

# INDIGENOTES

A picture of the Snowy River with its numerous weed; from a tourist brochure... Refer to page 4 for an article on its plight.

# Remaining Fragments of Wetlands Should Not be Put at Risk - Royal Botanic Gardens Cranbourne

The Royal Botanic Gardens, Cranbourne has voiced its strong opposition to the construction of a major road within the Ballarto Road corridor because of the impact it would have on several remaining fragments of wetland and heathland habitats in the region. Three of the proposed routes, 2A, 2b, and 2C, cross through wetlands of State conservation significance and abut the site of the development of the Australian Garden, destined to become Australia's premier native garden. Three flora and fauna species of State significance are found within the Northern Wetlands: the Naked Sun Orchid, the Swamp Skink and Lewin's Rail.

The Gardens has provided advice and assistance to the consultants engaged in the preparation of the Environmental Effects Statement (EES). The EES was directed by the then Minister for Planning in December 1993 to examine the need for an East-West link road to the south of Cranbourne, between Dandenong-Hastings Road and South Gippsland Highway and to examine a whole range of siting options for the road taking into account the effect on the ecological, biological, social and economic environment and to seek community views.

The Gardens' statement says: "None of the Ballarto Road options can avoid the destruction and serious degradation of critically important areas of the Gardens, and both will seriously diminish the State and regional conservation value of the site." The two page statement stresses that the Gardens contain one of the last large stands of indigenous vegetation in the region, and that if these fragments are encroached upon, they will be lost forever. "Degradation of vegetation within the Gardens will put at risk the conservation and protection of species and habitats which are rare and of high conservation value at a State and regional level," says the statement.

The Gardens is concerned that if Ballarto is chosen for the proposed four lane highway, the development would destroy or seriously degrade:

- areas within the Gardens containing wetlands which are of State significance for flora and fauna on conservation. These wetlands meet State criteria for High Ecological Value Wetlands and their degradation will compromise the conservation and diversity of wetland habitats within the Gardens, and therefore the State of Victoria;
- areas of wetland within the Gardens which are known to contain three species of plant or animal of State conservation significance (listed above);
- areas within the Gardens containing vegetation communities which are of State/regional conservation significance, including Sedge Swampland, Dry Heathland and

Wet Heathland;

areas within the Gardens which provide habitat for a large number of plants (about 50 species) and animals (8 vertebrate species) which are of regional conservation significance.

The Royal Botanic Gardens, Cranbourne are less than an hour's drive from Melbourne. With 363 hectares of native bushland, the gardens are rich with native wildflowers, including Victoria's floral emblem, the Common Heath, and birds and animals.

The foundations for Victoria's second Royal Botanic Gardens were laid in the 1970's with the acquisition of land by the State Government at the instigation of the Maud Gibson Trust with a view to developing it into botanic gardens that link natural bushland, designed gardens, recreational space and a centre for scientific learning. Further land purchases and donations over the years have seen the gardens grow to its current size. The Gardens opened to the public in 1989, following Bicentennial funding through the Victorian Government. Last year 60,000 people visited the Gardens - a number which is growing steadily each year. Contact: Penny Underwood for more information on (03) 9818 8540

## Wetlands - why are they important

Wetlands are areas of low-lying land which hold water for some part of the year. A wetland can include river flats, salt marshes, rock pools, farm dams, duck ponds, and even ditches. Wetlands can be natural or human made. Some of the world's most famous wetlands include the Everglades in Florida, USA, the Red River Estuary in Vietnam and the Camargue in France.

Sadly, wetlands across the world are in sharp decline. In Asia alone, 500,000 hectares of wetlands disappear each year, and in Africa and Australia, the advancing deserts and shortage of water only highlight the need to protect remaining wetlands. River systems in Europe, such as the Rhone, Rhine and Danube, have deteriorated in recent decades despite efforts to reduce certain forms of pollution, and to use natural aquatic resources more wisely. This tragedy has occurred because, to many of us, wetlands are an utterly forgettable third-rate habitat. Lacking the drama of rainforests, and deserts or the emotional pull of the coast and mountains, wetlands throughout the world are being filled, drained, polluted or otherwise transformed in the name of productivity.

It does not take much to damage wetlands. Changes in the quality and quantity of water flow through wetlands can adversely alter the nature of the vegetation, promote weed invasion and degrade plant and animal habitat. Increased pollution and sediment can mean an increase in weed invasion which, in turn, leads to species loss.

