



United States Department of Agriculture



Southern Pine Beetle Collector Map

Data Collection Using SPB Spots for Collector

SPB Collector Webinar Transcript (July 2019)

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[SPB Collector Webinar](#)



Forest Service

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Introduction

Let's begin. Welcome to data collection using SPB Spots for Collector. We will cover a few basic topics mainly using the collector app for SPB data collection we will be covering what SPB data collection is, and where the collector app fits into that process. We will be covering what collector for ArcGIS is, so we'll be covering the app and how to use it and where it fits into our data whole data collection process. After we cover that, we will pop over to a Collector for ArcGIS demo where we will cover a download and installation of the app, opening maps on the device, downloading them to the device, collecting new spots, evaluating existing spots, and at the end syncing data to the server so that it can be used by other people in the field.

This is a short presentation, but it is good for us to start with where we are in the entire process. First let's focus on SPB database. You can see the SPB in the center, and this is really where all of the data that is collected through various means including collector and DMSM, which we'll talk about in a moment this is where all of the data ends up. Once the data ends up there then it can be used as output so it can be made into regional maps, made into SPB maps, and we use that for reporting of forest health so we can make better management decisions in the field. This is done a number of ways. One of the most rudimentary ways is we start with paper and GPS field units. This will involve field workers in the field who record information that they see regarding forest health, that then gets made into a CSV. Then using SPB web tools it can be given to the SPB database. That is one way that we are able to get information from the field into the SPB database. Another way is down here using DMSM. DMSM is the digital mobile stitch mapping system, this is all done using aerial survey. We have surveyors who fly over the forest the mark of spots they see that should be checked out by the field crews. DMSM has its own internal process for data validation and making sure that we are collecting quality data. Once the data is collected through DMSM it is uploaded to the DMSM database then imported and then given to the SPB database so that it can be used for the same output maps that I mentioned earlier.

Collector for ArcGIS App

We will be talking about collector for ArcGIS app. The one thing to notice is this arrow between collector and the SPB database this flows both directions which is important to understand. When we use collector we are taking data from the SPB database, updating it and adding more data and then we will sync that back to the SPB database server can be used for output maps that we talked about earlier. That is where we are in the process, that is where collector fits in overall SPB spots for Collector collection system. Let's talk for a moment about what collector for ArcGIS is. I mentioned that it is a app, really all of this is, it is meant to be an app that can be run on a mobile device when you're in the field will be using a tablet, and it is meant so we can quickly and efficiently collect field information. There are both iOS and android versions so it can run on an android tablet or an iPad. Today

we will be using android. I think the field tablet that get used will be Android tablets so this should be compatible with the tablet you're learning on. Another key advantage of using collector for ArcGIS is that we can store and host and serve data through AGOL. So through ArcGIS online we can have a map and some feature servers that's where we can store data so it can be easily transferred between the tablet and the SPB database. After we pop out of this presentation, we're going to be talking about a few key items using collector.

AGOL SPB Group

The first is this [AGOL SPB group](#). You will need to be a member of this group to access the map. We will talk about downloading the collector app and downloading the SPB maps to your own device. We will talk about exploring the collector interface so that you better know how to use the app. We will talk about reading spot metadata including information that people previously collected about the spot. We will go through adding our own evaluations and our own perimeters to spots and then collecting new data including new SPB spots as well as things like breadcrumbs and perimeters and treatments. Of course syncing data back to SPB database so that the data can be used for the Output maps that we discussed in the last flowchart. There are number of resources that we will discuss at the end of the presentation. The first is a self-paced tutorial so you should be able to click this link and that will take you to the self-paced tutorial teaching you how to use collector for ArcGIS specifically for SPB data collection. This will go through a series of exercises which will cover a lot of the information we will cover today in this demonstration, but if you need to revisit it on your time, that is a great resource you can go through to remind yourself of the information. Another is this group within ArcGIS online. If you go to this group there will be a number of resources. You will be able to find field service maps and the training maps that we will be using today. You will be able to find some other information about the SPB collection. If you need help with any of the SPB collection or the collector for ArcGIS app you can contact FHAASST through either of these email addresses. Particularly the top email address, Sage Sheldon (sage.sheldon@usda.gov), if you need to be included in the membership of the AGOL SPB group. She is who you should contact. We will leave this presentation, we will pop over to the screen share of the tablet so we can go through a few things I just discussed.

