apps, Gear & Links

Wilderness Navigation, GPS, & Introduction to Map & Compass2020 ClassesFind Free Altimeter & GPS AppsLynn Graf, Brian Starlin & Emma AgostaNavigation Gear, Apps & Links of InterestJeffrey DuffinMountaineers Compass Recommendations for 2019+Navigation CommitteesSeattle Program Center Compass Calibration StationBob Boyd



--Theodolite remembers locations. Identify site of this June photo (see p.12).

Navigation Summit April 26 Notes & Action items

Volunteer Collaborations Manager Nick Block chaired the April 26 virtual Navigation Summit from 9 to noon. Present were: Jim Heber and Alan Davey (FTH), Jerrick Linde and Rick Finkle (TAC), Michael Hutchins, Patricia McDonald, Steve McClure and Brian Starlin (SEA), Joel Heidal and Brian Booth (EVT), Mike Kretzler (OLY), and Education Director Becca Polglase.

Action Items:

We identified a number of possible changes to the standards during our meeting, but we did not come away with any specific language changes. I will be posting several Basecamp threads for you all to discuss the changes you'd like to see in the standards, along with a few other topics we discussed.

Standards Discussion:

- Aligning the Navigation badge to match the standards Wilderness Navigation instead of Basic Navigation
- Could we split into a map and compass standard and a gps standard? Does this present complications?
- A general review of the standards, based on the comments we input into the document during the summit Basecamp group. Input your discussion here. Use the working standards document to input comments and more suggestions.

Other topics:

- How can we better recruit and train instructors and leaders for Navigation programs?
- Noted role of GPS and Digital Trip Planning in navigation curricula and alignment with Freedom 9 key points.

Branch Highlights

Everett. Usual March courses were split March/April this year at Camp Edwards – had to cancel. Interested in moving instruction online.

Foothills. Instruct three courses and one seminar (Winter Navigation). Wilderness Navigation follows the Seattle model with GPS plus Map/Compass online and two in-Person field trips at Raging River State Park. More than 130 students enrolled in the online Digital Trip Planning course. Staying Found sessions at Tiger Mountain are rescheduled for September.

Seattle. The Wilderness Navigation (3.0) four-component curriculum is now aligned with Freedom 9 (map/altimeter/compass/GPS online), evening workshop and field trip in person (250 students yet need a field trip). Working on leader/instructor training. Introduction to map/altimeter/compass renewed as online single session course. Intro to GPS and Trip Planning also renewed to focus

on Gaia GPS and CalTopo but also is tucked into the Wilderness Navigation course. Small group option for Wilderness Navigation was under development.

Tacoma. Cancelled two Basic Navigation courses as the Irish Cabin property was not accessible due to White River flooding. September will see a new course. **Olympia.** April's course is rescheduled for September with 40 students enrolled. Online resources due to be used for the first time.

A follow up Summit is planned for fall 2020.

Adapted from Nick Block's minutes and notes. Nick climbs rock and ice with an appetite for backcountry skiing, mountain biking, backpacking, nature photography and adventure travel. Contact him at <u>nickb@mountaineers.org</u>.

COVID: "No big groups." Navigators: "OK, small groups."

By Peter Hendrickson

Here we stand in Covid Phase 2 with the real possibility of slipping back to 1.5 or even Phase 1 if the curve rebounds. Every branch teaching Wilderness Navigation has used two or more large (20 to 120 persons) field trip sessions to reteach and apply essential wilderness navigation skills. Necessity being the mother of invention, navigation committees are planning on launching independent small groups to stay within the Phase 2, 8-person limits.

Seattle's Navigation's Nav 3.0 fall 2018 rollout included small groups tucked into the legacy large group program. It worked well and 2019 saw full implementation of all instruction by intact small groups on Heybrook Ridge. We were prepared to pilot a solo small group of teenaged MAC students in spring 2020 but... And here we are with over 220 MAC and adult Seattle students needing a field trip.

We needed solutions beyond waiting for Phase 3 where a group of 50 will be allowed. A navigation instructor quartet Zoom gathered for eight spring Sundays to flesh out plans for self-contained field trip groups of 6 (or fewer) students plus a pair of instructors. We labeled this development FT3.5.