The disappearance of the world's wetlands should concern us. They are special places for birds, other animals and plants, many of which are threatened with extinction and dependent on wetlands for survival. Wetlands teem with life. Fish breed and thousands of other life forms are attracted to these nurseries to feed on them. Wetlands allow life well beyond their boundaries to survive. They are the beginning of food chains that affects even us. The most visible form of life is the birds. But the only reason that birds survive is because of the number of much smaller creatures which live in the water and under the sand and mud. Those creatures, in turn, flourish because of the nutrients fed into the water by water-loving plants.

Without wetlands, much of what people rely on to eat, drink and to live would simply not exist. A wetland can produce up to eight times as much plant matter as a wheat field, an indication of the real value of wetland. But it will only be productive if it is functioning well. Wetlands provide tremendous economic benefits through fishery production - over two thirds of the world's harvest depends on the health of wetlands. They maintain the water tables for agriculture and timber production. They provide water storage, and assist in the reduction of natural hazards, such as floods.

Wetlands will continue being vulnerable to human demands. Many are located in gently sloping lowlands that attract human settlements, and many sites are highly productive because they combine available water, abundant minerals, warm micro-climates and high light intensity. Once drained, wetlands have fertile soils, though phenomena such as oxidation and wind erosion may then render them useless. The challenge is to enable wetlands to remain wetlands, while at the same time provide resources for people.

## The Wetlands of the Royal Botanic Gardens, Cranbourne

As with many of the world's wetlands, the Northern Wetlands in the Royal Botanic Gardens, Cranbourne are beautiful, fragile, and precious places. In mid-spring, the green flower spikes of the Water-ribbons stand like sentries above the waters. The swamp is awash with yellow Marsh-flowers during early summer. They are home to a variety of rare and endangered plants and animals, many of which are protected by the State's *Flora and Fauna Guarantee Act*. Three species in particular are of State conservation significance: the Naked Sun Orchid, Swamp Skink and Lewin's Rail. These species are dependent on the natural balance of

the wetlands being maintained with the least amount of human interference. These remaining wetlands are designated as High Ecological Value Wetlands by the State's Department of Natural Resources and Environment.

### The Naked Sun Orchid (*Thelymitra circumsepta*)

The delicate Naked Sun Orchid grows in the reasonably shallow and flat bottomed wetlands of the Royal Botanic Gardens, Cranbourne. In order to survive, it depends on a healthy environment which floods regularly. Its leaves and flower spikes pop out of the water in October. Its flowers only open on hot, steamy, sunny days in December.

First described in 1944, it is a rarity among sun orchids because it does not have a hood above the anther - hence its common name. The flower is seldom found in lowland swamps, preferring alpine peaty areas or sphagnum moss bogs. The plant was first discovered at the Cranbourne Gardens by John Eichler in 1989 while he was looking for the Yellow Bladderwort (*Utricularia australis*) and the Creeping Sandflower (*Scaveola hookeri*), both regionally significant species in the Westernport area and which also grow naturally in the Gardens' wetlands.

### Swamp Skink (*Egernia coventryi*)

The Swamp Skink depends on healthy wetlands and sedgelands to survive. As more and more swamps and wetlands in Victoria and southern New South Wales are drained, polluted and/or destroyed, the Swamp Skink is becoming a rare sight.

A territorial and aggressive creature, the Swamp Skink lives in burrows which it digs itself or uses the holes that have been dug by yabbies. In warmer weather, it can be seen sun-baking on logs in and around the wetlands of the Gardens. This medium sized lizard grows up to 30 cm, taking two to three years to mature and can live up to 20 years. It eats mainly insects, actively searching for prey such as spiders, beetles, moths and other small skinks.

### Lewin's Rail (*Dryolimnas pectoralis*)

The Lewin's Rail is a rare sight in Australia, living elusively in the rushes and reeds of swamps and creeks. It only flies if startled or when travelling at night. It has a dark, long-tipped, pink bill and a rich gingery tone to its head and nape, and its breast is slate grey. Its voice is distinctive: a loud "jik-jik-jik" which is answered by other Lewin's Rails in the area. The call can last thirty seconds, accelerating and becoming louder, before declining into pig-like grunts. The Lewin's Rail relies on wetland habitat to breed.

The Environmental Effects Statement discussed is due to be released on 17 October and should be available for reading and commenting on for two months after that. Look for the usual ad in *The Age* or on these pages next month for details. Letters to relevant politicians will be useful at any point as well.

