



**Mappt**  
Mapping. Better



# **Spatially Enabling Healthier Communities With Simple Field Mapping Technology**

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INSPIRE Geospatial World Forum  
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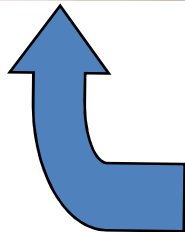
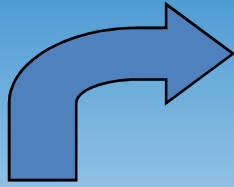
# Who are we?

- Mappt is a low-barrier-to-entry Android mobile GIS app that breaks away from the traditional dependency on pre-existing desktop packages.
- Mappt seeks to democractise the mobile GIS industry by providing a simple interface, all within a competitively priced package that is easily deployable to field GIS.

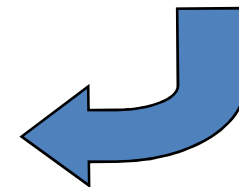
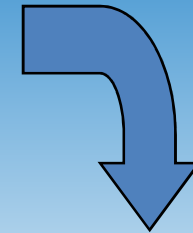
# Field data - it doesn't *have* to be messy



# Dengue Transmission Cycle

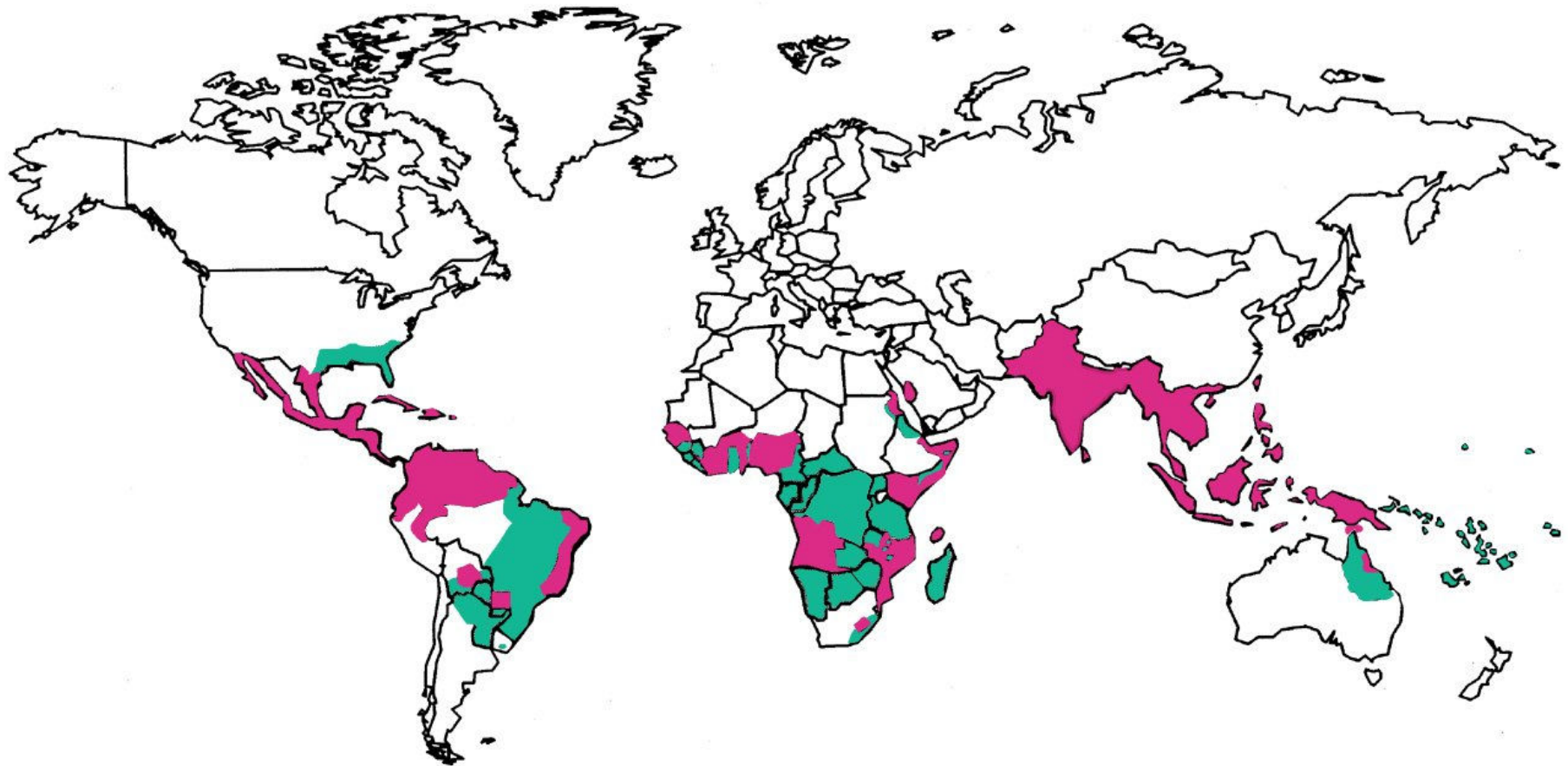


1. *Ae. aegypti* bites infected person
2. Mosquito becomes infected 10 days later
3. Infected mosquito bites human
4. Human becomes infective 4-13 days post infection.





# Distribution of Dengue and *Ae. Aegypti*



■ Areas with *Aedes aegypti*

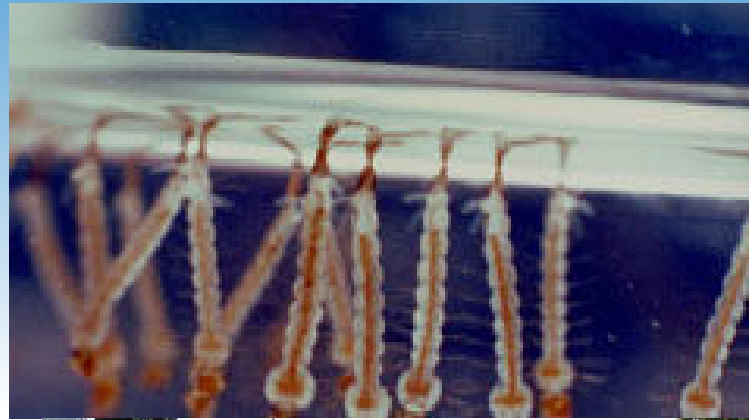
■ Areas with *Aedes aegypti* and dengue epidemic activity

# Dengue Is Imported By Overseas Travellers

- Ca. 10 notifications/year N. Queensland
- Tourists, especially arriving from SE Asia
- Residents/relatives (PNG, 50% of imported cases)
- Goal of dengue control: catch patient 0 before he spreads it!
- Dengue Action Response Team (DART) initiate control measures

# Ae. Aegypti: Container Breeding

**Mosquito** Common Breeding Containers: Rubbish





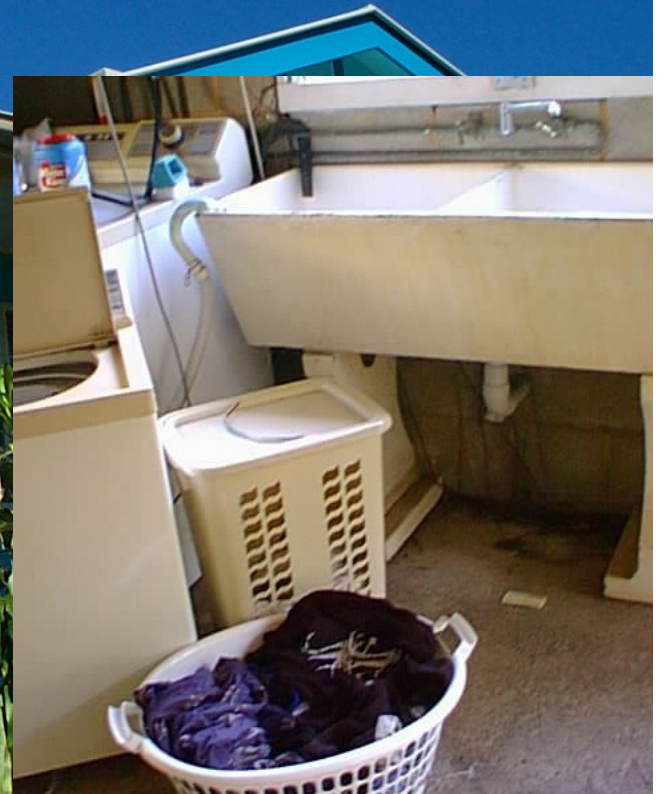
# Residual surface spray:

- Kills eggs, larvae, pupae and adults!
- No breeding for up to 6 months!





