2013 BCCFA Conference Session Summary

Smart Phones and Tablets: Tremendous Potential for Field Data Collection

Presented by Andy Muma, RTF
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Andy gave, by most reports, the most useful session at the conference. Everyone was inspired by his information about mobile devices, smart phones and tablets and their potential for streamlining field work process and digital data management.

Andy is a Land Information Coordinator (GIS analyst) with the Ministry of Forests, Lands and Natural Resource Operations. He has worked in the forest industry in BC since 1991 and began working with and supporting GPS technology in 1993. He began his fulltime GIS career in 1995

His job currently entails:

- Technology research and development, Business improvement, matching technology to job function
- Spatial data management and Analysis
- Training

Andy's presentation can be found on the BCCFA website 2013 Conference page or at http://www.bccfa.ca/index.php?option=com_k2&view=item&task=download&id=162

Here is a summary of his presentation. And stay tuned for new updates on the rapidly developing uses for smart phones and tablets.

Andy's talk focuses on applications and uses for smartphones and tablets.

- These are powerful computers with 20,000-800,000 apps
- They are portable and mobile, can go anywhere.
- GPS-most work off line and have similar to common GPS devices
- Camera: photos are automatically geo-reference
- Video recording and audio recording is very powerful and good quality
- Gyroscope
- Magnetic compass

The devices replace essentially all over tools that were used in the field traditionally.

- Seamless transition from field notes/photos in device to spreadsheets and reports.
- GPS device in phones/tablets use GPS and GLONASS (Russian base positioning system)
- A-GPS assisted GPS
- Hybrid system uses both GPS and A-GPS

The Range division adapted Ipads first in government. Many people bought them personally. They've now **replaced paper** in many situations. They are used for navigating, photos of noxious weeds, and even instructional videos for new hires and student.

They can be used in **all weather conditions**. With Otter boxes and the demand for use in recreational activities, there are a lot of accessories available to make them very **tough in the field**.

They are **essential time savers for field data collection**. All data can be rolled into a spread sheet very simply at end of day. The data collection on the app is uploaded and sent in an e-mail, then the supervisor can see same data on Google earth.

The device's **camera can take photos for data collection**. The photos are geo referenced and can be put directly on the map.

They are a huge **time and cost saver**. A helicopter pilot said his $900 ipad was paid for in day 1. Everything is pre-loaded, flight time was far less, and they could work with 1 pilot instead of 2.

You can also **carry all of your reference material with you**! You can upload all of your important docs and take them with you in the field including legislation, plant guide, maps, etc. If you are called out in the field you can continue your regular work.

Forms etc. can be uploaded to your device and you can enter data in the field, rather than fill out a form in the rain and have to type it in later. You can also sign Ipads, so it is possible to complete forms that need a signature .

Safety. There is a free app (similar app "spot" costs $250, and there is no return communication). With the free app there is two-way communication. It is called Earthmate GPS and is paired with the De Lorme inReach satellite communicator. 98% coverage around the globe.

A lot of the data can be dumped right into Google earth. People are adjusting to this, they are getting used to looking at data/reports in .kml Google earth instead of an .xls.

C and E investigators are rolling out use of devices in their work. RCMP is also looking into rolling this out.

Some Useful Applications or Aps

There are MANY data collection apps. All apps can run simultaneously. You could track a polygon, record a conversation and take photos all at once.

Three types of Apps

- Native apps are the ones installed on the device. They are very specific to the device
- Web apps are designed to interact with a device's browser.
- Hybrid apps run on the web, so any device can use it.

Free PDF maps

- all of the pdf maps are georeferenced and automatically tell you where you are.
- Veg maps have vegetation cover, soon TRIM maps will be downloadable off of the web too.
- Harvest plan map- saves time with work flow in the field during harvest
- you can also plot your photos on the map. export them to a .kml file and then people can open it and view it in Google earth.

GIS Kit -$100 (replaces $4000-$6000 software)

- the app streams imagery from Google, bing and others.
- in the north they are getting better imagery than what the government collects
- this is only within google range, but there is an offline feature, you can cache imagery ahead of time and use off line. Y
- you can create your own template for data collection and adding points.

Questions about what is acceptable? Is this type of data accurate enough?

- Andy said it is equal to a Garmin, but it isn't as accurate as other professional survey tools.

Theodolite

- you can take tree heights
- calculate slope etc.
- costs $3

Form Connect

- you can create custom forms
- auto compete forms
- take photos
- positional data
- you can export form data automatically to a spreadsheet

FieldNotes LT - Free

- Provides GPS location with three different types of maps
- It can handle unlimited numbers of notes, and can email many notes at a time as KMZ files.
- It automatically geo-references all images taken from within the note, and can easily send a zipped folder of these images via email.

Fieldnotes Pro - $9.99

- Has many features that are not included in the FieldNotesLT application. Voice Notes and HD Video (on capable devices) are provided. Images can be annotated using a finger or a stylus, making circling problems in photos a cinch. It builds well-formatted .PDF files that can be viewed or edited on any computer.

Report-a-Weed: developed by BC Range.

- A crowd sourcing (which means reaching out to the public for info) app.
- Report a weed is free. Anyone can download it.
- You record your weed sighting with name, photo etc.
- App development cost $12,000. It paid for itself in first week.
- They are looking into similar apps for other citizen data collection.