BUTTERFLY CONSERVATION SA INC.

NEWSLETTER

No. 55: June, 2015

OPEN GARDEN AT SOPHIE'S PATCH (HAMLYN COTTAGE) Easter 2015

Media and ABC garden presenter Sophie Thomson opened her garden over easter. BCSA had a promotion stand (See page 8) and Secretary Jan Forrest gave a talk on the Saturday to an enthusiastic group of visitors. We certainly had four seasons in four days and thanks go to members who helped out on the stand.

Sophie is planning another open day in spring. Hamlyn Cottage is well worth a visit to see a working garden full of flowers, veggies, quirky sculptures made from old tools and even a bee hotel, plus a very new butterfly site sign.











Top left: Hamlyn Cottage Mt.Barker, the garden some of the sculptures, pumpkins, above, bee hotel, veggies, example of a 'wicking bed' vegetable garden, windmill, more sculptures, garden and 'Mum's shed'.
Photos : Jan Forrest

IN THIS ISSUE

BUTTERFLY CONSERVATION SA. INC. Membership enquiries: info@butterflygardening.net.au
Membership payments ($20pa - less 50% discount for email membership): to Treasurer: C/- South Australian Museum, North Terrace, ADELAIDE. 5000. Cheques to be made out to: Butterfly Conservation SA Inc.
Direct Debit details:BSB633000 Account No:152785838 Bank: Bendigo Bank. Account Name: Butterfly Conservation SA Inc.
Please email Treasurer if paying by direct debit: info@butterflygardening.net.au (Attention Treasurer)

MISTLETOES - native plants used by several butterfly species as food plants.

Mistletoes are parasitic plants which attach themselves to branches or roots of host trees and shrubs for their survival. The word mistletoe derives its name from 'bird lime' or 'mistle', which is a sticky 'viscous' substance, prepared from the bark of the holly tree. The 'toe' derives from 'tan' meaning twig, hence a 'sticky twig'. The substance was used in the middle ages to capture birds. They were caught in the sticky glue where they would alight. The genus *Viscum* in the Viscaceae family was derived from the word 'stickiness'. The mistletoe *Viscum album* was traditionally used in Europe at Christmas festivities and as a palliative treatment for cancer.

Mistletoes are dicotyledonous, having 2 seed leaves. The berries or seed are mostly distributed by the mistletoe bird. Seeds are digested and regurgitated on branches where they develop threadlike roots and tap into the sap of the tree. Mistletoes differ from other plants in the fact that the twigs are able to 'snap' into two, unlike normal plants which are more 'ropey'.

There are two plant families in the world which contain mistletoes, Viscaceae and Loranthaceae. Both are represented in South Australia.

Mistletoes are closely allied family Santalaceae, the quandongs comprise many semi-parasitic plants and they are also host of several butterflies such as the most spectacular "Fiery Jewel", "Small Brown" Azure" and the "Wood White". Not all mistletoes are butterfly food plants.

The Loranthaceae family is related to the Olacaceae, the American Hog Plum and African Walnut family. The Loranthaceae family contains 73 genera and about 900 species throughout the world. All the species which occur in Australia are native to Australia. There are 4 genera and 17 species in South Australia. The genera *Amyema* and *Lysiana* are food plants for butterflies.

There are over 100 amyemas around Malaysia, the Philippines and the Western Pacific region. In South Australia the genus *Amyema* contains 12 species of which many are food sources for butterflies. *Amyema* in South Australia host on acacias, grevilleas, hakeas, casuarinas, melaleucas, sennas and eucalypts. Some are exclusive hosts on particular genera. The *Ogyris* or azure butterflies rely on amyemas for their survival as a larval food source, along with the wood white butterfly, *Delias aganippe*.

In South Australia the genus *Lysiana* contains 3 species of which *L. exocarpi* is a larval food source for azure and wood white butterflies. These mistletoes are known as the "Harlequin mistletoes" due to their bright red and yellow flowers. This species is widespread on various host plants.

The remaining South Australian species, *Diplatia grandibractea* " coolibah mistletoe" from the far north and *Muelleriana eucalyptoides* "Creeping mistletoe" from the south east are not known to be food sources for butterflies.

Another in the family is the Australian Christmas tree, *Nuytsia floribunda*, of Western Australia, which is a showy tree with orange flowers.

Threats to the mistletoe and parasitic native plants.

The mistletoes have a bad name and their role in the landscape is much misunderstood. They are all indigenous to various parts of Australia, they are not weeds. It is often said that 'they kill trees': yes, they do, eventually. With the continuous breakdown of our natural ecology, living organisms are on the brink of disappearing for ever. If the health of the natural system is sick then it cannot support itself, or be sustainable.

Mistletoes are often seen as the final nail in the coffin for trees because the natural system is sick and unable to repair and support a healthy ecosystem. The reason for the loss of trees under mistletoes is a much broader one: if the trees are weak then they will suffer, it's the same when a flu strikes, it's the old and sick that suffer first. The question that needs an answer is "Why are the trees so weakened?"

We often see areas in the agricultural regions where mistletoes have been brutally removed from vegetation. Why? Because it is considered a killer of the trees. If a native plant is removed then it will have consequences on the chain of events for wildlife, especially insects which rely on it for nectar and food. The answer is not to destroy what is left but to enhance the natural system so it can become more sustainable. We have many other rescues to make before continuing to destroy biodiversity.