# The Snowy River:

## A tale of development, dollars and ecological disaster

By Carol Kunert

The Snowy's awe inspiring valley with its rugged gorge, rain-shadow woodlands and the deep pools, rapids and white sandy beaches provide all the ingredients to refresh the soul and lighten the spirit. It is a river that we have strong cultural ties with as well as having outstanding flora, fauna and geological values and is a delight to walk or paddle through.

However, what we see today is only a fraction of its former splendour, and the growing amount of sediment and depleted flow reflect the environmental changes that have taken place as its waters were harnessed and used for development over the last fifty years. Its future for the next 100 years is now being considered with the corporatisation of the Snowy Authority.

Prior to the Snowy Mountain Scheme, the River had the highest discharge of any Victorian river with daily flows reaching 2200 megalitres/day (ML/d) in spring with the snow melt. The river had strong seasonal and daily variability of flow with the flows dropping to 200 ML/d in late summer/autumn. Multiple flood events were common, especially in spring and the floodwaters moved rapidly down the catchment due to the largely gorge like nature of much of the stream valley.

The development of the Snowy Mountains Hydro-electric Scheme (SMS) through the 1950's and 1960's created a major industry for the Snowy Mountains area and substantially changed the hydrology of the Snowy River catchment. The scheme utilises the headwaters of the Snowy, Murray and Murrumbidgee rivers to capture water for electricity (at Lake Jindabyne) and subsequently diverts this water to the Murray and Murrumbidgee Valleys for irrigation use. The Snowy Hydroelectricity Authority is jointly owned by the New South Wales, Victorian and Commonwealth governments with NSW owning the greater portion.

Corporatisation of the Snowy Hydroelectricity Authority is expected to occur shortly, after which it will be difficult to change agreements of the amount of water available for electricity generation (and hence the amount left in the river).

The Snowy Genoa Catchment Management Committee in November 1995 established an expert panel to assess the environmental flow requirements for the Snowy River below Jindabyne. They found that the construction of Lake Jindabyne on the River resulted in dramatic changes to the hydrology and instream flora and fauna.

## Hydrological Changes:

### Upper Snowy

99% of the river's natural flow is captured into Lake Jindabyne.

Flows now range from 50 ML/day from Jindabyne Dam to maintain a minimum flow at Dalgety of 25 ML/day, with negligible flow variability.

Significant floods are much rarer (they are now mainly derived from the tributaries) with much longer periods of low flows between flood events.

There are few flushing flows and riffle zones are not maintained.

The channel between Jindabyne Dam and Delegate River junction has contracted in size, and been invaded by exotic vegetation.

Consistent low velocities allow sedimentation and organic enrichment of the river's pools.

### Lower Snowy

A reduced frequency and variability of flushing flows, combined with land degradation has increased sediment delivery to the river.

The sequence of alternating sand bars and deep pools in the floodplain reach have given way to a flat sand bed.

Sediment deposition has raised the bed by up to 2 metres since 1960.

There are less deep holes for fish to breed.

A saline wedge associated with the river mouth has progressed some 7 km upstream affecting irrigation and agriculture.

## Ecological Issues:

### Macroinvertebrates

Loss of seasonal flow variations has adversely affected the life cycles of macroinvertebrates and diversity is low with many macroinvertebrates that tolerate pollution or degraded conditions.

### Fish

Fish migration for many species needing to travel upstream has been affected by the loss of riffles and runs and the low base flows.

Higher water temperatures and low base flows also affect fish.

The reduction of seasonally high flows means that many species no longer have that environmental trigger for reproduction.

### Vegetation

Increased presence of algal species in the warmer shallower waters.

Both native and exotic species have been able to establish on, and stabilise sand banks in the river.

Much of the Snowy's riparian zone is now invaded by willows, blackberries and exotic herbaceous flora.

The expert panel concluded that 330 Gigalitres/year

(equal to 330,000ML/y) is required to restore and maintain the River's ecological integrity. This is 28% of the original flows, with current flows being at less than 1%. Although supporting the need for more environmental flows, the government is considering less than 10% of the original flow.

The Victorian, New South Wales and Commonwealth governments appeared to have agreed that a public water inquiry be held to determine environmental flows and to then set up the corporatisation of the Snowy Authority through legislation. However, the legislation was recently thrown out of the NSW upper house which isn't a bad thing as the proposal for privatisation may have meant licence for 125 years of resource security with the option for renewal after 75 years and compensation for any future changes to whatever environmental flows were agreed upon!

