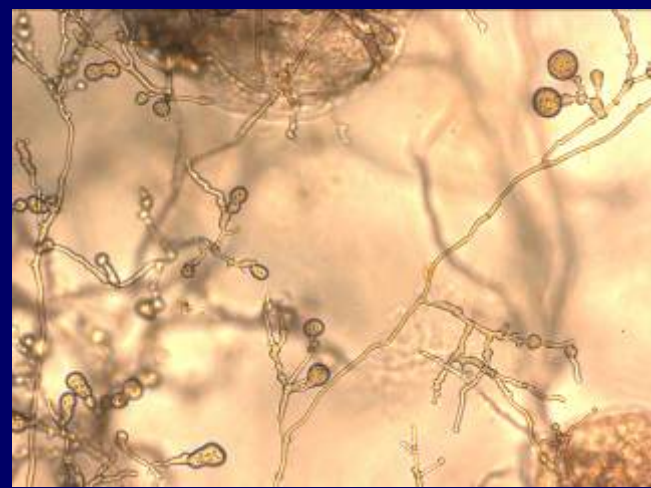




Dieback in the Greater Blue Mountains World Heritage Area, and the role of *Phytophthora*

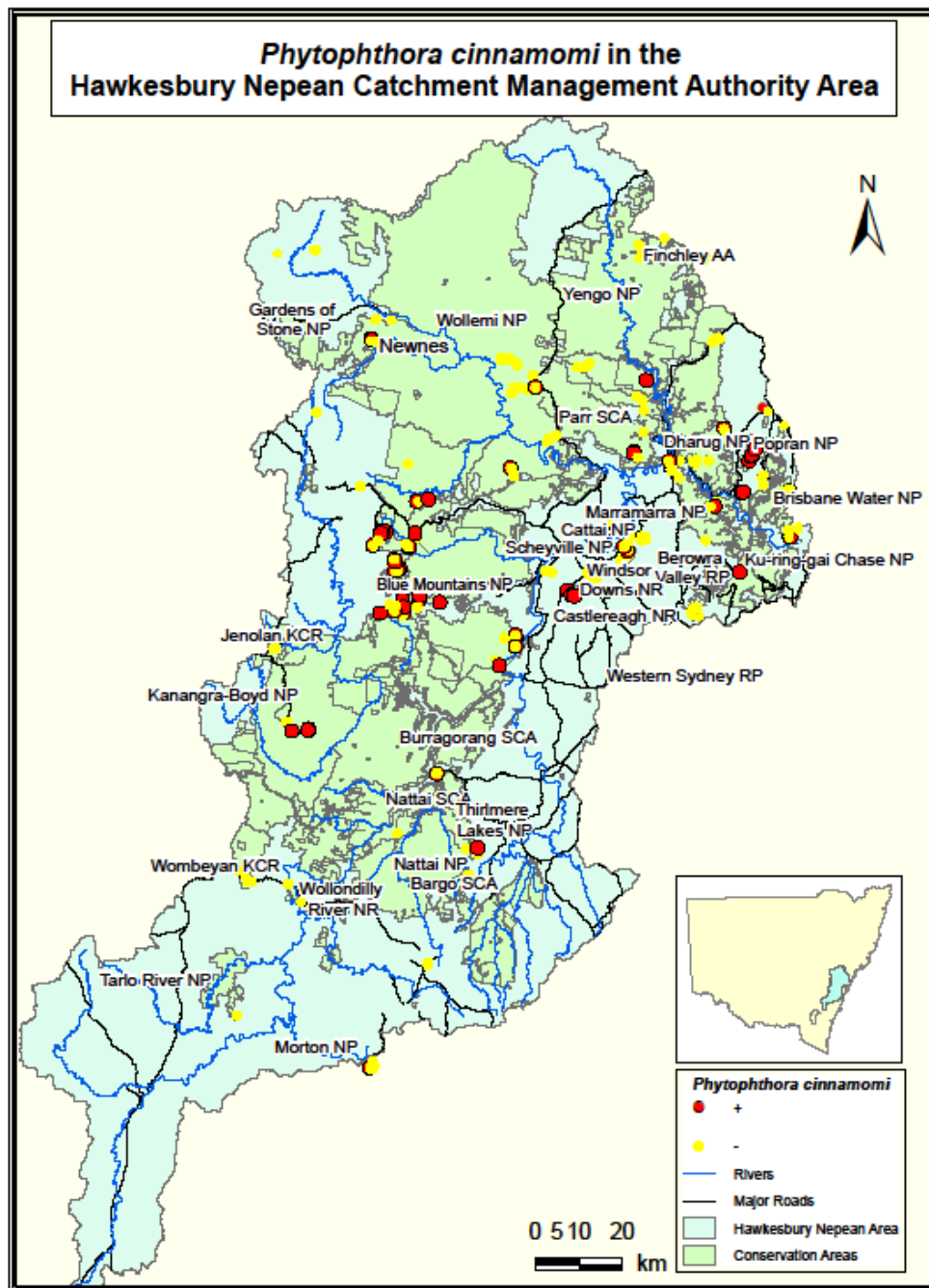


Zoe-Joy Newby, PhD candidate, The University of Sydney

The occurrence of dieback in GBMWHA and the significance of *Phytophthora*

- Is it there?
- What is it doing?
- What conditions are associated with its occurrence?

Hawkesbury-Nepean CMA *Phytophthora* Survey, 2008



Field survey - April, 2010

From 2008 CMA Sites Positive for *Phytophthora*