Claims for Field Trips

Seattle leaders crafted "claims" for student learning after navigation's first summit in June 2016. The 2020 working group drafted companion lead instructor claims.

Student Claims for Field Trips &	FT 3.5 Small Group Lead Instructor
Later Back Country Activities	Claims
Skilled in travel thru varied terrain & conditions	Skilled in group leadership including trip planning, group dynamics & follow up.
Leaders held to higher level of training,	Demonstrates wilderness navigation
experience & experience with	teaching skills with topographical maps,
navigation tools	altimeter, compass, and GPS
Maintain high level of situational awareness – all can determine point position & return to TH	Mountain safety skills include terrain and weather hazards recognition, actions to minimize risk, and Wilderness First Aid.
Skilled using full tool set – map,	Demonstrates emergency preparedness
altimeter, compass, GPS & emergency	knowledge including emergency
communicators	communication to summon help.
Provide support to bewildered, abandoned, ill-equipped or overly ambitious souls	Physical fitness matches the rigor of a full day on and off trail with up to 1800' gain and 8 miles travel.

We identified the salient differences between leading a small group within the larger field trip vs leading a FT3.5 small group. Lead instructors handle pre and post trip duties like any activity leader. Documents were tailored to the independent group mode and leader skills include group dynamics, emergency response and overall physical fitness. Scenarios are largely unchanged and there is potential for completing the rigorous day an hour or two earlier. Small groups have a small footprint enabling year-round field trips. The training focus is on lead instructors.

Figure 1 shows that participants park at the Heybrook Tower trailhead rather than Mr. Muncer's property east on busy Hwy 2.



Figure 1. Focus areas for Heybrook Ridge instructional scenarios.

Beyond time savings, the leaner model eliminates the need for sani-cans, coffee and pastries, traffic duty, highway shoulder walks and the inevitable waiting periods inherent in large groups. Additional student radios would be needed for safety.

The working group suggested strategies to meet social distancing Covid guidelines:

Group students two pairs per instructor

Navigation Northwest (V8.2) Summer 2020

- Attend to spacing needs according to activity type
- Single file default except on forest roads
- Radio communication as needed
- Join instructor groups only as needed, i.e. emergency response

Students could assist with any sign set-up, reducing the need for floater instructors. And students would also be charged with looking back to make sure instructors are safely navigating broken ground. Pairs would launch from near the middle "C" tree (Figure 2).



Why Launch @ C? Students and instructors avoid nastiest blowdown (at right). >Saves time. >Reduces risk. >Maintains sidehill travel. >Keeps pairs closer. >Stronger sight, voice and radio communication.



A trio of Seattle instructors gave FT3.5 a June simulated run-through reporting even further economies of time and effort. Lead instructors were invited to begin scheduling small group field trips to whittle away at the 2020 student list.

Peter Hendrickson is a past Seattle Navigation Chair and current VP of Branches. Contact him at <u>p.hendrickson43@gmail.com</u>.

Reflections on Digital Navigation and Trip Planning Course

By Travis Prescott.

Editor note: I asked Travis to look back on the eight evening Digital Navigation and Trip Planning Google Classroom/Zoom seminar that reached over 150 (enthusiastic) students. I was one who took advantage of the archived sessions to stand in for missed content due to conflicts. Travis had already been teaching much of the content during in-person sessions.

Q. What were the challenges in preparing for each session (for each hour live, how many hours prep and clean up)?

Haha, well, first of all, each hour live was actually an hour and a half live and I think every session actually ran that full length (either because my lecture ran long or there were questions people had). But for each lecture, I would estimate probably at least 4 hours of extra work... and was reusing the slides from previous years! There would always be the necessary review and tweaking of the old material, which averaged about an hour depending on the amount of updates.

The light editing and posting of the session replays online would typically add another half-hour to an hour. The activity walkthroughs would easily add one to two hours due to the sheer amount of editing that needed to take place in Camtasia to highlight the cursor and make those videos extremely easy to follow. The worst week was when I had to edit full-length versions of the GaiaGPS app lecture for both iOS and Android in this style... probably five hours there! However, for those who relied on that style of video and its visual cues, those videos were absolutely key to their learning experience, so it was worth the cost.

Q. What did you learn to do (or do better) as navigator and as online instructor (including what you may have learned from the participants)?