What you will be seeing now is an AGOL page and this is the homepage when you sign in through a USFS organizational account. If you're not part of the US forest service you may not have the USFS account but you do need to have an organizational account that they can added to the southern pine beetle group. We will go through how to access that group now what resources you might find there. This is the homepage that my find yourself at. Yours might look a little different depending on what organization you're a part of. At the top you will have this toolbar so we have home, gallery, map, scene, groups, content, and organization. I will click on groups. That will take me to the page that shows the groups I'm a member of. Yours won't look exactly the same as this, it will depend on what groups are part of. You can see I'm part of this digital mobile sketch mapping or DMSM group. That's something I mentioned earlier which is also part of SPB collection and we'll



be seeing some of the data generated in DMSM today. The other one we need to talk about is the southern pine beetle group this group is something you will need to be a part of, in order to do SPB collection using collector for ArcGIS. I will click that group, this takes me to the group page. Primarily, this group is for us just to hold the feature services and web maps for the SPB collector information, please scroll down, then you can see that really the major features is that this is how we can access the training maps, the training feature services, and then there is some additional information regarding SPB spots for collector including flowcharts and other information I covered in the presentation as well as instructions for accessing the maps, the geodatabase documentation, and of course most importantly the field feature service. We will cover the difference between the field and training maps in just a moment. This is how you access the SPB group. We will go through and do a fresh install of the collector for ArcGIS app and then we will download maps to the device we will talk about collecting data how that is done in the app.

Downloading the Collector app and discovering SPB maps

The first thing we will need to do is download and install the app , this is the home screen of the tablet I'm currently using. There's a couple of other apps on here including survey 123 which is sort of a similar app to collector for ArcGIS it's not exactly the same but another esri product. These other apps you might not see on your homepage, it might look different this is just what the tablet that I'm using looks like. Don't worry if the apps aren't the same. What you will look for an apps button at the bottom. Again, just like with all things yours might look a little different depending on the version of android that you have but look for the apps button which will open the apps drawer. If I tap that, then this will show me all of the apps available. You will look for this play store app with that icon, tap that, and then it opens up this homepage. You will see a bunch of apps that you could download. You want to go to the search bar at the top and search for collector for ArcGIS. Type that into your search bar. That will take you to this page the collector for ArcGIS make sure this is from ESRI, has this icon, and this can give you a little bit of information about the app. You can see some screenshots and learn a little bit more about it. You will want to tap install, it will give you this warning. It needs to access identity, location, photos, and then Bluetooth connection information. All of this is necessary. Identity because it needs to know who is collecting the data, that's just your AGOL identity that it's referring to. Your location because it needs to know where you are because of course this is spatial information that you're collecting. Photos and media, because we can collect photos in the field of the trees and the damage from southern pine beetle then the Bluetooth connection information because we will connect external GPS devices to improve the location information so that we are collecting accurate data. Go ahead and hit accept. This will begin to download. This will take a moment while we wait for this to download and install.