6/9 sites positive for *Phytophthora*

Blackheath & Mt Victoria



Leura & Wentworth Falls



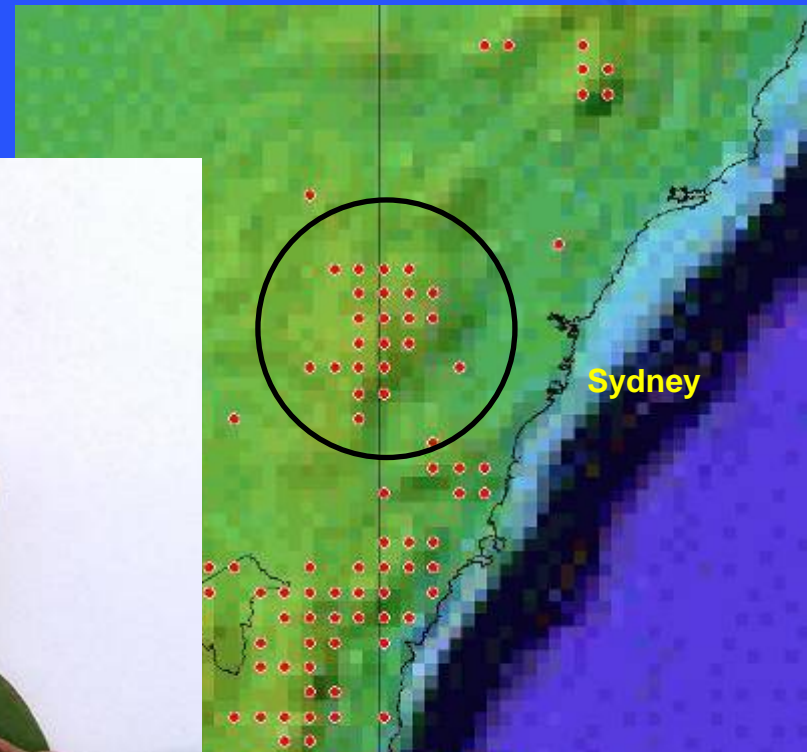
Potential impacts of disease

| | | |
|-----------------------------------|---|---|
| Vegetation | → | Over 150 inhabiting spp. are 'hosts' |
| Fauna | → | Loss of habitat |
| Infrastructure | → | Installation of containment and decontamination apparatus |
| Tourism and general public | → | Site and track closures |
| Management | → | Active disease treatment and prevention; policy development |

