PaDIL
Pests and Diseases Image Library

A Tool to Assist Invasive Pest Recognition

Challenges of biosecurity & invasive species

- What is it? → Identity

- How do you find it? → Hosts
- Where is it? → Distribution

What does it do? → Biology

- How do you manage it?

From biology to regulation?

What is it? (Identity)

- Management of Risks
  - Accurate + efficient diagnostics
- Diagnosticians
  - Familiarity with local fauna – need information on non-local fauna.
- Identity
  - Supports: surveillance
    monitoring
    appropriate treatment
    communication
    emergency management

What is it? (Identity)

- Factors:
- Invasive pests encountered are not local
  - Require a world-wide knowledge of group
  - Broad range of groups encountered;
- Worldwide decline
  - No ready availability of diagnosticians and taxonomists.
  - Can impact on response

PaDIL
What is it? –a tool to help solve the question

- Supports: (knowledge of what is not wanted/existing)
  - **Pre-border**
  - **Border**
  - **Post border**
    - Emergency management
    - Domestic trade (intra-national)
  - **Communication**

What is contained in PaDIL

- Diagnostic specimen images
- Symptom images
- Pests
- Other organisms
- Reference specimens
- Distribution
- Hosts
- General Overview

PaDIL: Diagnostic specimen images

- Supported by diagnostic information
- Nomenclature information
  - Family, genus, species, author, year
- Morphological,
- DNA,
- Information accessible by
  - Species
  - Hosts
  - Regions

PaDIL: Other organisms

- Native, beneficial & invasive organisms
  - Those which may be confused with pest or disease causing organisms
  - Pollinators
  - Other special interest organism groups

Reference specimens

- Where possible an image is
  - associated with a reference specimen
    - Held in a publicly accessible reference collection
- Collection data
  - Includes location taken or as quarantine interception
  - Image taker
  - Diagnostician

PaDIL: Overview and other data

- Distribution
  - Validation – referenced – literature or specimen
- Hosts
  - Validation – referenced – literature or specimen
- Other information
  - Biological
  - Descriptive
  - References and links

