

## Tuesday, July 28<sup>th</sup>

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1:00-2:30 PM

**SPB Working Group (Organizer: Stephen Clarke)** – Harbor Room

It's your Thing – Tony Courter

SPBIS – Valli Peacher

Insecticides for SPB – John Taylor

The rise of fall SPB trapping – James Meeker

SPB Internet Control Center – Scott Salom

Plane talk: the availability of aerial detection aircraft – Chris Steiner

Pheromone database – Brian Strom

SPB novel control screening committee – Brian Strom

Operational use of semiochemicals in a mixed WPB/MPB infestation-  
Dave Wakerchuk

### **It's Your Thing**

*Tony Courter (USFS-FHTET)*

The SPB data portal is an internet-based data portal that allows you to put your SPB infestation data into a database through the internet. It validates the data as you enter them, and also has an automated uploading utility.

What's new since last year. The Portal is outside the FS firewall so state cooperators can get into it. Password protected entry for 13 state users and for FHP. Calculates and validates conversion of volumes into cubic feet. Reorganized the data entry forms. We've got one area for the core fields, latitude and longitude, unique spot identifier, detection year and month, state and county. If you try to enter a location that's outside your state, it will scream at you. Acres, volume and value also are core.

Other important fields (detection date, owner type, survey type, forest and district; and market-size class are to the right. Aerial detection info is the next block, ground check data are the 4<sup>th</sup> block, then management actions and harvest data.

If volume and values are not entered, the program calculates them on the fly.

Since the ADS fields are on their own separate block they will remain. After ground-check the core values will be updated, but the ADS estimated data will still be there and could be used for training.

Detection date is the default; you can also use ground check date and suppression date as additional fields as well. You can also sort the info by state, county and owner type (either/or type of fashion). You see the results on screen and you can do an optional CSV download. So basically you run a report, you can see the information and then save it to a CSV file which is then on the computer.

This is what the improved mapping functionality looks like. Over here you have the data portal, reference shapefiles, states, Region 8 wilderness, R8 USFS boundaries, but then you also have ESRI. Enable the street map up there and you have Google earth map satellite like imagery, i.e. picture garden spot of the South there, and this is zooming in on fictitious spot in TX down there in that little red one.

Click on that, you can see the raw data associated with the spot.

Universal upload utility – organize input data in a CSV file in Microsoft Excel, save it, and then use this interface to map the fields to my fields and pull the trigger and everything automatically uploads. It validates on the fly.

You can fix the data interactively. You can view the input file, you can view the exception report so for every record that doesn't cut it, there is a separate file that you can fix in Excel and then you can view a log file as well as it'll go through and tell you what was wrong with each record.

The mapping utility has an extensive online help.

And then my goals for this week:

- \*As many live demos as possible.

- \* In terms of the mapping functionality, I've got the server service set up to take 5 concurrent users. I could make as many as 20 concurrent users but I suspect the overall mapping functionality would slow down. There's got to be a sweet spot there but I don't know what it is.

- \* I'd like to review and reorganize the data entry interface.

- \* Find what Wes wants in the queries...

- \* Any additional data validation and calculation necessary?

- \*We have some fields out there that serve no purpose anymore. I'm pretty sure we can cut those off easily and be done with them.

- \* I'd like to make detection date a required field. Motion carried.

I'm here all week.

## **SPBIS**

*Tony Courter (USFS-FHTET)*

SPBIS 5.3 update. We decided that latitude and longitude were going to have to be required core fields with SPBIS.

I've reengineered the data listing.

The export to SPB data portal format will cut multiple layers, multiple-related records down to a single line of data. One line of data per spot infestation and it'll return all the associated fields with the newly populated lat/long and then it'll generate a CSV file so you can run this export to data portal format. Data can be uploaded with the universal upload utility into the data portal and then you can also save all of the queries.

I've also added special management considerations to the custom queries. You can run a report that returns all the spots that are associated with special management considerations and the SMC code "BC".

And on each one of the brain trust queries now there's a create KML file utility.

*SPBIS is inside the FS firewall. General public will be able to see all the core fields for the data portal but not the other stuff.*

### **Insecticides for SPB**

*John Taylor (FHP, Atlanta)*

Historical use, back in the 40's Orthodichlorobenzene was used in a petroleum solvent to control bark beetles, usually a kerosene or diesel-fuel base. Diesel was a strong player as a carrier. Then we went to BHC and diesel. Then we got high tech and took the gamma isomer from BHC and mixed that with diesel; that was Lindane. And that stayed around for a long time; maintained itself as kind of standard for bark beetle work for years. Then we decided that the diesel was damaging the plant tissue and you got better uptake if you used water as opposed to the diesel; also you got less human risk. So we used that for a long time. Some of the smart folks in the South got together and began to look at chemicals and came up with a few and got them registered. Chlorpyrifos and Fenitrothion were the two that really came out of that. Fenitrothion didn't stay around too long. Chlorpyrifos (Dursban) was used for quite a long time, but is not available anymore.