Well, I firmly believe that navigation is a field skill and the course focused more on the "at home" skill of trip planning (though that can also be done in the field in a pinch!), so I'd be hard pressed to cite an example of becoming a better navigator. Usually that learning happens from going out on adventures and teaching at the navigation and scrambling field trips.

As far as trip planning goes, I received some great tips via the course chat and email about other techniques that people use or other resources they know of. I try to always evaluate those resources and fold them in where it makes sense. I always learn a lot about being a better online instructor, and that was even truer during the most recent session due to the sheer number of students. Even a suggestion as simple as making the exercise handouts available *before* class starts proved to enhance many people's learning.

The most overwhelmingly constructive piece of feedback I got was on the GaiaGPS/Caltopo 101 lecture where many students found the back-and-forth Navigation Northwest (V8.2) Summer 2020

between the two platforms to be confusing. I heard that loud and clear! And I love that kind of feedback because of course it all makes sense in my head and I can't effectively put myself in the shoes of a newcomer, so I really rely on the feedback of students to understand what works and what doesn't.

Figure 1. Sample Lesson 3 slide from Google Classroom Printing in Gaia



- •Worthwhile to print from GaiaGPS.
- •Recommend professional print shop (Kinko's etc) due to abundance of color.
- •With no control over scale, understand what works and what doesn't:

Use Case	Supported
Taking bearings	\checkmark
Orient map and terrain match	
Measure distances	\checkmark
Measure UTM position with romer	×
Measure slope angles with comb	×

Q. What were the most powerful or useful learnings from what participants may have told you, or you discovered?

I read all the feedback on the Mountaineers website, and I find it's very individualized because people come into the course at all skill levels (by design) and are seeking to reach different levels of mastery. For some that can be as simple as understanding the range of tools available. For others, it will be nothing short of complete mastery of every fine point. Most people fall somewhere in between, so I think each individual student comes away with a different "aha" moment.

Some examples students cited included using Google docs to share trip plans, the creation of custom overlays in CalTopo, the use of the Roadless Areas layer in GaiaGPS to find egress points on long backpacking trips, the art of toggling between multiple layers and overlays to investigate terrain, and finally people who hadn't heard of <u>Windy.com</u> before they fell in love. :)

Q. Which lessons or portions of lessons were clearly for a smaller audience and where will they live going forward

The only lesson I can point to that's intended for a smaller audience is the CalTopo/Gaia 101 lecture because it assumes zero familiarity with the tools, but I think it had one of the highest attendance rates. Maybe that's because it was early in the course or maybe folks just wanted to make sure they didn't miss some interesting tidbit even if they already thought they knew the tools (that's what I would have done!).

The curriculum was designed to be modular so that people could pick and choose which topics were most of interest to them. In particular, the on-trail, off-trail and winter series of lectures were created with a beginner, intermediate, advanced mindset. Even though custom CalTopo shaders can be used for on-trail or off-trail travel, I put it into the winter lecture because that way it would be in the advanced lecture (since it is definitely an advanced topic!) and because that is where, practically speaking, I use the feature the most.

	FATMAP	Google Earth Pro	Winner
Satellite image quality	Low-res	High-res	Google Earth Pro
Historical satellite imagery	No	Yes	Google Earth Pro
3D Topographic Accuracy	Excellent	Bad – flattens peaks and summits	FATMAP
Displays imported waypoints	No	Yes	Google Earth Pro
Can link directly to Caltopo routes	No	Yes	Google Earth Pro
Has layers such as slope angle shading?	Yes	No	FATMAP
Intended for outdoor enthusiasts?	Yes	No	FATMAP

Figure 2. FATMAP and Google Earth Pro Comparison from Lesson 4

Currently, the lecture with the least cohesiveness is that final lecture, which honestly was one of the best! We talked about other navigation-related apps that exist, talked through a comparison of phone navigation, GPS watch and InReach, and then did a detailed case study that came from one of the students. There was a whole section I did remove from the pilot of the course that went into crazy detail on estimating travel times. It was originally in the on-trail lecture and was just waaaay too niche a topic and way too complicated so I pulled it out completely. I would love to find a place for that content to live though, because I think it's very interesting and useful. I think if the course wasn't constrained to the distinct fixed-length sessions, but just had variable length modules a la the wilderness navigation eLearning, that would help. I'm considering such a format for the future.

