BUTTERFLY CONSERVATION SA INC.

NEWSLETTER

No. 74: February 2021

WHAT IS KILLING THE ST. KILDA MANGROVES?

THE ST. KILDA MANGROVE DIE-OFF - What is happening?

Our beautiful tidal wetlands (mangroves and Commonwealth EPBC Act protected saltmarshes) surrounding the St. Kilda Mangrove Boardwalk have been sickening and dying since mid 2020. Due it appears to a massive failure by both the private and public sectors involved in their management.

The nearby decommissioned gypsum ponds were filled with hyper-saline brines. Gypsum, lining the old ponds, had rotted after sitting empty for seven years and now the ponds are leaking and mobilising acidic materials from underneath the gypsum crust.

The SA Department of Energy & Mines regulate all the ponds as part of the Dry Creek Saltfields and the SA Department for the Environment manage the International Bird Sanctuary next to the gypsum ponds.

The 23 January media release 'SAVE ST KILDA MANGROVES' from the St.Kilda Mangroves Alliance (https://www.conservationsa.org.au/st_kilda_mangroves_alliance_launched_23jan21) provides an excellent overview of the concerns being raised, with comments provided from: Craig Wilkins, Chief Executive of the Conservation Council of SA; Peri Coleman Pricipal Consultant of Delta Environmental Consulting (and a member of BCSA); Lindsay Virgo, St Kilda and surrounds Progress and Tourism Association; and Aleisa Lananna, Sharing our shores with coastal wildlife Project Co-ordinator Birds Australia.

THE ST. KILDA MANGROVES NEED YOUR HELP RIGHT NOW

If you share our concern, please sign, and share the petition for the South Australian Government to act immediately to minimise the damage done to the

IN THIS ISSUE

Butterfly Conservation SA has joined the St. Kilda Mangroves Alliance, of concerned environmental and community groups, to raise the public's understanding of the ecological catastrophe that is happening at St. Kilda.

We ask that you view the information on the website: **savestkildamangroves.com** and on Facebook site: **Save St Kilda Mangroves** and sign the petition if you wish to add your name to express your concern.

MEMBERSHIP FEES

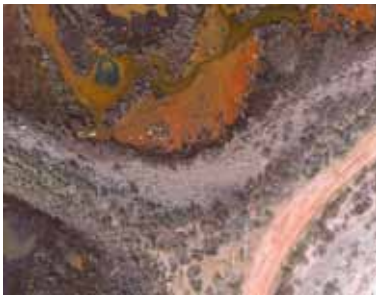
The annual membership fee for BCSA remains at $20 per annum however if you agree to receiving your newsletter via email you may deduct 50% making the reduced annual fee for 'email' members $10.

If you receive your newsletter via email and you have an email address please provide this address to the Membership Officer in order to receive notices for Public Talks and other activities.

BUTTERFLY CONSERVATION SA. INC. Membership enquiries: membership@butterflyconservationsa.net.au or online: www.butterflyconservationsa.net.au/product/become-a-member/ Membership payments ($20pa - less $10 for email newsletters): to Treasurer: PO Box 4, DAW PARK 5041. Cheques to be made out to: Butterfly Conservation SA Inc. EFT details: BSB 633-000 Account No:152785838 Bank: Bendigo Bank. Account Name: Butterfly Conservation SA Inc.
Please email Treasurer if paying by direct debit: treasurer@butterflyconservationsa.net.au with name, amount and item.

St. Kilda Mangrove Forest through the continuing leaking of hyper-saline liquid from the adjoining gypsum ponds.
Action required:

- The immediate removal of damaging hyper-saline brine in the ponds to the South of St. Kilda Road.
- Provide much greater transparency and genuine two-way exchange of information between Buckland Dry Creek Ltd, the Department for Energy & Mining and the public.
- Development of a closure and rehabilitation plan, in partnership with the public, for the damaged ponds and a restoration plan for the surrounding tidal wetlands.
- A permanent solution to the unstable 'Holding Pattern' operating in the northern ponds, preferably the transition of those ponds to self-sustaining natural habitats that do not pose ongoing risks to the surrounding tidal wetlands.



Images above: from savestkildamangroves.com website

Photo: Alex Mausolf

BUTTERFLIES AND MOTHS FOUND IN SALTMARSHES - OBSERVATIONS by Peri Coleman - Principal Consultant, Delta Environmental Consulting, St Kilda South Australia

About saltmarsh moths and butterflies: the top end of the estuarine areas of the Little Para and the Helps Road drainage both support thatching grass (a Sedge) *Gahnia filum*, potential host plants for the larvae of the Yellowish Sedge-Skipper (*Hesperilla flavescens*) and subject of ongoing recovery efforts.

This spring, across southern SA, those sedge species and numerous other saltmarsh grasses like the *Pucinellia* species that grow between the No 3 and No 4 flood gaps (Helps Road tiny estuary and Bolivar site drain) were heavily populated with the larvae of Grass anthelids, *Pterolocera* sp. I couldn't believe how many there were, as we worked our way through the *Gahnia* patches at Meningie.