Eucalyptus fastigata – Brown Barrell



- Susceptible in field
- Highly susceptible in cultivation



Pherosphaera fitzgeraldii – Blue Mountains Pine

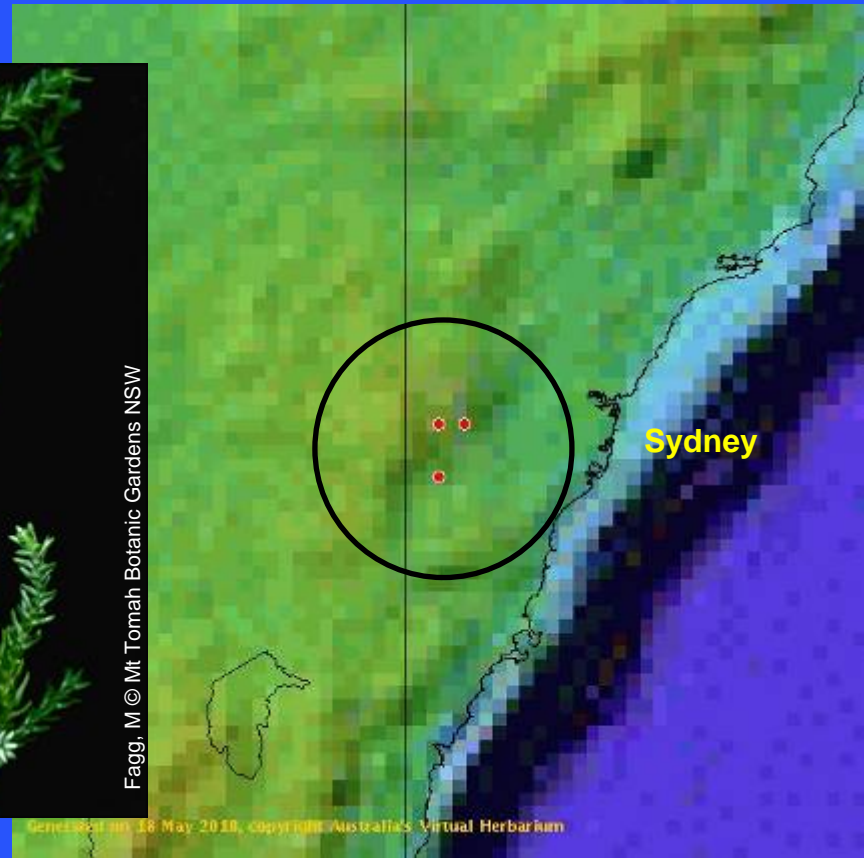
- endangered
- Susceptible in cultivation



Brian Walters, Australian Native Plant Society

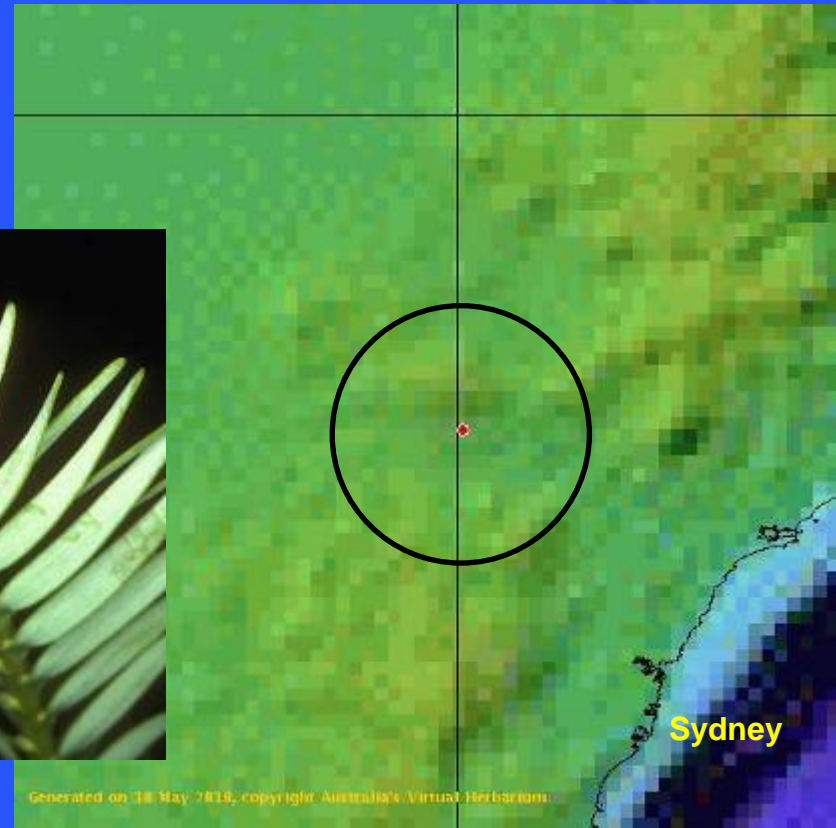


Fagg, M © Mt Tomah Botanic Gardens NSW



Wollemia nobilis – Wollemi Pine

- Endangered
- Highly susceptible in experiments



Sydney

The needle and the haystack...

