

NISIMS

Software Model - Field Data Collection

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Kathie Jewell

NISIMS GIS Software Model: I'm going to talk a little bit about our overall configuration for the NISIMS system. The NISIMS system is based on using ArcGIS Suite Software. We have left all the functionality that comes from the COTS [Commercial-off-the-shelf] itself, but what we have done is, we have added some toolbars to the overall applications, and that is what we're going to be using for our data entry and for our use in ArcGIS. So we have the whole suite available to us in ArcGIS, on the desktop. We have the edited analysis so that now, when you have all of your weeds information in the database, you'll be able to take and do analysis with that information. But the functionality of NISIMS is tied in with what's called the Task Assistant.

The **Task Assistant** ends up giving you a table of contents for all the processing that you would need to do, from the start of getting the data from the national down to the workflow of what you're going to be doing out in the field. Each step is shown in the Task Assistant, and we'll be going through much more in the detail of what the Task Assistant includes.

In **ArcPad**, that is where you're going to be able to take and do your field collection. And your field collection is going to be done with a toolbar just off of ArcPad. Now all of this is based on having a national corporate dataset for the invasive species. That corporate dataset is going to be stored in SDE [Spatial Data Engine], all packaged together, that's what you end up getting for the NISIMS software package.

NISIMS Field Data Collection: For the field collection, we ended up taking, and first for the pilot offices, buying some hardware, and what we ended up buying was the Ipaq and the Recon. When we were going through some of the training modules, we ended up taking and having both of those deployed and kind of tested. There is a purchase that's going on right now for all of you to be able to take and have Juno's available to

you. So we're basing our overall field collection on either the Trimble [Recon, Juno] or the [Hewlett-Packard] Ipaqs at this point. And they have been distributed through this NISIMS program.

On the software, we have the **ESRI ArcPad**, and we have a **NISIMS ArcPad Toolbar**, and it is illustrated in the bottom of the screen and showing you that's what it would look like on the Ipaq, and that is the overall toolbar that allows you to collect the individual information.

You are able to take and manually input any of the points, line, or polygons on the screen of your handheld, or you're able to take and use GPS. Whether you use a data dictionary or whether you use ArcPad, you are able to take and also put the information in using GPS.

We have based the overall collection on using ArcPad, although we are supporting the data dictionaries from using the TerraSync. There are things that are advantageous for us in using the ArcPad because we are able to take and really bring down from the national dataset all of our historic information on infestation and treatment. That allows us to be able to take and track the relationship of the new activities that we're doing to what currently exists in the system.

Also, to let you know how it's handled, as far as each of the individual infestations, as we collect them are given a temporary unique identification, and it is not until the dataset are uploaded to the national they actually end up getting their unique identification for the long haul.

NISIMS ArcPad Toolbar: The next slide shows you a little closer view of what the overall toolbar looks like in ArcPad. You have three [icons] with the letter 'I'. That is for your infestation points, lines, or polygons. [Three icons] with the letter 'T' for treatment, you have point, line, and polygon. Then you have an 'E' for evaluation, the 'M' for monitoring, and the 'SA' for survey area. The **survey area** would represent the overall area in which you have done a survey. The **monitoring** is going to take and deal with

what's happening on the infestations and, if in fact infestations change in their geometry. The **evaluation** is going to allow you to be able to go back to a treatment and talk about its effectiveness, and then on the **treatments**, where you've done the treatments, and, in fact, where you have also collected the **infestations**. So that's our mechanism to be able to take and collect the information.

NISIMS ArcGIS Task Assistant: Now we're going to go into next, from the field collection, to how do we take and manage our workflow in ArcGIS, and that's through Task Assistant. Donna, would you like to explain a little bit about Task Assistant?

Donna Degner

Task Assistant was a program that was written just for the ArcMap environment. It, basically, like Kathie says, is a table of contents so you can step through one by one, to do each of your pieces. The first thing that we want to do is, we want to make sure that we have all of the necessary data available to us before we go out in the field. So we would want to have our proposals all created and put into the system. From there then we have a national dataset that we want to download that data to a local database, and, from that local database, we would want to take that and convert it to shaped files that are accessible within ArcPad. Once we've gone out in the field and collected our data, then, of course, we want to come back in and be able to upload that data back to the national server after doing some buffering and other special functions and quality assurance-type issues. And then, once our data is all located in the national server, we can generate the report.

Activating Task Assistant: To activate the Task Assistant, a user would go up to the View on ArcMap environment. Go down to Toolbars, and select the BLM Weeds Task Assistant toolbar.

Opening Task Assistant: Once the user has done that, they will get this new tool that will pop up, and it may be floating, or it may be whatever - you can just dock it up there if you'd like. Once you've pressed this tool, then it will open up the Task Assistant, which is the centerpiece in this ArcMap document.

Opening a Workflow: Now we want to add data for our program to that Task Assistant or the actual program for weeds that was created for Task Assistant. So we would click on this XML button right here and navigate to,

C:\Program Files\ESRI\BLM WeedsArcMap\bin\

directory, and grab this file called BLMWeedsTAConfig.xml. Unless somebody has installed this program to a different drive, you should always be able to find this program in this exact area. Once you have navigated to here, go ahead and click Open, and the program will then load into that Task Assistant area within the center of the ArcMap document.

Task Assistant Workflow: This is what it would look like.

Kathie Jewell

First, could you read to us what the five major categories are?

Donna Degner

I can. Okay.

The first thing that you would have would be **download data to ArcPad**. That would include downloading from the national to a local dataset and from the local to the ArcPad.

The second category that we have is **uploading the data from the ArcPad to the local server**. This would include moving the data from ArcPad back to the desktop, converting the ArcPad project files back to the local database, doing some batch attribute updates, and quality assurance processing or QC processing.

The next step that we would have would be to do any **data entry properties**, such as adding our proposals, doing the weed certifications, or seed certifications - some of that kind of stuff.

And we also have the next category to **upload the data to the national server**. So we've done all of the different processes of quality assurance. Now we're uploading it back to the national server.

The last category that we have is **generate report**.

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