# *Ae. Aegypti* Fly Into Queenslander Houses





# *Ae. Aegypti* Resting Places





# Interior Surface Spraying

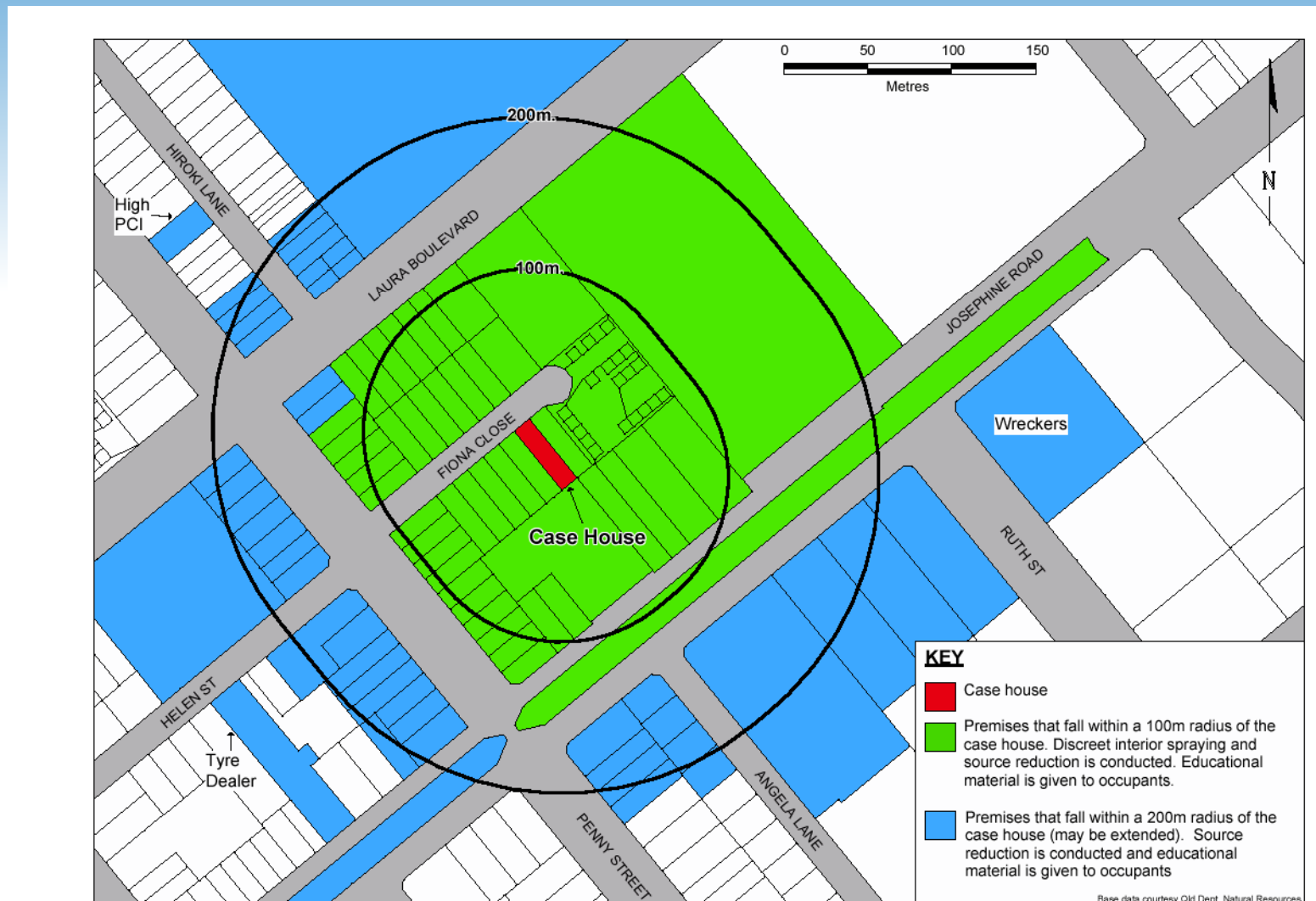


- Use synthetic pyrethrins
- Apply with pump sprayer to avoid drift
- Target resting sites indoors
- Residual action for several weeks

# Dengue Response Protocol

Within 100 m of case: larval control + interior spray (TPHU)

From 100-200 m of case: larval control (council)



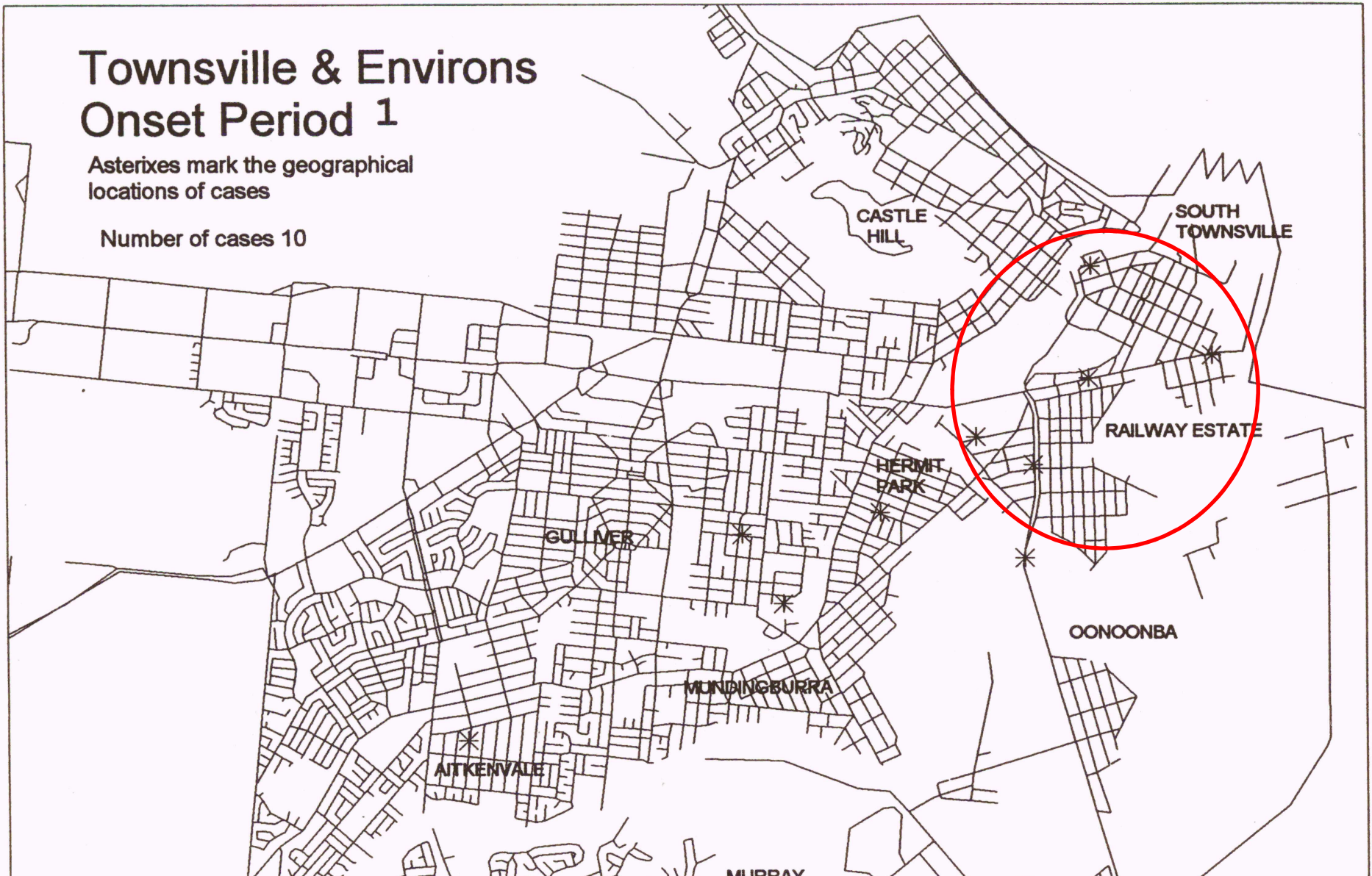
# Outbreak Response: Multiple Cases



# Townsville 92 DEN-2

(Cases/fortnight)

