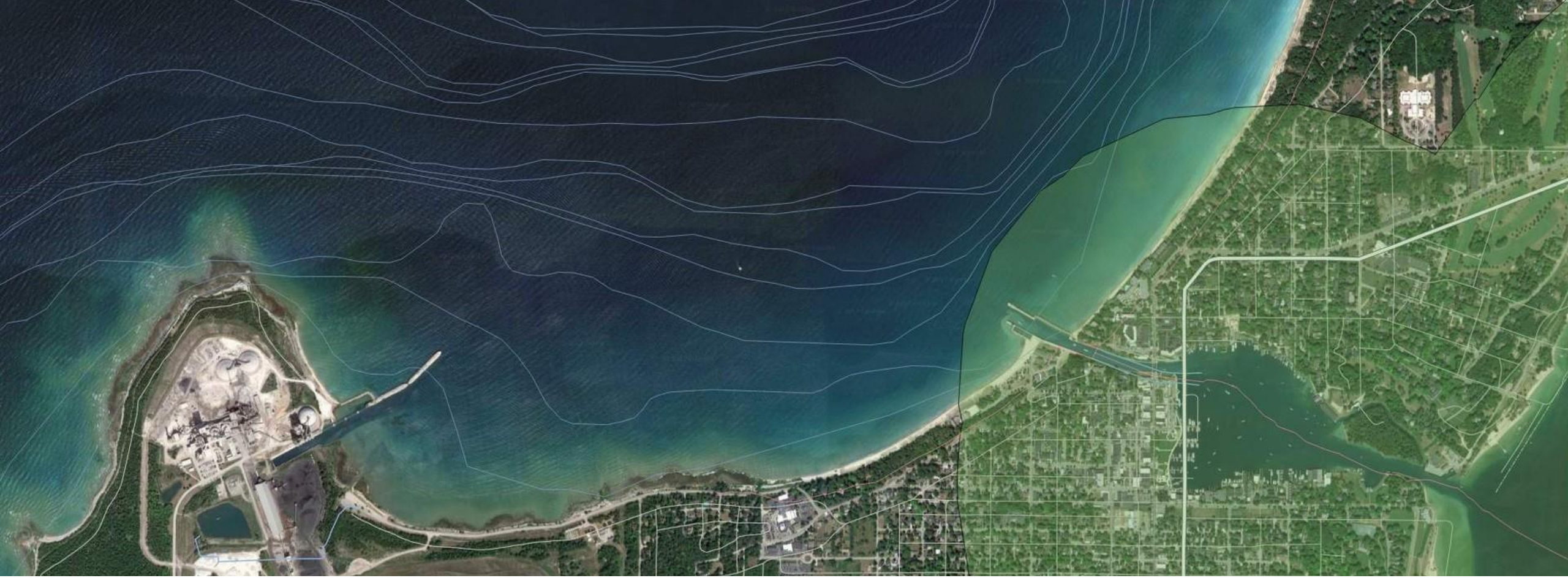

Field Data Collection on a Budget with QField and QGIS

Jessica Kane | IMAGIN Conference 2019