Forestry is a minor use. EPA introduced the risk cup concept. What that said to the chemical manufacturers was that you can have this amount of risk total from all the registrations in this active ingredient and if you exceed that risk cup then you have to do whatever is necessary to get the risk back in this allowable quantity. So guess what was the first thing they threw out the window? All the minor uses, and that's where we really got nailed. Dow unilaterally withdrew registration of Dursban for control of bark beetles so we lost that one. And then the Lindane registration was still around for awhile. The label was still active in 1999 but nobody was making it and now that whole product has been cancelled.

The FS Special Technology Development Program funded about 20 years of work on verbenone (all together) and how to use pheromones. It worked and it actually was registered by EPA. Then the company decided they didn't make enough money so they just dropped that registration.

*Question? Does the registration have to be renewed every year at a cost?*

Yes, it has to be renewed and the timeframe varies. There is a cost for re-registration or registration renewal. Both a federal cost, and in most cases, a state cost. So fees have to change hands. About \$6,000 a year EPA asking for, plus whatever the states want (you got to make that much money just to break even).

Then we had Beetleball, 4-allyl anisole(4-AA). I think the registration is withdrawn for that too. Efficacy was a little bit of an issue and is not currently used.

Bifenthrin is an insecticide that some of the folks at the University of GA did some work with and looked good; actually was registered and is registered as far as I know. It's called Onyx, but finding it is the problem. It is not easily available unless you know where some of this stuff is and if you do, let me know where it is.

**Audience** - We were told a couple weeks ago by Red River Specialities, the non-Onyx label products are easily available.

**John:** Yeah, but you don't get the registration you need?

**Audience:** I think you do, I think it's the same.

**John:** What is it James? I'm saying this based on what you went through trying to find it. Is it the same active ingredient?

**Audience:** Jim and I looked at the label, it's the same label.

**John:** OK, it's for turf & ornamentals right?

**Audience:** Yes.

**John:** not general forestry.

**Audience:** That's right, at least that's my understanding. There's a fact sheet on the website. Yeah, and we can send you some info too.

**John:** OK, you might want to put that out because I wasn't aware of that.

**Audience:** It's from Red River Specialities and they buy it out of TX. The company is in TX and makes generics, essentially.

**John:** Remember you don't have to have bark beetles; you have to have *a site, that's the key*. You got to get the site – forestry, or turf & ornamental or however you want to do it; you have to get the site.

**John:** Carbaryl works out west; I don't know. You guys haven't been able to figure out how we can use it here to kill bark beetles consistently, I guess?

**Audience:** We've used it to mess around with as check, but it doesn't work so well.

**John:** And that's what we've kind of said. Is it valid to say the humidity difference is what's killing us there?

**Audience:** I have no idea about that.

**John:** Don't go spray your trees with Sevin thinking you're going to control SPB. It's not going to happen.

**Audience:** I thought it was some type of aerial detoxifier.

**John:** Could be; whatever it is, it doesn't work.

Permethrin → it's *great* for keeping chiggers off you or ticks, but it doesn't do too much on SPB. It's still registered and is available. It's registered for seed and cone too.

OK, effective pheromone alternatives, unless you guys are doing stuff in your labs I'm not aware of any alternatives that are currently registered operationally for use. There are some options on the horizon, i.e. the injection stuff. Again we're talking about turf & ornamental. Injection is probably going to be turf & ornamental. I don't see plantations as being injected. I don't think we have that kind of values.

**Audience:** Permethrin is currently registered for SPB; *but* the site is only ash. The list of insects they had on registration has to pass by EPA. The only site and tree species they'll allow injection on is ash for the emerald ash borer.

**John:** I think that's a mistake.

**Audience:** The reason is that they're concerned about pollen. They think perhaps some of these trees that put out pollen (like pine) are being visited by bees.

**John:** We have data to reflect that this is a current concern based on scientific gathering of information?

**Audience:** Right. Now Syngenta is collecting data information from several species. They have to then resubmit to EPA for review. EPA was supposed to give their decision this month. Because of this resubmission they're not expecting a full decision until another 6 months.

