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This is a presentation & discussion of **Apps for Arboriculture: Making the Most of Smart Devices...**

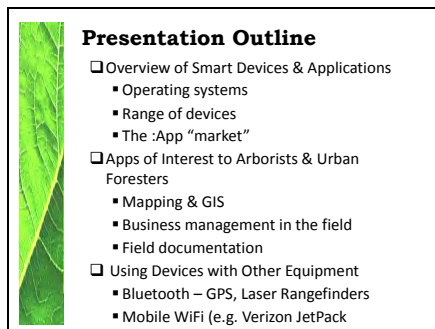
This is NOT just smartphones, but any of the new generation of mobile devices (e.g. tablets) that are available that have connectivity to the Internet via WiFi and cellular communication systems.

First, how many do NOT have smartphones? Or other “smart device”? (i.e. Android tablet, iPad) Have any of you developed an arborist-specific smartphone application (app)? Are any of you using arborist-specific smartphone applications ?

This presentation will discuss some specific apps I have adapted for arborist-related work, a strategy for searching for & testing apps, a list of my “most used” apps, and app development that is in reach of many arborists & urban foresters.

Urban Forestry South is the Southern Region’s urban & community forestry Technology Transfer Center which supports U&CF programs through state agencies and municipalities.

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In this presentation I’ll discuss ...

I will NOT be discussing GPS (vehicle) navigation apps, tree ID (although Virginia Tech has a new one), invasive ID, or pesticide related apps.

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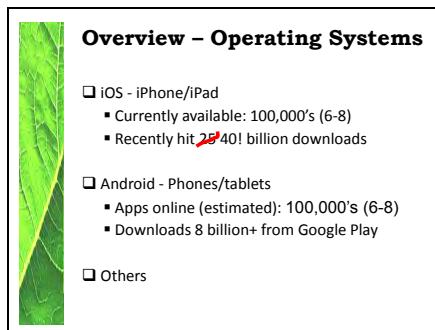


Presentation Outline

- What Do You Need?
- Developing Apps

And this ...

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Overview - Operating Systems

- iOS - iPhone/iPad
 - Currently available: 100,000's (6-8)
 - Recently hit ~~20~~ 40! billion downloads
- Android - Phones/tablets
 - Apps online (estimated): 100,000's (6-8)
 - Downloads 8 billion+ from Google Play
- Others

This is the situation...

- Lots! available
- Most probably not useable !
- Free (Android) and small fee
- Test free and purchase “ad free” version

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Smartphone-Like devices

- Smartphones
 - iPhones (iTunes)
 - Android (Play)
 - Others (Windows, Blackberry)
- Tablets
 - Many sizes
 - IOS & Android
 - Run same apps, but...
- Ruggedized devices available (CAT)

Hardware options are expanding... (this is good)

- Available in many sizes
 - Phone-size (and “super-phone sized”)
 - 7”
 - 10” (iPad)
- Tablets run same operating systems (IOS & Android)
 - Faster
 - With somewhat different layouts
- Many apps (Android) don’t keep up (i.e. don’t work or function quite right)
- More “rugged” hardware now on market

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What's In This Huhg "Market"

- Games
- Business "marketing"
- General Business
- Completely worthless "stuff"

- "Adaptable" apps (to fit our needs)
- Cloud access (i.e. data storage)
- Tree related (ID, invasives, data access)
- Mapping
- Annotated photography

Most of what is available isn't too useful...

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Focus on Groups of Apps

- File & Document Management
 - Google Stuff (QuickOffice)
 - File access & cloud storage

- Misc. Field Apps
 - Compass
 - Level
 - Note taking
 - Arborist (quote, invoice, document)

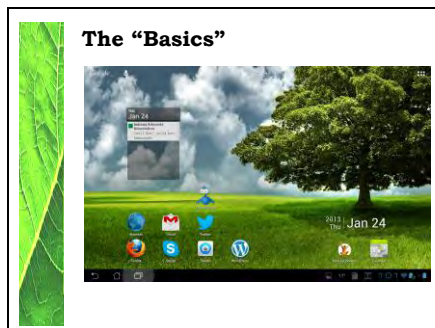
- Mapping & GPS

I keep a fairly constrained focus, typically...

- File management
- Adaptable field apps (misc)
- GIS, GPS

Download & test free apps and then may upgrade if appropriate for "ad free".