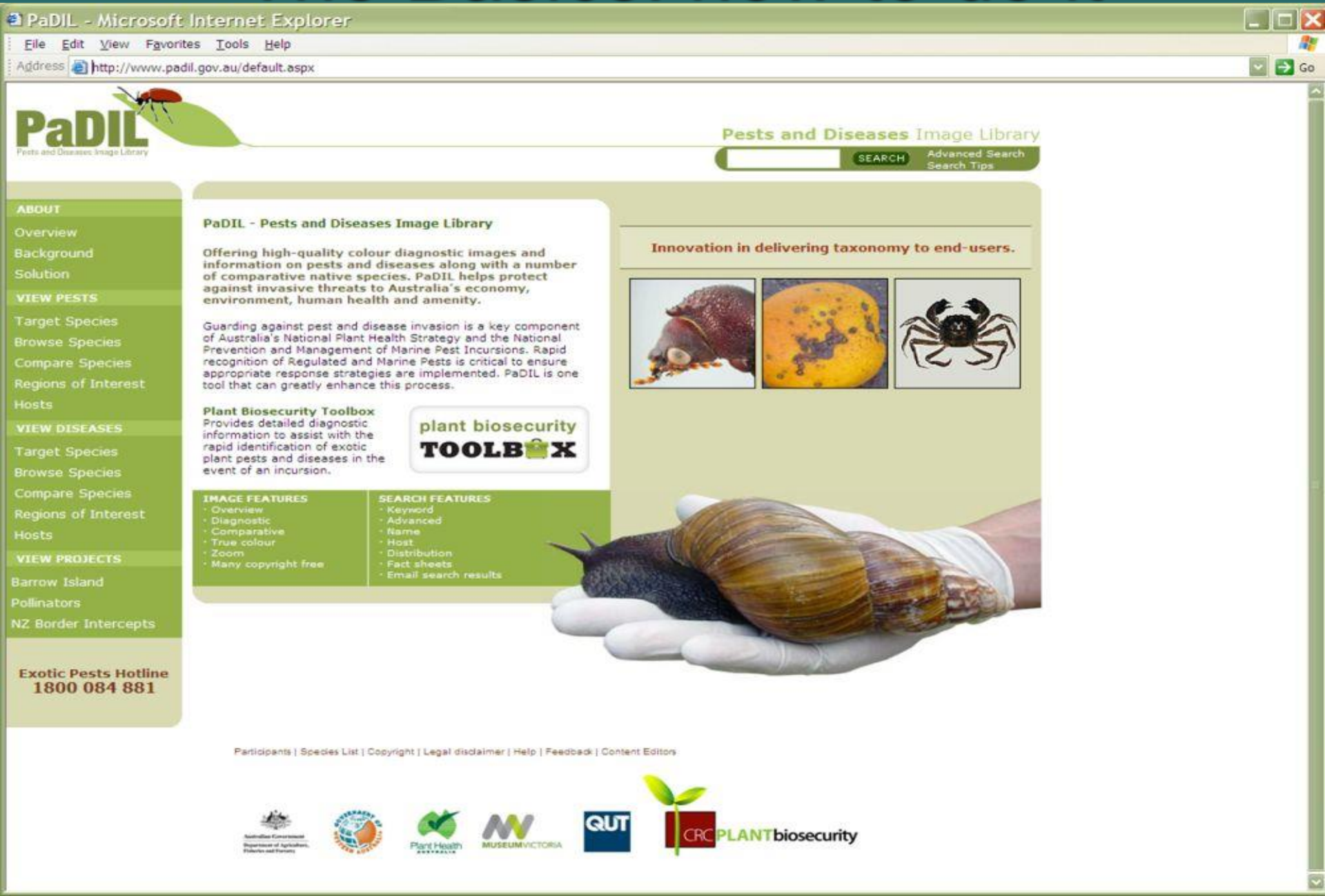
PaDIL: Symptom images

- Current
  - **mostly plant pathogens**
  - **few insects/invertebrates**
-
- Developments
  - **expand to include field images as part of normal suite**
  - **Pilot project planned for late 2009**
-

PaDIL: Pests

- Original concept
  - Pest recognition
    - Assist in species-recognition
    - Assist incursion management
- Now and the future
  - To include much broader range of organisms
    - Non pests: eg beneficial organisms, environment support
  - Broaden image and information types
    - Information and images
    - Organisms
    - Damage, symptoms

The Basics: how to do it



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Offering high-quality colour diagnostic images and information on pests and diseases along with a number of comparative native species. PaDIL helps protect against invasive threats to Australi[illegible]omy, environment, human heal[illegible]amenity.

[illegible]against pest and disease invasion is a key component [illegible]stralia's National Plant Health Strategy and the National Prevention and Management of Marine Pest Incursions. Rapid recognition of Regulated and Marine Pests is critical to ensure appropriate response strategies are implemented. PaDIL is one tool that can greatly enhance this process.

Plant Biosecurity Toolbox
Provides detailed diagnostic information to assist with the rapid identification of exotic plant pests and diseases in the event of an incursion.

plant biosecurity TOOLBOX

IMAGE FEATURES
- Overview
- Diagnostic
- Comparative
- True colour
- Zoom
- Many copyright free

SEARCH FEATURES
- Keyword
- Advanced
- Name
- Host
- Distribution
- Fact sheets
- Email search results

Innovation in delivering taxonomy to end-users.



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Common Name	Scientific Name
12 Spotted Asparagus Beetle	*Crioceris duodecimpunctata*
A false powderpost beetle	*Xylopsocus capucinus*
Acacia whitefly	*Tetraleurodes acaciae*
aedeomyia mosquito	*Aedeomyia catasticta*
aedes mosquito	*Aedes katherinensis*
African black beetle	*Heteronychus arator*
African cotton thrips	*Calliothrips impurus*
African cowpea thrips	*Megalurothrips sjostedti*
African sugar-cane borer moth	*Eldana saccharina*
African white stemborer	*Maliarpha separatella*
Africanized honeybee	*Apis mellifera scutellata*
Aleurocanthus whitefly	*Aleurocanthus citriperdus*
Aleurocanthus whitefly	*Aleurocanthus cocois*
Aleurocerus whitefly	*Aleurocerus palmae*
Aleurothrixus whitefly	*Aleurothrixus antidesmae*
Aleurotrachelus whitefly	*Aleurotrachelus trachoides*
Aleurotulus whitefly	*Aleurotulus nephrolepidis*
Alfalfa Ladybird	*Subcoccinella vigintiquatuorpunctata*
Alfalfa leafcutting bee	*Megachile rotundata*
Alleculid Beetle	*Omophlus lepturoides*
almond bark beetle	*Scolytus amygdali*
ambrosia beetle	*Xyleborus volvulus*
ambrosia beetle	*Xyleborus monographus*
ambrosia beetle	*Xyleborus bispinatus*
ambrosia beetle	*Xyleborus cryptographus*
ambrosia beetle	*Euwallacea validus*
ambrosia beetle	*Gnathotrichus materiarius*
ambrosia beetle	*Xyleborus pelliculosus*
ambrosia beetle	*Ambrosiodmus obliquus*
ambrosia beetle	*Dryoxylon onoharaensum*
ambrosia beetle	*Xyloterinus politus*
ambrosia beetle	*Ambrosiodmus compressus*
ambrosia beetle	*Euwallacea destruens*
ambrosia beetle	*Euwallacea bicolor*
ambrosia beetle	*Euwallacea piceus*