[Pause] >>

Exploring the Collector interface and SPB data

Once you have downloaded it and installed the app, you will see this open button over here. Also if we go back to the home screen, you see that the icon has been added to the homepage. If you go to the drawer you will see this bottom app is now the collector for ArcGIS app. If we tap on that, then that will open up the collector for ArcGIS and prompt you to sign in. It will give us access to the group I was mentioning so we can load those maps into collector and then to continue. Let's take a moment to connect. We will need to sign in. Remember I said that you need your organizational account needs to be part of the SPB group and signing in with that account to ensure that we know who is accessing the SPB database and who is contributing data. Go ahead and sign into the account. Once you sign into the account, you will be taken to this main screen. This is showing all of the maps that you have. You will see that I have access to this training, this roadmap which you will not have access to, don't worry about that, then this SPB spots for collector field service. Let's talk about the difference between these two spots. Actually first let me show you how to get to this group. In the upper left-hand corner come you see we have a couple of icons. If I tap on this menu, then I've a few options. I can bring up all of the maps, so just the ones that I've created. I can bring up just my maps, I can go to a specific group. If I tap southern pine beetle, that will take me to the southern pine beetle group. You can see we still have access to the training map as well as SPB spots for collector field service. Let's talk about what these are because it's really important. When you are training, you need to be using the training map. Whenever you're doing any work in trying to learn something about collector do that in the training app that you can draw whatever data you want nothing there is actually used in the final output maps. However, everything that you drop in the field service needs to be considered valid data. So if you're doing something as a learning exercise can do it in the training map and then the data won't get updated through the SPB database. If you are legitimately collecting data you need to be doing that in the field service map. Those two things need to be kept very separate. The field service map is legitimate data, the training is just for learning purposes. Real quick, I am going to remove this map from my device and the only reason I'm doing that is that I can show you how to go through a download process when we first start. I am going to go back to southern pine beetle and this is what your screen will look like when you start out. Notice that you have this blue download button next to both the field service map and the training map. What does that mean? Right now we have access to these maps through AGOL. But none of the information in the map is stored on a tablet. However, you will be taking the tablet to a place where you will likely not have Wi-Fi or cell service we need to be taking the data in locally so we can collect information save it on the tablet and then we will learn to sync data back to the SPB database. We will download information from the training map onto our device. I will tap download. That will take you to this screen. You want to zoom into the area that you're going to be collecting and that you will be downloading all of the data, then collecting information and then upload it later. Because I'm training it doesn't really matter where I download data from. So I will zoom to an area where I know that there is data, I can download and show you some stuff. I will zoom to this area, tap choose map detail, that is



fine for today, I will hit download. This will take us back to this main screen and notice under the training map, you see this blue bar which is basically just loading the data. It's a progress bar. We will wait for a second for that to download.

[Pause] >>

You can see when it is finished, now you have this little map that says downloaded. What that means is we have taken that information and that's now stored locally on our tablet, if we lost our wifi or data connection it doesn't matter we would still be able to collect data. Also notice that instead of over here the field service button used to say download, our button now says sync. When we collect data then we can perform a sync which will simultaneously upload data we have collected back to the SPB database and will also draw down new data to our tablet. To open the map just tap the map, it will load and then you can see we have gone to the area where we downloaded data. First let's talk about the collector interface and about some of the tools that we will be using. First of all up at the top, over here the right-hand side you will see a few icons. This first one is the GPS icon. If I were to tap that and that should take me to where we are in the field. That will re-center you on your location. Right now I my location services turned off because I just downloaded data in Mississippi I believe I'm actually not in Mississippi so I have that turned off, when you're in the field you will have that turned on so you can be accurately measuring your location. Next to that you have the search button and this is pretty handy. First of all I can tap search, then you can just use this like you want a more standard map app. I can type in a place, I can hit search, and it will give me the location on the map. I can hit the more options button, pull details about the place and have collector give me directions. If you're trying to figure out the best way to get to a town or something like that, collector can guide you there. You can also hit add to my places and that will bookmark it essentially so that you can get to the place again later. You can also use this search bar if you know the four spot ID of one of the spots you're trying to get to you can type in that spot ID in the search bar should work and take you there. So if you know the spot ID of a place you're trying to go that's a useful way to get directions there. The next thing over is this bookmark place, so there's bookmarks and then my places. I didn't have anything there but if you were to add a spot ID or bookmark location, then you could get back to it. Lastly you have this more options button you can do things like measuring distances. We can select a couple of places on the map and I know that that is 3.4 km. Some things like that are kind of nice.