I can remember a farmer breaking off mistletoe from his trees with a backhoe and saying that it was necessary to save the trees. This intellectual act was carried out in healthy mallee country over run with cows. In fact it is the presence of stock and the activity of heavy disturbance that lead to downfall of the natural ecosystem, not the presence of mistletoe. The appearance of too much mistletoe is a consequence of ignorant activities.

The main causes of mistletoe loss are:

- Promoting mistletoe as a weed and cause of tree death
- Indiscriminate removal of all mistletoe on sight
- Over use of agricultural fertilizers and chemicals
- Large amounts of stock dropping around host plants
- Lack of water and lowering of water tables
- Approved and illegal clearance of vegetation
- Loss of sustainable environment
- Misunderstanding and ignorance on the role of natural systems

David Keane






Mistletoe images:
Facing pace - *Muelleriana eucalyptoides* (on tree and closeup) Photos: Roger Grund.
Top - *Amyema melaleucae* Photo: Roger Grund and close up Photo: Ron Sandercock.
Above - *Amyema miquelii* Photo: Roger Grund and close up Photo: DPaton.
Above - *Amyema pendula* on *Eucalyptus baxteri* Photo: Roger Grund.
Right - *Amyema* sp. Photo: Roger Grund.

ARE YOU WONDERING WHY YOU HAVE NOT RECEIVED A MEMBERSHIP RENEWAL NOTICE?

This year you will receive your notices in October/November as we have moved to a calendar year (approved at the last AGM).

Annual membership fee is now $20 pa with a 50% reduction (to $10pa) if you receive your newsletter via email.

You will receive your notice in October.

PHOTOS STILL REQUIRED

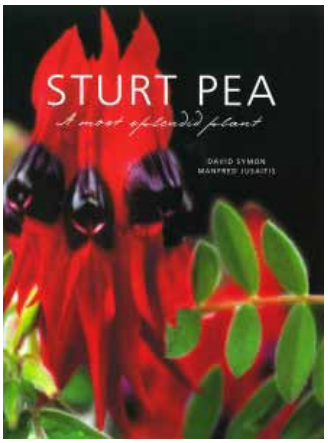
Images of moth caterpillars and adults are still required for the new moth book. We are still missing images of a number of the more common species. Please make your photos available, even if you do not have an identification.

If you can assist please contact Secretary Jan Forrest.

BCSA AGM

Members are advised that the Annual General Meeting of the Association will be held at the Clarence Park Community Centre on Tuesday 4th August at 6.30pm. Agenda and nomination form is included with this newsletter

DO YOU KNOW THIS BOOK?



A few years ago, the Board of the Botanic Gardens and State Herbarium published an authoritative account of the South Australia's floral emblem, **Sturt's desert pea** (*Swainsona formosa*), one of Australia's most striking and recognizable flowers.

Written by the late David Symon (former Hon. Research Associate of the State Herbarium) and then Botanic Gardens staff member Manfred Jusaitis, the book gives an insight into the botany of the plant, its discovery and naming, and discusses its biology, propagation and cultivation. The volume also features chapters on the Sturt pea as a State flower, and its use in decorative and commercial art and literature.

It contains a wealth if knowledge about this plant and is profusely illustrated with many colour illustrations and photographs.

Symon, D. & Jusaitis, M. (2007). *Sturt pea: a most splendid plant.* (Board of the Botanic Gardens & State Herbarium: Adelaide). 151 pp.

While this is not a new release, it still is the only in-depth account of South Australia's floral emblem. It was published in three editions, softcover ($39.95), hardcover ($50) and leather bound ($150), and all three editions are still in stock and available for purchase. The book makes a great present for friends and family, too.

Volunteers and staff members of the State Herbarium of South Australia are eligible for a discount on this publication. Please speak to Jurgen Kellermann for more information. For a list of all books published by the State Herbarium, please go to www.flora.sa.gov.au/publications.

Papilio anactus story

A note from member Sylvie:

"I thought you might be interested in my sister's Dainty Swallowtail (*Papilio anactus*) story.

In Feb. 2011 she had 3 Dainty Swallowtail Chrysalises. 2 emerged but not the third.

On the 24th of Nov. 2012 the third emerged.

A beautiful healthy Butterfly.

After 21 months my sister nearly gave up on it. We find it incredible how they can survive so long".

Sylvie also advised that she had two butterflies that took 12 months to finally emerge from their chrysalis/pupa.

REARING PUPAE of the Dainty Swallowtail *Papilio anactus*.

Unfortunately there are many problems that can go wrong with artificially rearing butterflies or moths. Being infected with small parasitic Chalcid wasps are only the beginning of your possible problems, as reared butterflies, can become infected by a large number of possible killers. This is a feature often not realised by people and also demonstrates that butterflies are up against a lot of problems to survive during their life cycle.

Apart from parasites the early stages can become affected by environmental processes and everyday chemicals (that also have the potential to affect humans). When rearing butterflies, everything must be kept scrupulously clean during the rearing process as even a small amount of chemicals/ hormones can disrupt the growth process. These chemicals can come from contaminated hands or containers, or anything else you may use in the rearing process. These chemicals may not immediately affect or kill the larvae, but may cause disruptions in their pupal development stage ultimately leading to death. Chemicals can also come from neighbouring spray drift or similar or from local and natural air-borne sources of bacteria (dipel). There are also virus's that can infect insects. If your over-winter aquarium is exposed to direct sun or heat, that may ultimately kill the pupae by over-heating them however it is generally environmental chemicals, bacteria or virus from the surrounding environment that lead to their demise.