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VIEW DISEASES

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Guarding against pest and disease invasion is a key component of Australia's National Plant Health Strategy and the National Prevention and Management of Marine Pest Incursions. Rapid recognition of Regulated and Marine Pests is critical to ensure appropriate response strategies are implemented. PaDIL is one tool that can greatly enhance this process.

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Ciids
Clerids
Coccinellids
Curculionids
Dermestids
Erotylids
Laemophloeids
Lyctines
Mycetophagids
Nitidulids
Platypodines
Scarabs
Scolytines

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Address http://www.padil.gov.au/simplePestSearchResults.aspx?fldKeywords=cerambycidae

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Sort by: Common Name | Scientific Name | Taxonomy

View as One Page | Select All / Deselect All

1 2 3 4 5 6 7

Asian longhorn beetle
Anoplophora glabripennis
(Motschulsky, 1854)
(Coleoptera: Cerambycidae: Lamiinae)
Species Content Page

(Select to compare)

Exotic (absent from Australia) High Impact Pest Species

Bamboo longhorn beetle
Chlorophorus annularis
(Fabricius, 1787)
(Coleoptera: Cerambycidae)
Species Content Page

(Select to compare)

Exotic (but present in Australia)

Blackspotted pliers support beetle
Rhagium mordax
(De Geer, 1775)
(Coleoptera: Cerambycidae: Lepturinae)
Species Content Page

(Select to compare)

Exotic (absent from Australia) Pest Species

bullseye borer
Phoracantha acanthocera
(Macleay)
(Coleoptera: Cerambycidae: Cerambycinae: Phoracanthini)
Species Content Page

(Select to compare)

Native to Australia

Burnt pine longhorn beetle
Arhopalus ferus
(Mulsant)
(Coleoptera: Cerambycidae)
Species Content Page

(Select to compare)

Exotic (absent from Australia) High Impact Pest Species

Capricorn beetle
Cerambyx scopoli
Fuessly, 1775
(Coleoptera: Cerambycidae: Cerambycinae)
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Exotic (absent from Australia) Pest Species

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Beetles

Asian longhorn beetle
Anoplophora glabripennis (Motschulsky, 1854) (Coleoptera: Cerambycidae: Lamiinae)

Status
Exotic (absent from Australia) High Impact Pest Species

Dorsal view Zoomify VIEW LARGER IMAGE

Caption: Intercepted by AQIS Victoria in timber pallet from China. June 2005
Source: Peter Lillywhite Museum Victoria

Typical cerambycid shape, 25 mm (male) and 35 mm (female) – the elytra of females is parallel whereas the elytra of males is distally tapered; antennae 2.5 times body length in males and 1.3 times body length in females. Beetle has about 20 irregular white spots on the elytra; antennae have 11 segments, each with a white blue base; Females are larger than males; both are glossy black (after emergence from the tree will be very blue-black) and finely punctate.

The other species which *A. glabripennis* may be confused with is *A. chinensis*. The two species can be separated as follows:

Pronotum: In *A. glabripennis* and *A. chinensis* (morph from China) black and without hairspots; *A. chinensis* (morph from Japan) has two bluish-white hair spots on either side of the pronotum.

Elytra: The base of the elytra in *A. glabripennis* is smooth while the base of the elytra in.*A. chinensis* has numerous tubercles.

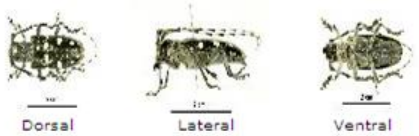
Scutellum: *A. glabripennis* and *A. chinensis* (morph from China) is black, *A. chinensis* (morph from Japan) has a white hair patch.