... Identifying *Phytophthora*-dieback

- ‘Dieback’ is generic
- Initial dieback is in undergrowth
- Asymptomatic appearance
- False negatives
- Wilderness!

Blackheath,
Hathill Rd

Healthy
vegetation

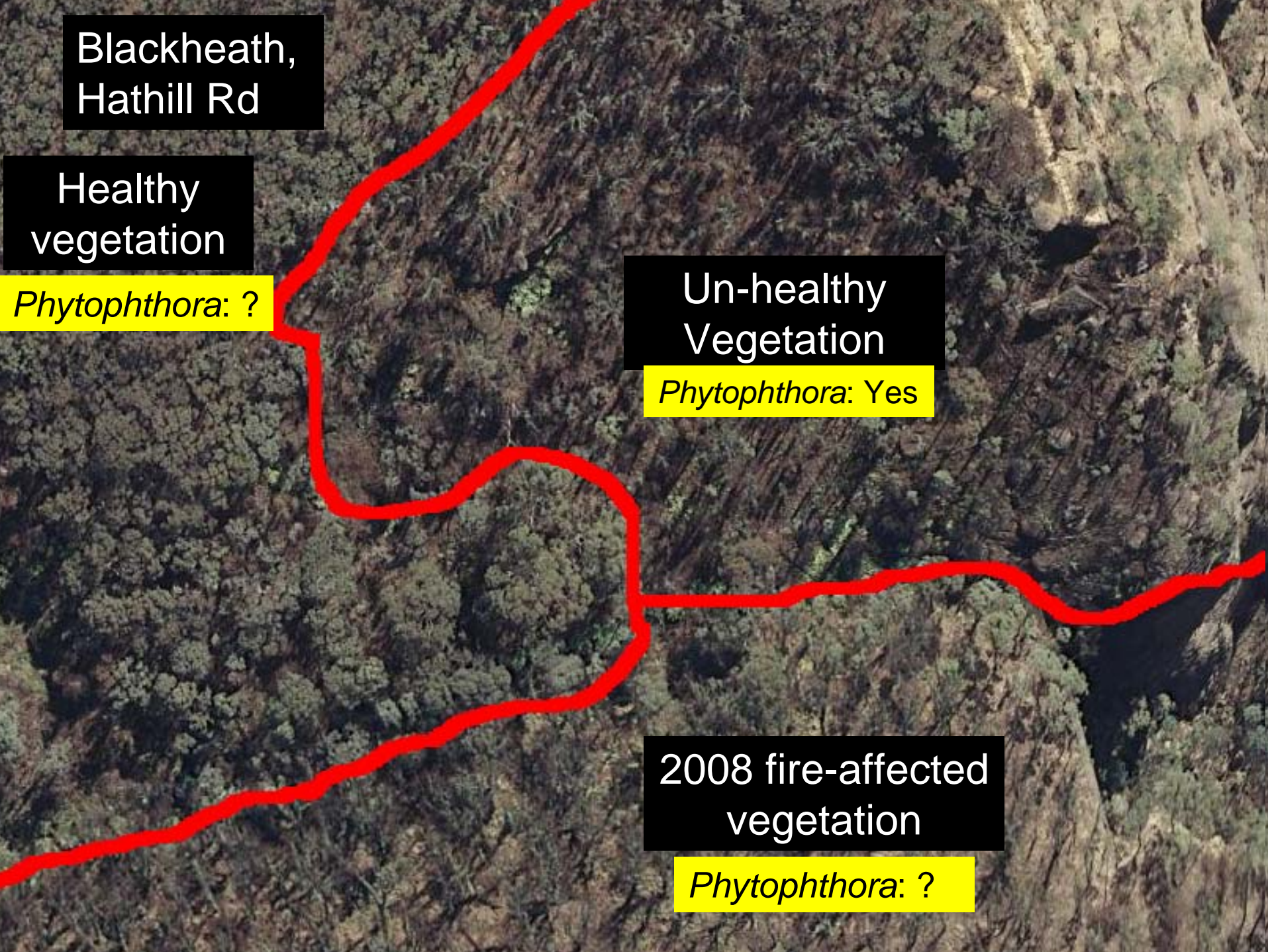
Phytophthora: ?