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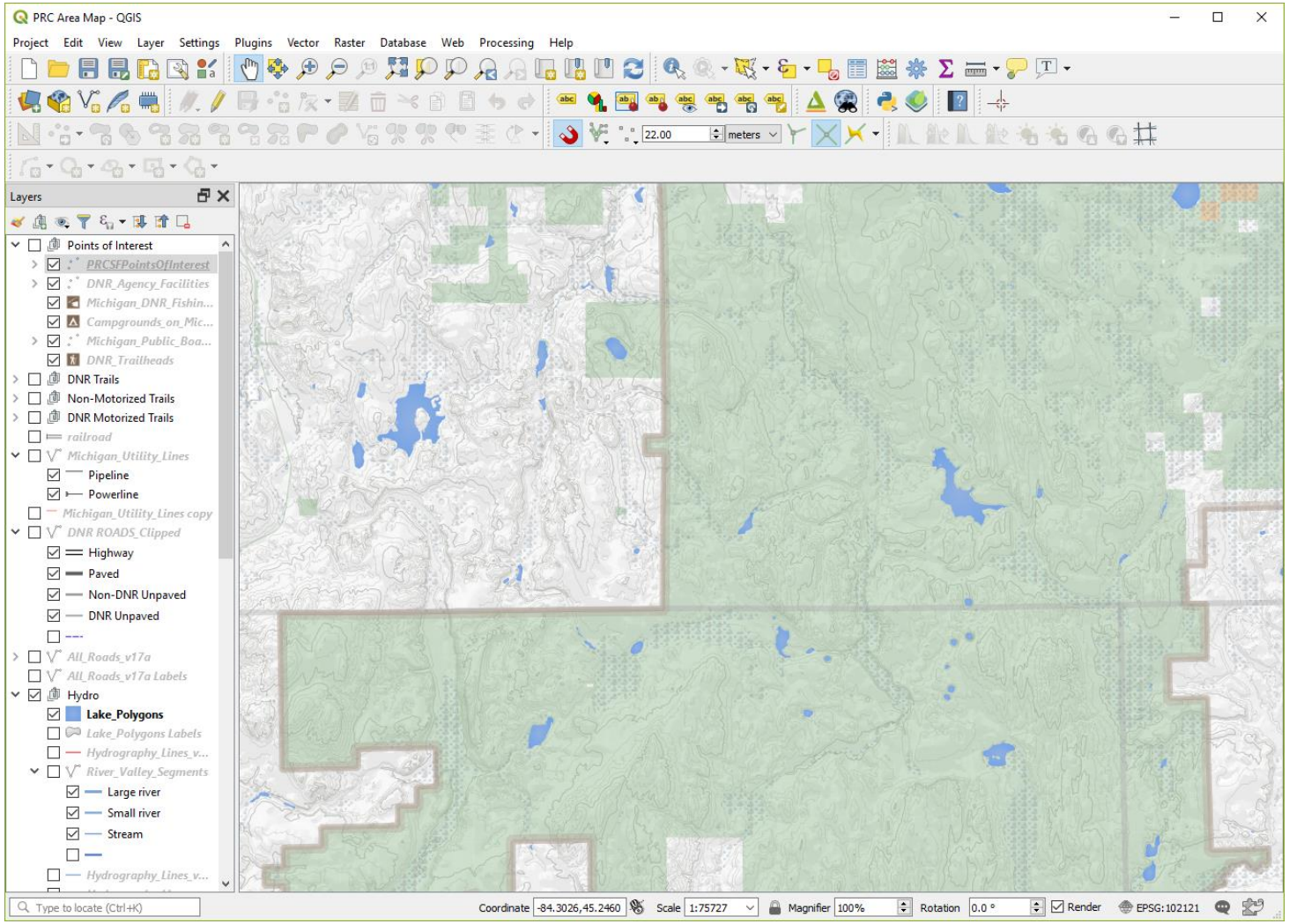
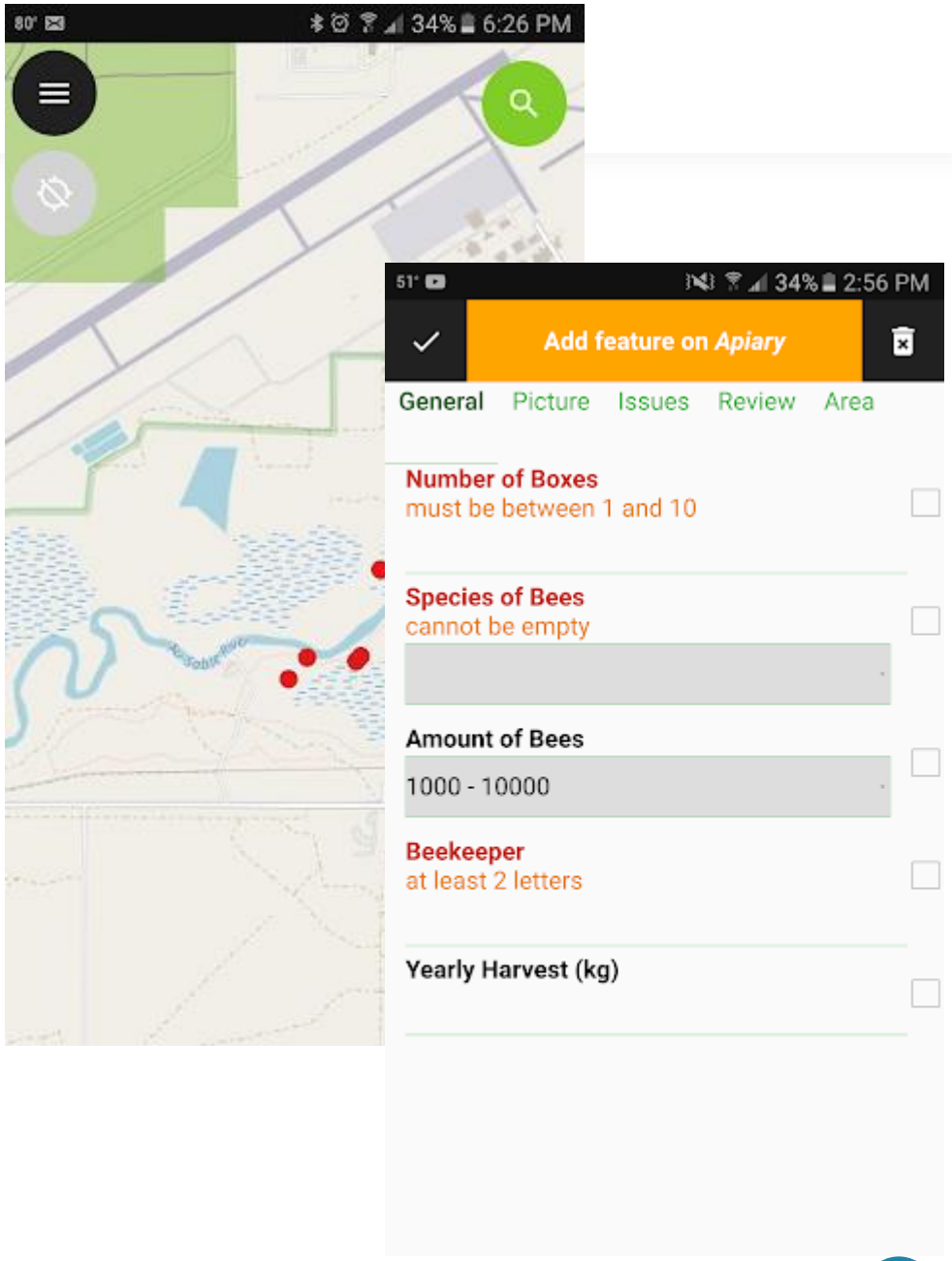
QGIS