Figure 3. Aspect Shader avalanche information demonstration, Lesson 5 You will always need to choose values for a**XXX-XXX**. Note that the values in Caltopo for cardinal directions do NOT conform to the rose used by NWAC, so use the below diagram when trying to match NWAC. The copy-paste example if for the shaded area described in the rose (68-293 degrees).

Copy-paste	Image	Notes
a68-293 009AFF-009AFF		338 N 293 W 248 SW 248 SW 203 158

Q. What are the takeaways to share with others who may be considering eLearning via Zoom?

Well, for those considering taking eLearning in this way, I encourage you to do so! It avoids the need to drive anywhere or even the necessity of being available when the lecture is delivered! For those considering delivering eLearning, know that it can be tremendously effective and help serve a much larger, more inclusive audience; however, also understand that it isn't easy!

The stress I thought I was getting rid of by not having to schedule meeting rooms was actually just exchanged for a different kind of stress in working through technical hurdles and editing video (seriously, editing is THE WORST!). Still, I know that, at least with my particular course, the online format is most effective because the original version *was* in-person, and many people were left behind by the time constraints of that format. I got so many notes from students saying how they appreciated being able to go back and rewatch sections that were tricky-something that just isn't practical for most in-person lectures.

Navigation Northwest (V8.2) Summer 2020

Realize that teaching online requires additional skills above and beyond just those required by the subject at hand. If you are excited about learning those new skills, that's great! Even if you aren't, though, you can still build a team to deliver a great eLearning experience. As the instructor, you will need to do the recordings yourself, but you could find someone interested in learning video editing to handle that (easily the most time consuming aspect) and/or find a course administrator to handle website issues and so on.

Bonus: The Alpine Geek has posted Part 1 of a series on reliability in distance/gain measures <u>Accuracy</u>.

Contact Travis at <u>travis@thealpinegeek.com</u> or on Twitter @AlpineGeek. If you want to subscribe to the podcast or YouTube channel, I also won't stop you.

[<u>Editor note</u>: Travis supported Seattle Navigation as a test instructor for the small group delivery model on Heybrook Ridge. And he's been a Foothills navigation stalwart through developing the Raging River Wilderness Navigation course.]

Where was the front page smartphone Theodolite photo taken?

- a) Little Si summit
- b) Mount Si hikers' summit
- c) Teneriffe forest road lookout
- d) Mount Teneriffe summit



Discussion. These Middle Fork favorites offer views even more enchanting than the I90 panorama. We're guessing that you can "see" what we saw last month on one of our many pandemic hikes.

Mountaineers Required Compass Features

Wilderness Navigation & Other Courses

Revised August 2019

1. Adjustable declination: This feature simplifies map and compass work. Most compasses with adjustable declination have an adjustment screw, usually brass or copper-colored, and a small key attached to the lanyard. Some have a 'tool-less', pinch-to-adjust feature.

- All students MUST have a compass with adjustable declination. The presence of a declination scale does not guarantee that it can be adjusted.
- Even if you already have a compass without adjustable declination, you may not use it in this course. Experience indicates that such compasses detract from the learning experience.

2. A transparent rectangular base plate with a direction of travel arrow or a sighting mirror.

- Transparency allows map features to be seen underneath the compass.
- A rectangular shape provides straight edges and square angles to plot on the map.

3. A **0 to 360 bezel** (the rotating housing) marked clockwise from 0 to 360 degrees in increments of two degrees or less. Bezels should be large to allow use with gloves - the larger size also improves accuracy. <u>Do not</u> get one marked in 0-90 degree quadrants OR one marked in 0-6400 mils!

4. **Meridian lines**: Parallel 'meridian lines' on the bottom of the interior of the circular compass housing rotate with the bezel when it is turned. Longer lines are better. Meridian lines run parallel to the north-south axis of the bezel, however turned, for use with a topo map.

5. A **ruler and/or gradient scale** engraved on one of the straight edges, used for measuring distances. In the U.S. 1:24000 scales (rather than 1:25000) are preferred. Both are acceptable.