Reading spot metadata

Let's talk more about the spots that we see in the data we see on the map and then we will get into reading existing metadata and collecting our own data. First let's talk about the spot colors you see a few different ones here. You don't see all of spots you could see in collector. Let's talk about a few. First of all these red spots are spots that were collected but have not yet been evaluated. A lot of it may have been collected through say DMSM. We had an aerial survey fly over, they noticed there was a spot that had been affected by southern pine beetle, so they dropped a spot but then they didn't actually get dispatched

to the field, so they haven't collected data at these red spots. There are couple of other spots you can see. Green spots and blue spots. Blue spots are spots that have been collected and their evaluation has said that we should be monitoring but we have not recommended a suppression treatment. The green spots are spots that have been collected and evaluated and an suppression treatment has been recommended but has not yet been applied. Also see that we have black X spots. These are places where and suppression treatment has been applied. All of this is available on the self-paced tutorials or if you forget the legend you can pull it up here or go through the tutorial and it will have it explained. There a few other bits of data we can look at. If we zoom in on one of these spots, notice we have a spot with a black X through it and around that a couple of different polygons. This first polygon which has cross hatching through it and a red outline and black lines, that is a spot perimeter. That should be denoting on the map is the boundary on the spot. This other polygon next to it has a yellow outline and a red fill, that's a treatment perimeter. That is where a treatment was applied. Remember this is just a training map this might not look exactly, it might not have the same spatial detail as on the field collection service but just for the sake of training purposes that's how these were drawn. That's what that polygon indicates. We have these purple lines these are called breadcrumbs and I will talk about them later when we are collecting our own data. That is broadly speaking what a lot of this data means. That's what different spot colors and polygons mean. Let's start before we start collecting data let's start by reading some data that other people put in. This might be useful, if you need to know about spots that have been collected, so we have an example where maybe you are a timber sales specialist and you need to go in and see the extent that southern pine beetle influenced these spots. We know that there have been suppression treatments applied to these spots. Let's click on one and read about it. When I tap on the map it brings up this list of things that I could've been clicking on the this is the spot, this is a spot perimeter, down on the list is the treatment perimeter and the breadcrumbs. Let's start by tapping this spot. When it loads you will see information about the spot. First is the USFS spot ID, the latitude, longitude so its location, the 4 digit spot id. All of that is a table in the field so you will know which spot ID to enter. As you go down the list, we know that this was treated or suppressed on May 10, 2019 at 12:08 PM, so you can tell when the treatment was applied. If you go down on the list estimated acres – a tenth acre, the host was Loblolly pine so we know what kind of tree was growing there. The damage agent was SPB. We can go down the list. This is just more information about the spot – detection date, measured acres, treated acres, etc. Also notice down here the spot state is suppressed or treated, this means that a treatment has been applied. A big thing we will get to is the four things at the bottom the perimeter, the treatment, the location, and the evaluation. You have it couple of different options, you can view the existing input, or you can add a new one yourself.

Let's start because right now remember we are just reading data, we're not adding our own. Let's start with viewing the perimeter, hit view, this perimeter will be this polygon collected associated with that spot. I tap on that, then you can just see this is a perimeter in the same spot ID the date that it was created, the user ID this is who created it, and then the area surveyed with the entire spot. I will tap back, back again, then we can go



down to treatment and tap view. This is the treatment that was applied. This is the treatment polygon, the spot ID, then here we have the treatment types C&R which I believe is cut and remove. That gives us an indication about what treatment has been applied in the area and when. Next on the list is location. Then we have this location information that was added and what this gives you is some kind of additional ancillary information about the spot that you might want to know. What percentage of the spot is operable by mechanized equipment? 50, so half and half. Width of the ridge, percent sideslope, width of the floodplain, is this a suitable campsite, a nearby stream, how far away from the stream, what is the width of that stream? This gives you a lot of additional information that might be useful to know about what is on the ground here at this spot. We will look over more these later on. We get to the bottom and we get to this spot evaluation this is where a lot of the information about a spot can be seen. Tap view. This is the evaluation. The other thing I should mention is the reason why we have to tap the evaluation is because there could be numerous evaluations. You can revisit a spot after a treatment has been applied and reevaluate that spot. We can have numerous evaluations. This spot we are looking at just has one. One perimeter, one treatment, one location and one evaluation. Again, we could have multiples. I will tap this evaluation, this gives us a long list of information. We get into some additional information. We know that a ground crew visited this.