Up on the embankments and on the sandy cheniers in the marsh the Bitterbush Blue Butterflies (*Theclinesthes albocincta)* used to feed on the *Adriana* plants, but the large stand of *Adriana* on the chenier at PA6 appears to have been destroyed (either by high brine levels or earlier, I can't say - it was on the pond ward side of the Seawall) and the cheniers south of PA9 are inaccessible to us at the moment. These patches were missed in the recent BBB survey for the same reason - lack of access, but I used to collect reproductive material from them and the remaining few bitterbushes seen in St Kilda gardens were all started from cuttings I took from the Saltfield.

The mid and high marsh is clothed with *Atriplex* and *Maireana* (saltbush and bluebush) with tussock grasses and flowering pigfaces on the highest parts and there are always many, many Saltbush Blues and Common Grass Blues.

The damaged saltmarsh is not covered with the colonial webs of the Christmas spiders (*Austracantha*), so I assume this year's crop of hatching gall insects (mostly flies and micro wasps) has been impacted. Those that escape through the network of sticky trap lines to reach the sky often fall prey to the hovering marsh terns. Which are also absent above the marshes south of St Kilda this year.

One invertebrate that MAY be doing well is the leaf rolling spider, *Phonognatha*. Where there are high patches of marsh with *Tecticornia arbuscula* plants alive, every bush is decorated with dozens of the curled houses. Not sure if this is just all of the local population crowding into the small live patches, or reflects the fact that the dead mangroves have produced drifts of shed leaves that have washed up in piles against the higher land, meaning most spider specimens can get themselves a home.

Butterflies. Left: Yellowish Sedge-skipper *Hesperilla flavescens* LFHunt.
Right: Saltbush blue *Theclinesthes serpentata* LFHunt.

OBSERVATIONS on moth species found in saltmarshes by Dr Peter McQuillan, Adjunct Senior Researcher at the University of Tasmania.

Although little survey work has been done in saltmarshes, preliminary evidence is that they support a distinctive moth fauna. I have sampled a few marshes in SA but nothing like a comprehensive survey.

When I visited the saltmarsh at Pelican Point and Mutton Cove Conservation Reserve last year I was aghast to see that the levee has been breached and it is inundated, clearly for some time because there is a dense crop of young mangroves established. Almost all the chenopods have drowned. Unfortunately, the moth fauna of the mangrove community, while interesting, seems much less diverse than that of saltmarshes. It is even less studied in SA.

However, I have observed saltmarsh moths opportunistically on LeFevre Peninsula since about 2012, and estimate the fauna to be at least 100 species in 24 families. Saline grasses, salt tolerant herbs and chenopods probably dominate the foodplants of the larvae.

Broadly the fauna is a blend of habitat specialists and widespread generalists, the latter associated with the weedy flora in particular. A number of widely dispersive species turn up here as they do in other habitats in southern Australia (e.g. the heliotrope moth and brown cutworm).

Three families of moths dominate the macromoths: Noctuidae, Geometridae and Pyralidae.

NOCTUIDAE include 3 or 4 species of the semi-arid adapted genus *Ectopatria* (larvae on *Tecticornia* and likely some other chenopods) and 5 or 6 species of *Proteuxoa* (larvae on grasses and some herbs). These are mainly saltmarsh specialists although some extend to chenopod shrublands inland. Noteworthy too is *Eremochroa alphitias*, usually regarded as an inland species but clearly with outlying populations on the coast. Widespread common species include some agricultural pests such as budworm *Helicoverpa punctigera* and southern armyworm *Persectania ewingii*. These are likely to be opportunistic breeders in saltmarshes but may also fly in from adjacent habitats.

GEOMETRIDAE includes the beautiful *Notiosterrha rhodocosma* which is a very rare species, originally described a century ago from the now lost saltmarshes at Semaphore. Any depletion of saltmarshes on the Adelaide plains/Fleurieu Peninsula would put pressure on this species. Its lifecycle remains unknown. *Scopula achroa* is a rare species in Tasmanian (where it is formally listed as a threatened species) and Victorian saltmarshes and known from a single specimen from Garden Island in SA. A related species, *Scopula rubraria*, is common everywhere. Other saltmarsh specialists or near specialists include *Epyaxa hypogramma* (larvae probably on saline annuals). *Ciampa melanostrepta* is a noteworthy species that is rarely seen (larvae probably on saline herbs).

PYRALIDAE includes various members of the subfamily Phycitinae with larvae as internal feeders in large seeds or seedpods or else terminal leaf-tiers. Several are probably saltmarsh specialists (such as *Vinicia gypsopa* with larvae on *Samolus*) and the widespread species include the lucerne seed moth *Etiella behrii*. The related CRAMBIDAE include at least 3 species of the attractive genus *Hednota* with larvae feeding on grasses at night.

Micromoths include SCYTHRIDIDAE which seem unusually abundant in saltmarshes, especially the genus *Paratheta* which are probably associated with the reproductive parts of chenopods. Also abundant are certain GELECHIIDAE but their taxonomy is poorly known; certainly some appear to be restricted to saltmarshes and related to inland species associated with *Atriplex* and *Rhagodia*.

Noteworthy is the paucity of micromoths of the family Oecophoridae which are very diverse in most habitats in southern Australia and with many larvae on leaf litter. I estimate less than 10 species are present (compared to 100+ species in the Aldinga Scrub for example). Also under represented are the TORTRICIDAE with larvae as leaf-tiers. There are one or two members of the subfamily Olethreutinae but the most common tortricids are widespread species associated with weeds (*Crocidosema plebejana, Epiphyas* spp., *Ericodesma liquidana, Merophyas divulsana*). Almost absent are moths with larvae which bore in woody tissue (only a single cossid moth *Archaeoses polygrapha* with larvae thought to bore in *Myoporum* stems).