It is sometimes possible to tell if the pupae are dead by their weight. i.e. dead pupae tend to be less heavy than living pupae. You can by experience this by judging their weight in your hand by bouncing them around (safely) in your cupped hand, or perhaps more reliably by putting them into a cup of cold water: living pupae should sink or submerge themselves in the water (as they are full of watery tissue); dead pupae should float as they are full of air.

Papilio anactus pupae should normally hatch to the adult stage by spring.

Roger Grund

Papilio anactus images: Top - pupa, Left - Adult underside and above adult male. Photos: RHFisher. Above - larva. Photo: LFHunt.

MORE PHOTOS OF THE DAY FLYING MOTH *Cruria donowani*
(refer page 5 of Newsletter 54)

From Rosemarie Stacey.

We live at Craigmore and we have a predominant local species garden. The tarvine volunteered to live in our front garden about 15 years ago. There were two agaristid in the garden and were around for about five to six weeks when the tarvines were in flower. They are no longer in our garden but hopefully will see some again in next year. They seemed to prefer purple/pink flowers. Photos: Rosemarie Stacey.

2015 State Community Landcare Conference.
Landcare – connecting people and healthy landscapes

We encourage you to keep this date for the 11th State Community Landcare Conference to be held in Waikerie in South Australia's Riverland from September 14-16, 2015.
The Conference includes the 2015 State Landcare and Premier's NaturalResources Management Award presentations.
The Conference will showcase landcare and natural resources programmes across South Australia with a particular emphasis on theRiverland and the South Australian Murray Darling Basin.
The Conference will connect people with their landscapes and communities through the 4 Conference Themes:

- Biodiversity – Management and Conservation
- Indigenous Land Management
- People and Volunteers
- Sustainable Farming and Fishing.

These themes will be explored in keynote addresses, presented papers, posters, workshops and field tours.
Presentations by local students in preparation for the Barmera Primary School Environmental Expo will also feature at the Conference.

Get involved. Make a difference in SA.

- Submit an abstract, poster, presentation or workshop idea.
- Download the Call for abstracts information sheets by clicking here.
- Register your interest in attending the Conference.
- Click here to fill out the online form.
- Become a sponsor or support the Conference. To express your
- interest, please email Glenn Gale: execofficer@landcaresa.asn.au
- Nominate for the 2015 State Landcare Awards.
- 2015 Premier's Natural Resources Management Awards *Awaiting information on categories and submission dates from DEWNR.*

Please email Glenn Gale to express your interest.

Get in touch

Contact Glenn Gale
Executive Officer
Landcare Association of SA

P 0428 812 902
E execofficer@landcaresa.asn.au
www.landcaresa.asn.au

WOODLAND RECOVERY -BUILDING HABITAT FOR BIODIVERSITY

a talk by Assoc. Prof. David Paton AM
Earth & Environmental Sciences, University of Adelaide

Mt Lofty region

Isolated woodland system
Unique biodiversity
Biodiversity "Hot Spot"
Heavily cleared

Birds no longer seen in the Mt Lofty Ranges

- Spotted Quail Thrush
- Bush Stone-Curlew
- Regent Honeyeater
- Swift Parrot
- Glossy Black-Cockatoo
- King Quail
- Red-chested Button-quail
- Azure Kingfisher
- Little Lorikeet

Some of the bird species that have declined in the Mt Lofty region

- Square-tailed Kite
- Scarlet Robin
- Crested Shrike-tit
- Rufous Whistler
- Dusky Woodswallow
- Tree Martin
- Red-rumped Parrot
- Jacky Winter
- Yellow Thornbill
- Restless Flycatcher
- Brown Treecreeper
- Black-chinned Honeyeater
- Diamond Firetail
- Southern Emu-wren
- Chestnut-rumped Hylacola
- Tawny-crowned Honeyeater
- Beautiful Firetail
- Hooded Robin
- Willie Wagtail
- Southern Whiteface
- Fantail Cuckoo

Hooded robin male top and female

Woodland birds will continue to decline unless additional habitat is provided.

On question raised was "Do current revegetation efforts help counter declining woodland bird numbers?"
Current revegetation suffers from:

limited species/floristic diversity
limited structural diversity
poor dispersion patterns
high plant densities for the tree and shrub layer
poor tree architecture
small patch size
limited biodiversity gains

Professor Paton discussed the points noted above, however the list below demonstrates how difficult it is to bring the bush back to even a remnant vetetation state.

Understorey species	# plants/ha
Arthropodium strictum	154,300
Bulbine bulbosa	31,600
Caesia calliantha	44,233
Calostemma purpureum	61,933
Chamaescilla corymbosa	22,700
Cheilanthes *austrotenuifolia*	20,500
Daucus glochidiatus	64,067
Lagenophora *huegelii*	29,733
57 other species	165,833
TOTAL understorey plants	**617,400**

In addition, different birds require different habitatats and research also shows that habitat size differs for individual birds.

Conclusions
Put back native vegetation on good agricultural areas that have been disproportionately cleared

Regional scale needed for natural resource management and revegetation

Revegetation for biodiversity should establish large patches of heterogeneous habitat ~100 ha (at least)

A suggested method
Retire whole farms and provide owner with income to restore native vegetation to the property
Examples include: Para Woodland, Cygnet Park and Mt Bold (SA Water).

