UT Extension
Precision Agriculture

Field Scouting Using NDVI Maps in ArcPad

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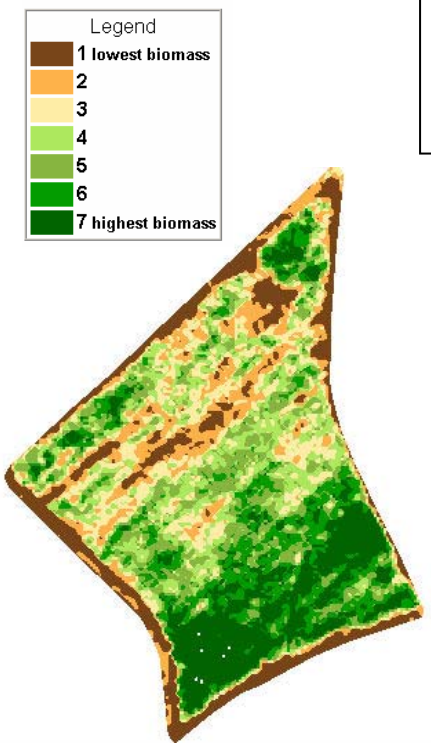
BEES 110

An increasing number of Tennessee producers are utilizing Normalized Difference Vegetation Index (NDVI) maps as a tool for improving farm management decisions. NDVI is calculated from the visible and near-infrared light reflected by vegetation. Healthy vegetation absorbs most of the visible light that hits it, and reflects a large portion of the near-infrared light. Unhealthy or sparse vegetation reflects more visible light and less near-infrared light.

The NDVI measures the infrared reflectiveness of the vegetation which results in a color-coded image that represents an indication of plant health/vigor relative to other plants in the image. Once loaded onto a PDA, these geo-referenced images can be used by agents, producers or crop consultants to scout fields for insect and disease damage, water stress or to make variable rate applications of fertilizers and chemicals.



Example File Names

scout_n_15s_2004_07_06_fields_20050330_1026_17658.jpg
scout_n_15s_2004_07_06_fields_20050330_1026_17658.apl
scout_n_15s_2004_07_06_fields_20050330_1026_17658.jgw
scout_n_15s_2004_07_06_fields_20050330_1026_17658.prj

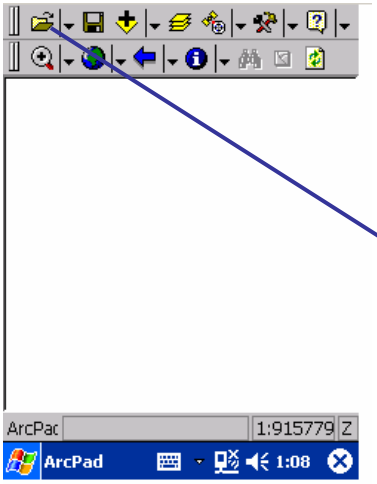
1. To view NDVI scout maps generated by InTime, Inc., you must first load the geo-referenced JPEG file (.jpg) and the other three files that are associated with this JPEG file (.apl, .jgw and .prj) on your PDA. Although the extensions are different, all have the same file name. The file name contains the following information:

   - n_15s - Is the name of the field
   - 2004_07_06 - date the image was flown
   - 20050330 - date the image was accessed
   - 1026 - time the image was accessed

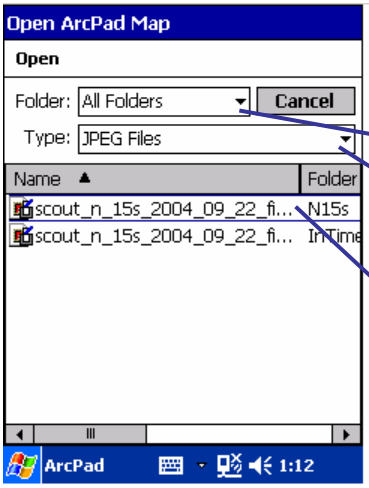
- 17658 - order number generated by InTime, Inc. when the map was processed

