

ISSN 1329-7759

RSWA Proceedings

ATTENTION LIBRARIANS:

This publication should be catalogued under "Proceedings of the Royal Society of Western Australia"

May 2006

General Meeting
Royal Society of Western Australia Ordinary Meeting
Kings Park Administration Building
Off Fraser Ave., Kings Park

7 pm Monday, 15th May 2006

The Natural History of Maple Syrup Production
Or... There is more to Maple Syrup than pancakes!

Dr Stephen G. Saupe

College of St. Benedict/St. John's University
Collegeville, Minnesota, USA



Maple syrup or 'sinzibuckwud' was first discovered by the North American Indians, and means 'drawn from wood'. For centuries, a springtime ritual in the deciduous forests of northeastern North America has been the production of maple syrup from the sap of the sugar maple (*Acer saccharum*). In his presentation, Dr Saupe will provide some historical and cultural background about this uniquely American crop, and describe the science behind the production of maple syrup.

Dr Saupe is a Professor in the joint Biology department of the College of St. Benedict and St. John's University (Minnesota, USA). He currently is serving as the director of a group of American students who are spending the term at the University of Notre Dame. Current research activities involves floristic studies in central Minnesota, pigment changes during leaf senescence in the genus *Rhus*, impact of exotic earthworms on native vegetation, and airborne pollen and molds. Steve's latest research project involves a collaborative effort with scientists in the Gulf Coast region to study aeroallergens that may be involved in equine asthma. Steve also serves as one of the chief syrup-makers at St. John's where each spring where more than 600 "taps" result in the production of 150 gallons of syrup.

Steve's talk will be followed by pancakes and maple syrup!

Members, guests and visitors welcome

<http://www.ecu.edu.au/pa/rswa>

This issue of the RSWA Proceedings was edited by Margaret Brocx rswa@iinet.net.au

Weekend RSWA excursion to the Rockingham wetlands, 9th April 2006

Twenty two people attended the half-day RSWA weekend excursion to the Rockingham wetlands on Sunday 11th April 2006, drawn from RSWA members, government agencies, community groups, and the general public. The excursion sequentially explored the three groups of wetlands in the Rockingham area (Figure 1): those formed initially as marine water bodies behind spits and barriers, those formed within inter-dune depressions on a prograding beachridge plain and those formed as slacks in wind-deflated bowls in parabolic dune blowouts.

The excursion commenced at Lake Richmond, a deep, now freshwater, permanent lake, formed as a marine lagoon by a barrier 2300 years ago, and whose shores today are fringed by stromatolites and sedges. The rapid development of marine lagoon by barriers and spits was explained, using the now-filled former Peel Harbour that existed along the shores of Warnbro Sound during the 1800s. The Lake Richmond site illustrates a relatively middle stage development of such wetlands. The excursion then moved on to the next site, the northern shore of Lake Walyungup. It was explained that Lake Walyungup initially formed as a relatively shallow water marine lagoon barred by spits some 6000 years ago, and hence was the oldest of the wetlands in the region. It evolved to becoming a freshwater lake, filling with sediment, and then to a hypersaline lake, currently inhabited by saltwater-tolerant plants, and freshwater vegetation where there is freshwater seepage along the margins. The northern shore exposes fossil (cemented) stromatolites and surficial cemented crusts, and shows the late stage development of such marine-derived wetlands (Figure 2).