When will people understand that we are dealing with a living system and with hydrological events that cannot be completely predicted. A process of Adaptive Environmental Management is required to manage the Snowy on the basis of regular monitoring and readjustment of the flows as needed.

In the current debate financial considerations, and short term profit making are taking priority over environmental issues. Obviously, for the SMS less water means less profit, but at what cost to the environment?

The Victorian and Commonwealth governments must now push for the water enquiry to proceed. The environmental flow issues must be resolved prior to corporatisation otherwise the options are reduced. An independently chaired water enquiry with clear terms of reference will mean an open process in which all players: irrigation, environmental and energy interests can contribute.

The people of the Snowy catchment have been campaigning for a fair deal for the river for many years. We have now reached a critical stage for safeguarding its future and our natural heritage.

#### **For further action:**

Contact Paul Leete, Snowy River Alliance, 064 565 500  
Write letters to Marie Tehan and Allan Stockdale with support for the Expert Panel recommendations and request that Snowy River environmental flows are agreed before corporatisation of the Snowy Authority occurs.

#### **For further reading:**

Snowy Genoa Catchment Management Committee (Feb 1996) *Expert Panel Environmental Flow Assessment of the Snowy River below Jindabyne Dam.*

## From the Editor: **Coming Events Editor Needed!**

It's now official, Elissa Kerassitis has resigned and relinquished her role as editor of the Coming Events section. Elissa has been doing a fantastic job and we have appreciated her efforts a great deal. Thanks!!!

Now, do we have someone to take up the role again? I believe it is a very useful and appreciated service we provide in Coming Events and it would be great to keep it up and improve it.

How big of a role is it and what does it involve? Coming Events has to be done for each issue. The Editor would receive all newsletters, schedules and other information that has come in a few days or a week before the date Indigenotes goes to the printer. It takes about 5 to 10 hours a month to screen out and type in the different material. Then the material needs to come back to the editor on computer disk and be included. That's the monthly routine...

There is also the annual project at the beginning of the year that we like to call "Regular Events", the lift out we did in Autumn 1997 with regular working bees and consistent events throughout the year. This saved time and space in the section during the rest of the year and provides a useful resource. It would be fantastic to expand this feature by being more aggressive about collecting the information. Any more ideas out there?

So, any takers for the job? You can live anywhere around Melbourne; we'll figure out a way for the material to flow around. It's a great way to get an appreciation for all of the activity out there. Please ring the editor.

**Keep all the other information, newsletters, stories, articles, events, flowing as well.....**

**And I can always use help in general with Indigenotes, so give me a ring if you want to help!**

# Bird Monitoring

**By Clive Napier, Chairman Birds Australia (WA Group)**

Birdwatching or birding as it is often called these days is largely bird "monitoring". In most aspects of this work or hobby it is necessary to check, count, assess or some way monitor the number, species or behaviour of birds. It is also one of man's oldest nature based activities and in the UK it is considered the second most popular outdoor activity after gardening.

In Australia due to the vast amount of bushland still available in close proximity to our cities and the comparative profusion of native birds within walking distance of most residential areas we tend not to regard them as special creatures. However, there is one aspect of ornithology or birding which is becoming increasingly appreciated by a wide cross section of the population. Birds are excellent indicators of the health of our environment.

This factor allied to the increasing number of birds whose existence is threatened by man's ever increasing use of their environment has greatly increased our awareness of the avian population. I represent the only Birding organisation in WA; Birds Australia (WA Group). It is part of Birds Australia based in Melbourne and our senior scientific ornithological group since 1901. So much for the "commercial". We have around 800 members in WA and are involved in a number of projects, all of which involve bird monitoring in some way or other.

The largest of these projects is an Australia wide study of "Birds on Farms". Over 300 farms are covered by either the resident farmer or by volunteers who are interested but do not have a farm. Over 90 farms are being surveyed in WA. Bird counts involving species and total numbers are done every quarter and the data sent to Melbourne for compiling and analysis. Relevant information is returned to the individual farms and state groups.

Bird counts are done over the same track through the same 50 ha selected area on each occasion and the time taken to walk the route is roughly two hours. As well as the large area, smaller plots of .3-.5 ha can be done and these are given a search time of 20 minutes. Those involved are encouraged to select areas with maximum diversification of tree and understorey cover and particularly areas of reforestation. The aim of the project is to show the value of timbered areas in the maintenance of biodiversity, using bird abundance and variety as the yardstick.