**John:** So any tree that produces pollen is a likely suspect. Even ash produces pollen. That's my point. I don't know of any asexually-producing trees.

**John:** Apparently it is registered for SPB; that's a start. If we can help you with that let us know.

**Audience:** There's work out west with some of the neonicotinoids for control of mountain pine beetle. They got some real encouraging results. They want to test with SPB; is anybody is interested?

**John:** Anybody got any bark beetles?

**Audience:** if you are interested get a hold of Bayer or BASF.

**John:** In case anybody is wondering where we are in this talk, we are right here.

Neonicotinoids will bite us on the posterior as far as the pollinator issue. We've already struggled with that and forestry is such a minor user. The agricultural use is what's going to kill us. I guess where we are is - keep your chainsaw sharp and your bulldozers warmed up.

**Audience:** One other thing, BASF has become less enthusiastic about fipronil. It was never as effective as emamectin. We're having some problems with update and general efficacy.

**John:** Fipronil has bigger issues than that. I've got some enforcement friends at Fish & wildlife who hate that product because of what they've seen.

**Audience:** BASF is focusing on bigger markets now and I guess EPA is limiting them on what they can use it on.

**John:** It's a great fire ant killer.

Did y'all here that? Bifen XTS. The guy's last name is Rozell (or something) at Red River Specialties. That does work but there's nothing as good as what we've had in the past.

**Audience:** What about Warrior insecticide? There's a generic available for that too.

**John:** Alex has been using in seed orchards I know.

**John:** It would sort of be interesting when the cycle goes around and bark beetles start chewing on people's yard trees again and the demand fills. It is going to be interesting to see where this goes.

**Audience:** So do we pursue anything with say the generics and try and see if one of these bench players (these generic producers) would be interested in a label; is that worthwhile at all?

**John:** There were companies that specialized in niche label markets but the problem is they are going to want a market survey and when beetle population is down you're not going to get the kind of numbers they want. The demand is just not there right now.

**Audience:** So does that mean we produce some data or does that mean we don't produce some data?

**John:** I don't think it would be bad to have the efficacy data on hand even though efficacy is not required for the registration piece. It'd be nice to know what the options are.

**Audience:** The rate used way back when was higher than the label.

**John:** Substantially higher, forget that.

**Audience:** So do we just use the highest rate that's currently on the label and try it?

**John:** Yeah, because if you come outside that label (we found this out the hard way) in seed orchards, that's like a red thumb sticking up. They want to knock it off first chance so stay within the label rates. The other take home message from what we've learned is when the wording goes on those labels be sure it reflects *what you actually do and not what you might do* because we got killed with azinphos and some of the others. We could put on like 50 lbs active a year with everything that goes on the label. Nobody was doing that but EPA of course picks up the worst case and that's what they run their risk assessments on and you can't beat that.

So, keep it reasonable.

### **The Rise of Fall SPB Trapping**

*James Meeker (FHP, Pineville)*

We're continuing with the fall pheromone trapping surveys on the National Forests in the western Gulf States from TX over to AL, AR, LA and MS (thanks to Valli). We've been doing it since 2003. We've gotten into using the standard beta and sirex SPB sleeves along with 2 centrifuge tubes. Fall surveys are mimicking the spring surveys and as far as its 4 weeks during the year. In the fall it runs October up to the week before Thanksgiving. The results are right in line with spring forecasts, or as good or better, but we haven't had any beetle outbreaks to really test whether we can get a 6-month jump on detecting population phase shifts. So we're still waiting for an outbreak to occur to really evaluate the utility of the fall trapping survey. We're going to continue doing it in the western Gulf on the NF's for the foreseeable future.

### **SPB Internet Control Center**

*Scott Salom (Virginia Tech)*

The SPB ICC is still running. Some upgrades are needed. Tree Dellinger has moved on. She did content management at the site for the past 4 years. Steve Clarke has assembled a team to help manage content. The people that are involved day-to-day on SPB activities need to provide up-to-date content and management of the site. There are some areas where that's certainly needed.

We have been working on the bibliography and have added 350 articles. Obviously those of you that are publishing should be adding citations.

### **Plane Talk: The Availability of Aerial Detection Aircraft**

*Chris Steiner (FHP, Pineville)*

What will we do for aircraft when an epidemic comes (mostly for the federal side)?

Aircraft currently available:

→LA - 1 Cessna 182, AR -1, KY- 2 (will soon have three, Cessna 182 to get AFF on board), NC - 1 (Western) 1 (Eastern) & 1 Cessna 210, FL – 2. We have a total of 2 aircraft in the west and 5 in the east. We will have 3 available in Kentucky once the AFF is on board.

