



See Your Location as a Moving Point on a PDF Map – or Use Your GPS Enabled Device (Phone, Tablet, etc.) with a GPS Enabled PDF Document with a Map.

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So ... someone told you that you can get your phone (or “smart-device” with global positioning system or GPS functions) to interact with a GPS/geocoordinate enabled PDF document? Or maybe you read it and were directed to this page. It’s correct, that you can do just that: have your specific location be seen as a moving mark on our specialty-setup PDF documents with map portions which “know their own location” or extent of the mapped area shown in that PDF. Beware as: (1) this may not apply to all maps in all PDFs or formats (multiple pages, etc.); (2.) this requires a working device with GPS or a working “location service enabled on your device; and (3.) you could incur additional charges or fees, depending on your data plan. This tool can be used by anyone who has such a device, a GPS enabled PDF with a map, and wants to try it... meaning you don’t have to be a high-tech person, or a hunter, or at home, or from the car, etc. In the document, if it says “phone” then it means “phone, tablet, or other smart device”.



The most important thing: - *ensuring your safety and others* – while making you aware of this new tool using the geocoordinate functionality, aware that the option is included in new DNR Wildlife Division map PDFs, and then we connecting you to options to try to use this new technology. Hence this brief document was made to get you started, with the goal that it might benefit everyone, keep you safe, and help enjoyment of resources, wildlife and outdoors.

Steps:

1. DO NOT DO THESE STEPS WHILE DRIVING! or while out at a remote area, in bad weather, after you’re already lost, etc. This might be a new tool to you, and something new you are trying; congratulations! Try these directions and the program, for the first time, with a cold drink (or warm, depending on the season) in an area where you and your device can see a lot of the southern horizon (so access satellites), in a more rural-to-urban area (so not out in boondocks, yet), and where you are safe. Relax, try a couple things, look at the features - and if you don’t like what’s recommended below, try another program, etc.

Car/truck use: You can use the location functions while in a car, but please setup and start it either outside the vehicle or when parked; don’t use it while driving, and risk yourself or others. This situation is where another person helping as your “navigator” is perfect for you.

Walking use: More importantly, you can use the location functions while walking – and that’s where we’ve seen this new option really be beneficial and help! An example: using one of the newer [wildlife/game area maps](#), like in one of the managed waterfowl areas which include a “no-entry” refuge or “retrieving only” zone, you should be able to see where you are and stay in the area where you want to be to avoid problems, or find your parked truck, or find the foot-bridge to cross the deep ditch/dike feature, and you can interact more easily with our mapped information while you’re outside.

2. Plan for what you want to do and need, then try it.

There’s some possible considerations you should be aware, prepare for, and be patient if you can while work through them (particularly if you don’t think you are well-skilled with technology).

- All devices are not the same, so test it first.
- All PDF maps are not geocoordinate enabled.

Also, sorry but we cannot list a single, simple way to check PDFs, other than try them.

- Tablets which depend on Wi-Fi and might not have a GPS receiver chip, will not work when out of contact with a wireless/Wi-Fi connection. Check the device options.
- Using the “location services” enabled or GPS on your device means your battery runs out of power a lot faster. There are some cheap connect-by-USB battery charge options at many department stores, and the extra power really can help ... particularly if you’ve navigated around the swamps and muck to that perfect spot, and then time to go back to car at end of the day and your navigation tool doesn’t work because device out of power.
- If you save a map to your device, be aware that we might update that map – so go back and check the PDF resources so you have the newest information.
- That’s a perfect example of making sure you’ve a backup plan with someone else who knows where you or your group are going, and also you should have an alternate way to find your own way out from a location, in case power gone on your device. Your own safety is highest importance. Our hopes are that informing you of this new tool, and using it, makes you safer and enjoy Michigan out-of-doors more.

2. Get an appropriate program/app...

You have to use a special PDF reader program installed on your device. Installing it may require you to be in a location with a dependable Wi-Fi/ wireless connection, so you can download the program. There are a few programs or “apps” available, but, in our reviews and evaluations, and those done by many others (i.e. such as [USDA's Forest Service's directions](#) or [US NWCG's directions](#)), one seemed to excel over others, for now. This document recommends one program/app., but it’s your choice to decide to try it or try another program. We do not and cannot offer any technology support, guarantee or warrantee for usage; any recommendation is unofficial, and provided to show the location functions which might be used.