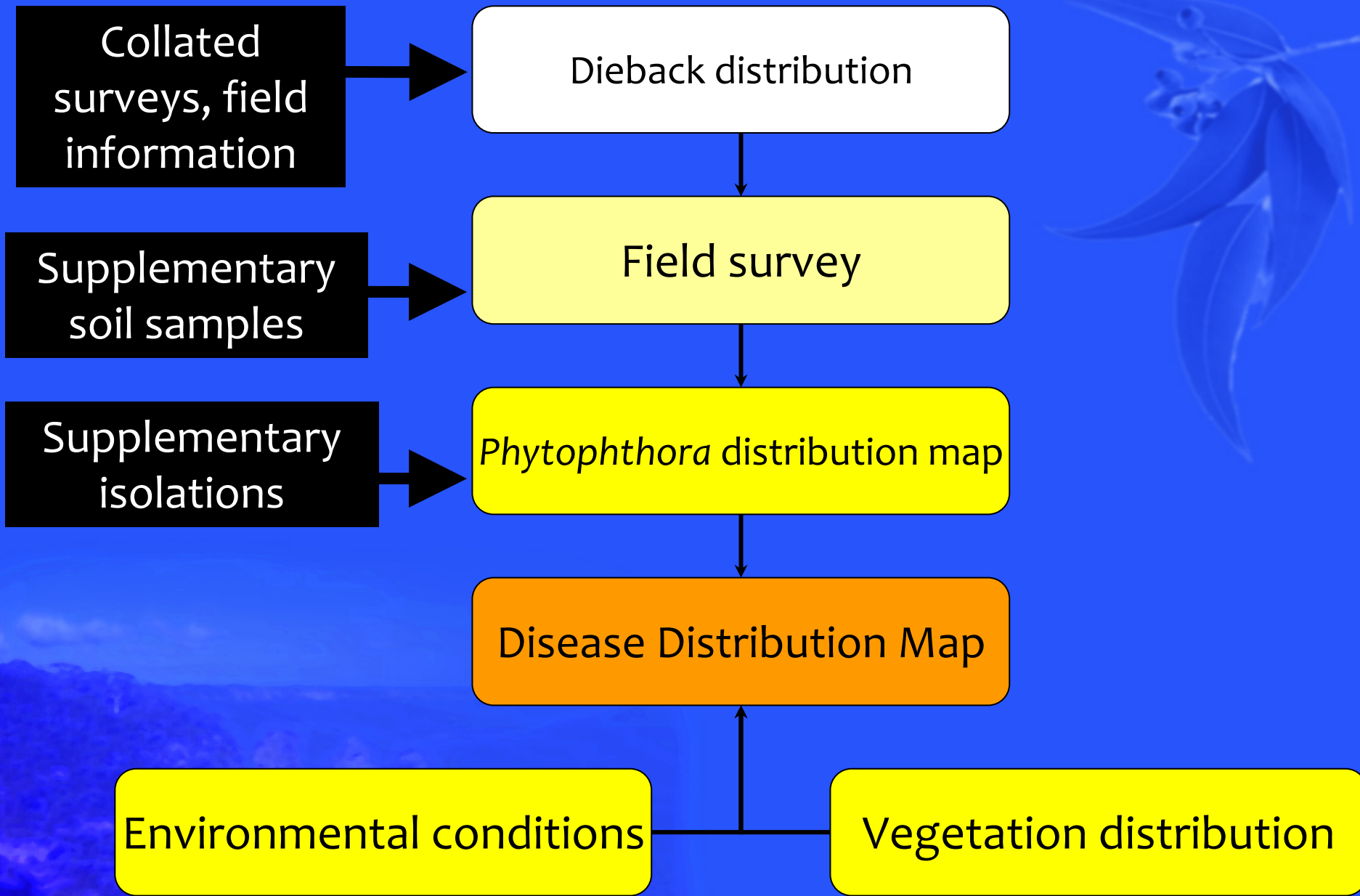
Un-healthy
Vegetation

Phytophthora: Yes

2008 fire-affected
vegetation

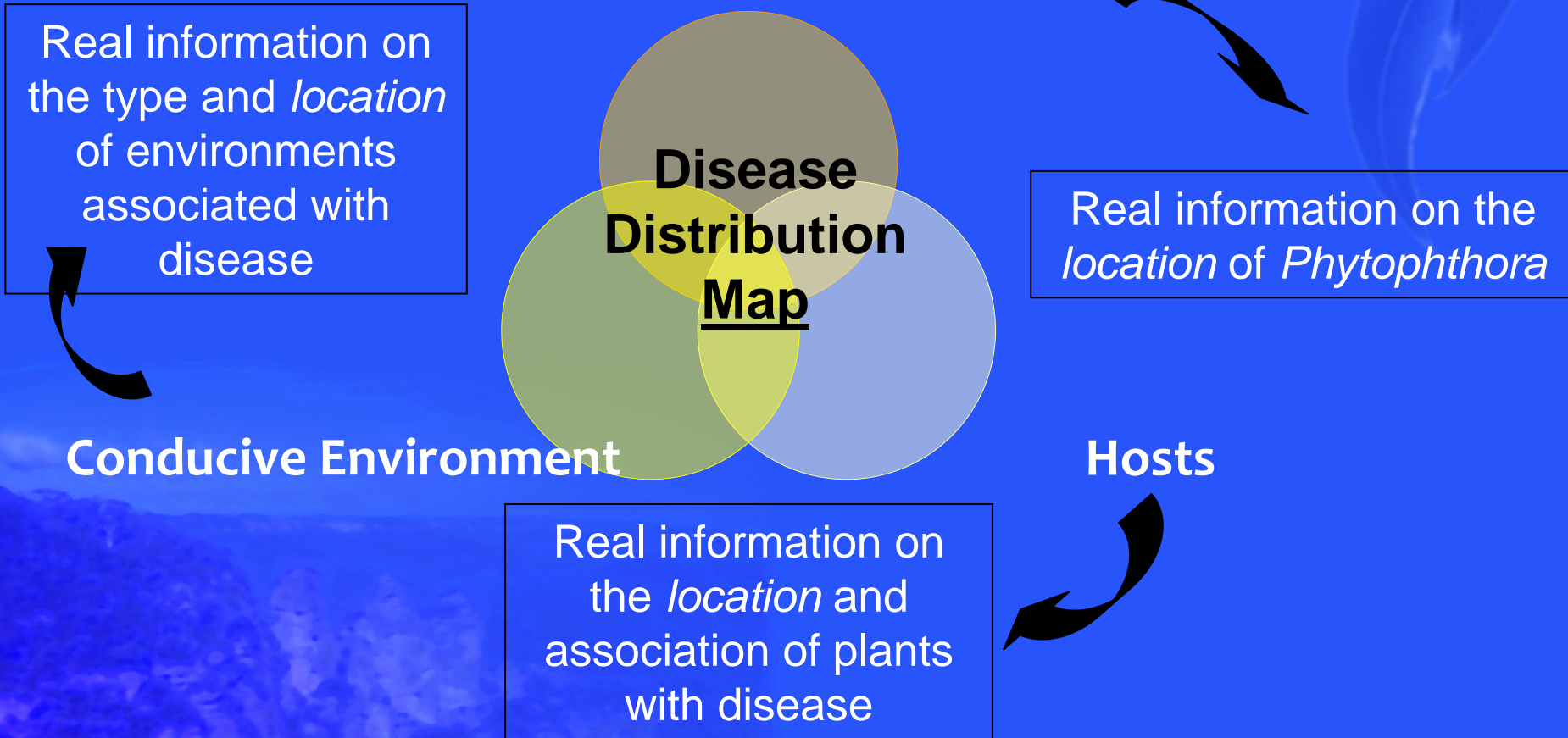
Phytophthora: ?





Disease Distribution Map– management outcomes

Phytophthora distribution



= Spatial Risk Prioritisation

Spatial Risk Prioritisation

Management implications

Localities positive for Pc

- Control anthropogenic processes affecting disease
- Treat/remove infected hosts
- Remove resistant/susceptible host
- Quarantine
- Chemical treatments

Localities with potential

- Identify environments where disease is likely to occur
- Identify localities of susceptible species
- *Ex-situ* conservation of endangered or threatened host
- Chemical treatment of hosts
- Stop the spread!

Getting involved

Email with questions, updates, photos, site details, result sheets, etc:

diebackproject@bmwhi.org.au

Send soil samples to:

Zoe-Joy Newby
Plant Pathology and Mycology Centre
Royal Botanic Gardens
Mrs Macquarie's Road, Sydney, NSW, 2000
(02) 9238 1838
0401 818 364

Please remember to identify the coordinates of your sample