# tick, tock



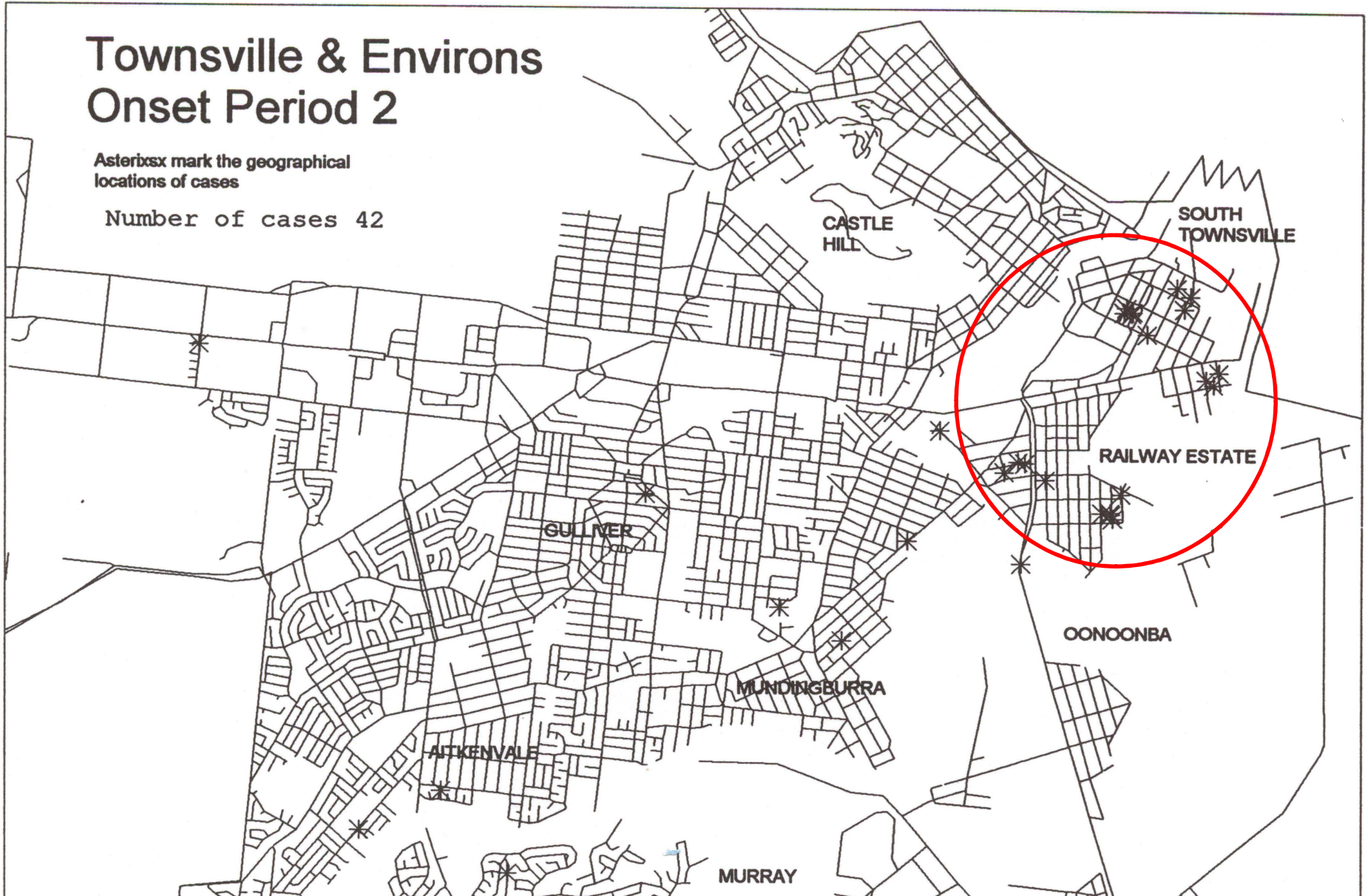


# Tick, Tock

## Townsville & Environs Onset Period 2

Asterisks mark the geographical  
locations of cases

Number of cases 42

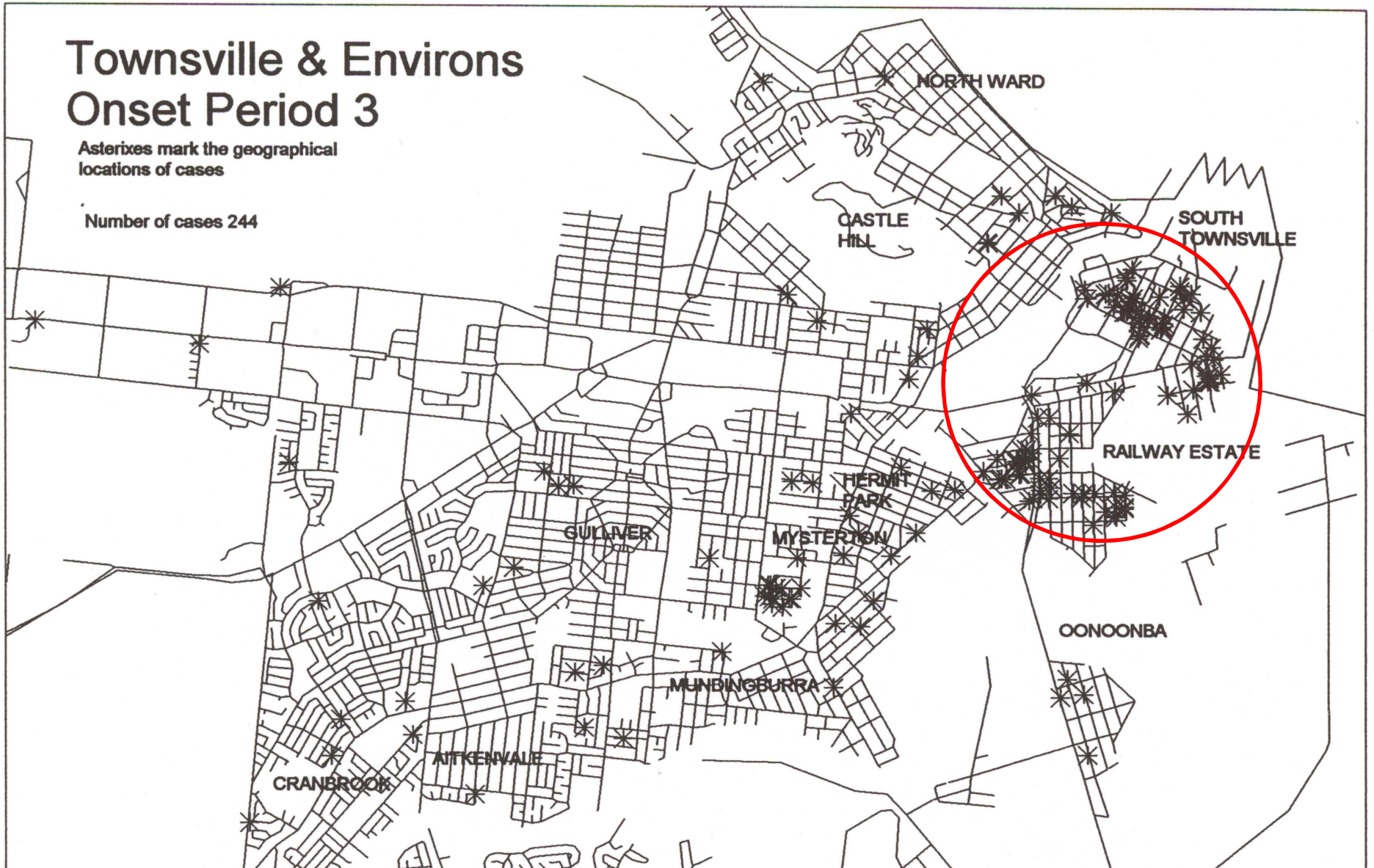


# Boom!!! Dengue Explosion !

## Townsville & Environs Onset Period 3

Asterixes mark the geographical  
locations of cases

Number of cases 244





# From this... *Sava Sea*

## Aedes Aegypti Mosquito Premise-to-Premise Survey Form

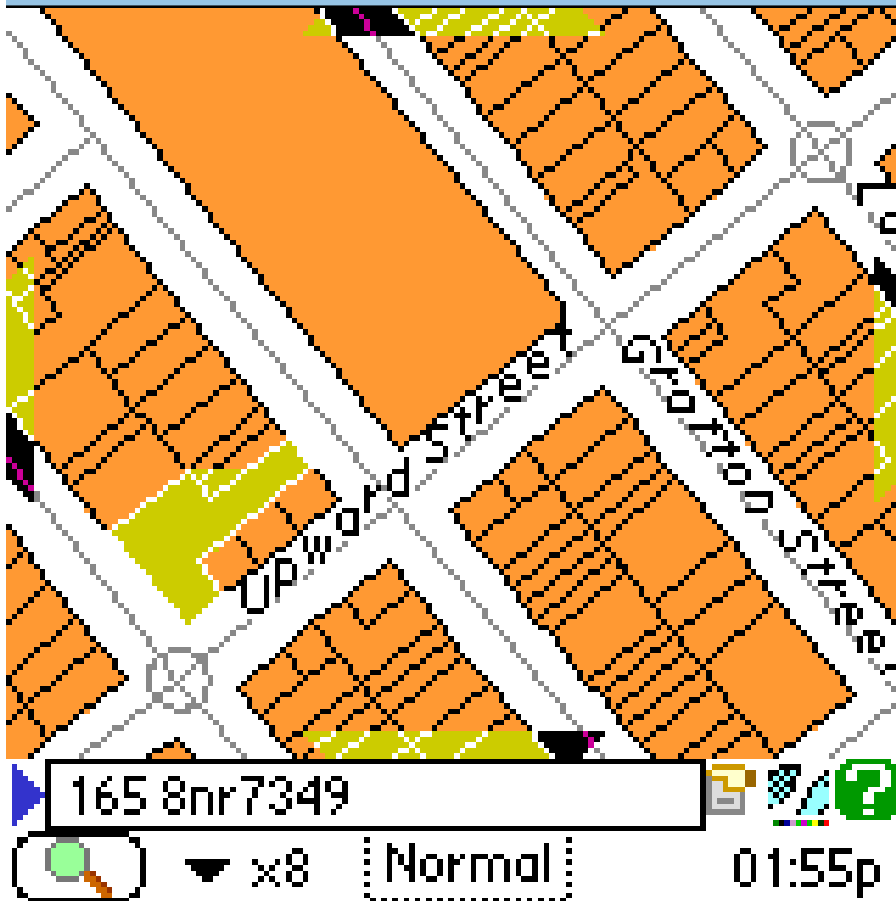
COUNCIL: \_\_\_\_\_ SUBURB: *Coal Sea / Harbour* INSPECTOR: *S.H. D. [unclear]* DATE(S): *13.8.8*

ROUTINE SURVEY       SUSPECT DENGUE CASE       SEROLOGICALLY CONFIRMED DENGUE CASE  
 VIROLOGICALLY CONFIRMED DENGUE CASE       OTHER

No.	PREMISE ADDRESS	PREMISE INSPECTED		BREEDING CONTAINER TYPE	LARVAE SAMPLE No.	LARVAL ID	AREA SPRAYED			INSECTICIDE USED	NOTES
		YES	NO				INSIDE	UNDER	OTHER		
	<i>Total inspection of Boat</i>										
	<i>Sanity ves - salt water in them</i>										
	<i>Some "cavities" w/ H<sub>2</sub>O = 20% salt water</i>										
	<i>Hold - H<sub>2</sub>O fresh on bottom -&gt; sloshing - no larvae</i>										
	<i>Quarters - NO plants</i>										



NOTES: *very clean. Most H<sub>2</sub>O -> oily, or salty or both. No larvae, adults seen*

# To this...!



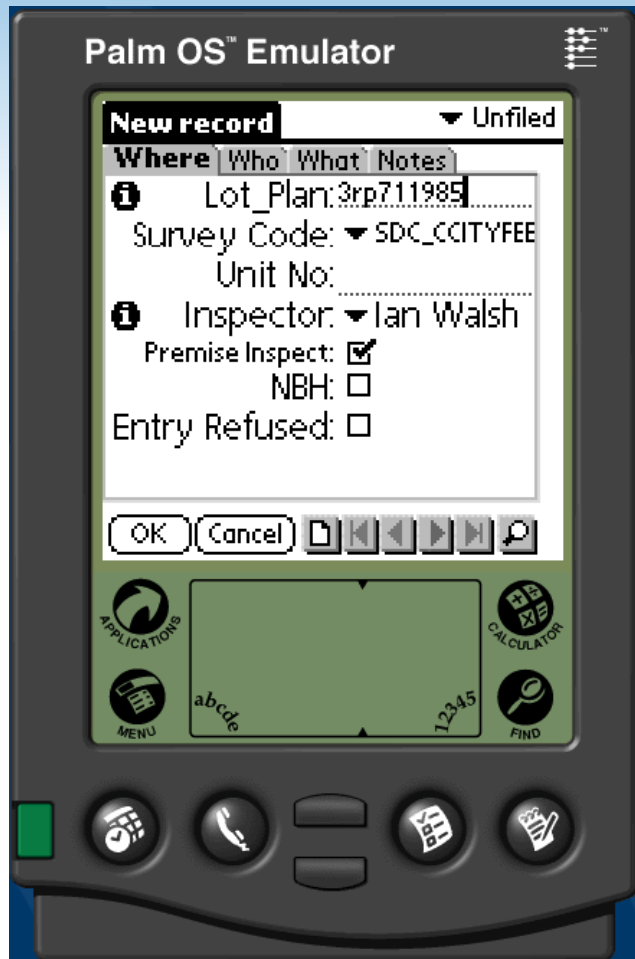
Recd 1 of 1 ▼ DART

Where	Who	What	Notes
<b>i</b>		Lot_Plan: 8nr7349	
		Street No: 165	
		Unit No:	
		Survey Code: ▼ Pupal Survey:	
		Inspector: ▼ Alistair Hart	
		Premise Inspect: <input checked="" type="checkbox"/>	
		NBH: <input type="checkbox"/>	
		Entry Refused: <input type="checkbox"/>	

OK Cancel    

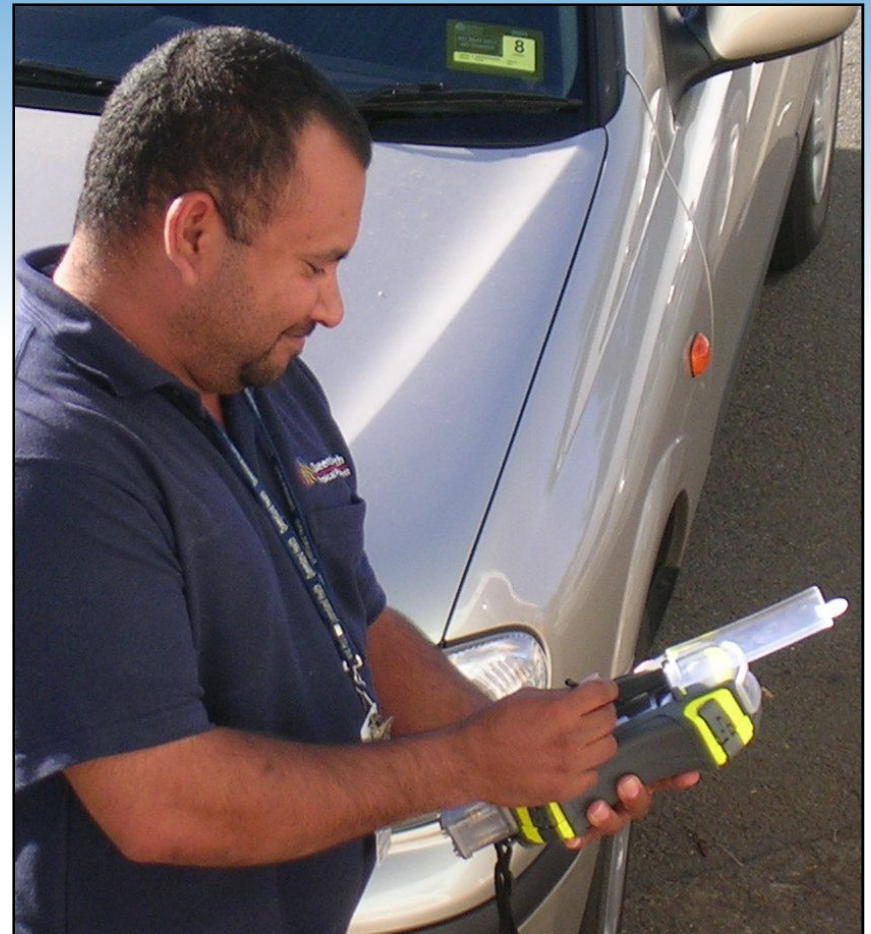
# Handheld computers for field data collection

No more survey sheets!