A more systematic Lepidoptera survey of the saltmarshes near Adelaide covering each season of the year would be very worthwhile. I have been collecting moths in saltmarshes in Tasmania in recent years so a comparison would be very interesting (but you need to be tolerant of the blood thirsty mosquitoes).

Family Noctuidae: *Ectopatria aspera* GWeber

Family Geometridae: *Scopula rubraria* RGrund (related species).

Build me up buttercup

Reprinted from Green Adelaide Landscape South Australia - Nature Education Weekly Digest 15 November 2020.

We all know how important it is to use local, native plants in our gardens and community. If you are trying to attract native bees to your gardens it is important to include blue, purple and yellow flowers. A native flower that offers one of these colours to the bees is the Australian Buttercup (*Ranunculus lappaceus*). Otherwise known as the Common Buttercup or the Native Buttercup, this plant produces beautiful bright yellow flowers from July to December.

Plants grow to 70 cm high, with two to 10 flowers on singular or branched stems. Flowers are 2 cm to 3.5 cm wide, with leaves divided into three broad triangles, with soft hairs.

The genus name, *Ranunculus*, is Latin for tadpole, deriving from the Latin word rana, meaning frog. It is suspected that this refers to the swampy habitat most species are found in, as they prefer moist, non-stagnant soils. That makes this plant ideal for use around the edges of frog ponds and in rockeries where it gets part to full sun.

If you do bring an Australian Buttercup into your garden space, be mindful that many buttercups can be poisonous. This particular species can cause colic and inflammation in animals, and may cause blindness in horses, but generally animals will avoid eating it due to its yucky taste.

References:

- https://www.victoriannativeseed.com.au/?product=australian-buttercup
- http://www.flora.sa.gov.au/cgi-bin/speciesfactsdisplay.cgi?form=speciesfacts&name=Ranunclus lappaceus
- http://www.abc,.et.au/local/stories/2010/10/22/3042519.htm
- http://www.herbiguide.com.au/Descriptions/hg_Australian_Buttercup.htm
- https://www.victoriannativeseed.com

Photo: Steve Walker

Check out the collection of **Creature Features Vol 1** https://www.landscape.sa.gov.au/files/3d3de926-fbb3-47b6-88f2-a32c00cd1fef/nrmeducation-creature-features-2013-fact.pdf and **Vol 2** https://www.landscape.sa.gov.au/files/share-dassets/adelaide_and_mt_lofty_ranges/nrm_education/nrmeducation-creature-features-volume2-2020.pdf on the Green Adelaide Nature Education website as well as the plants and animals page. https://www.landscape.sa.gov.au/hf/education/for-educators/plants-and-animals.

The art of seduction, perfected by orchids

Reprinted from Green Adelaide Landscape South Australia - Nature Education Weekly Digest 6 December 2020.

There are over 200 species of orchids in Australia but the Large Green-comb Spider-orchid, Caladenia tentaculata, is one of the easiest to identify in the Adelaide region. Their large and brightly coloured spidery-looking flowers appear over spring and summer, and can be up to 12cm in width. They are found in open woodland, heathland and forest.

Sadly, the Large Green-comb Spider-orchid and many other native orchids are in decline. Key threats include vegetation clearance, climate change, weed invasion, herbivory/grazing, in-breeding, recreational activities and lack of pollinators.

A lack of pollinators spells particularly bad news for orchids because the Australian orchids are the queens of deception. They deceive male insects – mostly wasps – into believing that they've found a female mate by releasing a chemical copy of the female wasp's pheromones. The orchid flower also mimics the female wasp visually, which further deceives the male. When a male wasp lands on the flower, the shape ensures the male is in the right position to make contact with the pollen (to deposit or pick up). Most Australian orchids that mimic female insects are pollinated by male Thynnine wasps. These are highly specific relationships with each orchid being adapted for pollination by a single species of wasp pollinator. Habitat conservation and restoration is vital to ensure the survival of both pollinators and the orchids that rely on them.

If you're interested in orchids, you might like to download the Native orchids of the Adelaide Hills identification chart on the Nature Education website. http://www.landscape.sa.gov.au/files/sharedassets/adelaide_and_mt_lofty_ranges/nrm_education/amlr-native-orchids-2015-gen.pdf

To learn more about your local biodiversity and what you can do to take action, please visit the Land Based Environments section on the Nature Education website https://www.landscape.sa.gov.au/hf/education/for-educators/plants-and-animals/land-based-environments

References:

https://www.anbg.gov.au/cpbr/cd-keys/orchidket/html/genera/Arachnorchis.htm

https://www.australiangeograp[hic.com.au/topics/science-environment

Large Green-comb Spider-orchid Photo: Steve Walker

Saltbush Blue

also known as the Chequered Blue

Class:	**Insecta**
Order:	**Lepidoptera**
Family:	**Lycaenidae**
Genus:	***Theclinesthes***
Species:	***serpentata***
Subspecies:	***serpentata***

A widespread and adaptable Blue, the Saltbush Blue could be encouraged into the suburbs by growing its caterpillar food plants. This butterfly has been found on mowed Saltbush growing on the footpath in suburban Woodville. The adult butterflies of this species normally fly very close to the foodplants.