2. After loading the files to your PDA, start ArcPad by tapping Start then tap ArcPad.

3. The ArcPad splash screen will briefly appear and then ArcPad will open with a blank Map window.



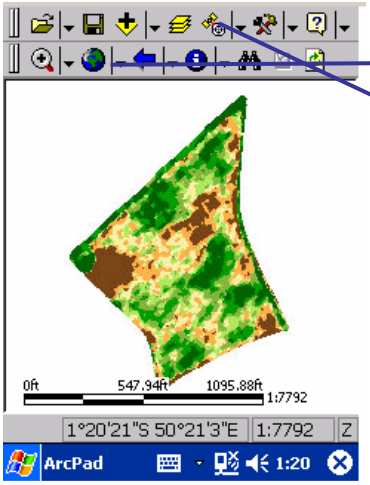
4. To open the NDVI scout map, tap the Open File button on the Main toolbar. The Open ArcPad Map dialog window will appear.



5. Tap on the down arrow in the Folder box and select All Folders from the dropdown list.

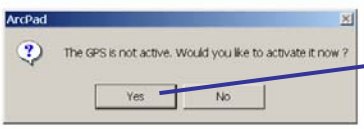
6. Tap the dropdown arrow to the right of the file Type and select JPEG files. The NDVI scout maps generated by InTime, Inc. are geo-referenced JPEG files.

7. Tap the NDVI scout map file you wish to open in ArcPad.

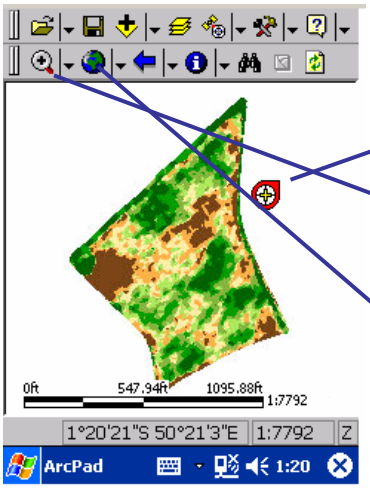


8. Tap the Zoom to Full Extent icon. This will ensure that the entire map is displayed on the screen.

9. Tap the GPS Position Window button to activate the GPS receiver. A message box will appear indicating that the GPS receiver is not active.



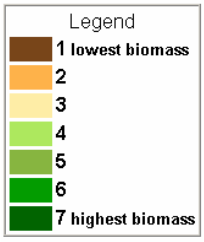
10. Tap Yes to activate the GPS receiver.



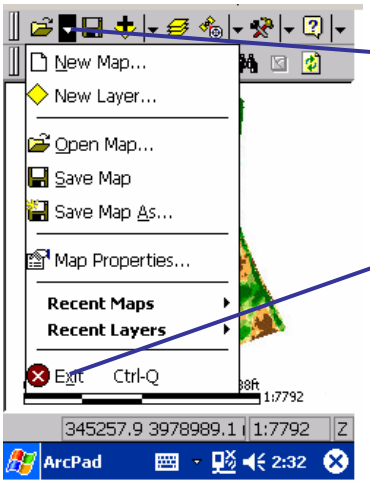
11. The GPS Cursor is displayed after the GPS receiver has been activated. The GPS Cursor is displayed at your current GPS position on the map and will move on the map as you navigate around the field.

12. If you wish to zoom in on an area, first tap the Zoom In button to activate the tool. Next, using your stylus, tap the GPS Cursor on the screen. The map will zoom in on the area at your current position.

13. Tapping the Zoom to Full Extent icon will redisplay the entire map on the screen.



14. Map legends are not shown on the map. You can use the scale to the left as a reference as you scout the field. The color scale goes from dark brown (areas of lowest biomass in the field) to dark green (areas of highest biomass in the field.



15. To exit ArcPad, tap the arrow to the right of the Open button to display the list.

16. Tap Exit to close ArcPad.

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