It is good to know that in the **Adelaide & Mt Lofty Ranges NRM Plan** there is a target to reinstate native habitat to 30% cover ~150,000 ha over Mt Lofty region with priority to large patches (>100ha) and to disproportionately cleared habitats

The Challenge
Re-establish 150,000 ha of new habitat to prevent imminent species loss.

To deliver the outcome need strategies to:

Select the land to be revegetated
Secure the land that is selected
Integrate planning for biodiversity with other planning processes
Secure broad support from the community

But also need to:
Build capacity (people, knowledge)
- research, education, training, learn by doing
Build intergenerational ownership
- community involvement
- conspicuous presence (Glenthorne)
Secure long-term funding (100 year program)

The University of Adelaide has identified an exciting opportunity to establish the **Woodland Recovery Initiative at Glenthorne.** (see following article).

208 ha farm in southern suburbs
Restore woodland habitat to farm
Conspicuous example in urban setting

Critical strategic issue.
Need long-term secure funding
- Not led by governments and community led.

Build a Trust Fund
Principal paid into Trust and maintained, only the income is spent but available over many years to provide long-term regular investment in program.

sources: philanthropic
ecological offsets
carbon offsets

What can you do to help?

Consider offsetting your ecological footprint by paying into the Trust Fund
- What is an individual's ecological footprint?

- How much might it cost to offset it

Ecological footprint (EF)

Ecological footprint is the resources (land, sea, water) needed to support a human (includes land used for housing etc). Ecological footprint also includes carbon footprint.

Average EF ~ 7 ha per Australian
Global average ~ 2 ha
carbon footprint – ~50% of EF
Need to reduce EF to ~ 2ha for sustainability
Costs for offsetting your ecological footprint (EF)

(a) Based on carbon footprint

~ 10 tonnes/person ~$200 per annum
so EF ~ $400 per annum = ~ $1 per day

(b) Based on costs to repair one hectare

~ $25K per hectare to build woodland habitat
- spread over 60 years = ~ $1 per day
(offset payment is tax deductible)

The time to act is now

Visit: www.bior.org.au

OFFSETTING *YOUR* ECOLOGICAL FOOTPRINT

WHO ARE WE?

Bio^R generates funds, knowledge and practical skills to re-construct habitats that support native wildlife in degraded landscapes. Bio^R is a non-profit organisation that focuses on offsetting ecological footprints.

ON THE BLOG

Learn about current Bio^R projects, upcoming events and future projects and engage in discussions about environmental stewardship and restoring biodiversity

GET INVOLVED

Become a member of Bio^R, volunteer for projects, help with events and offset your ecological footprint. Become part of the solution and in the process enhance our biodiversity.

You can offset your ecological footprint for as little as $1 per day

That's less than the price of your daily cup of coffee!

AS WELL - **donations to BioR are tax-deductible.**

What makes Bio^R different?

Bio^R differs from other environmental organisations doing revegetation in five key ways:

Bio^R reconstructs wildlife habitat (and does not plant trees).

Bio^R recognises the importance of science in planning and delivering habitat reconstruction.

Bio^R recognises that re-construction habitats requires a long-term commitment

Bio^R has a novel funding model for securing long-term investment in on-ground works on individual properties

Bio^R is about reconstructing habitats at landscape and regional scales

THANK YOU, THANK YOU, THANK YOU

We have a number of successful promotional displays this year and it would not be possible to mount these displays without the help of willing members. Very sincere thanks to everyone who assisted. Especially several members of the committee who, each time have put their hand up to help. Please accept my apologies if I have missed anyone. JanF.

- **MT.PLEASANT SHOW** - convener Gerry Butler, helpers included, Lorraine Woodcock, and Ann Winter, Jill Davy and David Keane.
- **SOPHIE'S PATCH** - convener Jan Forrest, helpers Linda Shmith, Jill Davy, Joyce West, Faye Lush, Andrew Lines, Lorraine Woodcock and John Wilson.
- **AUSTRALIAN PLANTS SOCIETY** show and sale - convener Jan Forrest, helpers Gerry Butler, Jill Davy, Lorraine Woodcock, Andrew Lions and Janet Subagio.
- **HOME EXPO** - convener Jan Forrest, helpers Dan Duval and Amelia Duval.
- **ADELAIDE REPTILE AND FROG EXPO** - convener Jan Forrest, helpers Helen Prior, Ann Winter, Tina Gallash, Jill Davy,
- Lorraine Woodcock, Andrew Lines, Adrien Uren and Margaret Lee.
- ENVIRONMENT DAY - Botanic Gardens - Linda Shmith




Above left: The display at 'Sophie's patch' left Linda Shmith. Above right: Lorraine Woocock and Gerry Butler at the APS show. Below:The display at the Home Expo, Wayville Showgrounds. Photos: Jan Forrest. Above: Linda's display at the Botanic Gardens for Environment Day. Photo: Michael Yeo.

EDITORS NOTE: Newsletter

As no articles came in this time for the newsletter I had to 'make do' and search for articles I thought may be of interest. I would love to her from members, please send some pictures of your garden or interesting articles.
Thanks. JF

FRIENDS OF GLENTHORNE

Restoring Native Habitat and Heritage in Adelaide's South

About Glenthorne

Glenthorne is a 208ha property located at O'Halloran Hill about 17km south of the Adelaide CBD.