# Why digital field data collection?

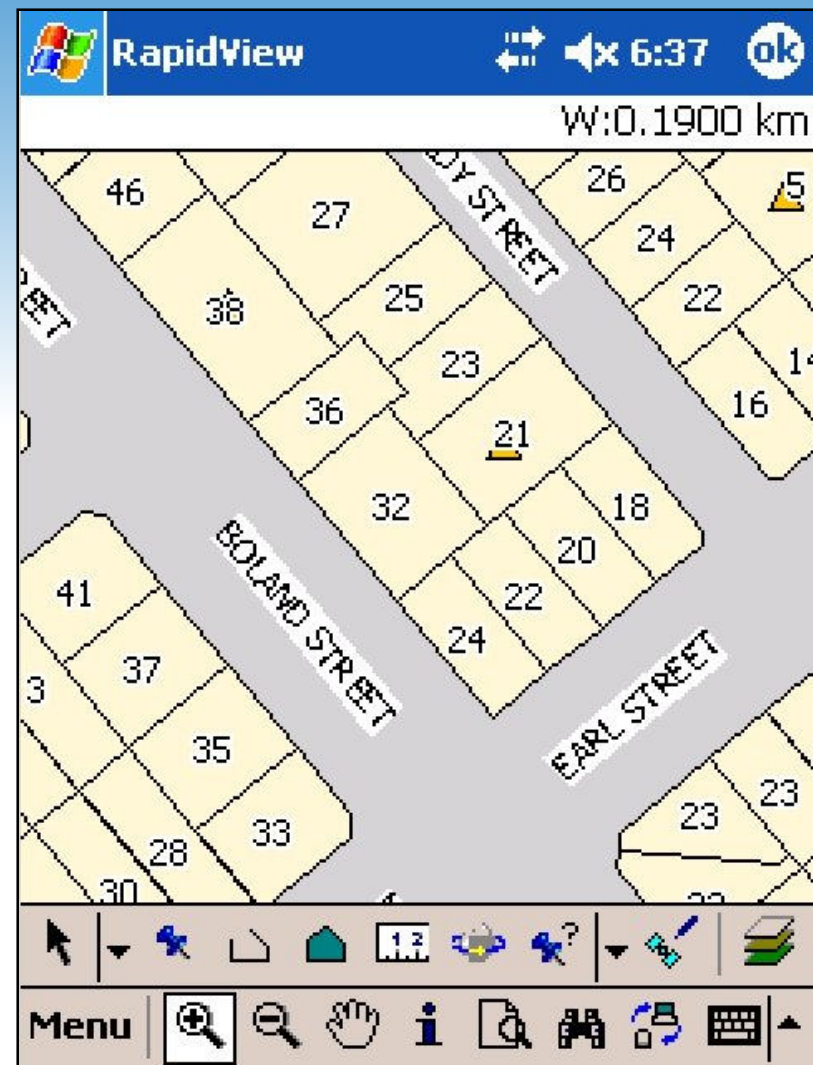
- Eliminates duplicate data entry
- Eradicate messy handwriting
- Speedy transfer of data into desktop computer
- Real time situational awareness of outbreak containment





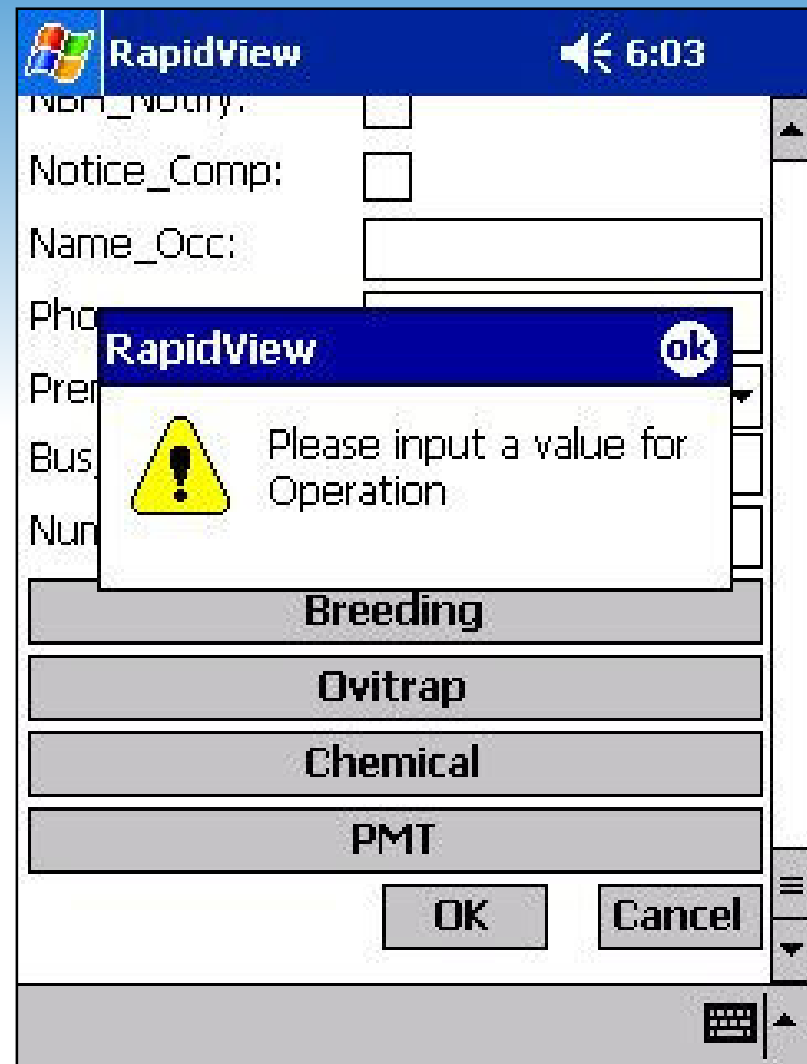
# Know where you are!

- We know what the property identifiers are, even when we are on a vacant block.
- Enables 100% automated geocoding of field data



# Standardised data collection

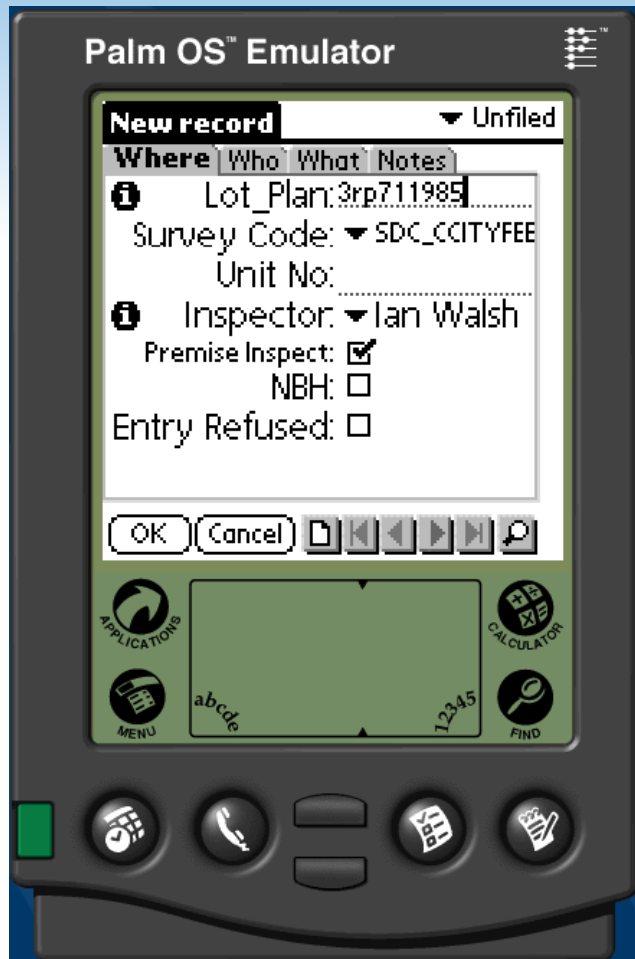
- Handheld computers allows us to record all our field data digitally.
- Data integrity rules can be enforced.
- Entry of field data to the desktop automated.