6. A **3 to 4-inch base plate**. A longer straight edge makes map work easier.

Additional recommendations

- A sighting mirror in the cover: May reduce error introduced when moving compass from eye-level after sighting to waist-level for reading the dial. Protects the bezel.
- A liquid-filled housing: Reduces erratic needle movement (common on better compasses). In some cases, steadying the compass needle can be difficult
- An inclinometer: A gravity driven arrow that allows you to measure slope angle.

Current favorites: Suunto, Silva and Brunton are favorites. All have adjustable declination. Their quality and usability varies, so **keep any receipt**. We have unfortunately seen many defective compasses in the past.

Maker	Models	Features +	Features -	Vendors	Cost
Silva of Sweden	Ranger 2.0	Slope card, Luminous		Forestry Supplies	~\$45
	Explorer Pro	No mirror, Bendable	Lacks clinometer	Liberty Mountain	~\$45
Suunto of Finland	MC-2 Pro	Northern Hemisphere		REI, Online	~\$56
	M3-D Leader	Mirrorless	Lacks clinometer		~\$44
	MC-2G Navigator	20 degree tilt margin			~\$95
Brunton of Colorado	TruArc15*	*Global needle, mirror	Bezel may pop out	REI, Cabela's, Online	~\$50-60
	TruArc 7*	Fewer scales	Skinny Mirror		~\$36

Manufacturers make continuing improvements and corrections in models. Model variations and designations proliferate – insist on features 1 to 6 above. Remove plastic from Suunto mirrors and Brunton bezels before use.

(Rev 9Aug2019/ph bb bs)

Wilderness Navigation Course Offerings—Seattle 2020*

The revised Wilderness Navigation 3.0 is focused on wilderness/back country travel including off trail navigation to meet requirements for Alpine Scramble, Basic Climbing, Snowshoe and BC Ski students (and others). Essential tools are maps, altimeters, compass, GPS and emergency communicators. The four components are (1) eLearning Workshop, (2) GPS online module, (3) In-Person Workshop and (4) Field Trip. Completers receive both Wilderness Navigation and GPS Navigation badges, reflecting the expanded navigation tool set. Fee.

Lead course administrator is Michael Hutchens, Seattle Co-Chair.

Dates 2020	1 - eLearning 2 - GPS Module	Date & Day	3 - Workshop 4 - Fieldtrip
TBD	Online	TBD, if offered	Program Center
Sep 26 to Oct 10	Online	Saturday & Sunday, Nov 7 and 8	Heybrook Ridge

Introduction to GPS & Trip Planning Course—Seattle 2020*

Interested in learning to use your smartphone as a wilderness GPS? Maybe you've had a Garmin for years or the Gaia app on your smart phone and want to get the most out of them. This one evening course is revised. An online presentation with exercises is viewed and completed (4 to 5 hours) before the class (~2.5 hours). Applications are Gaia GPS and CalTopo. Prior completion of the Wilderness Navigation course is strongly encouraged. Note: This is not a comprehensive Trip Planning class. Fee and Badge.

Course lead administrator is Steve McClure.

Dates 2020	Location
Tuesday, September 22	Online + Virtual or In person

Introduction to Map & Compass – Seattle 2020*

The Seattle Navigation Committee scheduled five 2020 Introduction to Map and Compass dates at the Seattle Program Center from 6:30 to 8:30 p.m. Instructors are drawn from the pool of Wilderness Navigation Course teachers.

This Getting Started introductory class does <u>not</u> satisfy the navigation requirement for Alpine Scramble, Basic Climbing, Snowshoe or Backcountry Ski. Baseplate declination adjustable compass loaners are available for the class. Fee, no badge.

Course lead administrator is Otto Greule.

Intro to Map & Compass	Location
Monday, August 10	Online
Wednesday, September 2	Online

Other Seattle 2020 Navigation Seminars/Clinics*

Seminars/Clinics	Dates
Instructor Training eLearning – No fee Program Center	Oct 20
Lead seminar administrator is Nina Crampton.	
Wilderness Navigation & GPS Equivalency – Fee	Rolling enrollment
Lead equivalency administrator is Lynn Graf	