Owned and operated by the University of Adelaide, Glenthorne falls within the City of Marion council area adjoining the City of Onkaparinga, and is surrounded by the suburbs of Seaview Downs, Trott Park, Reynella and Happy Valley.

A short history of Glenthorne

What is today known as Glenthorne has had a diverse history.

Glenthorne was originally settled in 1839 by Major Thomas O'Halloran, who was the first Police Commissioner of South Australia. Major O'Halloran was subsequently immortalised by having the suburb of O'Halloran Hill and Majors Road named in his honour. In 1878, the then owner of the O'Halloran estate, Thomas Porter, renamed the estate "Glenthorne".

The property changed hands a number of times until it was compulsorily acquired by the Commonwealth in 1913 and used by the Australian Army for training troops and raising horses.

In 1946, the scientific research organisation today known as the CSIRO took control of the site and used it as a research station until 1998, when it sold the land to the South Australian Government.

In 2001, the State Government sold Glenthorne to the University of Adelaide subject to a Land Management Agreement with the State of South Australia. Over the years the University has considered a number of options for the property. One proposal was to develop a vineyard on the site, however extensive analysis revealed this not to be a viable option.

Today, with increasing government and community recognition of the potential impacts of climate change, the University of Adelaide has identified an exciting opportunity to establish the **Woodland Recovery Initiative at Glenthorne.**

2015 Enjoyment Days and Working Bees are usually the 3rd Sunday of the month, as follows, subject to possible change at late notice.

Dates are as follows:

21 June, 2015	18th October, 2015
19th July, 2015	15th November, 2015
16th August, 2015	20th December, 2015
20th September, 2015	

Enjoyment days usually start at 10.00am and finish at 1.00pm. Meet at the Majors Road gates at about 9.45am to complete the paperwork.

Late arrivals please phone 0411 595 910 for gate attendance.

Tea and coffee follow after each working bee.

Working Bee "Enjoyment Day" Functions
To control weeds and assist in the re-vegetation efforts
To support each other as local volunteers
To know the features of the property and identify its vegetation types
Bird identification, seed collection and heritage protection

Or just come along for whatever peaceful reason to simply enjoy the friendship of our wonderful group and one of the most precious places in the southern suburbs.

CONTACTING FRIENDS OF GLENTHORNE

Chairman: Martin Schumacher
Martin@FriendsOfGlenthorne.org.au

Secretary: Treasurer Alan Burns
AlanBurns@FriendsOfGlenthorne.org.au
Ph. (08) 8340 5509
Mob. 0411 595 910

web: http://www.friendsofglenthorne.org.au

NATURE FOUNDATION VOLUNTEER OPPORTUNITIES

Nature FOUNDATION SA

KANGAROO ISLAND PLANTING FESTIVAL
Friday 3 July – Sunday 5 July
Location: 20km West of Kingscote, KI
Description: Volunteers will be involved with revegetation of threatened native plant species
Please contact Heinrich Klein – NRM Kangaroo Island
heinrich.klein@sa.gov.au
www.naturefoundation.org.au/our-work/cygnet-park/

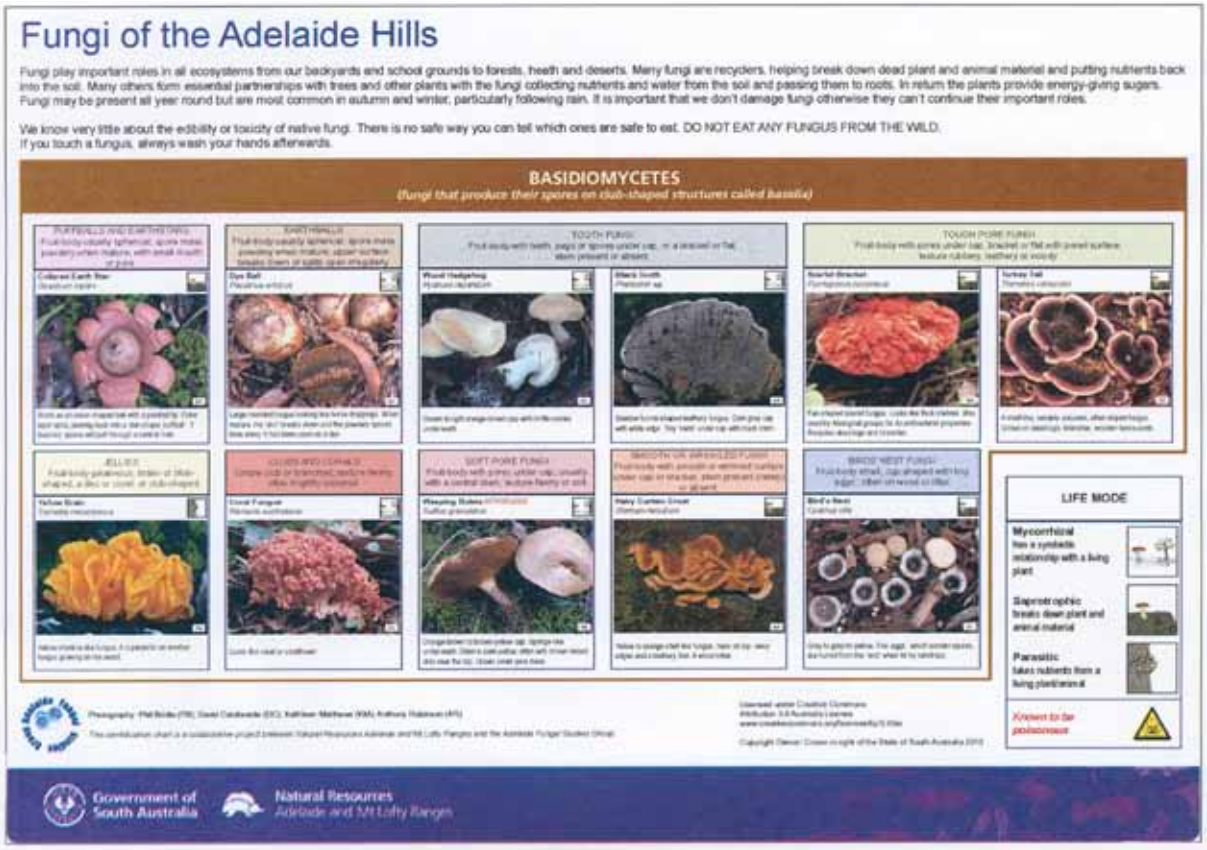
TREASURE HUNT FOR NATURE
Sunday 16 August
Location: Elder Park, Adelaide
Description: Inaugural 'Treasure Hunt For Nature' to be held around Adelaide environs. Refer website for updates.
www.treasurehuntfornature.com.au
Presented by Nature Foundation SA & SA Power Networks Employee Foundation