We get to here, are there fresh attacks present? Yes. Take a look at your screen for the data. There are quite a few that have been attacked or killed by southern pine beetle. This might be valuable information for you if you are a specialist. We go down through these in a little more detail later on. This is where we can look up the evaluation of a lot of information. I close out of that. Let's look at another one. Remember that I said that these blue spots are spots that have a recommended treatment of monitor which is basically no treatment that we will not perform a suppression treatment we're aware there are some SPB activity but right now we are making the decision that we don't need to go cut anything down or burn anything. We will be monitoring. I will tap this top one, we have a spot in this ranger district. Again, spot ID, this is all of the information we saw before. We know now that the spot state is monitor. What does that mean? It means that we've gone here realized there is some southern pine beetle activity but we are just monitoring. We have not recommended the treatment. If I go into the evaluation at the bottom, we have perimeter, treatments, the location information, and the evaluation. Just like before I'm going to hit view on the evaluation, this is the evaluation, when we load that up we can read more about it. This is a ground evaluation. The recommended treatment was monitor. If you look at the rest of the information and makes sense. The number of green infested trees is lower. Red or fading trees is lower. Somebody visited the site, they looked at the trees, they made the determination which is to monitor the spot but not necessarily treat it. That's how you can pull some metadata from an existing spot.



Adding evaluations and perimeters to spots

Let's get into adding our own. This is what you will be doing a lot of in the field. I'm going to zoom in to one of these red spots, tap this one. Let's say this is a spot that we went to visit. Imagine we are not trying to read metadata, we are part of the field crew going into the field and collecting information about these spots. We come along to this spot. It's been previously detected, possibly by an aerial survey, maybe from DMSM, we walked to the spot, we can go ahead and open it. Here is what I want to show you. Let me scroll to the bottom, remember there is this training evaluation, if I hit view, no evaluations found which is what we expected. The spot has not been visited on the ground. It has been detected, but no ground crew visited. I'm going to hit back, you can see here a spot is detected, but that is as far as we have gotten, which is why its red. We will go ahead and add all of this information about the spot. Imagine we are in the forest, come across the spot and then we need to add the training perimeter. If I hit view there is no perimeters because nobody visited this spot, all of this information will be empty. Instead of in view we will hit new. The first thing you will need to enter is the field spot ID. I'm just going to enter 9999 right now. The next thing is the date created. You can tap current and will populate this field with the current date and time. You can hit next and that will take you to the user ID tab, then type in my organizational account. This is the one that I was, I used to join the group in AGOL. If we go to this and hit next it gives us this drop-down menu asking us what part of the area was surveyed. We will go around the entire spot, this is what we are surveying which will be the perimeter of the entire spot. I hit the back button to close the keyboard, then you have a few options. Let's go over those options. Let's assume for a second that you're in the field, you have this GPS hooked up to your tablet, and what you could do is hit this button at the top so on the top toolbar, you have this button that says start streaming, if I were to tap that, then it tells me it is waiting for my location. It will not find it because I my location services turned off because I'm not actually in the field. But if we had our streaming turned on then what we could do is walk along the perimeter of the spot, rather than having to draw the polygon on the map by hand we would walk the perimeter of the spot and it will be collected. Obviously, we cannot do that today because I'm not in the field. You have all of these other options at the top soon you can zoom to your location, you can just hit the delete button to delete the perimeter, and then we have this more options button. So if I that, we can do delete vertex and I will show you that in a second, or we can go to collect settings. This changes the requirements for that streaming option. If you are walking along, then this has the required accuracy of at least 30 feet and the polygon has some margin of error that it's willing to accept. And then the streaming interval, so it drops a new vertex every 5 seconds. As you're walking along every five seconds and you get a new vertex dropped. You can adjust these really though the default settings for the database should be fine so I'm going to cancel and leave everything how it is. That is where you will go to change it if you decide to. Instead of streaming because we can't, we will draw on the map so I will tap here, tap here, and I can edit these vertices. Let's say that the spot looks like this. That would be the perimeter of the spot, so that's what would be recorded. Saying this is the entire spot that was detected and was