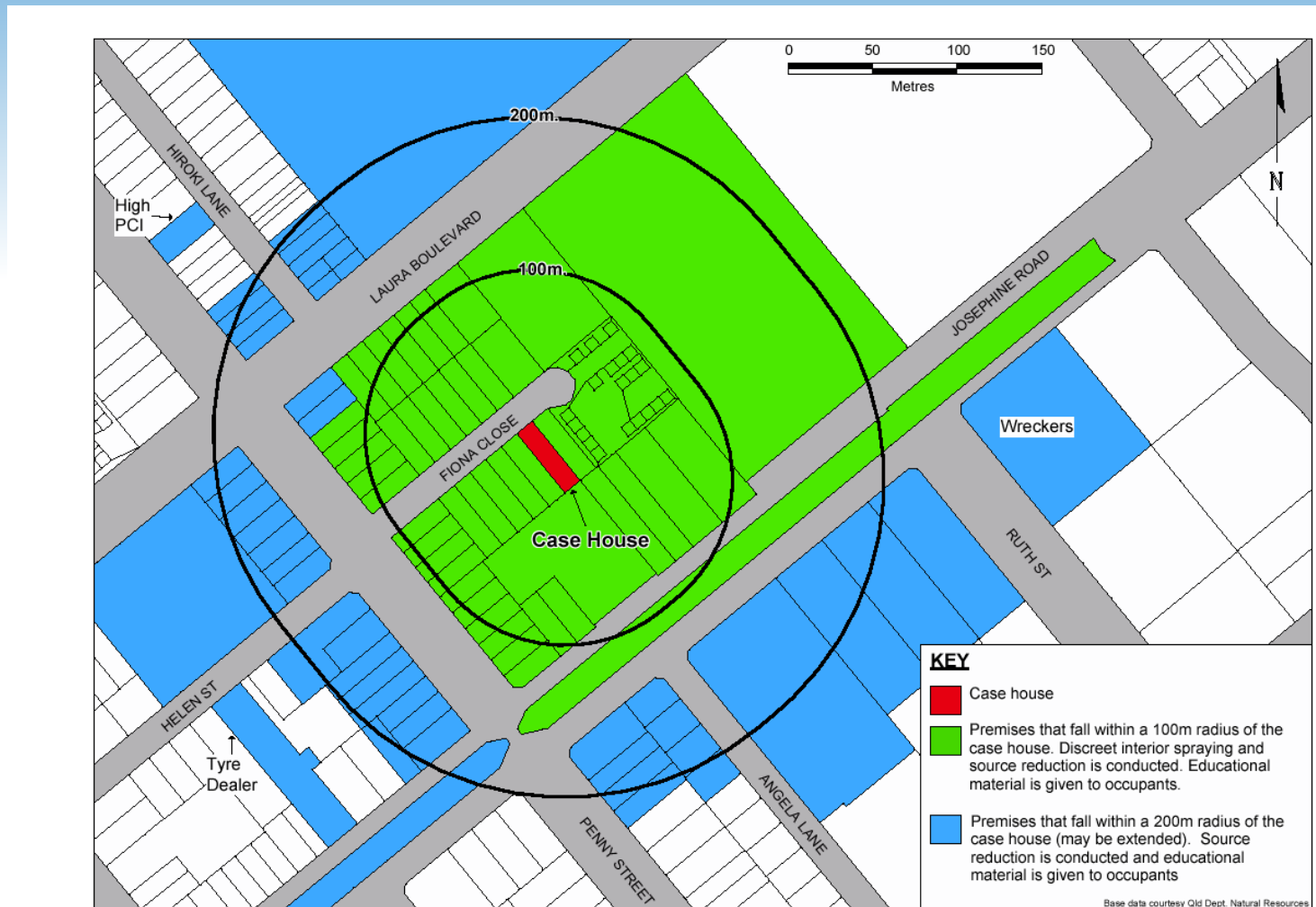
# We started with something modest...

- HandMap & ThinkDB



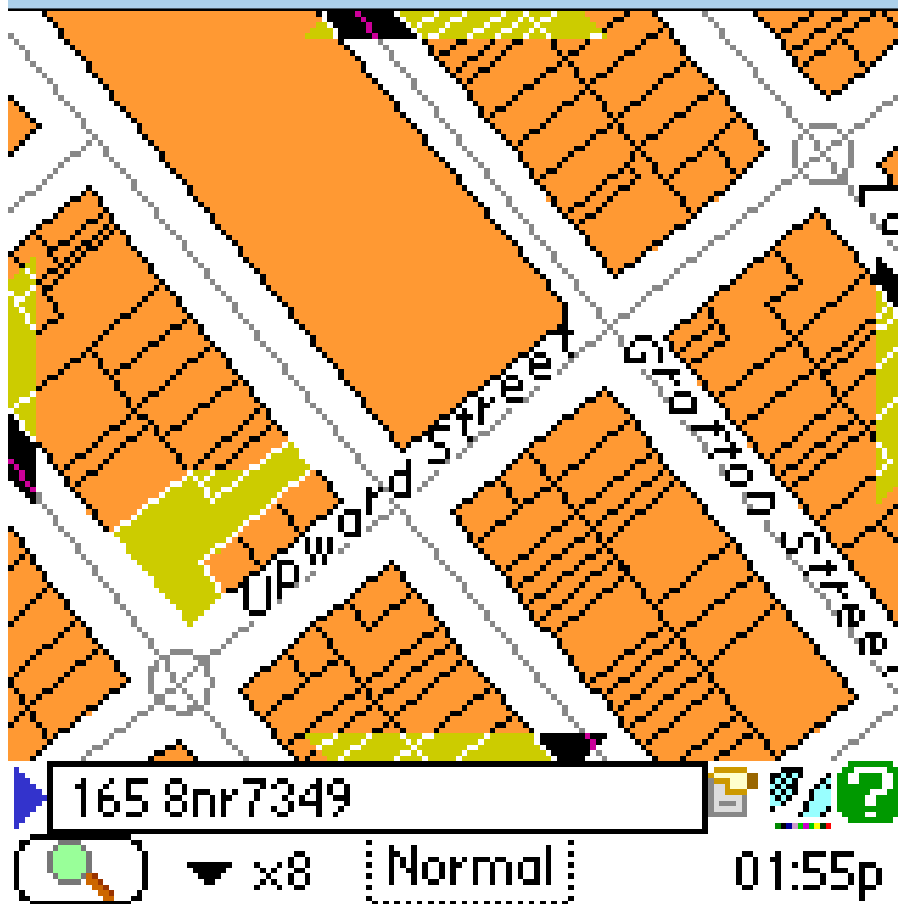
# And for an IncurSION, we...

Create response map showing case house and control areas using concentric ring buffers.



# Conduct field survey

Collect information in ThinkDB database



+

Recd 1 of 1 ▼ DART

Where	Who	What	Notes
		Lot_Plan: 8nr7349	
		Street No: 165	
		Unit No:	
		Survey Code: ▼ Pupal Survey:	
		Inspector: ▼ Alistair Hart	
		Premise Inspect: <input checked="" type="checkbox"/>	
		NBH: <input type="checkbox"/>	
		Entry Refused: <input type="checkbox"/>	

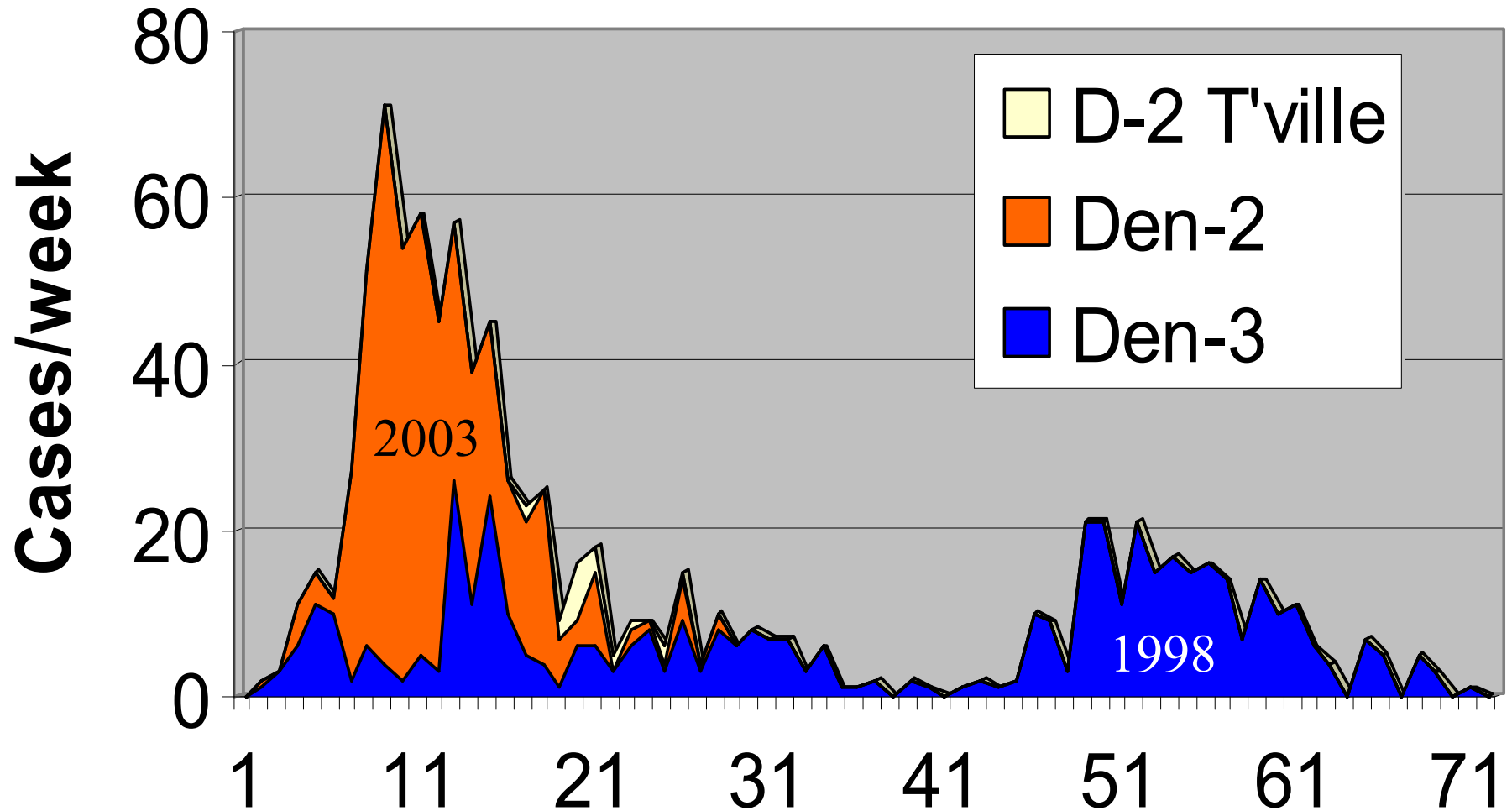
OK Cancel

# Frustration!!

- FRAGILE: 7 processes in...
- 6 different software packages
- Lots of steps - difficult to teach and maintain
- Map preparation time consuming
- We had two Palm handheld PCs..