Description

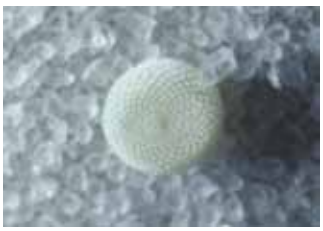
Wingspan: Male: 18mm, Female: 18mm
Upperside: Both sexes have a central purple-blue to blue coloured central area on the upper-side of the wings, with broad brown margins. There are a couple of faint white crescents near the base of the hind wing along the outer margin and a distinctive chequered fringe to the outer margin of both wings. There is also a very stubby, short tail at the angle between the outer and basal margins of the hind wing.
Underside: The underside is a mid to dark brown in colour with white transverse markings on the forewing and white patches and other markings on the hind wing.

Distribution

Occurs through much of temperate and subtropical Australia,including Kangaroo Island and Tasmania. Rare in the wet colder areas of South Australia. It is rare or absent along the Pacific coastal shoreline of the eastern states, where it is replaced by *Theclinesthes sulpitius*. A separate subspecies occurs in Tasmania.

Larval Foodplants

Caterpillars feed mainly on saltbushes including: Adelaide native species: Slender-fruit Saltbush (*Atriplex acutibractea*), Coast Saltbush (*A. cinerea*),



Photos: egg, first instar larva (1mm), third instar larva (3.5mm), final instar larva (9.5mm). Pupa, adult female upperside, adult underside. All photos: LFHunt.

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Marsh Saltbush (*A. paludosa*), Berry Saltbush (*A. semibaccata*), Lagoon Saltbush (*A. suberecta*), Climbing Saltbush (*Einadia nutans* ssp. *nutans*), Sea-berry Saltbush (*Rhagodia candolleana* ssp. *candolleana*), Fleshy Saltbush (*R. crassifolia*), Fragrant or Mealy Saltbush (*R. parabolica*), Pop Saltbush (*A. holocarpa*). The caterpillars eat the flowers and soft green parts of these plants.

Habitat and Ecology

This tiny butterfly can be very common seasonally wherever its caterpillar food plants occur being present in most habitats At times it colonises the inner city and inner suburban areas. The caterpillars of this species are pale green or green-grey, with a yellow edged, darker band down the back and have an almost granular appearance to the surface of their skin. They are nearly invisible on their food plants, where they feed on the flower heads and leaves. Mature larvae are 8-9mm long. The tiny pupa 5-7mm in length is pale green to grey-green with scattered brown markings and is usually attached to the stems or leaves of the food plants.

Flight Period

Flies all year however generally seen September - May

Threats

No major threats

Conservation

This butterfly is easily encouraged to come to urban gardens and will readily form colonies if Saltbushes, including the smaller, decorative ones, are grown in the garden. Locally common in breeding areas and in certain locations may be the most common butterfly.

Photos: Adult male upperside. Photo: LFHunt.

Top: Berry saltbush *Atriplex semibaccata* fruit and Climbing saltbush *Einadia nutans* fruit. Photos: RS Sandocock. Below: Marsh saltbush *Atriplex paludosa cordata*. Photo: R Grund. Bottom: fruit of Fragrant or Mealy saltbush *Rhagodia parabolica.* Photo: T Berkinshaw .

ACKNOWLEDGEMENTS *Theclinestes serpentata* fact sheet:

Majority of text, map and flight bar from: '*SA butterflies and moths*' website https://sabutterflies.org.au by Roger Grund much of which includes biological information by the late Lindsay Hunt.
Other references and contributors include: Michael Moore; Fisher RH 1978 *Butterflies of South Australia*; Braby MF 2004 *The complete field guide to Butterflies of Australia*; Dashorst RM & Jessop JP *'Plants of the Adelaide Plains & Hills*.
Production: Jan Forrest OAM, February 2021.

BUTTERFLY CONSERVATION SA Inc.
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EMAIL: info@butterflyconservation.net.au

Yellowish Sedge Skipper

also known as Altona Skipper and Flavescens Skipper

Class:	**Insecta**
Order:	**Lepidoptera**
Family:	**Hesperiidae**
Genus:	***Hesperilla***
Species:	***flavescens***

The Yellowish Sedge Skipper, is a native butterfly found in areas of southern South Australia and southern Victoria. Largely due to habitat destruction, the species has declined in many areas and its range has been reduced.

Description

Wingspan: Male: 32mm, Female: 37mm
Upperside: Male – ground colour mid-brown. Forewing with three subapical cream patches, four yellow patches in a vertical line in from the marginal edge and a large yellow patch in from the costa edge. Hindwing brown with bright yellow area at the centre with one small spot at the edge. Wing margin cream. Female – forewing similar to the male however yellow patches larger and hindwing has two spots at the edge of the yellow central area.
Underside: Male – ground colour pale brown. Forewing has distinct yellow patch near costa edge, below this a large brown patch with cream patches vertically in a line graduating to cream towards the posterier. Light brown patch towards the outer margin. Hindwing pale with two spots in the postdiscal areas and a series of five spots in the postbasal area. Female – similar to the male however the brown areas on the forewing are darker and more distinct, hindwing distinctly paler.