Though all surveys are done by volunteers it was found necessary to employ a part-time coordinator in WA to enlist both farmers and volunteers and to oversee the early stages and maintain the regular flow of data to Melbourne and the dissemination of information in WA. As we are so isolated here it was also decided to publish

a separate Report on the project and it's WA results. Funding for the WA segment has been generously provided by the Gordon Reid Foundation over the two years that we envisage it will take to achieve useful results.

The value of the above method of measurement was quickly appreciated by the environmental section of the Main Roads Board of WA and they asked if we could run a similar project to evaluate the effectiveness of their extensive roadside revegetation programme. Following discussion with Dr. Geoff Barrett, the Birds on Farms Australian Coordinator, it was decided that the segments of the road verge would fit into the "20 minute" small survey areas and could be used in the general data. This is now under way and some 165 road verge sections are being assessed by volunteers on a quarterly basis. The Main Roads Dept. have been generous in their financial assistance for this section of the Project.

The message soon reached other Main Road Depts. in the East and it now appears that a major Australia wide study is under way using bird population to assess the value of revegetating verges. It is apparent that good revegetation will help provide the corridors needed for re-population movements following natural or man-made disasters as has been ably illustrated by Dr. Dennis Saunders of the CSIRO.

The WA Group of Birds Australia is presently monitoring the Local Bird Population through the Suburban Bird Survey. In this programme many of our members and other interested residents record species seen in and around their home or a nearby park on a weekly basis. These records are sent to Clive Nealon, one of our enthusiastic Committee members who enters all data into his computer and can plot bird population, distribution and movement over the greater Metropolitan area. Over 60,000 records are to hand so far.

A third project which has been running for several years involves trying to plot the movements of the Hooded Plovers. These delightful little birds spend part of the year in large flocks of up to 1600 on the salt lakes near Esperance. They usually arrive there in early summer and depart around March/April for parts as yet unknown. In the eastern states these birds are permanent residents of the ocean beaches but in WA they apparently spend a large part of the year and do most of their breeding on inland salt lakes. Despite large numbers volunteers "monitoring" numerous inland salt lakes only a handful have been seen. We are persevering with the search.

One of the most intriguing studies involving intensive monitoring is aimed at understanding the lifestyles of the migrating waders. Hundreds of thousands of these birds make the annual pilgrimage to Australia from the Northern Hemisphere. Some birds have been known to have amazingly quick flight times but there is a need for them to refuel on the way with several stops. Research has highlighted the need to conserve their stopover areas.

Roebuck Bay at Broome and local spots such as Lake McLarty and Amarillo Farm are in desperate need of long term protection.

Much of the data gained from monitoring in specific projects is used in other projects not directly related. During the last few years one of our most active members, Allan Jones, has led a team which has produced over 40 small brochures utilising data from other sources as well as specially procured information for distribution by Councils and Tourist Bureaus to those interested in the local bird populations. Wherever possible all data is added to the WA Groups major database which is now 10 years old and is used quite considerably by commercial organisations producing Environmental Impact Studies, etc. At least here they are getting genuine information produced by experienced observers instead of emotional memories that are often unreliable.

Contact Birds Australia (formerly the RAOU) for more information about the New Atlas of Australian Birds and many other programs you can get involved with.

Birds Australia  
415 Riversdale Rd.  
Hawthorn East VIC 3123  
Ph. (03) 9882 2622  
Fax (03) 9882 2677  
Email: raou@raou.com.au  
Home Page:  
<http://www.vicnet.net.au/~birdsaua>

Assistance for these projects come from many sources but WWF for Nature, Healthways and the Gordon Reid Foundation have been particularly helpful.

For the keen birder monitoring bird populations and behaviour is a way of LIFE. It is FUN and with the advent of computerisation the database records can be accessed quickly and accurately. Gone are the days of numerous grubby notebooks at the bottom of the drawer. In the broadest sense modern day monitoring is providing the essential information to ensure the preservation of our natural world.

**Reprinted from the July 1997 edition of the *Land Management Society Newsletter*. For more information contact the Land Management Society at P.O. Box 242, Como, WA 6152.**

# Coming events:

For IFFA events see back cover

## Conferences/Workshops/ Talks

**October, Wed 29, 3:00 - 4:00pm. "Biocontrol of Dock".** Talk by Ian Faithfull, part of the seminar series at the Keith Turnbull Research Institute, Ballarto Rd, Frankston. All interested people welcome.