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The "Basics"

The image shows a screenshot of an Android tablet home screen. The background is a green field with a large tree under a blue sky with clouds. At the top, there is a weather widget showing 'Jan 24'. Below the weather widget is a dock with several app icons: a globe, a mail icon, a Twitter icon, a calendar icon, a search icon, a social media icon, and a web browser icon. The date '2013 Jan 24' is displayed in the bottom right corner of the screen.

The device "homepage" (from ASUS Transformer Prime 10" tablet)

Browser, Google search, e-mail, calendar (on an Android, all the Google "stuff") and other essentials...

TweetCaster and Twitpic

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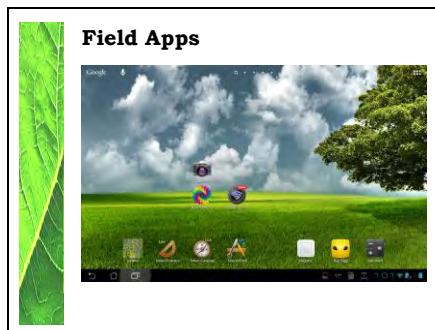


On my general tablet file screen...

- File manager (probably system dependent)
- Docs (if you use Google cloud)
- Other cloud access (Dropbox, Box.net)
- Zipped file management
- Notes (SuperNote or EverNote)
- Office Suite (purchased)

Office-compatible suite (really for larger tablets) – purchased (\$20)

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General field apps...

- Skitch (photo annotation)
- EveryTrail (route recording with annotation)
- Tree lean (protractor)
- Compass
- Square (credit card use in field)
- QR reader (i-nigma, BeeTagg)

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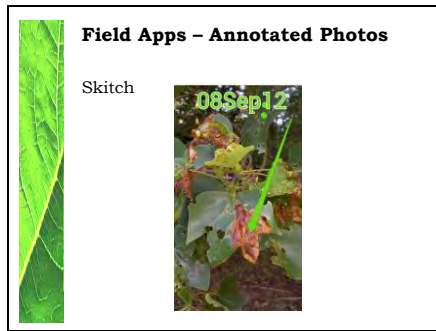
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General field apps...

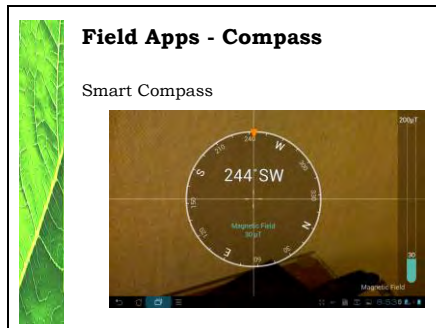
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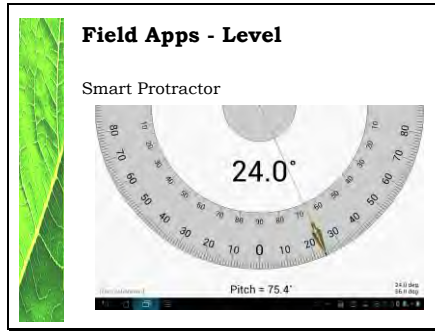
Skitch - photo annotation

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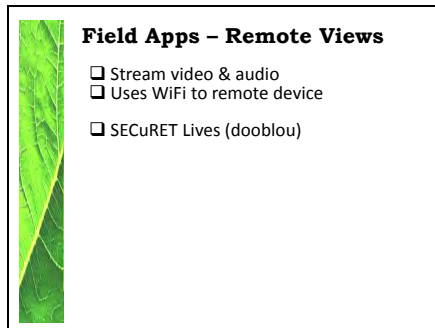
SmartCompass – verify directions for notes

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SmartProtractor – tree lean & slopes

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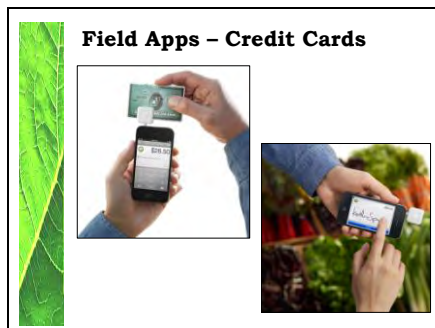


Live broadcast to another remote smart device; application is field crew to office consultation, or aerial lift to ground crew for discussion.

Stream video and audio from your Android device's camera directly across your Wi-Fi network in real-time, to be viewed and remotely controlled in a web browser or on another Android device.

SECuRET Lives

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Square (and others now) can use a smartphone for accepting credit card payment in the field.

2.75% fee

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Arborist – mobile office for commercial arborists.