The excursion then moved on to explore the wetlands formed in the inter-dune depressions of the beach ridge plain. These wetlands form as the water table rises as the beach ridge plain progrades. The first site, less than 900 years

old, is a linear depression situated between two beach ridges at the western (youngest) end of the beach ridge plain. Here, the wetland essentially retains the characteristics of being a beach ridge swale: it is floored by humic beach ridge sand, has simple margins, and the water table, though close to the surface in winter, has not yet risen to intersect the land surface. Thus it is a seasonally waterlogged basin (a dampland) with simple hydrologic processes, in early stages of wetland development. Sedges and rushes inhabit this wetland (Figure 2). The evolution of this simple wetland with a rising water table to the next stages of wetland development was explained. The next site, *circa* 4000 years old, is in the older part of the beach ridge plain, where wetlands are in late stages of development: though still existing as a linear swale within the beach ridge plain, the wetland at this site had filled with carbonate mud, has a thin capping of peat, shows evidence of sedimentary subsidence, and has complex margins. As a result of its sedimentary fill and margins, it has a complex hydrology and interacts complexly with the regional groundwater flow. Here, the wetland is a seasonally inundated basin (a sumpland) inhabited by a variety of sedges and rushes, and species of *Melaleuca*.

The last site explored the wetlands formed in the past 500 years as part of a series of wind-oriented slacks excavated in the bowls of a large parabolic dune system that cut across the beach ridge plain. Most of the wetlands in this locality have been destroyed by urban development or by the local golf course, so few remain. The excursion visited one particular slack, Secret Swamp (Figure 4), currently a dampland, maintained by a simple hydrology, underlain by humic sand, and inhabited by sedges and rushes.

Aspects of the excursion and some of the activities are captured in the illustrations below.

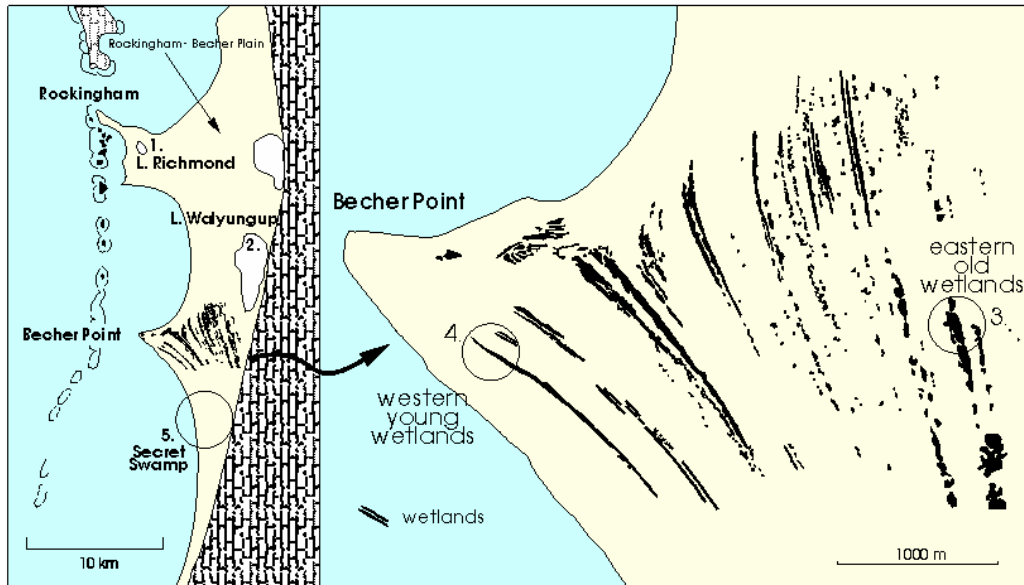


Figure 1: Location of the excursion sites in the Rockingham area



Figure 2: Excursion attendees examining crusts and fossil stromatolites, northern shore of Lake Walyungup (Site 2)



Figure 3: Zoe Knudsen, the youngest attendee on the excursion, leading a queue out of a young linear wetland (Site 3)



Figure 4: A remnant slack (Secret Swamp) set amid urban development (Site 5)

8th Annual Postgraduate Symposium Sunday 7th May - Murdoch University

The RSWA will hold its annual Postgraduate Symposium on Sunday 7th of May, including the traditional FREE BBQ lunch (RSVP rswa@iinet.net.au). Please support this event by attending. Please refer to the Program insert, and a map showing the location of the venue is on page 6 of the *Proceedings*.