**October, Thu 30. Fire Prevention. Speaker: Steve Pascoe of the CFA. 7 - 10 pm.** Part of a series of Bushland Management Seminars. Venue: Currawong Bush Park, Reynolds Rd, Warrandyte, Melways 34 H6. Bookings essential, No cost. Contact Donna Stoddart (03) 9840 9307.

**October, Fri 31. Hands on Environmental Education - for primary and early childhood educators. 8:30am - 3:30pm.** A day bursting with practical ideas to use with children. Held at CERES, 8 Lee St, East Brunswick, Melways 30 B7. Cost \$55 VAAE members/\$65 non-members. Fully catered. Workshop sessions will cover: Composting and worms, The Search for the elusive button wrinklewort, A wander with the Wurundjeri, Designing playgrounds from an environmentally responsible perspective, Water beasties, Alternative energy. For bookings contact VAAE on 9428 9812.

**November, Thu 6. "Wildlife Corridors". Part of the Green Wedge Environment Seminar Series. Speaker: Andrew Bennet. 7:30pm** in the Warrandyte Community Centre, Yarra Street, Warrandyte. Contact Bill Mallinson (03) 9840 9338.

**November, Thu 6. Roadside Reserve Management.** Part of Greening Australia's 1997 Environmental Industry Training Program. Workshop contents: The importance of Roadside Vegetation; The principals of management; Guidelines for assessing conservation values; Conception, Planning, Design, Maintenance & Rehabilitation; Process for Roadside Management Plans. Includes a field visit to roadside reserves in Whittlesea area. Cost \$125 per participant. Contact Mary Trigger at GAV on (03) 9457 3024.

**November, Sun 9. Improving your plant ID skills - Forest communities.** A training day presented by Greening Australia Victoria. Includes in-field experience in plant ID of common forest species, recognition of key characteristics of common Victorian genera and use of references such as books and herbariums. Cost \$30, \$10 GAV members, \$10 Community group members. Contact (03) 9457 3024.

**November, Sat 15. "Ecological Sustainability in the Victorian Alps".** Laby Theatre, University of Melbourne. This symposium will present the results of research on the alpine environment and its ecology, and will examine the implications of the research results for future management decisions on the use and management of Victoria's alpine areas. Speakers will include Alec Costin, David Ashton, Keith McDougall, Ian Mansergh, Neville Rosengren, David Scott and more. Cost: \$85 for the day. Presented by the Royal Society of Victoria. Contact the Secretary, 8 La Trobe St, Melbourne 3000 on (03) 9663 5259.

**November 17 - 20. "Creating a Green Future".** National Conference presented in Melbourne by the Australian and New Zealand Society for Ecological Economics (ANZSEE). Environmental issues must be discussed in relation to their economic context. ANZSEE hopes to stimulate debate amongst people from diverse backgrounds. The conference will cover such areas as sustainable land management, environmental tax reform, urban ecology, energy policy and cost-benefit analysis. Contact: Conference Secretariat, Conference Plus, Level 5, 406 Lonsdale St, Melbourne 3000. Ph: (03) 9602 3073, Fax (03) 9642 5152.

**November, Tues 18. Creating an urban garden with indigenous species.** A training day presented by Greening Australia Victoria. Learn garden design principles to address the needs of an urban block; use plants to create attractive features, designing to fit small spaces. Cost \$30, \$10 GAV members, \$10 Community group members. Contact (03) 9457 3024.

**November, Sat 22. Improving your plant ID skills - Grassland communities.** A training day presented by Greening Australia Victoria. Includes in-field experience in plant ID of common grassland species, recognition of key characteristics of common Victorian genera and use of references such as books and herbariums. Cost \$30, \$10 GAV members, \$10 Community group members. Contact (03) 9457 3024.

**November, Thu 27. Land Management. Part of a series of Bushland Management Seminars. Speaker: Alan Noy of Indigenous design. 7 - 10 pm.** Venue: Currawong Bush Park, Reynolds Rd, Warrandyte, Melways 34 H6. Bookings essential, No cost. Contact Donna Stoddart (03) 9840 9307.

**November 28 - 29, 1997. Sustainability & Local Environments: Myths, Models & Milestones, University of Sydney, NSW.** This is Environs Australia's second National Conference and it will explore the cutting edge of sustainability practice in local communities, and solutions for the 21st Century. For further information contact Peter Lyons, Executive Officer, Environs Australia, 2nd floor, Ross House, 247 Flinders Lane, Melbourne, Vic 3000, Phone (03) 9654 1322, fax (03) 9654 1625 or email <mcavic@peg.apc.org>.