Source:

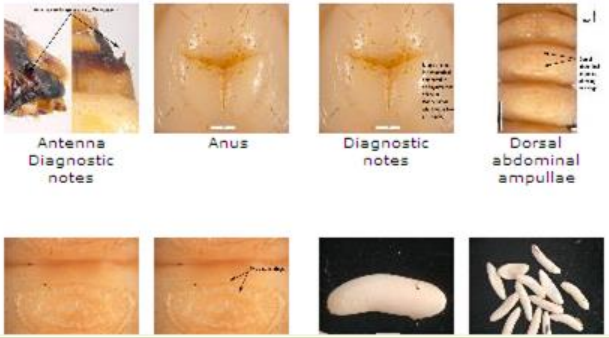
EPPO Data sheet & Cornell University Info Sheet

Diagnostic Images

Overview Images



Other Images



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Asian longhorn beetle
Anoplophora glabripennis (Motschulsky, 1854) (Coleoptera: Cerambycidae: Lamiinae)

Status
Exotic (absent from Australia) High Impact Pest Species

Other Common Names	Basicosta white-spotted longicorn beetle Starry sky beetle
Scientific Synonyms	*Anoplophora glabripennis* Breuning 1944 *Anoplophora nobilis* (Ganglbauer) *Cerosterna glabripennis* Motschulsky, 1853 *Cerosterna laevigator* Thomson, 1857 *Melanauster angustatus* Pic, 1925 *Melanauster glabripennis laglaisei* Pic 1953 *Melanauster luteonotatus* Pic, 1925 *Melanauster nanakineus* Pic1926 *Melanauster nobilis* Ganglbauer, 1890
Host Types	Citrus Fresh Fruit Fresh Roots Fresh Stems Leaves Ornamentals Pome fruits Stone fruits Timber
Distribution - Regions	Europe and Northern Asia USA and Canada
Distribution - Notes	Native to China and Korea, causes severe damage from 21-43 degrees North latitude and 100-127 degrees East longitude (represents 4 climatic zones in China.) Discovered in USA in New York, New York city in 1996 and Chicago in 1998. Discovered in Austria in 2001. Now in Canada and Ecuador (inc. Galapagos) The beetle has the potential to damage such industries as

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Beetles Asian longhorn beetle
Anoplophora glabripennis (Motschulsky, 1854) (Coleoptera: Cerambycidae: Lamiinae)

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Caption: Intercepted by AQIS Victoria in timber pallet from China. June 2005
Source: Simon Hinkley & Ken Walker Museum Victoria

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Current Developments: Specific project areas

The Toolbox

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Asiatic Citrus Canker

DETECTION
- Symptom description
- Sites of infection/infestation
- Factors influencing occurrence
- Detection method

IDENTIFICATION
- Biological methods
- Biochemical methods
- Molecular methods
- Isolation/culture techniques
- Handling/preservation

FURTHER INFORMATION
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LINKS
- CRC Plant Biosecurity
- Plant Health Australia

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New Issue
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Asiatic Citrus Canker (*Xanthomonas axonopodis pv. citri Pathotypes ...* A+ A- R Print Friendly Fact Sheet Email to a Friend

Home » Asiatic Citrus Canker (Xanthomonas axonopodis pv. citri Pathotypes "A")

Symptom description

The major symptom of citrus canker infection is the corky lesions that develop on the leaves, stems and fruit roughly 7-10 days after infection. In severe cases the disease also leads to shoot dieback, defoliation and fruit drop.

Appearance of Lesions

The appearance of canker lesions can vary depending on the citrus variety, plant part affected and the age of the lesions.

Canker lesions start as pinpoint spots. They are initially circular, white or yellow raised pustules on both surfaces of the leaf, but mainly on the lower surface. The lesions darken with age as they develop into light tan or brown corky, erumpent cankers with irregular margins. Often the margins of older cankers have slightly raised margins and sunken centres. Lesions are often surrounded by an oily or water soaked margin. A characteristic symptom of the disease on leaves is a yellow halo around the lesions, but this can disappear as the leaf ages.

Lesions on fruit that have been through the packing shed appear less corky and erumpent than lesions found on un-waxed fruit. During processing the top of the lesion is shaved off leaving a smooth, slightly raised dark spot, still with an irregular margin.

Figure 1. Typical symptoms of canker on leaves in the field.

Other issues

- Validation
- **Every species has a high level of validation, however this is not currently obvious to users.**
- **So currently being implemented is a tagging system** to enable users to determine level
  - Specimen identification validation and
  - Image quality

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Access PaDIL at: http:\\www.padil.gov.au

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