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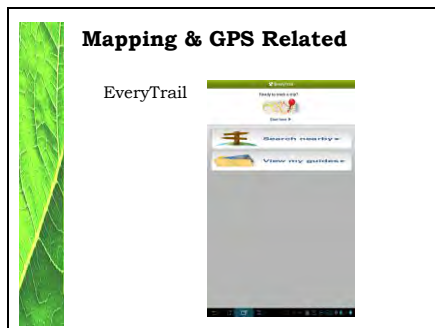


Mapping, but mostly GIS/GPS related...

- Google maps with Latitude (to track others)
- gvSIG (mobile OS GIS)
- ESRI reader
- LocationFromChip (mostly for testing your device GPS)
- BluetoothGPS for connecting to a higher accuracy GPS if needed) NOT on iOS)

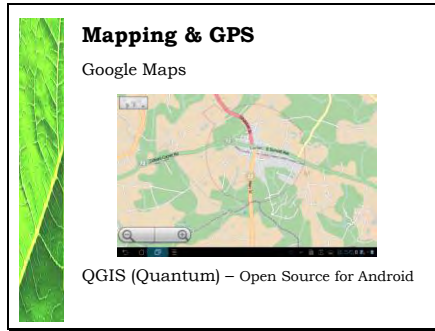
Apple systems (iPad) must have a cellular chip to get a GPS chip! However, you don't have to subscribe to the cellular for it to work.

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A frequently used app for quickly "mapping" tree locations for pruning or removal bids and publication and sharing (private or public) on-line with export to Google Earth.

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A good, quick mapping app with potential for crew location with Latitude...

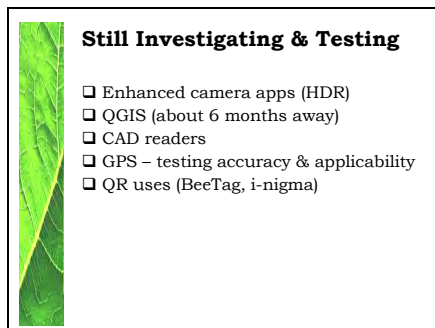
Many other apps can use Google Maps as a digitizing surface (with aerial photos); QGIS (Quantum) is the open source GIS being ported to Android.

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Everything else that I may need...

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Currently researching, testing and evaluating...

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Apps I Use Most

- EverNote/Supernote
- SmartProtractor
- Google Maps
- GIS (still testing - QGIS)
- Skitch
- QuickOffice
- EveryTrail

My top apps...

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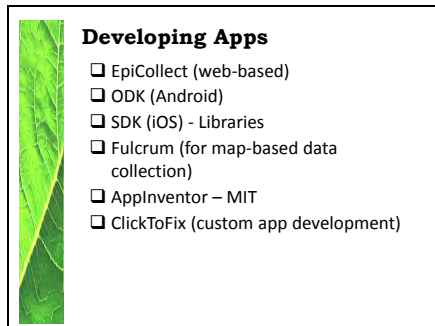
Needed in the "Market"

- Generic data collection
- Arborist Suite
 - Note dictation (like iPhone)
 - Annotated photos (multiple sources)
 - Mapping (i.e. location enabled)
 - Risk & Condition evaluation
 - Report assembly in the field w/ e-mail
- Connection to inventory database
- Crowd-sourcing (arborist examples)

For those interested in writing apps for arborists...

- Things we need...
- Look at...
 - Douglas (GA) Mobile
 - New York City (tree inventory)
 - Trees UK
 - Animated knots

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Developing Apps

- EpiCollect (web-based)
- ODK (Android)
- SDK (iOS) - Libraries
- Fulcrum (for map-based data collection)
- AppInventor - MIT
- ClickToFix (custom app development)

Development systems...

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**Smart Phone Apps for
Arboriculture**

What do you need?

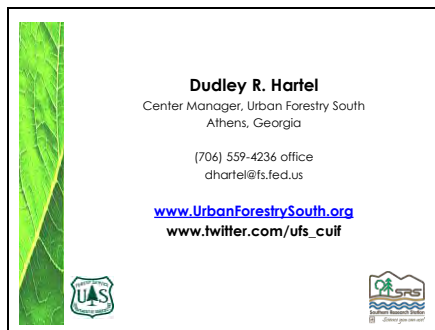
Discussion & Questions!

Dudley R. Hartel, Center Manager
Urban Forestry South
Athens, Georgia



Any final questions or comments about
Smartphone applications for arboriculture?



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A PDF of this presentation will be at
www.UrbanForestrySouth.org .

“Quick Search” with “IAA smartphone apps”
(no quotes).