TILIQUA LIZARD CRAWL
Sunday 6 September
PROPERTY VISIT AND VOLUNTEER OPPORTUNITY
Time: 11am -3pm
Location: 10km north-west of Burra
Description: Volunteers can be involved in 'citizen science' activities to assist ongoing research into the conservation of the endangered Pygmy Blue-tongue Lizard.
For enquiries/registration contact NFSA office.
www.naturefoundation.org.au/our-work/tiliqua

NEW FUNGI GUIDE FOR THE HILLS

Recently the Adelaide Mt.Lofty ranges NRM Board released a 'Fungi of the Adelaide Hills' identification chart. It was published in collaboration with the Adelaide Fungi Study Group, which is lead by State Herbarium Hon. Research Associate Pat Catcheside and in association with the Field Naturalists Society of South Australia.

Here is the link to the chart on the NRM Education site:
http://www.naturalresources.sa.gov.au/files/sharedassets/adelaide_and_mt_lofty_ranges/nrm_education/amlr-fungi-2015-gen.pdf



AN INTRODUCTION TO WICKING BEDS
http://vergepermaculture.ca/blog/2011/05/30/guide-to-wicking-beds/

This information has come from an excellent website by Rob and Michelle Avis who are Mechanical Engineers and Permaculture Designers and run their business, Verge Permaculture in Calgary, Alberta, Canada.

Wicking beds are a unique and increasingly popular way to grow vegetables. They are self-contained raised beds with built-in reservoirs that supply water from the bottom up – changing how, and how much, you water your beds. In this article, we'll talk about how wicking beds work and why we love them. We'll also show you some great examples and leave you with ideas and instructions for creating your own.

How Wicking Beds Work

A wick works through capillary action – the same force you observe when you dip a piece of tissue paper partially into a glass of water and watch the water climb the paper. Wicking occurs in many materials; cotton, wool, geo-textile, soil, gravel and even wood to some degree. Every material has different wicking properties which you can test by placing that material into a glass of water and watching the water "climb" up. When one end of the wick is saturated and the other end is dry, it creates a moisture gradient, which drives the wick until the gradient no longer exists or you run out of water. With the earth box, one of the more popular examples in North America, the soil is suspended above the reservoir with wicks dangling into the reservoir pulling up moisture. As the plants use the moisture in the soil, it creates a moisture gradient (the soil is drier than the reservoir) which drives moister through the wick into the soil.

Advantages of Wicking Beds

Wicking beds have a lot of advantages over standard raised beds and in-grown swale-based gardens:

- They are water-efficient! Watering from the bottom up prevents evaporation of surface water (which occurs when you water beds from the top).
- They are self-watering! Wicking beds are an especially great system to use in community gardens because they save people from driving every day during hot weeks to water their beds. A full wicking bed should irrigate itself for about a week.
- They can be placed close to the house without risk of flooding your basement, since the water is contained in the bed. This makes wicking beds a great alternative to swales on properties with sump pumps or basement water issues.
- No evaporation means no salting of soil. If you are watering your soils from the top with hard water, you risk accumulating salts, because the water evaporates and leaves the minerals behind. Eventually your soil will struggle to support plant life.
- They provide a lot of drainage in the event of a large downpour.
- Since they're raised, they will warm up quicker in the spring.
- You can easily attach cold frames to them.
- They are great for people with less mobility and strength as you don't have to haul heavy water containers.
- By using an intermediary tank, you can automate the watering process.

Disadvantages of Wicking Beds

Wicking beds do have some disadvantages as well:

- They cost more to install than in-ground swales and standard raised beds.
- There are additional freeze/thaw considerations that need to be taken into account, which is not required for conventional gardens.

Types of Wicking Beds

Reservoirs with Media

Most of the DIY sites for wicking beds focus on building beds that use media, a layer in between the soil and the water reservoir, as their wick. This is an easy and cheap way of supporting the soil on top of the reservoir. Gravel is the most common medium, but there are a number of materials that do the trick. Here's a good on media wicking beds.

