

biodiversitysnapshots.net.au

**Biodiversity Snapshots**

MUSEUM VICTORIA

**Engaging Students in Citizen Science  
Using Mobile Tools**

 **GAIA RESOURCES**  
ENVIRONMENTAL  
TECHNOLOGY  
CONSULTANTS

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**Outline**

- Background to the **Biodiversity Snapshots** project
  - Our history, audience and constraints
- What is the project?
  - Five main components of the system
  - Educational material and links
- School trials
- Where to from here?

# Outline

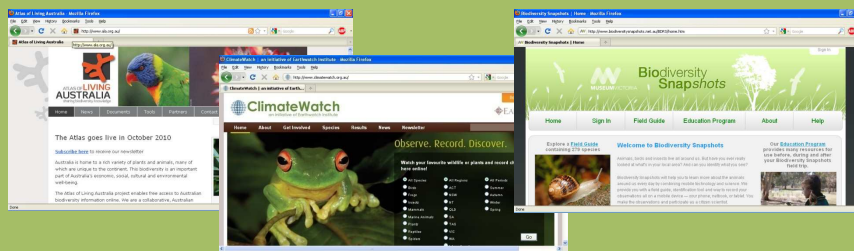
- **Biodiversity Snapshots** is a web site & mobile system:

*"We provide you with a field guide, identification tool and way to record your observations all on a mobile device... you make the observations and participate as a citizen scientist."*



# History

- ALA and Gaia Resources were working in the citizen science and informatics area
- The ALA first partnered with Earthwatch, leading to the Climatewatch web site
- DEECD funded Museum Victoria, who then partnered with ALA, leading to **Biodiversity Snapshots**



## Audience

- The users of Biodiversity Snapshots are school children aged 9-15
- The aim is to combine environmental education with technology using mobile tools
- The Department of Education was keen to have a 'real world' project involved



## Constraints

- Network availability/ internet connectivity
- Which mobile devices are available in schools
- Observation abilities of teachers and students



# Overview

Biodiversity Snapshots is made up of five components:

- **Field Guide**
- **Education Kits**
- **Registration process**
- **Help Me ID tool**
- **Mobile tool**

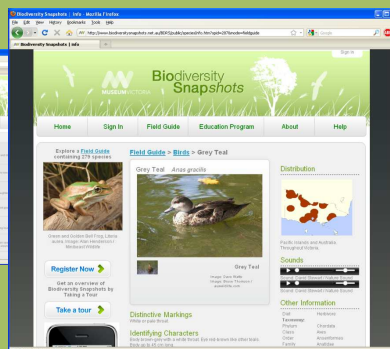
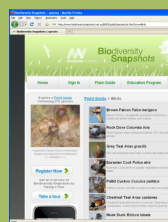
<http://tinyurl.com/biosnaps>



# Field Guide

- 279 Victorian species included:

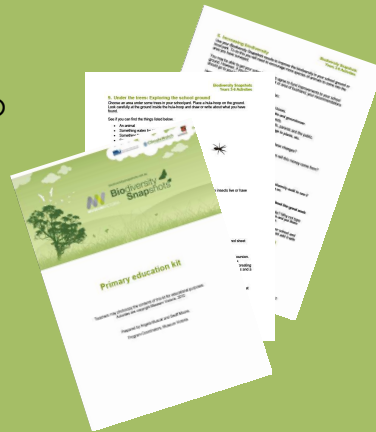
- Mammals
- Birds
- Reptiles
- Frogs
- Insects
  - Butterflies
  - Spiders
  - Invertebrates



- Content written by project author and curators
- Images sourced from local photographers

## Education Kits

- Written by Museum Victoria Education staff
- **Primary** Education kit
- **Secondary** Education kits
- Includes pre- and post- field trip information and activities
- Many teachers will not have a biology background. The kits aim to give them enough resources to run the project.