Distribution

In South Australia this species is present from near Streaky Bay to Port Lincoln and up to Cummins area, southern Yorke Peninsula, Goolwa to Frome Lake in south east along the coast and inland near Naracoorte. Historically there was a major presence in *Gahnia filum* wetlands inland of the coastal beaches of Adelaide, extending north to Port Gawler, now extinct in these areas due to urbanisation. Range extends into Victoria, vulnerable near Melbourne.

Photos: Egg LFHunt. Caterpillar RHFisher. (St.Kilda), Pupa, adult female upperside, adult female underside. LFHunt.

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Larval Foodplants

The caterpillars of this butterfly species completes its life cycle using Thatching Grass (*Gahnia filum)* as its caterpillar food plant. Larvae construct shelters for protection during the day and come out at night to feed on the leaves.

Habitat and Ecology

Found in sedgeland in slightly saline swamps and along edges of lakes where the usual larval food plants grow, especially young plants of those regenerating after disturbance. Adults fly rapidly close to the ground amongst tussocks of the larval food plant and are usually seen feeding on nectar from various flowers or basking in the sun during sunny periods throughout the day. Males often establish small mating territories in open spaces, between tussocks which they defend, sometimes challenging other males while waiting for females to arrive. Eggs can be found on outer leaves during the two flight periods and are creamy in colour, about 2mm wide. Shelters are often associated with bent leaves and this occurs because of plant growth. Larvae are green, with a 'V' mark on their heads, the pupae are brown or black.

Flight Period

The life cycle takes 12 months to complete and as this species has two distinct broods one in spring and the other in autumn, adults can be seen on the wing during two periods: September to November and mid-February to mid-April. Most main flights do not last longer than four weeks in any single location.

Threats

This species as for many other Hesperiids have declined over the years due to habitat loss.

Conservation

Maintaining healthy patches of *Gahnia filum* are the starting point for achieving suitable butterfly habitat. Aim to create or maintain areas of open sedgelands with clear inter-tussock ground spaces and a variety of plant growth stages. Having different plant stages present will ensure that successive generations of the butterfly can continue, even though some tussocks may become unsuitable with age as they accumulate excessive chaff or start to senesce. The butterfly is able to reproduce without nectar plants being present, however planting complementary suitable flowering natives and preserving non declared flowering weeds can be beneficial. Each site is unique; see specialist advice on plant species.

Further information on sedgeland management and monitoring of this species refer: "***Sedgeland management fact sheet for The Yellowish Sedge Skipper***" by Alex Stolarski for the Adelaide and Mt.Lofty Ranges Natural Resources Management Board 2020.

Photos: Right and below caterpillar shelters, below *Gahnia filum* sedgelands. R.Grund.

ACKNOWLEDGEMENTS *Hesperilla flavescens* fact sheet:

Text from "Sedgeland management fact sheet for The Yellowish Sedge Skipper" by Alex Stolarski for the Adelaide and Mt.Lofty Ranges Natural Resources Management Board 2020.
Map and flight bar from: '*SA butterflies and moths*' R.Grund website https://sabutterflies.org.au.
Other references and contributors include: Braby MF 2004 *The complete field guide to Butterflies of Australia*; '*SA butterflies and moths*' R.Grund website.
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A BCSA project at the ADELAIDE BOTANIC GARDENS

The Adelaide Botanic Gardens is a brilliant place to promote the needs of butterflies, tell their stories and highlight nectar plants as well as host plants. **You are invited to join this exciting one-off project to develop a butterfly walking trail through the gardens.**

Ideas so far include:

- highlighting wetland species of butterflies (near the Goodman Gate and Wine Centre) and their plants including Gahnia species.
- Use the 'Kitchen Garden' – "what you can find in your veggie garden?" as well as utilise the *Buddleia* and other nectar plants here as well as *Citrus* species.
- Conservatory and/or Palm House – palm skippers
- Sunken Economic garden, possibly three sites. *Capparis spinosa* SE corner of economic garden to highlight Caper White butterfly. Citrus area, SW corner to highlight Dainty Swallowtail butterfly as well, identify areas where nectar plants predominate.
- Australian native (Mallee) garden, to highlight the native host and nectar plants especially the role grasses play as host plants for many butterfly species.
- Flinders Garden - front of the Goodman Building has a great array of flowering plants and other host plant species.
- *Capparis mitchelli* tree (over 75 year old) host plant of the native Caper White migratory butterfly
- *Bursaria spinosa* tree (another 75 year old tree). This is a nectar plant which flowers around Christmas time hence its common name Christmas Bush after many plants have stopped flowering.
- Mediterranean Garden could highlight introduced species.

To develop the trail we will need to locate individual plant species of special interest and write up something about each plant and its association with a butterfly or group of butterflies.

Create a trail map and information which will be availble on-line for visitors to download. In addition we will need to provide small named signs to place next to individual plants.

A funding proposal is presently with the BCSA Management Committee to consider as our organisation may need to fund this project from the Butterfly Conservation Gift Fund.

If you are interested in being involved in this project please contact comittee member Anne Frodsham <roush1@internode.on.net> for further information.

An Adelaide Botanic Gardens Brochure and Map can be downloaded from: www.botanicgardens.sa.gov.au. Then click on Visitor information/Planning your visit.

Photos: Top. *Capparis mitchelli*, below *Bursaria spinosa*. Photos: Anne Frodsham

INSTRUCTIONS FOR THE BUTTERFLY APP.