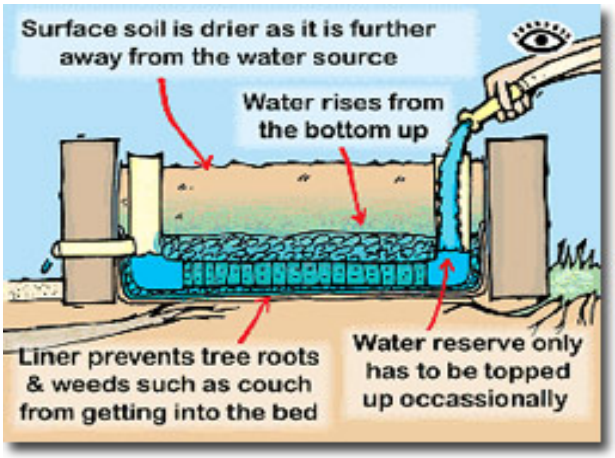
Media-less beds

Beds without media require a false bottom that will allow the soil to be suspended above the water reservoir. Again, this wick system can be made from a variety of materials. Here are some examples of media-less wicking beds are Global Buckets, Earth Box and Phytopod.

Design Considerations for Media-filled Reservoirs including Above-Ground Planter Box and In-Ground Wicking Beds

Layers in the Bed considerations include:

1. protection of the poly from sharp edges.
2. Poly liner.
3. protection of poly from punctures from the gravel.
4. Weeping tile to increase rate of water communication
5. Drainage pipe.
6. gravel.
7. Segregation of soil from the gravel
8. soil



Above: diagram of the principles of wicking beds 'Reservoirs with media', Left: media-less beds. Below: above ground planter box. See website noted above for further information.

www.butterflygardening.net.au

Butterfly Conservation South Australia Inc.

presents

a PUBLIC TALKS PROGRAM

on the first Tuesday of the month March to November at 6.15pm for a prompt 6.30pm start.

At the Clarence Park Community Centre
72-74 East Avenue, Black Forest.
Bus route W91/W90: stop 10.
Noarlunga Train service: Clarence Park Station.
Glenelg Tram: Forestville stop 4, 9min walk south.

Entry by donation (minimum of $2).

Bring supper to share, tea/coffee will be supplied.

Meetings should conclude by 8.30pm.

At the start of each meeting a ten minute presentation on a 'Butterfly of the Month' will be given by a BCSA committee member.

Photo Robert H Fisher: Common Brown *Heteronympha merope*

BUTTERFLY CONSERVATION SA INC.
c/- South Australian Museum, North Terrace, ADELAIDE
Further Information Secretary: Jan Forrest 8297 8230
Membership is $10pa (email) $20pa (postal).

Websites: Butterfly Gardening - www.butterflygardening.net.au

Resources for sale:
Our book "*Attracting butterflies to your garden, what to grow and conserve in the Adelaide region*" is available from the secretary. RRP $29.95 (at the talks program - $25ea).

The Book '*Making of a Monarch'* is available for $20.

Posters (sets of two) "*Moths of the Adelaide Region*" and "*Spiders and their allies of the Adelaide Region*" $10 each set. Other posters: Bats of SE South Australia and The Bilby, threatened species.

A '*Butterfly Gardening*' DVD will also be available as well as plant tags and site signs.

Butterfly Conservation South Australia Inc.

Butterfly Gardening

Butterfly Site

ADVANCE NOTICE

DEEP CREEK CONSERVATION PARK OPEN DAY

Please save the Date!!!
20th September 2015
We are keen to have you all come along and make the day as outstanding as it was last year.
If you wish to confirm ahead of time that you will be a stallholder or like to assist with this awesome community event please contact Coral Marsden or Simon Oster on 8598 0263

PUBLIC TALKS PROGRAM 2015

7th July: ***" Mawson of the Antarctic"*** Professor Douglas Mawson led and organised 2 of his 3 expeditions to the Antarctic. But his widespread fame tended to overshadow his other previous interests in Australia. Mark Pharaoh from S.A. Museum will balance these exploits with an overview of his geological interest and related natural history pursuits.

4th Aug: ***"Flora of Golden Grove 50 million years ago"*** Fossil leaves found in a sand mine at Golden Grove tell the story of an ancient river bed which once ran from Port Augusta to Victor Harbor. This talk by David Keane will commence at **7.00pm** following a short BCSA AGM at **6.30pm.**

1st Sept: ***"Frogs of the Adelaide Plains and Mt. Lofty Ranges"*** Frogs are commonly recognised as indicators of environmental health. Co-author of "Frogs of South Australia", Steve Walker will teach you how to recognise our local native frogs, both visually and audibly and learn about some of their interesting characteristics. Bring along paper and pen/pencil, a fun test will be undertaken!..

6th Oct: ***"Torrens Island - history and conservation"*** The old Quarantine Station on Torrens Island has an interesting history and the adjacent Conservation Park is home to populations of the Bitter-bush Blue butterfly. Friends of Torrens Island Chairman Andrew Winkler will trace the history of the Island and future plans.

3rd Nov: ***"Rain Moths"*** Mike Moore has had a lifelong interest in butterflies and moths. His talk will provide a fascinating insight into one of the largest moths, the Hepialids, commonly called rain moths.