**December, Tues 2. Improving your plant ID skills - Wetland communities.** A training day presented by Greening Australia Victoria. Includes in-field experience in plant ID of common wetland species, recognition of key characteristics of common Victorian genera and use of references such as books and herbariums. Cost \$30, \$10 GAV members, \$10 Community group members. Contact (03) 9457 3024.

**December, Thu 4. "Foxes" Part of the Green Wedge Environment Series. Speaker: Linton Staples. 7:30pm** in the Warrandyte Community Centre, Yarra Street, Warrandyte. Contact Bill Mallison (03) 9840 9338.

**December 6 to 9. "The 3rd International Megapode Symposium" - for science and conservation.** Held in Victoria's Little Desert National Park, this conference emphasises the personal experiences and adventure of those involved in studying this unique family of birds in some of the most exciting and remote regions of the world. Contact Dr. Darryl Jones, Faculty of Environmental Sciences, Griffith University, Nathan Qld 4111, Australia. Phone 617 3875 7451, Fax 617 3875 7459, e-mail: D.Jones@ens.gu.edu.au

**December, Thu 11. Heritage with Murrundini of the Wurundjeri Tribe.** Part of a series of Bushland Management Seminars. Venue: Currawong Bush Park, Reynolds Rd, Warrandyte, Melways 34 H6. Bookings essential, No cost. Contact Donna Stoddart (03) 9840 9307.

**9 - 12 December "The Other 99% - The Conservation and Biodiversity of Invertebrates: Sydney NSW.** The objective of this meeting is to demonstrate the importance of invertebrates in biodiversity research and in nature conservation. Contact the Australian Museum, Invertebrate Biodiversity Conference, 6 College St, Sydney NSW 2000, Fax (02) 9320 6000, E-mail: invert@amsg.Austmus.oz.au

**4 - 10 January 1998 Alpine Ecology Course** on the Bogong High Plains for land managers, rangers, teachers and conservationists. Learn about the plants, animals and soils that make up alpine ecosystems; their significance for land use and conservation issues in the Alps. The course includes: practical demonstration and field experience, evening talks, individual projects, course notes, accommodation in modern chalet, three hearty meals a day. No detailed knowledge required. Course fee \$625. Based at Howman's Gap Alpine Centre. Contact Heather Anderson on (03) 9637 8427 or Warwick Papst on (03) 9479 1230 soon. Applications close on 31 October 1997. Presented by DNRE and supported by La Trobe University.

**12 - 16 January 1998. Ecology Fieldwork Training for Women.** This residential course will provide training in a variety of wildlife fieldwork techniques, with special emphasis on platypus research. Women who are tertiary or Year 11 - 12 students are invited to apply. For more details, phone (03) 9716 1626. Presented by the Australian Platypus Conservancy with support from the Victorian Women's Trust.

## Excursions and field trips

**Sundays - 7pm sharp. Morning walk in Queensland's Toohey Forest.** Meet at the Toohey Road carpark. Contact Chris Stokan(06) 3343 2943.

**October, Sun 26. Birdwatch and Platypus evening.** 3pm - dusk. The Friends of Jackson's Creek invite you on a discovery walk of the creek. Meet at the Vaughan Street bridge car park, Sunbury. Melways 382 G4. Contact Linda Keen (03) 9205 2380.

**Now to November 3. Annual Eltham Copper Butterfly Larval counts.** If you have never tried this activity, it's good fun crawling around in the dark looking for the tiny caterpillars of our Eltham Copper Butterfly. Museum of Victoria staff will be conducting the count and need plenty of helpers as they are doing an intensive count this year. Counts will be held until 3rd of November generally held on a Tuesday and Thursday, and possibly a Sunday night. If you can help with this most important research and can spare one or more evenings, contact Anna Richtarik on (03) 9411 5158.

**November, Sat 1. Gippsland Plains Wildflower Tour.** Starts 8am sharp, returning in the late evening. Cost \$10, concession \$5. BYO lunch and drinks. Contact Vanessa Craigie (03) 9412 4199 or Tim Barlow at VNPA (03) 9650 8296. Planned visits include: Briagolong Cemetery, Munro rail reserve and the Moormung Flora and Fauna Reserve.