- Open source desktop GIS
- Free to use, modify and redistribute.
- View and edit vector and raster data in a variety of file formats and databases
- Tools include geoprocessing functions, spatial analyses, styling/cartography
- PyQGIS allows for scripting of geospatial processes
- Works with other open source tools and plugins



QField

- Open source mobile (Android) application
- Allows you to edit QGIS projects on a mobile device.
- V1.0 released March 2019
- QGIS project (including symbology) looks exactly the same in QField
- Supports most of the formats that QGIS supports including shapefiles and PostGIS databases
- Works fully when offline
- Feature digitizing, geometry and attributes editing, attribute search, forms customizable through QGIS, GPS support, and camera integration
- Create and edit points, lines and polygons
- Package QGIS projects with QFieldSync



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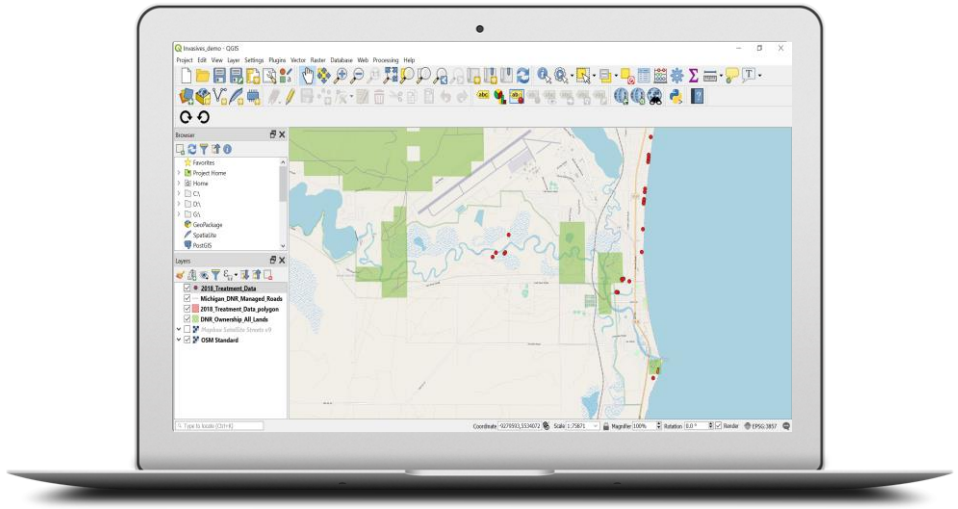
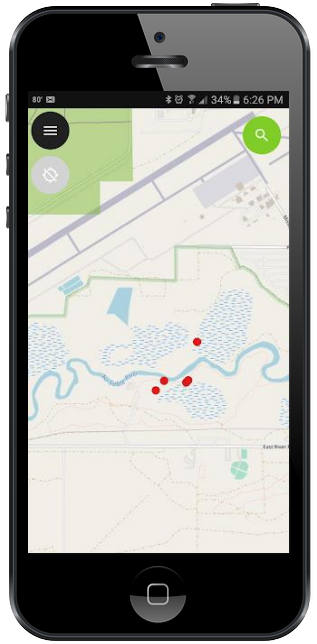
Demonstration Workflow



QFieldSync

QFieldSync



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Demonstration

Items to Note

Concurrent Editing

Using the demonstrated workflow, a user in the office can make changes to the data in the QGIS project that persist when new data is uploaded from a user in the field. Multiple people can gather data points in the field and then sync; however, there is no conflict resolution for the same feature updated by two field workers at the same time.

Online Editing

If you store your data in a centralized database on a server accessible through an internet connection, multiple people can be editing data in the field and seeing edits in real time (as long as they have connectivity).

A hybrid mode and cloud synchronization functionality are planned for the future.

Accuracy

QField can be used with just a cellphone's GPS or with an external high accuracy GNSS receiver. QField listens to the Android location services so it will use whatever the Android operating system is delivering to it. It can take advantage of the best location provided by external devices.

Pros

Powerful forms

Full editing of points/lines/polygons and attributes

Web map generation through QGIS

Active community support

Cons

Learning curve for customizing forms in QGIS

More involved set-up to create real-time data editing/viewing workflow

Web maps generated through QGIS may require tweaking

Relatively new project with young documentation

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https://www.line-45.com/labs/QGIS-QField.pdf

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