In the case of an advertised speaker not being available, a speaker of similar interest will replace that advertised.

compost for soils

Microscope workshop - Waite Institute

Discover the secret life in your soil!

The Australian Organics Recycling Association's (AORA) Compost for Soils program is running a soil microbiology workshop. This half-day workshop gets you in a lab looking at your own soil under a microscope. Learn to identify benefical soil organisms so that you can make more informed choices about inputs into your soil.

Dr Ash Martin and Dr Maria Manjarrez of Microbiology Laboratories Australia will cover:

- Introduction to microscopy
- hands on session: how to get the best from your microscope
- soil sample preparation
- practical session: life in the compost pile
- making microscope slides
- how to recognise living specimens in your soil

When: 30 June, 8:45 am - 1:30 pm

Where: Waite Institute, Netherby

Cost: $40 AORA members, $50 non-members

Places are limited so RSVP is essential! RSVP by 23 June register on line at the AORA website or contact Kaylee on 8368 3565 or Kelly on 85565295.

WHAT'S FOR SALE?

BOOKS ***"Attracting butterflies to your garden, what to grow and conserve in the Adelaide Region"***
Published by BCSA 2007 - Our price $25 (members may purchase one book for $20). Postage $7.

"the Making of a Monarch" Published Linda Shmith 2013 - BCSA members price $20 plus postage $7.

DVD ***"Butterfly Garden"*** produced by Tracy Baron and Carolyn Herbert - BCSA members price $15, postage and packaging $7 One book plus one DVD postage $12.

POSTERS ***"Spiders and their allies of the Adelaide Region"*** Published by BCSA 2014 and ***"Common Moths of the Adelaide Region"*** Published by BCSA 2012 - sets of two $10 for each set, plus postage $12. (available FREE to schools - all they need pay is postage costs, contact Secretary for an order form). Single posters: Bats of SE South Australia and The Bilby - Endangered Species are available for $5 each, plus postage above.

SITE SIGNS: Application form to register a butterfly site available on the butterfly gardening website. Cost of sign including postage is $50.

PLANT TAGS: See list and form available on website. $2.00 per tag, includes plastic stake.

POLO-SHIRTS with Butterfly Conservation logo. Prices between $35 and $40. Includes postage. A wide range of colours are available.

If you would like to order any of our merchandise, obtain an order form for a site sign, plant tags, polo-shirt or schools poster set, please email: info@butterflygardening.net.au or write to the Secretary C/- SAMuseum, North Terrace, ADELAIDE. 5000.

BANKING DETAILS

BCSA has changed its bank to enable electronic signatories.
Below are the new details for any future payments for books, posters, membership etc.

Cheque or Money Order : Please make cheques payable to: Butterfly Conservation SA Inc.
Mail your details with payment to: Treasurer, Butterfly Conservation SA Inc., C/- 12 George St, Hawthorn SA 5062.

Direct Debit : Bank: Bendigo Bank, BSB: 633-000, Account No: 152785838, Account Name: Butterfly Conservation SA Inc.If using this method please put your name in the description and email the treasurer, John Wilson, at j.and.m.wilson@internode.on.net to advise payment.

KONICA MINOLTA

Thanks to Chris Lane and Konica Minolta for their generosity in printing the BCSA newsletter

BUTTERFLY CONSERVATION SA Inc.

C/- South Australian Museum, North Terrace, ADELAIDE, 5000
Email: info@butterflygardening.net.au
Chairman: Mike Moore, 5 Oakleigh Road, MARION. 5043 S.AUST.
Secretary and Newsletter editor: Jan Forrest OAM, ph H (08) 8297 8230.
email < janforrest@hotmail.com>
Treasurer and membership officer: John Wilson
Committee: Andrew Lines; Gerry Butler (Publications Project Manager), Jill Davy, David Keane, Gil Hollamby, Lorraine Woodcock (Public Talks Program), Bernadette Johson, Linda Shmith and Bryan Harwood (endangered species advocate).
Consultants: Roger Grund and Peter McQuillan
Public Officer: Beth Keane

DIARY DATES

COMMITTEE MEETINGS - Meetings are normally held bi-monthly (usually the second Monday of the month) at 6.00pm at a committee member's home. All members are welcome to attend. If you would like to attend please contact Secretary, Jan Forrest.

PUBLIC TALKS PROGRAM 2015: first Tuesday March - November, Clarence Park Community Centre 6.15pm for a 6.30pm start to 8.30pm.
Next talk: 7th JULY ***" Mawson of the Antarctic"*** Mark Pharaoh from S.A. Museum will Prof. Douglas Mawson's exploits in the Antarctic with an overview of his geological interest and related natural history pursuits.

WEB SITES

Butterfly Gardening - www.butterflygardening.net.au
South Australian Butterflies (R Grund private site) - http://www.sabutterflies.org.au
NRM Education - http://www.naturalresources.sa.gov.au/adelaidemtloftyranges/home 'Get involved' - 'Education' - for students, **school monitoring activities** / for educators. See also other regional NRM Education sites.

WELCOME TO NEW MEMBERS:

Linda Schafrick
Janet Cole
Neil Davis
Julie Howe
Brendan Knight
Lynn Maxwell
Bernadette Hendry
Brian and Carol Green
Greg Donovan
Katherine Faull
Louise Niva
Sharon Roberts
Sarah Dimitrov

Butterfly Conservation South Australia Inc.