# 98 vs 03 epidemic



**Cairns 03:**  
**2829 yards treated,**  
**1646 houses sprayed -**  
**phew!**

**Week**

**Up to 5 teams on the ground**

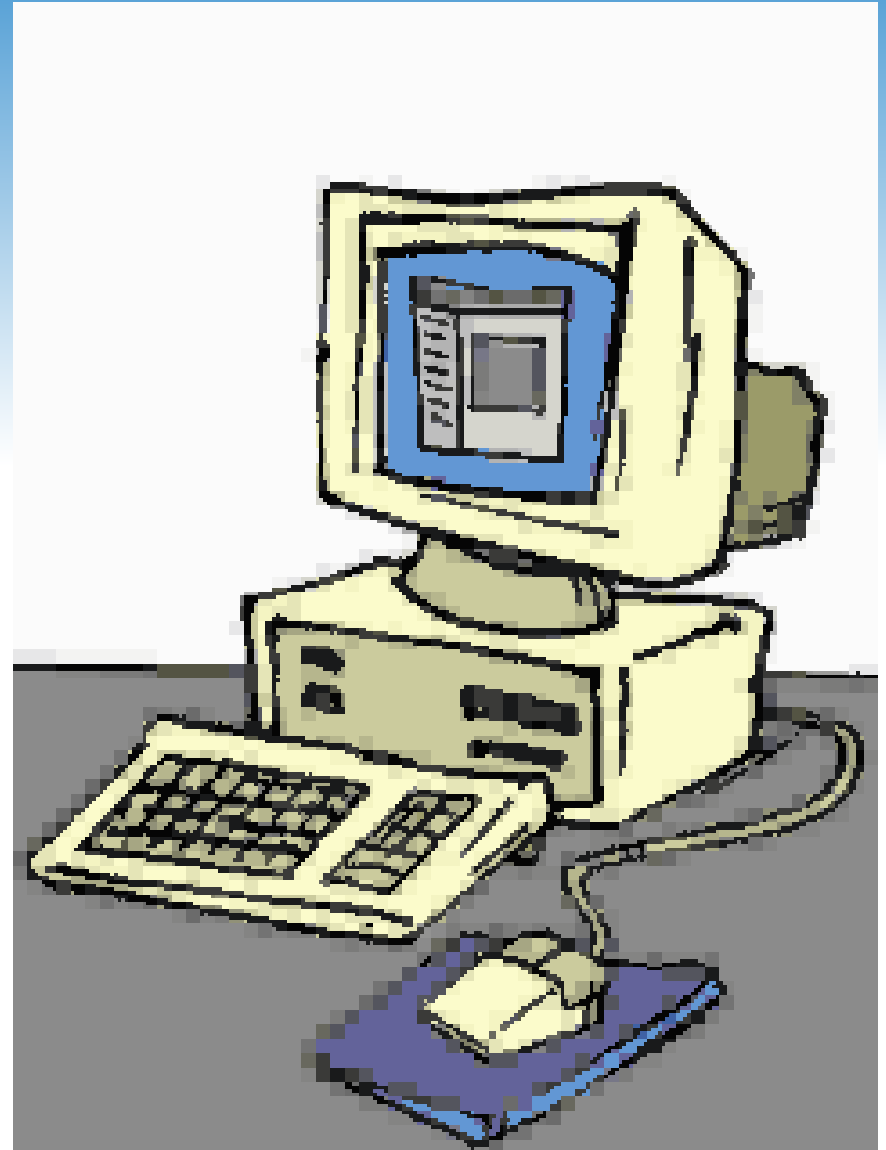
# Capacity overload!!

We used paper based data collection for outbreak control during 2003 outbreak, with manual data entry

Labour intensive

Poor access to data for analytics

Issues with hand writing resurfaced







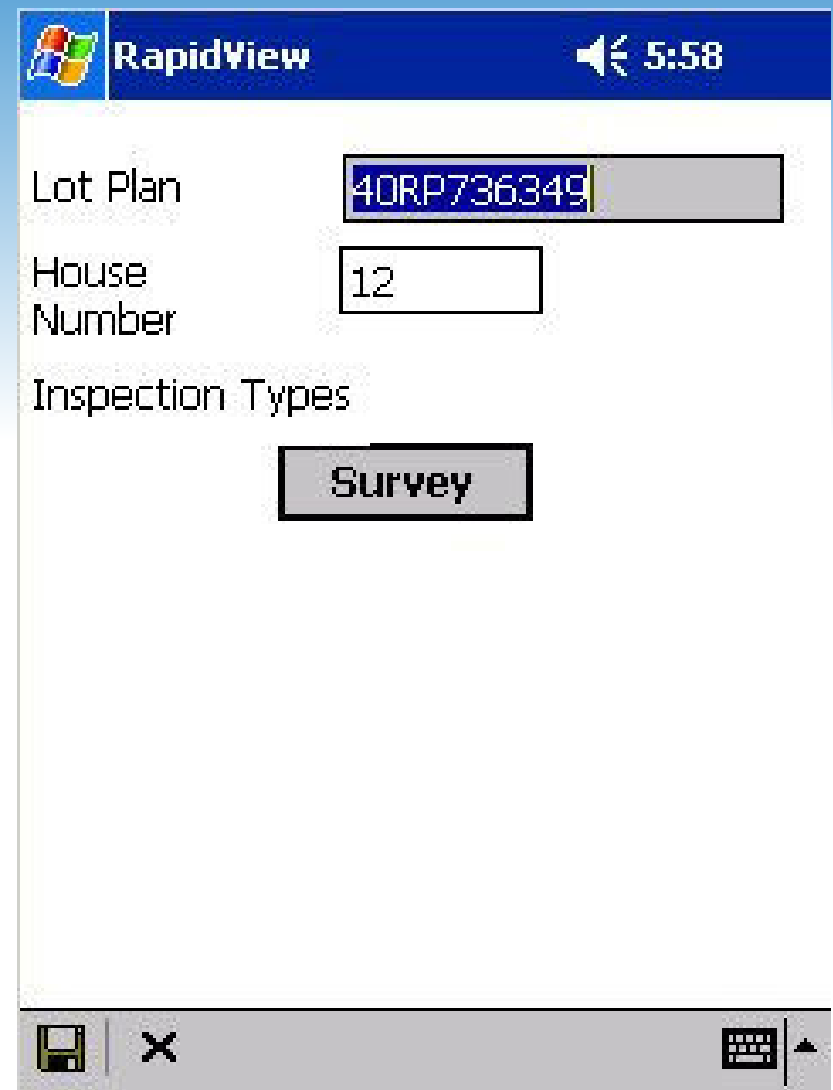
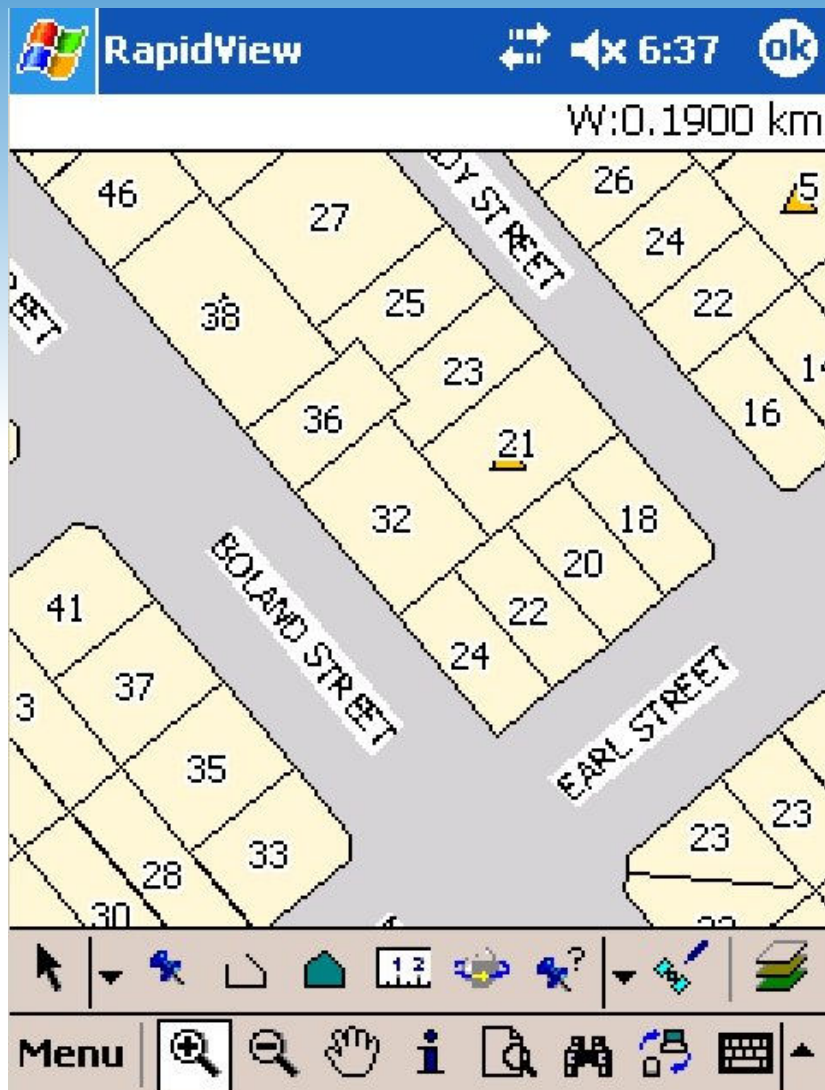
# PocketPC

Detailed forms

Compatible with existing  
GIS

An improvement on the  
PalmOS solution

# Select premise from map & confirm street number



# Data integrity rules enforced

RapidView 6:02

Non\_notify:

Notice\_Comp:

Name\_Occ:

Phone:

Premise\_Desc:

Bus\_Name:

Num\_Breed\_Site:

Breeding

Ovitrap

Chemical

PMT

OK Cancel

RapidView 6:03

Non\_notify:

Notice\_Comp:

Name\_Occ:

Phone:

Premise\_Desc:

Bus\_Name:

Num\_Breed\_Site:

Breeding


Ovitrap

Chemical

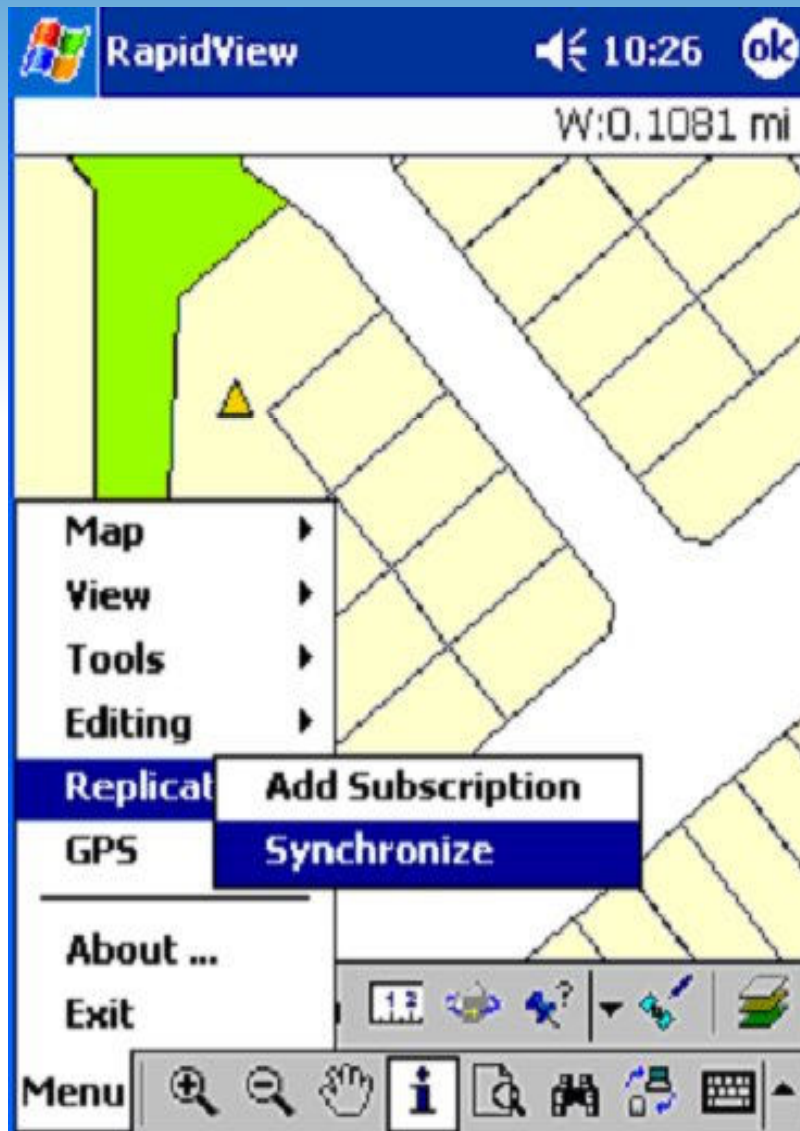
PMT

OK Cancel

**RapidView** ok

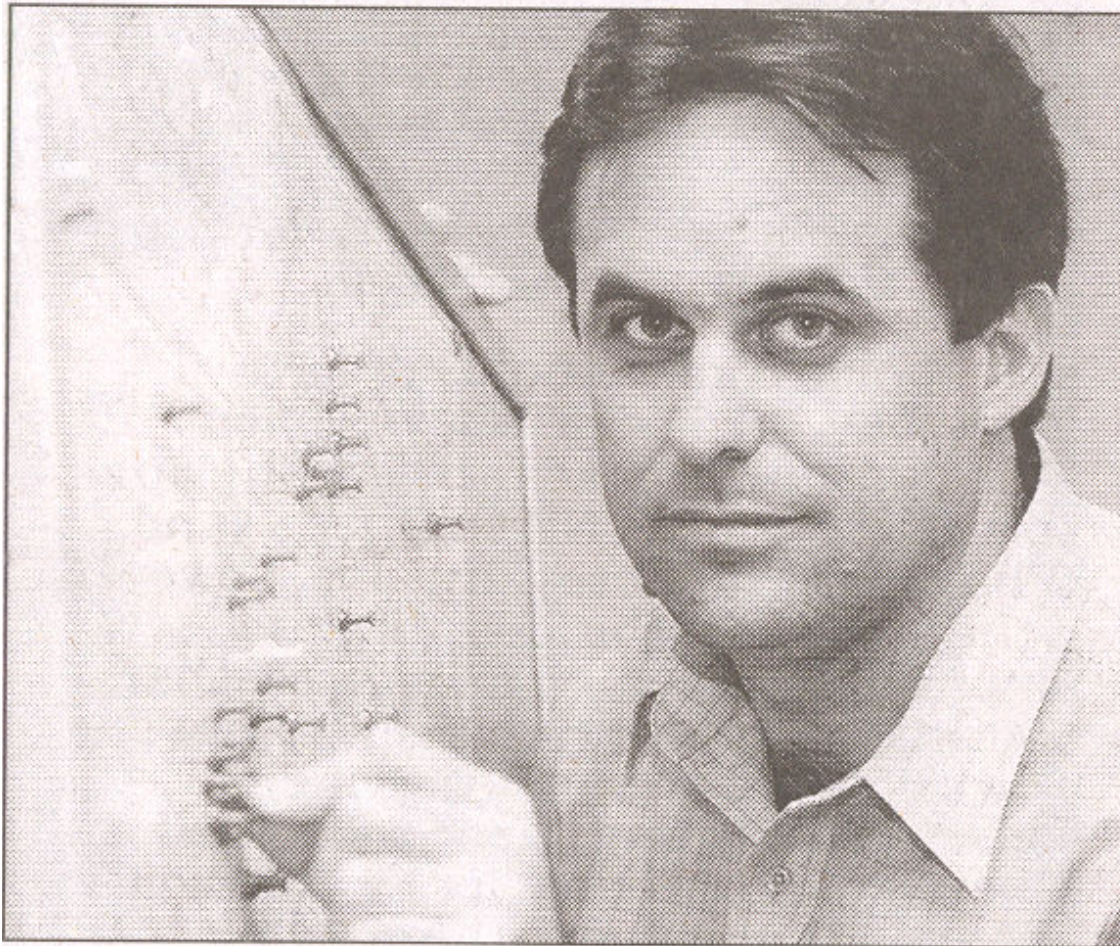
 Please input a value for Operation

# Add to database on server

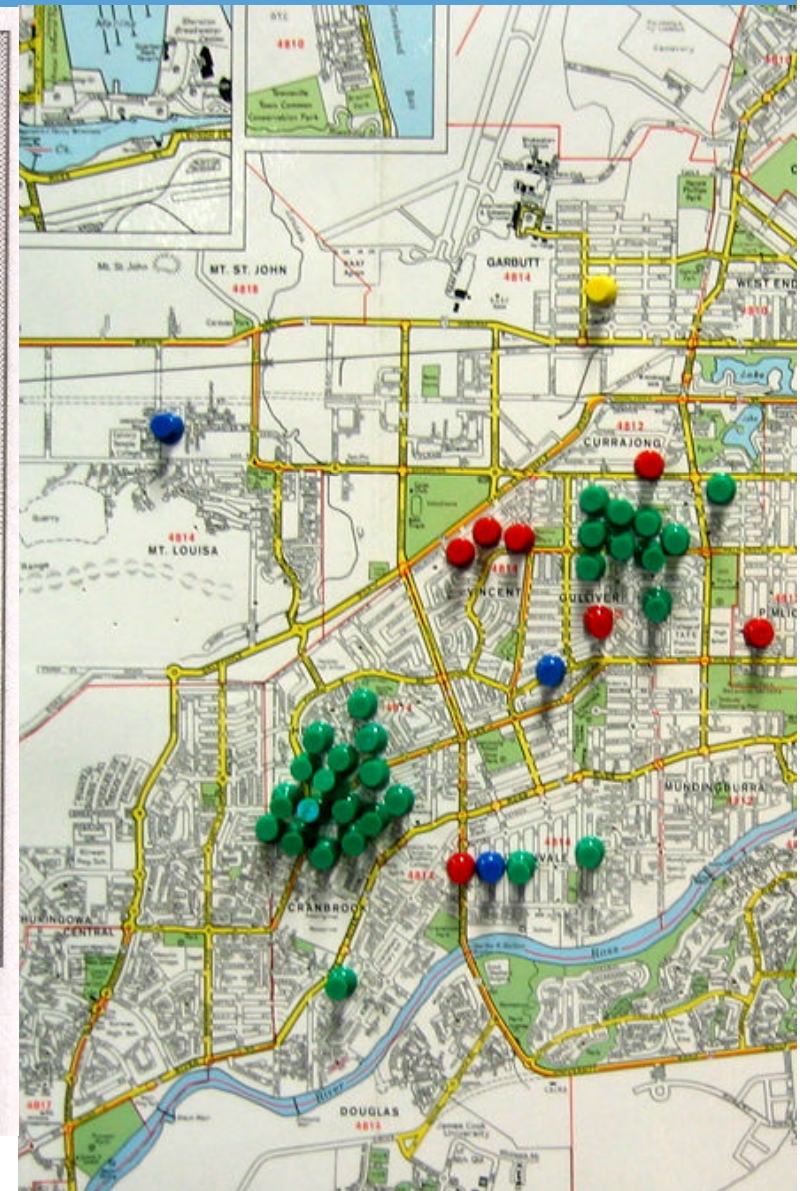




# Dengue Surveillance... From this:



**ALARMED . . . John Piispanen plots dengue hot spots throughout the city**





# To this! Inform the managers



## Getting better but... still some serious issues

- Slow address data updates in high-growth regions
- Imagery as a backdrop would be great for context, but you need to have the imagery and it's a hassle to introduce, even if you do
- Batteries don't last all day
- Small data entry screen leads to user rejection

But... there is hope!





# What is Mappt?

- Back to basics Designed for ease of use with minimal training
- Create, edit and manage your data, even while offline
- Simple workflow to move data between your Enterprise GIS and Mappt
- [Video](#)

# Existing solutions vs Mappt

- Problems with Apple vs Android
- Open industry standards
- Not tied to existing GIS package
- No “iTax” on hardware
- Very low barrier to entry (anyone can use it!)
- Easy to learn UI

# Broad scope of uses

- Current users
  - Mining & exploration
  - Environmental & vegetation management
  - Asset management
  - Cultural & heritage mapping
  - Education & training
- Anywhere you record field data
  - Adaptable (independent of industry)

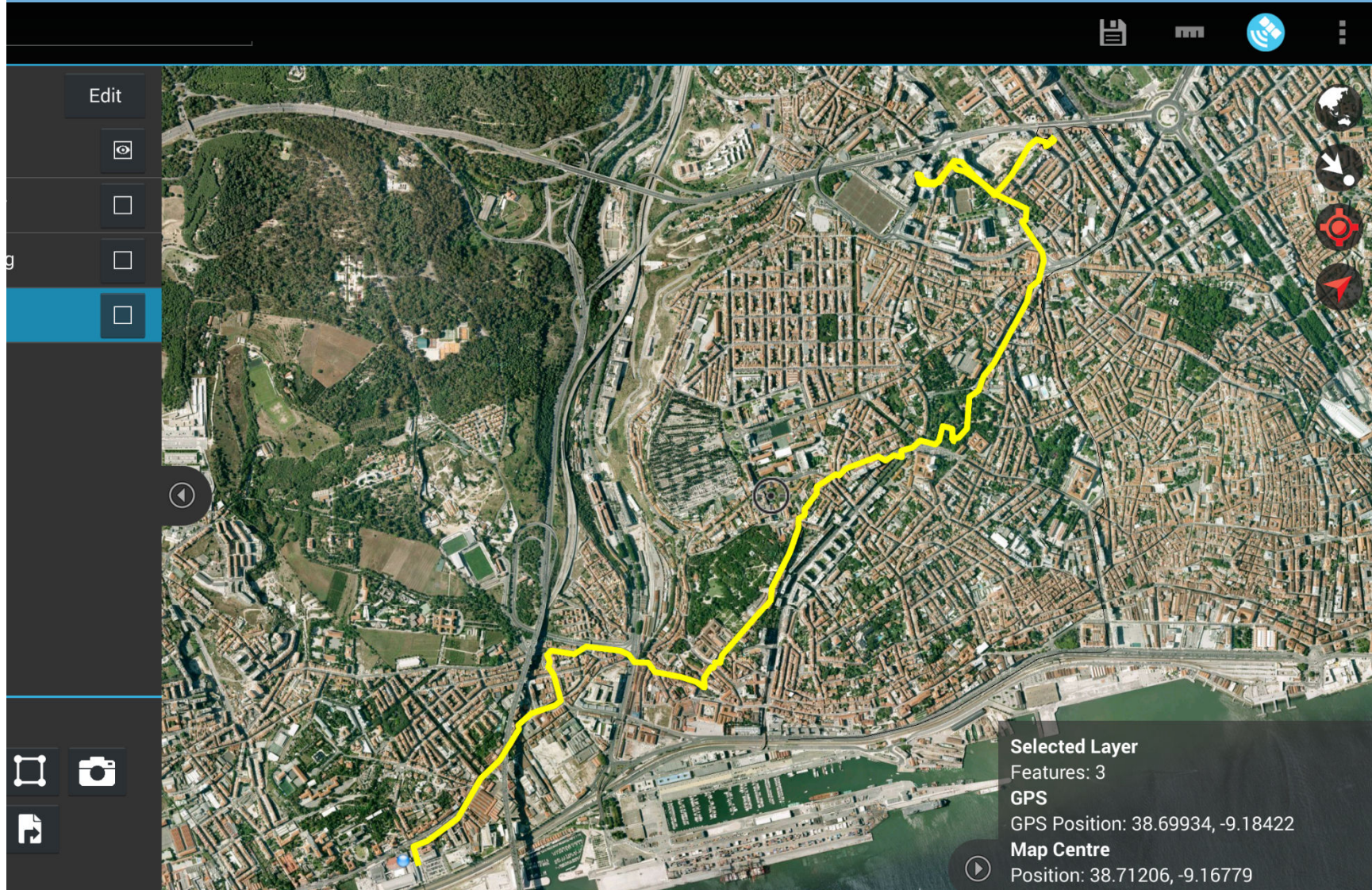
# Suitability for fieldworkers

- Laptop vs Tablet (Weight/Battery/GPS)