Notes from the President:



Dr Alex Bevan

Meeting with the Minister for Science

On the 20th April, the RSWA had its first meeting with the new Minister for Science and Innovation, the Hon. Francis Logan BA (Hons) MLA. Jane Rosser and I talked with the Minister and his advisor in a very cordial, hour-long meeting. The Minister is no stranger to Royal Societies, having visited the Royal Society of London only a few weeks ago, and as such, was aware of our multidisciplinary nature.

As this was our first meeting, we outlined to the Minister the aims and objectives of the RSWA. The Minister then described the Government's directions and priorities regarding Science and Innovation for its current term. Currently, the Office of Science and Innovation is in the process of being moved into the Department of Industry and Resources, and this may herald a major reorganization of infrastructure.

The Government's main projects include support for biotechnology, future energy considerations including biofuels, and areas of marine research. There are also plans to concentrate geoscience expertise at Technology Park in Bentley through collaboration between industry groups, CSIRO, State Government agencies, and Universities. The international bid for the astronomical 'Square Kilometre Array' project continues, and a decision is likely to be made later this year. Australia faces stiff competition for the project from South Africa.

Finally, we explored with the Minister ways in which the RSWA can help in the promotion of science and, through the expertise of our membership, offer advice on scientific matters. The Minister seemed very keen to involve the RSWA in any future advisory body. Further meetings with the Minister are planned every two months. The next meeting is scheduled for the 27th of June.

NATIONAL TRUST



Notes from the National Trust of WA

The National Trust of Western Australia is seeking assistance and support to help in the protection and conservation of the rock art and precinct on the Dampier Archipelago. This extensive and unique precinct includes more than 250,000 individual rock carvings, some of which may be over 10,000 years old. Over the past 40 years approximately 20 % of this rock art has been destroyed.



An example of petroglyphs in the Dampier area

As you may be aware this area sits alongside one of the largest deposits of gas and oil in the world. The National Trust acknowledges such and has no desire to prevent the utilization of this resource, but industrial growth and economic development must be assessed and balanced against the possible loss of such priceless cultural assets. The further development of infrastructure and other industrialization on this land has the potential to irreversibly destroy the monuments of this world heritage site. A comprehensive and well coordinated inventory and forward-thinking conservation plan should be performed prior to any further utilization of the land and destruction of the rock art. Please take the time to become informed about the Dampier Rock Art, participate in the National Trust forum to be held on May 5th (see flyers inserted) and act to alert state and federal politicians of the need for the conservation of this unique site.

Dr Jamie O'Shea

RSWA Council representative on the Council of the National Trust of Western Australia

The Ord Irrigation Area - a long road to success

Joe Sherrard

Tuesday, 16 May 2006

7:30 to 8:30 pm with tea and biscuits afterwards

Kings Park Theatre Room, Fraser Avenue,
Kings Park

Enquiries to 9250 1888 (Men Of The Trees)

*Sponsored by the West Australian Nut and Tree
Crop Association WANATCA*

<http://www.AOI.com.au>

The Ord River Irrigation Area seeks alternative crops for production. The major crops grown in the area have evolved from predominantly field crops, include higher value hybrid seed crops and with a range of horticultural commodities; sugarcane and sandalwood are currently predominant industries. Dr Sherrard will provide information on the evolution of cropping in the area, and the history of its development; from the construction of the Diversion and Lake Argyle Dams, commencing in the 1960's. The proposed Ord Stage 2 development has a great potential for the expansion of irrigated cropping.

Dr Sherrard currently is Manager for Research and Development of Intensive Plant Industries with the Department of Agriculture and Food Western Australia. He completed his PhD in Melbourne and post doctoral studies in the United States, and commenced work with the Department at Kununurra in 1984 in rice production. He worked in the Irrigation Area until the closure of the rice mill in 1983, when he moved to Perth in 1984.