We need to keep helicopter options in use. We have learned over the years that it may cost more, but is more accurate for individual spots (especially with digital aerial sketch-mapping). Average costs are \$550 per hour/helicopter vs. \$250 per hour/aircraft.

Is this number sufficient if an outbreak does occur? These planes are also used for fire. The availability is unstable due to the cost to keep contracts. We just got contract for LA. It is not very lucrative for some of these companies to stay in contract because they are not making any money, sometimes they opt out of the contract before it is over with. If non FS is in aircraft and we ask them to collect data, that aircraft must be carded. States can contract plane without it being carded and can use federal money, but a federal employee can not step on the plane.

### **Pheromone Quad Database**

*Brian Strom (SRS-RWU-4552, Pineville)*

The genesis for my involvement was the elution webpage (Forest Health Technology Enterprise Team with Judy Adams). APHIS folks also are involved. It is an online database with approximately 400 species of insects. We are trying to get information on lures and sampling protocols into this database (commercial lures available, what sampling protocols are used when first finding an insect). We are trying to foster collaboration with other countries and to do fairly quick surveys when exotics are discovered.

We are attempting to put field generated release information on the web. We've been in Pineville, LA, Missoula, Montana and Susanville, CA. We have taken lures that people have told us they would like info on (field data), evaluated them until they are spent, collected temperature info, determined release information, and uploaded the results on the web page. *Ips* pheromones tend to be problematic because they gain weight, but we have sirex, ethanols and various others. We are currently working on getting this years and last years information up and comparing company data. One of the goals there is to tell field people (particularly FHP folks) that if they are going to put out lures on this date then you will have to replace them on this date based on temperature data based on that location.

Data is on the way to being available for when EPA does risk assessments. Field data and lab data are very different and our goal is for *desperately needed field data*.

### **SPB Novel Control Screening Committee**

*Brian Strom (SRS-RWU-4552, Pineville)*

SPB lob model is being worked on by me along with Jim Meeker, John Nowak, Jim Roberts and John Bishir. Stand level model – we want to put in different thinning regimes and be able to test them with the models. The model is complex and is a process model that is for a single stand. Right now the model is available and running on our web page. You can vary site index and resin yield. The genesis of this was out of some clonal questions that John Bishir and Jim Roberts had. You can put clones in and it works pretty well. The problem with the model as it is now is that the output is not pretty or easy, it's tabular. We need some graphical output to get people to use it. Once the thinning components are in, it will be pretty useful.

We are trying to get a plastic literature library on SRS unit website (particularly useful and hard to find).

We have very good microscope facilities in Pineville (Automontage) and if anyone has need for that, please let us know.

We have had on-and-off requests for looking at various products and we are trying to get together a group to deal with these requests. This group will set up a protocol to decide if the request is worthy of evaluation.

### **Operational Use of Semiochemicals in a Mixed WPB/MPB Infestation**

*Dave Wakerchuk (Synergy Semiochemicals, BC Canada)*

Doing work in British Columbia – 5 years into mountain pine beetle (MPB) outbreak. I have been doing work on the Nicola Ranch in South Central BC. Ponderosa pine in this area is infested with mountain pine beetle and western pine beetle (WPB). Ponderosa pine is the best host for mountain pine beetle reproduction and the worst type of stand for verbenone protection. Verbenone is operational but not recommended once the beetle numbers get high. Western pine beetle does not respond well to verbenone and there is not value in cutting trees.

The Nicola Ranch wanted to save as many trees as possible; especially the mature trees around the heritage sites (highest value).

▶ 2007 - We started with verbenone and green-leaf volatiles (GLV) as an extender on perimeter trees of L-shaped zones. Verbenone works reasonably well with GLV as an extender and there were no attacks on key trees.

▶ 2008 - Infestation in central zone. Deployed 32 WPB traps in grid and later switched traps over to MPB lures. At the end of the season half the trees had been killed but the 144 near the heritage buildings were still beetle-free.

▶ 2009 - Removed all beetle-infested trees (between 10-20K trees). We still treated heritage trees with verbenone and GLV.

***Conclusion:*** We feel we didn't have enough protection for the central zone in 2007. In 2008, we collected 24,000 beetles by traps and saved approximately 240 trees; 359 of the 690 trees are still living in the central zone. Nicola Ranch remains a green oasis while outlying areas are wiped out. The outbreak has passed and the risk will become much less.