- It appears [Avenza PDF Maps](#) is the easiest program, works well (for the current versions we tested), is supported by both the company making it and other users online comments, and it’s free like Adobe Reader, etc. - so you can try it without buying something.
- This same program is made for *Apple*, *Droid* and *Windows* compatible devices; you can download the program off the [Apple-Store](#), off the [Google Play-store](#) , or off the [Windows Phone-Store](#).
- Avenza also has some good user help and directions – so if this document and brief introduction doesn’t provide enough help, see the Avenza website for the product, at <http://www.avenza.com/pdf-maps> .

For your appropriate phone (device) model and version, download the Avenza PDF program.

3. Get / save the specialty-enabled PDF with the map, to your device...

Open it and either “download” or save it to a location on your device where you can find it.

Some situations you can use the function with a PDF online, particularly with some other apps, but we found that it’s both faster, works better, and uses less battery if you have the PDF right on the phone. when you have the map contents on the phone, you don’t have to have WIFI or wireless coverage connection, so can be in more remote areas of Michigan where there is not connection service and still have this work.

4. Make sure your “location services” are turned on or enabled.

This is done differently on different device models, with differences depending on your system version, etc. so not even attempting to write exactly how to do this here. If you need help, there’s should be a help option on your specific device.

Be aware and try and consider that the satellites which allow the GPS location information, have to have a connection. This means you cannot be inside, you cannot be in vehicle with solid roof (without southern horizon view, typically), and if you are in thick forests with big tree trunks obstructing signal from satellites, then you may be off (have error) or it may not work at all. If you start noticing more error, wobble, or your point not matching on map where you expect you are in rea-world location, then slow down, turn to try and improve signal, and it may improve. If problems, it could also be the base data in the map doesn’t match locations in real-world geography (i.e. old data, coarse data, etc.).

Another thing sometimes noticed is that the average device GPS is not “survey-grade” or “to the inch” accuracies, and might show your location “off” from where expected. This could be just because of the hardware; check your device help information for any setting you can change which improves location accuracy.

5. Start up Avenza “PDF MAPS” and load the select PDF (from in step 2, above).

Again, see [Avenza's notes](#) on program operation, because directions can vary widely between devices. However, when you load the PDF and have location services (GPS) enabled, you should see a dot or arrow-point (may differ with system) where you are located, then if you move then the image on your device should remain centered on where you are, should show if you turn, allow zoom-in and zoom-out on map detail, etc.

Be aware there's a button/option to turn GPS on/off; if it's off then your location services is not working. If you bump the GPS function button accidentally, it stops working. When you notice it off, turn it on, stop/slow-down, and let your device connect, refresh, and then start back up again. If you stop for long periods (at a hunting blind, picnic table, etc.) then you could turn off the GPS function and save battery/power – just remember to turn back on when needed.

6. Try it out, use the special PDF reader Avenza (or another similar program) with a GPS enabled PDF map. We cannot describe all the options or all the ways the interactive location information might be useful or used; if you take a dozen users then there's a chance they might use this new option/tool a dozen different ways.

7. If you want to share your brief success story, we'd like to hear about it!

You can contact the author of this document and the specialist who's enabled geocoordinates in the DNR Wildlife Division map PDFs. Before getting the requests: I'm sorry but I cannot be your personal help-contact for details, for the Avenza program, for help with different model devices, for PDFs, make you custom PDFs, or more. However, I am interested in hearing how usage is going, and if there is any easy changes I could make to the DNR Wildlife Division wildlife/game area PDF maps which could greatly improve the functionality or benefits for us all, and for Michigan's wildlife and other resources. If you've a moment, send me a note. *Thank you, and enjoy the Michigan outdoors!*

- Marshall Strong (e-mail: strongm@michigan.gov), Mapping & Geotechnology (GIS/GPS/etc.) Program Specialist, Michigan Department of Natural Resources, Wildlife Division, Wildlife Policy & Management Section.