Case Studies on Benefits of Spatial Technologies for Pest & Environment Management and Biosecurity
Case Studies

- Biosecurity Initiative NSW Coastal Councils
- Dengue Fever Response Queensland Health
- Park Mgmt & Endangered Species Whittlesea
- Disaster Response Nillumbik
- IPM & Vector Control County of Santa Clara
Biosecurity Initiatives – NSW Coastal Councils

Tropical Soda Apple
Australian Class 1 Agricultural Weed
US Federal Noxious Weed

Analysis showed weed appearing at stockyards

Multi-region “Weed Access Program” Biosecurity Initiative

Infestations cross-referenced against NLIP registered cattle movements

Cattle transport pathways identified

Properties at risk identified

New infestations proactively prevented
Communicating to Landholders
- NSW Coastal Councils

Key Success Factors

Using maps to discuss problem

Automatic maps in formal notices
(State Weed/Pest Control Acts)

Strong support
Dengue Fever Response – Queensland Health

Fully Paper Tracking ...

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

Townsville Bulletin 2004
**Aedes aegypti Mosquito Premise-to-Premise Survey Form**

<table>
<thead>
<tr>
<th>COUNCIL:</th>
<th>SUBURB:</th>
<th>INSPECTOR:</th>
<th>DATE(S): 13.8.97</th>
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- **Routine Survey**
- **Suspect Dengue Case**
- **Virologically Confirmed Dengue Case**
- **Other**

**Premise**

<table>
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<tr>
<th>No.</th>
<th>ADDRESS</th>
<th>PREMISE INSPECTED</th>
<th>BREEDING CONTAINER TYPE</th>
<th>LARVAE SAMPLE No.</th>
<th>LARVAE ID</th>
<th>AREA SPRAYED</th>
<th>INSECTICIDE USED</th>
<th>NOTES</th>
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<td></td>
<td></td>
<td>YES</td>
<td>NO</td>
<td></td>
<td></td>
<td>INSIDE</td>
<td>UNDER</td>
<td>OTHER</td>
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**Notes:**

- **Notes:**
  - Very clean. Most H2O = oily or salty or both. No larvae, adults seen.
Daily updates of hot spots
Automatic aging – know reinspection is due
Find difficult addresses (often run-down high risk houses)
Two way link to Dengue patient case management
Park Works Management – Whittlesea City

- Maintenance
- Pest control
- Habitat mgmt
Endangered Growling Grass Frogs – Whittlesea City

**HABITAT DESCRIPTION**

Include Photo of Recorded Habitat (from 4D Cam)

**WEATHER CONDITIONS**

- Temperature (C): 31
- Sunshine: Clear and Sunny
- Wind Conditions: Gentle Breeze

**SURVEY RESULTS**

- Survey Method: Audio Survey (Frogs Heard)
- Number Heard: 0
- Number Seen: 0

**CORRELATING**

- Detailed Records
- Reports to Authorities
- Funding Applications
Controlled Burning – Whittlesea City

PLANNING & TRACKING

- Just like paper maps
- Enforced process
- Accurate measurements
Black Saturday Bushfires 2009

Dead & injured wildlife, stock and pets

COORDINATING
- Mapping by Air
- Multiple Field Teams
- Public Service Desk

Made complex statistics easy to understand
Vector Control – County of Santa Clara (in progress)

TARGETTING West Nile Virus, Hantavirus, Lyme Disease, Malaria, Plague, Dengue Fever, Baylisascaris, Chikungunya, Dog Heartworm, Tularemia

TECHNICIANS CAN SEE
- Work history
- Other reports in area
- Known sources
- Surveillance sites
- Pest pathways
- Protected species

Effective Control
Integrated Pest Management
- County of Santa Clara (in progress)

- Close to 200 sites requiring pest management
- Complex sites with multiple ongoing problems

COORDINATORS CAN SEE
- Work history
- Other reports in area
- Known sources
- Environmental concerns
- Impact of geography
- Pest trends over time

Effective Control
Minimum Chemicals
Future projections

Ticks found & treated in May
Ticks found in June
Source?
Spatial Technology enables major steps forward in managing pests, environmental health and biosecurity

**In the Field**
Rich information on environment, assets and threats, service requests and call history, all together

**In the Lab**
Rapid analysis of problem areas and coverage
Consolidated view of all pests and vectors
Standardize and share data over large areas – find vector pathways

**In the Office**
Map reports of spread and containment
Strong evidence for funding
Strong evidence for enforcing legislation in court
Accurate records of chemicals used
Tight controls
Questions & More Info

Spatial Technologies for Pest & Environmental Management and Biosecurity

Come up and grab a card

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www.iconyx.com/8th-IPM-Symposium

Special link to more case study information for IPM Symposium participants
Technology Concepts

Reference Documents

Image Store

Secure private data

Other Corporate Systems & Databases

(Analogy: Property, GIS, Asset Mgmt, Finance, CRM, Resources etc.)

Hosted SQL Database

Web-based Management SW – Form design, Notices, Workflow, Scheduling

Full spatial data Reporting Portal

Synch from field via 3G/WiFi

Mobile digital forms and maps

Web services

GIS Maps

Hosted SQL Database

April 2016 16
Pest Management Workflow

1. **Plan**
2. **Inspection**
3. **Control**
4. **Monitor & Approve**
5. **Schedule Work**
6. **Reinspect**

- **Known Sources**
- **Free of Pests**
- **Pest & Location**
- **Service Requests**
Advice on the Practical Side of Introducing Technology

- Business process and reporting requirements can be a moving target
- Field staff, admin staff and management all need to learn a new way of working and communicating
- Does it fit the way you work? E.g. all day in the car, on foot or on a bicycle
- Managers and admin staff will appreciate the automation benefits the most
- Field staff will get most benefit from not needing to come back to the central office for paperwork
- Skilled field staff will also benefit from having a really good view of what’s going on around them, knowing the full history when speaking to the public, finding sites more easily, and be more independent and effective
- BUT it’s all too easy to make things too complicated for the people in the field