Other Branches 2020 Navigation Courses*

Branch	Course	Dates
Everett	Basic Navigation Workshop & FT Camp Edward	Dates TBD
	Wilderness Navigation eLearning Option	Under Consideration
Foothills	Staying Found	Sept 12
	Wilderness Navigation Field Trips	Sept 12, Sep 19
	Wilderness Navigation Optional Mentor Session	Oct 08, Oct 15
	Digital Trip Planning & Navigation	TBD
	Navigating in Winter Terrain	Travis Prescott, TBD
	Wilderness Navigation Equivalency	Alan Davey, Contact
Kitsap	Both series have eLearning Wkshp Option	Dates TBD
	Wilderness Navigation Lectures Option	Dates TBD
	Wilderness Navigation Wkshp/Field Trip	Dates TBD
Olympia	Navigation Lectures 1 and 2	Postponed to late
	Lacey Community Center	September
	Navigation Field Trips	Postponed to late
	Kennedy Creek, Black Hills	September
Tacoma	Wilderness Navigation Lectures 1 & 2; Field Trip	Uncertain
	Wilderness Navigation Lectures 1 & 2; Field Trip	Uncertain
	Wilderness Navigation Lectures 1 & 2; Field Trip	Uncertain
	Wilderness Navigation Lectures 1 & 2; Field Trip	Sep 1?, 8?; Sep 12?

*Many courses are cancelled, postponed or moved to online during COVID-19 restrictions. Check mountaineers.org for up-to-date listings.

Mazamas (Portland, OR) 2020 Navigation Instruction*

Portland	Navigation Skill Builder Class – Videos, Wkshp, Field work	TBD
	Wilderness Navigation Smartphone GPS (Gaia)	TBD

*Northwest climbing clubs support similar goals for exploration, learning and conservation. Reciprocity is routinely granted across state lines. Mazamas lead navigation instructor is John Godino, contact <u>johngo.pdx@gmail.com</u>.

Organization	Web address	Notes
The American	https://americanalpineclub.org/casca	Cascade Section has a
Alpine Club –	de-section	Washington & Oregon focused
Northwest		Facebook presence
Region		
BOEALPS, The	http://boealps.org/about-us/	Primarily climbing; spring
Boeing		Basic Mountaineering Course
Employees		
Alpine Society		
Bushwhacker	https://bwcc.clubexpress.com/conten	Founded as 501(c)(3) 2003.
Climbing Club	$\frac{1.35px}{page} = 10 = 22 \& Club}{10 = 172409}$	Hike, climb, ski, socialize
Never Ston	https://www.neverstopmoving.org/v	Volunteer run Seattle II C
Moving	olunteer	women's rock climbing
rioving		company
OSAT, One	http://www.osat.org/	Melds outdoor activities with
Step At A	<u> </u>	recovery: 6 month glacier
Time		climbing course
WAC,	https://washingtonalpineclub.org/	Founded 1916. Many Guye
Washington		Cabin activities, Snoqualmie
Alpine Club		Pass
	3 Mountain Education Alliance Pa	rtners + AMC
American	https://americanalpineclub.org/	NW Region, Cascade Section
Alpine Club	303.384.0110	https://aacbackyard.org/cascade
	cascade@americanalpineclub.org	-section
Appalachian	https://www.outdoors.org/	Founded 1876 Boston. 12
Mountain Club		Chapters ME to VA, >40
		facilities, 280,000 members
Colorado	https://www.cmc.org/	Founded 1912 Denver. With
Mountain Club	303.279.3080	AMC support American
		Mountaineering Center &
Ma = a :::: = =	https://mazamag.org/	Museum in Golden
Mazamas	nups://mazamas.org/ 503 337 2345	Founded 1894 Portland.
	JUJ.JJ/.ZJ 1 J	Mainly a climbing club for
		those who have already
		summited a glaciated peak

Contact Information Northwest & Partner Mountaineering Clubs

Navigation Gear, Apps & Links of Interest

Your comments and suggestions are ever welcome regarding the Seattle Navigation website and links in Navigation Northwest.

The Gear... The new (and much improved) "Gaia Topo" map layer

John Godino on <u>Alpinesavvy.com</u> summarizes the graphic improvements to Gaia's house special default map layer Gaia Topo in his recently published article. <u>https://www.alpinesavvy.com/blog/the-new-and-much-improved-gaia-topo-map-layer</u>

"In January 2020, GaiaGPS introduced a new and vastly improved Gaia Topo map layer that has loads of great features, enough to probably serve as the only map layer needed for many people. Let's look at some of these features, and then some examples."