marked as a red dot on the map. Let's say I want to delete that vertex, highlight that, more options menu, click delete vertex, and there you go. Once you're satisfied with the spot perimeter, then up in the upper left you see this checkbox, you just tap that, you might hear a beep and then you see the banner at the bottom that says stored on device. Remember we are storing all of this locally this isn't going to the SPB database quite yet.

We successfully now added the perimeter. We can go to adding a treatment, I will hit new, actually I take that back, I will go through this showing you how to add a treatment, remember that when you're in the field if you're not providing a treatment then you wouldn't fill it out but we will go through so you can see how this is done. Again, the usfs ID gets populated I'm putting in a dummy ID for now but this is what you put in, if we tap next then we will go down to this treatment type. This is indicating what type of treatment has been administered. We will say C&R. On the suppression date we can use current, then the user ID. We can again add ID. I will hit done, we can then draw a treatment polygon if we were applying a treatment, just like with the perimeters polygon you have the same options to stream in all of these options in the upper toolbar are the same. We don't need to go over those again. Down below we can add location information. I tap new, that we can fill in the information which is useful ancillary information about this spot. Operable by mechanized equipment. Let's say 50% of the spot is operable by mechanized equipment. The width of the ridge that we are on is 30 feet. Again, I am making up these numbers because we're not actually at a spot. It gives you an idea of information that you can collect. The side-slope percent. Would this be a suitable campsite? Let's say no. Is there a nearby stream? Let's say yes. How far away is the stream? Let's call it 30 ft. What is the width? Let's call it 5 feet. Gravel substrate. You'd of course go through these, legitimately populating them with information about the spot that you'd see. Make sure that you review all of the information to make sure that it is correct and what you want to add. Just like before you have a check box, tap that and now you've stored a location update on your device. Last and possibly most importantly is spot evaluation. Evaluation date, I'm going to say use current. Evaluation type, ground, aerial or remote sensing/imagery. Remember that we are assuming we are field crew going out into the world and actually visiting the spot. Let's say we're on the ground, then the rest of this information you will have to make a judgment on as part of your job as a field worker. Make sure that you are entering correct information in the spot evaluation. Again, I just want to mention one more time that all of the information that we are covering this is all available in the tutorial so you can go through all of this as an exercise but you could print off and bring in the field with you if you needed to. Remember just like we reviewed before this includes information about if there are fresh attacks present? The number of green infested trees, red or fading trees, all this other stuff. This will be crucial information about this spot. For the sake of time I'm not going to make you watch me fill in a bunch of numbers. I'm just going to hit back and exit and then hit the check bar, actually that's a good point that it won't let me do that. There are some fields or values mainly so something like this is recommended treatment, this as an explanation point next to it. These are required fields so if I don't fill this out, then it's not going to let me continue. Let's go to the bottom, let's fill in the host, more loblolly pine. And let's say the damage agent was SPB. Now I can hit the checkmark and it will let me save. Remember



that there is some information that is considered crucial that it will not let you save an evaluation without having entered it. Now that we added a new parameter, treatment, location, and evaluation, then I can in the upper left another check box tap that, and now all of that information will have been saved. Now another thing that you might notice, that is still a red spot, but we just gave it an evaluation and information not just a detected spot, so it should change color to green. That change in the color doesn't happen until you perform a sync. Once we sync the information back to the database and that map will be updated.