When your first see a butterfly I suggest you take a photo using your phone camera before you open the app.

1 Hit App. icon to load.
2 Hit Incidental.
3 Hit Sightings.
4 Select Butterfly species from list.
5 Push "+" button to indicate number of individuals.
6 You can now add an image to your sighting OR NOT.

If you want to add an image hit the camera icon to the right of the species name. You can see it has sent you to the camera now hit the small up arrow in the bottom right of the screen and this allows you to choose image now from camera or upload from Gallery. You decide!
This image step is not necessary as you can just record sighting without an image.

7 Push BACK_ARROW to Select sightings.
8 Enter second species at that location. (Repeat 5-7) until recorded all species present AT THAT LOCATION.
9 Hit SAVE icon. This saves your sightings to your mobile.
10 Hit SURVEY icon.
11 Hit UPLOAD ALL or UPLOAD individual survey. This sends your sightings to the database.

A SHORT TALK I PRESENTED TO THE LAST BCSA PUBLIC MEETING IS VIEWABLE ON THE BCSA WEBSITE. THIS TALK INCLUDES IMAGES OF THE MOBILE SCREENS. https://butterflyconservationsa.net.au/butterflies/read/websites/.

Mike Moore

REDUCE YOUR TAX - MAKE TAX DEDUCTIBLE DONATIONS TO THE BUTTERFLY CONSERVATION FUND

BCSA has been recognised by the Australian Tax Office and the Commonwealth Department of Agriculture, Water and the Environment as a Deductible Gift Recipient – in other words, we can receive donations that are deductible from the taxable income of the donor. What that does is reduce the cost to the donor of making a donation – we hope that will enable people to donate more and will greatly enhance our ability to conserve butterflies, moths and other invertebrates as a critical part of the environment.

We have set up the Butterfly Conservation Fund, with committee members Jan Forrest, Mike Moore and John Wilson. The Fund will receive tax deductible donations, which must not be tied to any specific project. The Committee will identify and fund suitable strategic projects consistent with BCSA's aims.

The Committee are currently in the process of identifying and contacting possible donors, including philanthropic organisations, companies, purchasers of our merchandise, the public and our members. Suggestions of whom to approach for donations will be appreciated, also if you have a project that could be considered for funding please contact the Fund Committee members.

The latest project for which funding may be requested from this fund is a Butterfly Trail in the Adelaide Botanic Gardens.

Butterfly Conservation South Australia Inc.

presents the eleventh

PUBLIC TALKS PROGRAM for 2021

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

At the Plympton Community Centre

34 Long Street, Plympton.

(200 metres E of Marion Rd, and 300 metres N of Anzac Highway).

Venue of the November talk will be in the SA Museum foyer.

Public transport options include:

Bus from the city via Anzac Highway.
Routes: 245, 248, 262, 263, 265, M44, N262.
Closest stop is Stop 9, then approximately 350 metre walk along Long Street.

Bus from the city via Marion Road.
Routes 100, 101, H20. Closest stop is Stop 10 (east side is approximately 100 metres south of Long street). Stop 10 (west side is on the other side of Moringie Ave. approx. 100 metres north of Long Street). Then approx. 250 metre walk along Long Street.

Entry by donation (minimum of $2).

Bookings not required

Please bring supper to share (unless otherwise advised). Bring your own cup, 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. DON'T FORGET TO BYO CUP.

Photo Greg Coote: Chequered Copper butterfly *Lucia limbaria*

www.butterflyconservationsa.net.au

BUTTERFLY CONSERVATION SA INC.
C/- South Australian Museum, North Terrace, ADELAIDE
For further information contact: Jan Forrest 8297 8230
Annual membership: **$20** per year. Less 50% discount if you opt to receive the newsletter via email. Life Membership $200.

Website: www.butterflyconservationsa.net.au

Resources for sale: at public talk meetings or on-line at www.butterflyconservationsa.net.au/shop.
Books ***'Attracting butterflies to your garden, what to grow and conserve in the Adelaide region'*** (2nd edition).
'Caterpillars moths and their plants of southern Australia'.
plus large **spider posters,** A3 size **moth posters** and **plant tags.**

A NOTE FROM OUR WEBMASTER - Lionel Edwards

The 2016 BCSA website and 2018 (Grund) SA Butterflies and moths site are designed very differently. I have added links, which go back to the SA Butterflies and Moths site where this site can provide information additional to what is available on the BCSA website. For example, the page https://butterflyconservationsa.net.au/butterfly/bitterbush-blue/. Click on the link "You can learn a lot more about this butterfly on the Roger Grund website (now managed by BCSA)".

I am really pleased that we have made Roger's data more accessible now.

PUBLIC TALKS PROGRAM 2021

2nd March *Australian sea lions. An iconic and endangered South Australian mammal.* Professor Simon Goldsworthy Principal Scientist at SARDI will talk about the Pinnipeds of South Australia and focus in particular, on the Australian sea lion.

6th April *Electricity prices: Energy and alternatives.* While there is general agreement that renewables are the cheapest form of electrical energy, the more renewables we have, the higher our electricity prices have been! Presenter Dr. John Patterson retired nuclear, radiation and medical physicist will provide information on back-up solutions to renewable energy and why nuclear energy may need to be considered in the future.