"I don't think there's a need for commentary on these, the images pretty much speak for themselves. Which map would you rather use?"



image: blog.gaiagps.com

The Apps...

• How about <u>Seek</u> using image recognition to field identify all things natural?

(Following apps first published in June 2017 issue)

Free (or nearly) Altimeter Apps For Smart Phones By Lynn Graf

	App Name	Device	Developer	Cost
	<u>Gareth</u> <u>Altimeter</u>	Android	Gareth Price	free
	<u>Accurate</u> <u>Altimeter</u>	Android	AR Labs	free
29.96 152.8	Pro Altimeter	iPhone	Hunter Research and Technology	\$0.99
ALT	Altimeter Plus	iPhone	Sichtwerk AG	\$1.99

Short guide to a few recommended altimeter apps for cell phones

Don't want to spend the money for a classic wristwatch altimeter, one more gadget? Basically all SmartPhones nowadays have GPS capability. This means that they can pinpoint your spatial position without cell service, which is often spotty or non-existent in the backcountry (and searching for a signal drains the battery, in case you haven't noticed). Many of the newer models (iPhone 6 and later, for example) also have a pressure sensor. This can be used for extra correction or a cross-check of elevation by barometric pressure (which is what wristwatch altimeters use) but that is not really necessary and requires more frequent calibration.

Here are recommendations for two very basic apps for Android and two for iPhones.

Selection Criteria (not in order of importance): low or no cost, easy to use, no cell service required, no ads, low memory and storage usage, reasonable speed at obtaining GPS signals, clear numerical display, recommendation from Mountaineers member(s) who have used it in the field.

There are many more out there, more all the time, and increasingly with features in addition to GPS-based elevation. We invite you to try them, see how they work for you, and let us know if they don't work as advertised. If you want additional information, see the article in Navigation Northwest

(<u>https://www.mountaineers.org/blog/how-to-pick-an-altimeter</u>) describing a systematic comparison of several Android apps.

Also, The Mountaineers currently has a deal for free use of GAIA Pro that basically turns your cell phone into an advanced GPS device. Check the website under "Benefits" (https://www.mountaineers.org/membership/benefits/instructions-forredeeming-member-benefits). It is highly recommended but requires time and practice to set up and use efficiently. The Seattle Navigation GPS class features Gaia as the app of choice. Backcountry Navigator, another full-service GPS app, also has many followers. Both are well worth it, in my opinion, but a paper map, compass and altimeter app will get you a long ways, both on and off-trail.

--Lynn Graf is a past Seattle Navigation chair and an active hikes and scrambles trip leader. She is a frequent contributor to Navigation Northwest. Contact her at: <u>lynn.graf@gmail.com</u>.

Free (or nearly) GPS Apps for Smart Phones

By Brian Starlin and Emma Agosta

Screen Shot	App Name	Device	Developer	Cost
	<u>MyTrails</u>	Android	FrogSparks	Free Pro €2
	<u>GPS</u> <u>Essentials</u>	Android	Schollmeyer Software Engineering	Free
Carrier * 11:09 PM * UTM WGS84 * Zone 56H * Easting 334515 * Northing 6251550 * Accuracy +/- 5 m * Altitude ? * Speed, direction ?, ? * Odometer 7350.4 km Reset Timer 00:00:00 * * * * * * * * * * * * * *	Handy GPS	iPhone	Anthony Dunk [<i>Note: Also authored</i> <i>Coordinate Master</i> <i>to convert</i> <i>Lat/Long to UTM</i>]	Free
Image: walk of the status o	Altimeter GPS	iPhone	Andrea Piani Immaginet Sri	Free Pro \$4.99

Criteria for Android and iOS GPS:

- 1) Backcountry oriented (Topo Maps rather than street maps)
- 2) Works offline, in airplane mode, with only the GPS on

- 3) Can display UTM and Lat/Long
- 4) Has at least NAD83/WGS84, but gets extra points if it has NAD27
- 5) Extra points if it's available for Android and iOS
- 6) Able to save data and send in GPX format
- 7) Able to import GPX format
- 8) Accurate (although I believe it's based on underlying GPS hardware)
- 9) Extra credit if tracks can be shared on a cloud service
- 10) Free

We used a 10-point scale with higher numbers meaning more of the above features were found. Also, there is a main point we need to make. Gaia is a serious app for backcountry use and has all the features we want. And Gaia Pro is currently free for one year to Mountaineers members .