<http://tinyurl.com/biosnaps-kits>

## Education Links

- Link to the local Victorian Essential Learning Standards, will link to Australian Curriculum
- Suitable for the ResourceSmart Australian Sustainable Schools Initiative (AuSSI) Victoria
- Investigating if Biodiversity Snapshots can be rolled out nationally through AuSSI and with the assistance of the ALA



## Education Links

- Victorian Essential Learning Standards (Levels 3-6)

Domain	Dimension & Standards
Science	Science knowledge and understanding Science at Work
Geography	Humanities knowledge and understanding Geospatial Skills
Maths	Number Measurement, chance and data
English	Reading and Writing Speaking and listening
The Arts	Creating and making
ICT	ICT for communicating
Thinking Processes	Reasoning, processing and enquiry
Civics and Citizenship	Community Engagement
Interpersonal Development	Working in teams

## Education Links

- Victorian Certificate of Education Curriculum Links

Subject	Unit	Area of Study
Biology	2	1 – Adaptations of organisms 2 – Dynamic ecosystems
Environmental Science	3	2 – Ecological issues: energy and biodiversity
Outdoor and Environmental Studies	2	1 – Discovering natural environments

- So far, all of this is available before teachers register for the site – anyone can access this with no login.

# Registration

- When a school decides to participate, a teacher registers.
- The teacher can set up classes and groups of students and can set up a field trip.
- The parameters that define a field trip are locality and species.


Survey Name:  ?

Date of Survey:  ?

Description:  ?

Please select the location where the field trip will be held — Multiple Selections Allowed (up to 4)

To add a location click on the map below. You can zoom in and out using the mouse wheel. You can pan around the map by clicking and holding the mouse button down. If you have entered a point you can move this by selecting and dragging around the map. ?



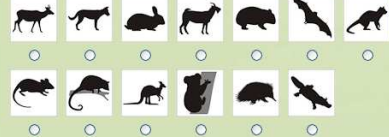
Site Name	Latitude	Longitude	
Riverbank	-36.714906604717	142.21415519714	✖
Oval	-36.710747079318	142.21346665164	✖
			✖
			✖

# Help Me ID

- Species tagged with silhouettes, size, colour, and tags specific to animal groups.
- Works quite well for birds, not so well for other groups
- We have observed that teachers direct children to use the tool to help make their identifications – so we need to continue to refine it.

**Silhouette**

Select a silhouette that best matches the animal you can see.




**Size**

Medium (> 30 cm and < 1 m)  Large (> 1 m)  Small (< 30 cm)

**Colour**

White  Red  Black  Grey  Pink  Yellow  Orange  Brown

**Mammal Location**



Terrestrial  Water  Arboreal

## Mobile Tool

- Once a teacher has set up a field trip,
  - an email is generated for students that provides a web address, a user name and password.
  - Students access that web address on their mobile device and login.
- If students will be visiting an area with no internet connection they can download the mobile tool to their device and use it offline.



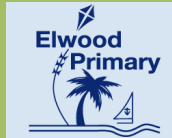
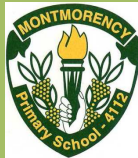
## Mobile Constraints

- Project initially conceived that the mobile tool would run on smartphones - few schools have these yet!
- **ipads** released during the build phase of the project – they're not widespread yet but **netbooks** are.
- This change had design implications – e.g. screen size.



## School Trials

- A number of schools participated in the school trials



MERRI CREEK  
PRIMARY SCHOOL



## Launch

- Biodiversity Snapshots was Launched at Museum Victoria on 25<sup>th</sup> August 2010
- Minister for Education, Skills and Workforce Participation, Bronwyn Pike
- Students from Merri Creek Primary School also attended the launch

MERRI CREEK  
PRIMARY SCHOOL



## Where to from here?

- Add extra Victorian species (aiming for 700)
- Image and video uploads from students
- Data sharing to ClimateWatch and the ALA
- Sharing project results between classmates, and maybe to other schools
- Continue to form partnerships with Education providers outside schools e.g. Ecolinc, National Parks Service, Marine Discovery Centre
- The ALA will also be releasing the underlying citizen science software as an open source toolkit



## Acknowledgements

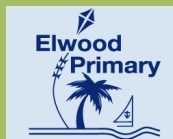
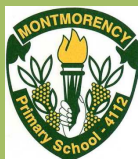


In particular Elycia Wallis, Angela Muscat, Gerard Roche



In particular, Donald Hobern, Peter Doherty, Owen Butler

Staff and Students at:



Manna Lakes College



MERRI CREEK PRIMARY SCHOOL