CALM Planning Diary newsletter, Issue 10 April 2006

Issue 10 of the Planning Diary is now available from: www.naturebase.net/national_parks/management/index.html. This issue includes an article on World Heritage and updates on the progress of selected management plans currently being prepared by the Department of Conservation and Land Management. This issue's *Plans in Focus* are:

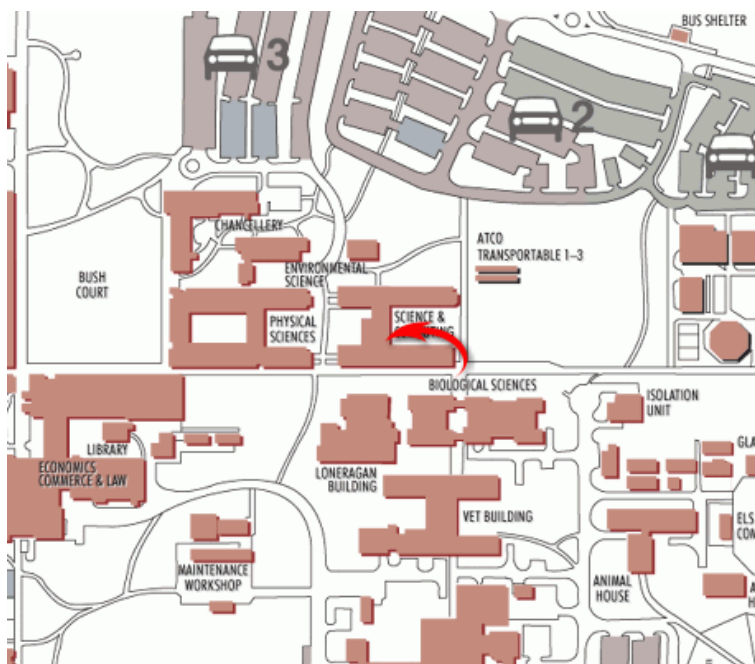
Beeliar Regional Park
Cape Range National Park
Esperance Coastal Reserves
Lane Poole Reserve
Northern Yilgarn Conservation Reserves, and
Shark Bay Terrestrial Reserves.

If you wish to receive this newsletter by email please contact Laurina Bullen (93340522)
laurinab@calm.wa.gov.au

RSWA Events Calendar

<i>Date</i>	<i>Time</i>	<i>Venue</i>	<i>Event</i>
<i>Sun May 7th</i>	<i>10 am-5 pm</i>	<i>Murdoch University: T.L Robertson Lecture Theatre, Science & Computing Building</i>	8th Annual Postgrad Symposium. Please RSVP for BBQ lunch rswa@iinet.net.au
<i>Mon May 15th</i>	<i>7 pm</i>	<i>Kings Park</i>	<i>Dr Stephen Saupe: Natural History of Maple Syrup Production</i>
<i>Mon June 19th</i>	<i>7 pm</i>	<i>Kings Park</i>	<i>Dr Gavin Prideaux: Palaeontology</i>
<i>Mon July 17th</i>	<i>8 pm</i>	<i>UWA</i>	<i>AGM and Presidential Address</i>

Map Showing location of T.L. Robertson Lecture Theatre (arrow in centre of Map)



From Car Park 2 walk directly south down the walk towards the ATCO transportables, before reaching them turn right on the first path and enter the Science and Computing building from the North side.

Royal Society of Western Australia Disclaimer. -The Society works to maintain up-to-date information from reliable sources; however, no liability is accepted for any errors or omissions or the results of any actions based upon this information. **Links to other websites** - the RSWA does not necessarily endorse the views expressed on these websites, nor does it guarantee the accuracy or of any information presented there. It should also be noted that other sites linked from the *Proceedings* may use cookies that track visitors. **Safety** - safety is an important concern in all indoor and outdoor activities. When attending an RSWA function or excursion, the RSWA cannot anticipate the limitations of every participant or alert you to every hazard. As such, you are required to assume responsibility for own safety at all times.