# Real-time GPS tracking (never get lost!)





# Geotagged Images





# Dropdown Data Entry Forms

The screenshot displays a mobile application interface for editing a marker on a map. The background shows an aerial view of a parking lot with several cars. A dark overlay titled "Edit Marker" is centered on the screen, containing a form with two tabs: "DESCRIPTION" and "ATTRIBUTES". The "ATTRIBUTES" tab is selected, showing a list of fields with dropdown menus for values. The fields and their current values are:

Name	Value
Condition	OK
Comments	
Material	Concrete
Photo ID	
Photo link	Concrete
Feature	Earth
	Gravel
	Other

In the bottom right corner, a "Selected Marker" information box is visible, displaying the following data:

- Selected Marker**
- Position: 38.69747, -9.18352
- GPS**
- GPS Position: 38.69939, -9.18416
- Map Centre**
- Position: 38.69747, -9.18352

# Unlimited Offline Imagery Support! ECW or JP2





# Classification and Thematic Mapping

The screenshot shows a GIS application interface with a dark theme. On the left, a 'View Layers' panel lists 'Vector Layer', 'LiDAR 5m Contours.shp', and 'WIN\_Sites\_Clip.shp'. The 'LiDAR 5m Contours.shp' layer is selected. The main window displays the 'Edit Layer' dialog box, which is divided into five tabs: 'DESCRIPTION', 'ATTRIBUTES', 'STYLE', 'CLASSIFICATION', and 'CLASS STYLES'. The 'CLASS STYLES' tab is active, showing a table of classification classes. The table has four columns: 'Class', 'Colour', 'Line Thickness', and 'Fill'. Below the table, a note states: 'The following classes have been generated from your data. Changes made below are applied immediately on the layer's features.' The background shows a map with a yellow road and a blue river.

Class	Colour	Line Thickness	Fill
0 to 0.2 (41 features)	Blue	Slider	Fill
0.2 to 0.4 (29 features)	Dark Blue	Slider	Fill
0.4 to 0.6 (30 features)	Medium Blue	Slider	Fill
0.6 to 0.8 (7 features)	Light Blue	Slider	Fill
0.8 to 1 (7 features)	White	Slider	Fill

The following classes have been generated from your data. Changes made below are applied immediately on the layer's features.

# In field data collection and mapping

Northern tour project

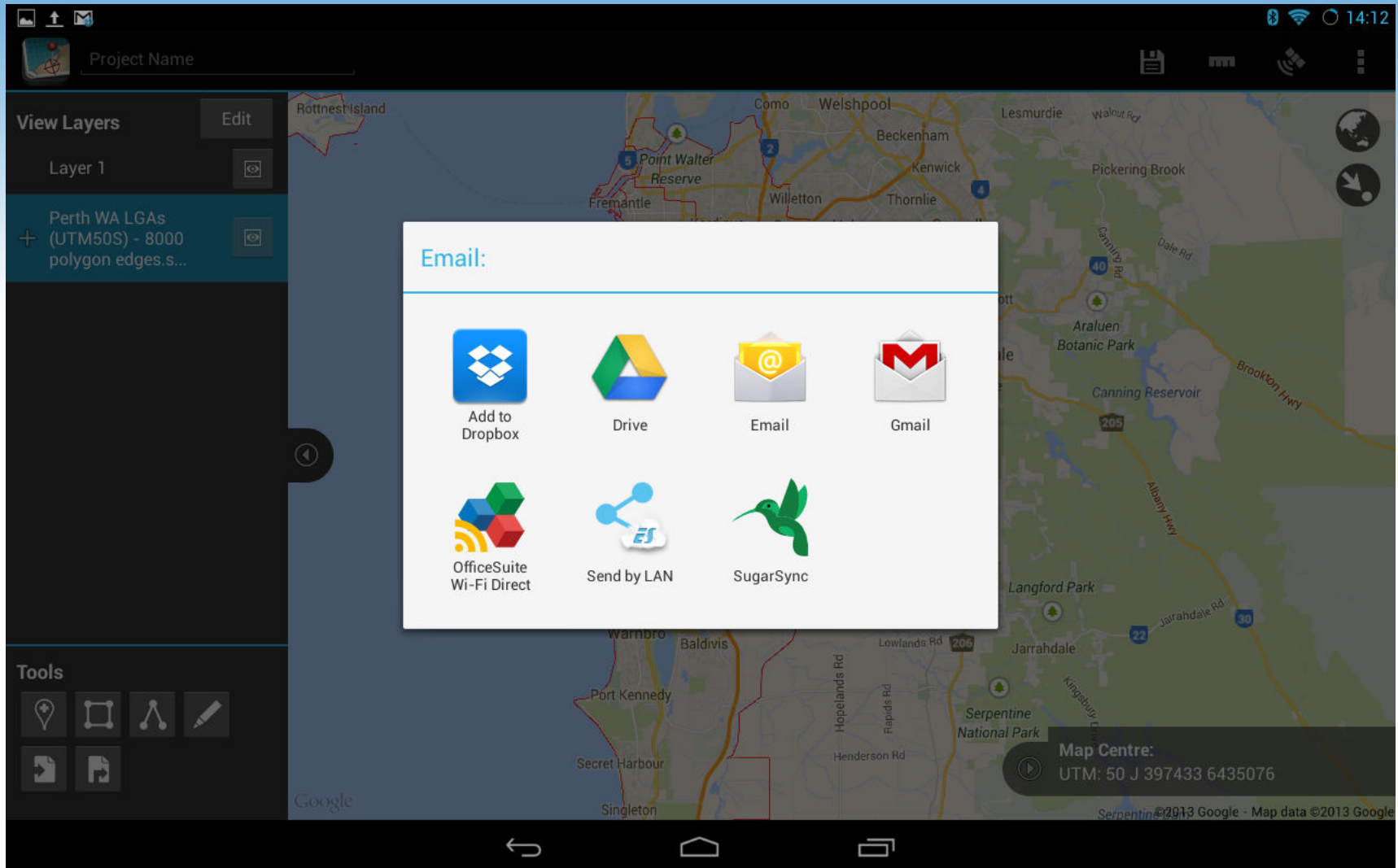
Sample 16 - 21  
Photo taken. Outcrop Mix of quartz vein, sandstone and iron bearing formation. XRF Iron formation Fe 53.5%. Sandstone Fe 12.4%.

Map Centre:  
Deg./Min./Sec.:  
-25° 42' 24", 118° 57' 19"

Google

3:20

# Export via Google Drive, Email, SD card or cable to your Desktop





# Required hardware

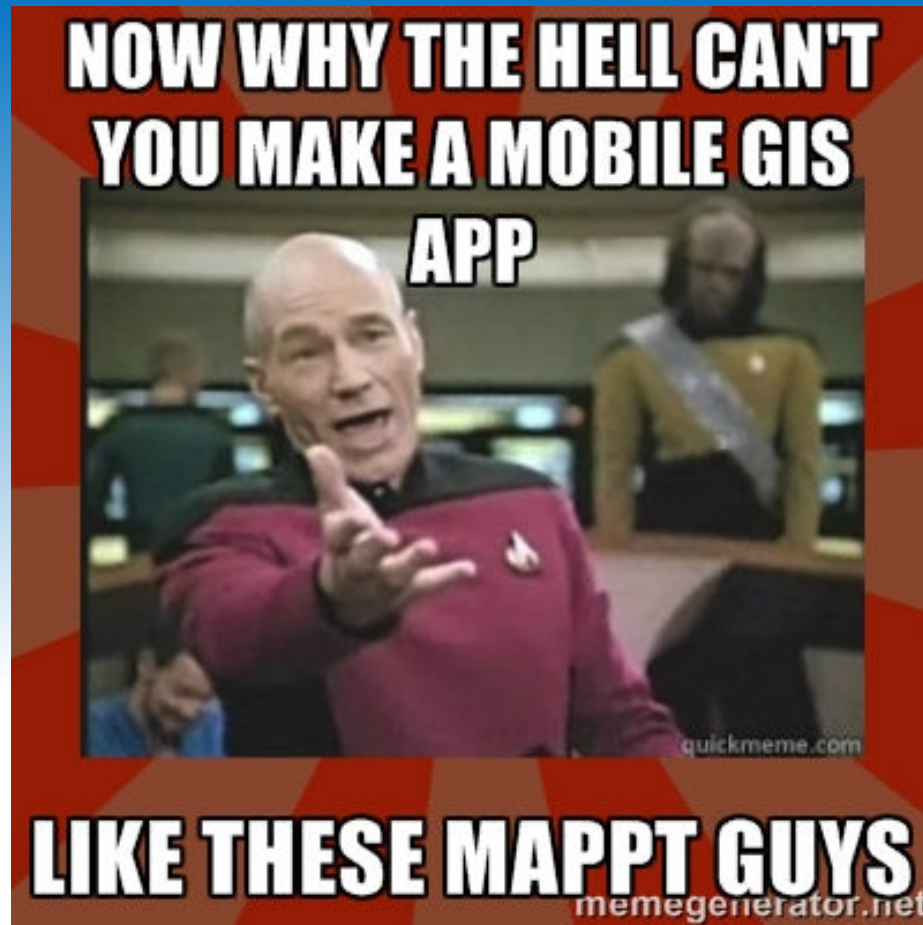
- Almost any Android tablet 7" and up running 4.1
- Samsung, Sony, LG, Panasonic etc.



# Pricing and Licensing

- From Standard \$660 (AUD)
- \$132 per year for maintenance
- Site wide licensing available
- Enterprise clients pay for customisation
- Free updates to regular subscribers





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