4th May *Finding DNA Where does your DNA come from?* Presented by Dr Professor Adrian Linacre from Flinders University. Everything you touch can leave a trace of you. Forensic tests are being developed that can detect this signature of you. This talk will highlight how trace amounts of DNA can track suspects and exonerate persons who might otherwise be of interest.

1st June: *Wetlands of the Sturt River.* Marion resident and former member of the Oaklands Wetlands committee David Jarman will provide an overview of the Warraparinga, Morphetteville Race Course and Oaklands wetlands. Correctly designed and managed wetlands perform a great contribution to our way of life. Water is becoming our most precious resource and David is concerned that in the future our focus will not be over fossil fuel but over clean water. Two of the above wetlands feature "Aquifer Recharge" and David will explain how this works during his talk.

6th July *Mites.* Dr. Matthew Shaw from the South Australian Museum will provide an insight into the mini world of mites and their contribution to composting vegetable matter into soil.

4th August. *An introduction fo butterfly observation.* Committee member and former Chairman of BCSA Mike Moore will provide practical hints on observing adult butterflies and their caterpillars and will include an overview of the butterfly app. produced by the Australian National University.

7th Sept. 6.30pm BCSA AGM 7.00pm Public Talk *The current and future prospects for biodiversity conservation on private land.* John Fargher, of the Yundi Nature Conservancy, will talk about explore the current policy settings for private conservation in different Australian states, and provide examples from practical experience of managing a re-wilding and biodiversity maintenance program at the Yundi Nature Conservancy on Fleurieu Peninsula, with some specific examples relating to butterflies and moths.

5th Oct. *The disappearing 'inscape'.* Soil is one of our most precious resources and the composition of the top 15cm is critical to the survival of all plants and micro organisms. Committee member Andrew Walters will provide an insight into what happens to our soil over time and how we can assist our plants to grow, by managing the 'inscape' or top 15cm.

Thursday 4th Nov. VENUE SA Museum foyer. *Why nectar is important to butterflies and where they find it*. Nectar is the major energy source for butterflies but species differ greatly in the range of flowers they exploit. Recent research has shown that only a small range of herbs, shrubs and a few trees account for most visits. These include native daisies, teatrees and bursaria as well as certain weeds such as scabiosa and blackberry. Presented by Dr. Peter McQuillan from the Univerersity of Tasmania, this talk will be of interest to those wishing to provide nectar for visiting butterflies to your garden and those interested in remnant vegetation conservation. This will be a ticketed event.

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

'The views of our presenters are their personal views.'

2nd March ***Australian sea lions. An iconic and endangered South Australian mammal.*** Professor Simon Goldsworthy Principal Scientist at SARDI will talk about the Pinnipeds of South Australia and focus in particular, on the Australian sea lion.

As the Principal Scientist at the South Australian Research and Development Institute (SARDI) Aquatic Sciences Centre in Adelaide, South Australia Professor Simon Goldsworthy heads the Ecosystem Effects of Fishing and Aquaculture Subprogram. This group undertakes research to support the ecological sustainable development of SA's seafood industry, including: assessing and mitigating interactions with protected species; undertaking population and ecological studies to inform their conservation and management; undertaking ecological modelling to inform fishery and aquaculture management; and developing decision support tools for ecosystem-based fishery management. His talk will provide an overview of the pinniped species in South Australia, their biology and ecology, and key human impacts from historic sealing to fisheries interactions. Much of the talk will focus on the Australian sea lion, a species in decline that has recently been uplisted to Endangered.

6th April **Energy and alternatives.** While there is general agreement that renewables are the cheapest form of electrical energy, the more renewables we have, the higher our electricity prices have been! Presenter Dr. John Patterson retired nuclear, radiation and medical physicist and will provide information on back-up solutions to renewable energy and why nuclear energy may need to be considered in the future.

This promises to be an interesting and thought-provoking talk as we hear from Dr John Patterson, a retired nuclear, radiation and medical physicist who has worked overseas and at the University of Adelaide and RAH Cancer Care Centre. His hobbies are understanding our electricity prices and the contributions of Sir William and Sir Lawrence Bragg to X-ray structural analysis.

His talk begins with this fundamental contradiction: while there is general agreement that renewables are the cheapest form of electrical energy, the more renewables we have, the higher our electricity prices have been! Why is this?
The tripling of our prices since 2000 is mainly due to our having to pay world parity prices for gas used at Torrens Island. As well as the very high cost of transmission lines from wind and solar sites to the city, plus the major inter-connectors to Victoria and NSW. High electricity prices in Australia have placed local manufacturing at a severe disadvantage. The Grattan Institute recently reported that they did not expect our gas prices to come down.

John argues that 100% renewables are impossible because they are inherently variable and unreliable and require alternative forms of energy as backup, which is at present 50% gas. Storage methods such as pumped hydo, batteries and hydrogen do not generate energy. They enable us to reuse excess renewable power on short time scales. They are expensive.

Hydrogen will be important for transport in fuel cells, for domestic use and for overseas export. However, nuclear energy is the backup solution we need! It could halve our electricity price, but it is illegal at present. John believes we will eventually have to come to terms with nuclear as coal and gas are phased out due to international pressure. Small Modular Reactors will become readily available from 2026, be cheaper and longer lasting than large batteries.

4th May ***Finding DNA Where does your DNA come from?*** Presented by Dr Professor Adrian Linacre from Flinders University. Everything you touch can leave a trace of you. Forensic tests are being developed that can detect this signature of you. This talk will highlight how trace amounts of DNA can track suspects and exonerate persons who might otherwise be of interest.