Realistically the spot is now a green spot, but you won't see that updated on the map until you perform a sync. That is how you would add information to an existing spot. Remember, different spot colors you evaluated differently, I showed you how to add a perimeter as well as a treatment to the spot normally what we do with that is the perimeter so you could record the location and then you would recommend a treatment and then somebody will come back and apply the treatment later on. You could also if you visited a blue spot or green spot, you could visit a blue spot and give a new evaluation and say are we still monitoring the spot or has this progressed to a level where I think there might be a treatment that needs to be applied. Depending on what color the spot is that you visited you will go about evaluating it slightly differently.

Collecting new data

Quickly I'm going to show you how to collect a new additional information. Over here on the features panel remember I tapped on those red spots before so that is still showing up in the features panel, but then this X in the upper right if I tap that and that brings us back to the main menu which is asking us if we want to collect new information which of course we do. First things first let's say we come across a new spot in the field so there is no red spots here so nothing has been detected we notice that there is a cluster of trees has been affected by southern pine beetle. We will come to this collect new menu. Tap spot, it is trying to bump me back to my location, I am not really in this area, it is telling me that I poor location accuracy. That is because I have my locations turned off. I should hit cancel, then tap on the map which I can. I tapped on the map and you see the purple spot, then we will go through and populate it with all of the information. I believe when you're in the field it will auto populate. We enter the ID and the field spot ID and that will be populated by the database or that will be given to you in a table which you will include when you're in the field. Here you will have to include what organization that you work for Say you work for the Forest Service, you would tap U.S. Forest Service. The estimated acreage. The default is a 10th acre. This is a bigger spot and you estimate the size and you enter the information. You would mark the host. Then the damage agent. You would again enter your user ID. The state you're in, the county you're in, the district. This is all information about where this spot is located.

There is a note section so you can add any additional notes that you might want to add for the spot, anything that you think might be useful for someone revisiting the spot. You can mark your detection date, the measured number of acres, the number treated



acres, total affected acres and whether or not this is a potential duplicate. Then last here at the bottom and this is important, the spot state. We tap this we have a few options. You can mark it as detected, this means that you notice the spot but you didn't give it a perimeter or treatment anything like that. There are couple of others here that we have mentioned. Monitor remember this would be you noticed southern pine beetle activity but are not recommending a treatment. You can mark it as treatment recommended this will turn a green one that we haven't talked about yet is dead or inactive so if you notice that these trees this is a spot that has been killed off completely by southern pine beetle then you would market as an active and it would return to a black spot. I will say treatment recommended. I will tap this check mark and you can see that we've saved this green spot.

I will tap it again to open it, remember normally if we are in the field, we would fill out all of this information. Just like before, if we went to the bottom, the spot data treatment is recommended. Then we can of course add a perimeter, the location information, in the evaluation. That's how you will collect a new spot in the field. I will hit this X again close out of the features window, and then there is one other collection piece of data that you can collect that will be important. It is called a breadcrumb, we saw few of these over here. Let's start by tapping on some of these and seeing what they say. Breadcrumb and the note is two spots behind the lake. All of breadcrumb is a line that you can draw the map that would indicate to a future field crew or yourself a good way to get here and maybe some important notes that you might want to know. If I tapped this, this one says for instance gate locked, this means that somebody coming back might be going down this road they might see this breadcrumb come this direction, but they will note that the gate is locked. Maybe they know to ask for permission to use it. It gives you useful information about how to navigate around the field. Let's look at collecting our own. We just collected this green spot, let's start on the collect menu, collect a breadcrumb, then I can tap on the map this line may be to this road indicating how to get there, and then I can leave a note. Might want to tell people watch for snakes. I can hit done, and like all of the other collections, tap the checkmark in the corner and out will have been collected.