Android Reviews (Brian)

>>GPS ESSENTIALS (mictale.com) -- 5 points

Only available on Android.

It only uses cached maps, which limits its offline usefulness.

Very robust dashboard, highly configurable.

Limited selection of map sources

The UI is clunky. It uses a thing called "streams" to store data. The Import/Export functions were hidden in the "streams." The track recording was also buried in the stream screens. The Dashboard is great, but the other functions are clunky.

>>HANDY GPS (BinaryEarth) -- 2 points

Great for just displaying your coordinates in various formats. It has very limited maps -- a blank screen, and the Google Maps. The map does not work offline and cannot be downloaded.

>>MYTRAILS (FrogSparks) -- 6 points.

Great selection of maps. I think it has only NAD83/WGS84 because I don't see a Datum setting. Tracks and waypoints can be saved as GPX. The free version can only save the current track, plus one. And can only store 100 tiles at a time in the offline storage. UTM displays on the screen. It's on Android.

>>RAMBLR (Bientus) -- 2 points

This is more of a journaling and trip sharing app than a GPS app. It's very focused on tracking and sharing details of a trip. It has Google Terrain and OpenCycle maps. It can use an offline map. It does not display coordinates, but it can show you your location on the map background. As I said, it's a journaling app.

iOS Reviews (Emma)

Additional features I noticed are under "other features and comments."

>>ALL TRAILS -- 3 points, free

Hiking oriented but by trail (not backcountry). More like WTA app. Works offline. WGS 83/84. Available for IOS and Android. Map overlays (such as USGS topo) are in the Pro version (\$29.99/year). No UTM or Lat/Long. Other features/Comments: ability to track a route, keep history etc. Many other apps do this for hiking, biking, running and other sports. I do not believe these are the kind of apps our readers are looking for.

>>ALTIMETER GPS -- 4 points, free.

Not backcountry oriented. Lat and Long: yes. No UTM. Elevation (ft/meters). Accuracy: unknown. Available on both? Some features only work with internet (i.e. choice of map format). Other features/comments: Weather, barometric pressure. Compass heading, Step Counter. Speedometer. Save position. Ads (non intrusive at the bottom, yet one can accidentally click). Find feature to search for location.

>>DECLINATION -- 1 point, free

Not backcountry oriented (map: satellite view). Lat and Long and UTM. Works offline: yes. Accuracy: unknown; Datum: ? Other features/Comments: Declination; Ability to search by Lat and Long. Ads.

>>HANDY GPS -- 6 points, free

Not backcountry oriented. Works offline: yes. UTM and Lat/Long, (plus elevation); Datum: ? Available for both IOS and Android. Able to save data and email : yes. GPX file: no; Accuracy level (+-10m). Other features/comments: nice display: uncluttered; intuitive, user-friendly; key features: Map. Digital Compass. Can save waypoints and email position from within the app. No ads. My favorite among free but cannot compete with Gaia.

>>MAP TOOLS -- 3 points, \$0.99

Street oriented; Works offline; Lat and Long and UTM; Datum: ?; GPX format: no; accuracy: unknown. Other features/comments: Not intuitive. Confusing zoom in and out feature. Declination provided.

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And the links ...

• A Chicago perspective <u>Howtogo outside</u> on getting outside during the pandemic.



RWB 2/2014

Seattle Program Center Compass Calibration Station

Navigation Northwest Copy and Publish Targets 2020

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Volume 8, Issue 3	September 1	Fall 2020
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Gear, Apps & Links of Interest Editor: Jeffrey Duffin Proof Readers: Jeff Duffin, Stevie Russell & Nancy Temkin (some issues)

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Gear, Apps & Links of Interest to Jeff Duffin jeffrey2k@hotmail.com

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- --No footnotes, header or footer
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Kindly contact editor for further information regarding topics, length, tables, figures, deadlines...

"Do not go where the path may lead, go instead where there is no path and leave a trail." --Ralph Waldo Emerson, American writer, 1803-1882

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