Professor Adrian Linacre graduated with a 2.1 honours degree in Zoology from the University of Edinburgh in 1984 and then completed a PhD (D.Phil.) in Molecular Genetics from Sussex university in 1988. He was employed as a Post-Doctoral Research Fellow at the University of Sussex from 1988 to 1994 before taking up a lectureship in Forensic Science, University of Strathclyde from 1994.

In 2010 he became the inaugural South Australia Justice Chair in Forensic Science & Emerging DNA Technology at Flinders University.

Adrian has published over 190 publications in international peer reviewed journals and is co-author of the text book 'An Introduction to Forensic Genetics', Wiley Press (2nd edition published in December 2010).

In 2020 he was recognised in the Queen's Birthday honours with the Medal of the Order of Australia for services to the forensic sciences.

He was elected National President of the Australian & New Zealand Forensic Science Society in 2016. He has authored over 500 Court Reports or Witness Statements and was a Registered Forensic Practitioner in the area of Human Contact Traces (DNA, Body Fluids and Blood Pattern Analysis) from 2004. He was Chair of 25th Congress of the International Society for Forensic Genetics (ISFG) and chaired the ISFG Commission into the use of non-human DNA in the criminal justice system.

Articles for the next newsletter are welcome.
Please send to:
'The Editor', BCSA Newsletter,
C/- editor@butterflyconservationsa.net.au
Please ensure images are provided separately as a .jpg, not embedded in word documents.

WHAT'S FOR SALE? - IN OUR ON-LINE SHOP

BOOKS ***"Caterpillars, moths and their plants of southern Australia"*** ***NEW*** Published BCSA September, 2019 Our price $30, plus postage.

"Attracting butterflies to your garden, what to grow and conserve in the Adelaide Region" ***2nd EDITION*** Published by BCSA 2016 - Our price $25 (financial members may purchase a book for $20) plus postage.

"The Making of a Monarch" by Linda Shmith, has now been reprinted. Cost $20 plus postage.

DVD ***"Butterfly Garden"*** produced by Tracy Baron and Carolyn Herbert - $20 each (BCSA financial members price $15) Plus postage.

POSTERS ***"Spiders and their allies of the Adelaide Region"*** Published by BCSA 2014. $10 a set of two, plus postage.

"Moths of the Adelaide Region" $10 Set of four A3 plus postage. Free download available.

Single posters: "*Bats of SE South Australia"* and ***"The Bilby - Endangered Species"*** posters are available for $5 each, plus postage.

FREE Orchid Posters. Plus postage. Posters are free to schools, but incur postage.

SITE SIGNS: to obtain an application form to register a butterfly site click on the site sign logo. Cost $60 includes postage.

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

If you would like become a member, order any of our merchandise, including books, plant tags, site signs or posters check out the **ON-LINE STORE at https://butterflyconservationsa.net.au/shop/** For queries please email: info@butterflyconservationsa.net.au .

BUTTERFLY CONSERVATION SA Inc.

An affiliated organisation of the South Australian Museum and Friends of Parks.
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Email: info@butterflyconservationsa.net.au

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Committee: Andrew Lines, Bernadette Johnson, Bryan Haywood (endangered species advocate), Anne Frodsham, Cristy Seymour (Social Media) Andrew Walters and Lionel Edwards (website).
Merchandise and sales: Sarah McDonald - publications@butterflyconservationsa.net.au
Consultants: Roger Grund and Dr. 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 Chairman Gerry Butler on 0407972149.

PUBLIC TALKS PROGRAM 2021: first Tuesday March - November, at the Plympton Community Centre, 34 Long Street, Plympton. 6.15pm for a 6.30pm start to 8.30pm. with an option for some talks to be viewed via Zoom. Please watch your email for information regarding public talks.
NEXT TALK: **Tuesday 2nd March** presented by Dr. Simon Goldsworthy. ***Australian sea lions. An iconic and endangered South Australian mammal.***

WEB SITES

BCSA official website - Butterfly Conservation SA - www.butterflyconservationsa.net.au
The former domain name **Butterfly Gardening** - www.butterflygardening.net.au is also still available and links directly to the new BCSA site.

South Australian Butterflies and Moths - https://sabutterflies.org.au (authored by Roger Grund and now managed by BCSA).

Landscape SA Boards, Urban Biodiversity: https://landscape.sa.gov.au/hf/plants-and-animals/native-plants-animals-and-biodiversity/urban-biodiversity

WELCOME TO NEW MEMBERS

Alex Weatherill
Tytler Pettigrew
Courtney Chambers
Shane Meyer
Anne Bastian
June Dyer
Saleem Hussenbocus
Bob Major
Mary Bloomfield
Ron Johnston
Kate Thomas
Alex Hackett
Bec Gayther-Moore
Maria Venter
Melanie Hall
Maritza Manojlovic
Lisa Mazzella
Mandy Orchard
Tania Wood
Jonathan Bowles
Lindy Breakey
Susanne McCallum
David Moore
Marion Kerr
Janine Weatherstone
Mark Dooley
Catherine Whiting
Carol Daff

KONICA MINOLTA

Thanks to Chris Lane and Konica Minolta for their generous support to BCSA.
Konica Minolta is a Landcare Australia National Partner

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