Recap

Just as a quick recap, we went through looking at his existing data which is on the map including red spots, blue spots, green spots, treated spots, the only one we didn't see was that or inactive spot but this would just be the same, but the color would be black. We went through to read information about this, how to see where the perimeters of the spots are what the treatments are and how to read what the evaluations are then of course we went through adding all of the information ourselves including adding a whole new spot that had not been previously detected.

Syncing data back to SPB database

Once you do all that you go into the field, you collected all of the information, edited the information, now of course like I said you need to update that back to the SPB database. Back on this main menu, then we will perform a sync. I cannot emphasize enough how important sync this data is. This is something you should be doing every day. Your job is to download all of the new information that was collected by the other field crews download that to your device go out to your fieldwork and as soon as you have Wi-Fi should be performing a sync and updating information to the database as constantly as you can. Whenever you have Wi-Fi, make sure that your updating data as often as possible. We will go through that now, notice at the bottom I mentioned this before the field service download button because I haven't downloaded it to my device, but again remember that the training map have the sync button but now it has the sync and in parentheses six so we've made six changes that we are going to upload to the database. I just tap sync. It is as simple as that and it will update all of the information that we collected. Anything that is new is going to be downloaded. Go back out in the field and we will have updated information. Once that is done you can see over on the side the status is now synced. That was a quick overview of collector for ArcGIS and how it relates to SPB spots for collector.

Conclusion

One last thing that I want to show you is, I am back in a webpage. This is on the [FHAASST website](#), on the forest health website in the applied sciences section, you end up on this page. I left a link to this in the presentation so if you're watching this recording, you should be able to go back to the beginning of the presentation and click on the link. If we scroll down to the bottom, then we see the southern pine beetle collector information in a few files. Some of these have a PDF file, but the one I want to draw your attention to now is that we go over here there's this SPB tutorial and then there's this little icon and if you click that, that will take us to this tutorial. I want to take a few minutes to walk you through it show you the information that is available. Using collector for southern pine beetle data collection, hit start, that will bring us to the main menu. You have some kind of overview information. Down here at the bottom, we have the email addresses. This is for training support. If you have issues with the material, you think there is a link that is broken, then you need to email this is email address at the bottom. Let's quickly go through how this is structured so we have our options over here on the side, let's start at the top. This gives you some information including where is collector SPB in the process, this will give you a flowchart that we covered in the presentation earlier that you can read about the various sections. If you forget where you are in the process or you want to revisit any of the information, you can do that here. Below that we also have this understanding SPB spots. This brings us to this page. It shows us the difference spot colors we might see. Remember we saw all of these except for this black spot. If we hover over the black spot it tells us this black spot is dead or inactive. You go to the blue spot it tells us what it is and how it might change later to a green spot or to a black spot so this is a good overview of what these



legend means. I will tap back, I will go back to the main menu, and then this gets us to the exercises that exercise one goes through the download and install of the collector for ArcGIS app that I started with. Tap begin exercise. That will open up a PDF. It will walk you through how to do everything that I just talked about in a self-paced format. I'm going back to the tutorial. We can hop to exercise two, you get a quick rundown of what it is that it will be teaching you. Exercise three, this involves collecting, start editing existing data in collector so this goes through adding evaluations and perimeters like we talked about.

This goes through collecting new data so this will be collecting new spots and adding breadcrumbs. We can hit finish tutorial. We have access to the additional resources page. If we tap that there are couple of extra PDFs on the side of you having trouble with your collector installs the might be some additional instructions that you can follow and then there's also this field data collection form which is kind of useful. That's a very quick overview of the tutorial, but if you ever would like to use it, then that might give you idea of the structure and the link to that will be available in this recording. Here are the resources available.

That was a quick overview of where collector is in the southern pine beetle process. The quick overview of the collector app itself and how to collect information and then a quick overview of the tutorial hopefully gives you any additional resources you might need. If you have any more questions, remember go to the tutorial and email sage or mark with your questions. You have any questions about this recording anything you saw in the exercises feel free to email me and you can get my email address from the tutorial. Thank you for watching. We will see you around. Good luck collecting out there.

[event concluded]