**November Sat 1 & Sun 2. Australian Native Orchid Show.** 10am - 5pm. Presented by the Society for Growing Australian Plants. Masonic Hall, Geringhap Street, Geelong. Admission \$2. Sales and refreshments.

**November, Tues 4. Cooper St Grasslands Walk & Gawk (Melb Cup day).** 10am. Organised by the Friends of Merri Creek. Led by Kat Pawley. Meet at the end of Northbourne Rd, Campbellfield. Contact (03) 9480 5492.

**November, Fri 7. Native Plant Auction** presented by the Society for Growing Australian Plants - Keilor Plains Group. An Annual Plant Sale is also to be held at Brimbank Park on November 9. Contact Marilyn Anderson (03) 9336 7754.

**November, Sat 8. Bannockburn, Cressy Plains Tour.** Some great sites have been turned up around over the last years, including the rail reserve, cemetery and bushland reserve. Contact Tim Barlow, VNPA 0650 8296.

**November Sun 9. Wuckatsch's Reserve, Nyora.** An excursion to Nyora's Flora and Fauna Reserve, presented by the South Gippsland Conservation Society Inc. Fern gullies, orchids, Rufus fantails and more. Meet 10am opposite General Store, Nyora. Contact Aletta Wolswinkel 03 5659 4303.

**November Sun 9. Eltham Copper Butterfly Talk & Wildflower Walk.** Presented by the Friends of Yandell Reserve. Meet 10am near scout hall off St Helena Rd, Greensborough. Melways 21 B1. Contact Graham Patterson AH (03) 9432 0163 or Lisa Pittle (03) 9480 4680.

**November Thu 13. A Trip to Kinglake National Park.** Join the Friend of Warrandyte State Park on an outing led by Ranger Stephen Anderson. Visit two contrasting environments - heathland and mountain ash forest, and see the now famous lyrebird location previously visited by David Attenborough. Meet at the Jehosophat Gully Picnic area just off the Kinglake - Healesville Rd. Melways ed. 24, Ref map 250 J8. Contact Jenny Hoskin (03) 9808 9231.

**November Wed 12. Victorian National Parks Association Social Night.** 7:45pm. Ormond College, University of Melbourne, Melways 2B D4. Guest Speaker Rupert Barnett - slide and discussion on recent trips to South West Tasmania.

**November, Sun 16. Friends of Evans Street Grasslands Guided Wildflower Walk.** 2 - 4pm. Come and learn more about this beautiful grassland located in Sunbury. Contact Veronica Burgess (03) 9744 4669 AH or Karen Wilson (03) 9205 2378 BH, (03) 9744 3858 AH.

**November, Sun 16. Central Creek Grasslands Bike Ride.** 10.30am. To depart from the Darebin Festival site at Edwardes Lake - meet at the old steam train near the corner of Edwardes and Griffiths Streets and return by about 1pm to enjoy the Darebin Festival activities. Organised by the Friends of Merri Creek. Led by Kat Pawley. Meet at the end of Northbourne Rd, Campbellfield. Contact (03) 9480 5492.

**November, Sun 23. Picnic at Warrandyte State Park.** Hosted by Friends of Warrandyte State Park. Plan a picnic lunch for family and friends in delightful surroundings. All welcome, bookings not required. For more information including a directions map and picnic program contact the Victorian National Parks Association on (03) 9650 8296.

**November, Sun 23. Galada Tamboore BBQ** - 1pm. To be held at the end of Hatty Court, Campbellfield. Organised by Melbourne Water and Hume City Council to look at the concept plant for Hatty Court and the Galada Tamboore area. Contact Melbourne Water (03) 9235 2124, or Parks Hume (03) 9309 1052.

**December, Sat 6. Comparing and understanding the dynamics of grasslands.** A bus tour presented by Greening Australia Victoria and Parks Victoria. Visit a variety of grassland sites comparing the different management techniques applied to each site and issues affecting these sites. Cost \$35, \$20 GAV members, \$20 Community group members. Contact (03) 9457 3024.

## Restoration Activities

**October, Sat 25. Reed and River Red Gums - Reconnecting with the land.** 10am - 3pm. A planting festival along the Moonee Ponds Creek to celebrate Refugee Week and the Spring Planting Festival. Presented by Hume's Multicultural Workers Network and Hume's Greening Program. Activities include: planting, displays, a diverse range of food and entertainment. Planting will be next to the Jacana footbridge, Broadmeadows. Melways 6 D8. Parking available on the opposite side of the creek at Jacana oval. Bring sunscreen, hat, a cup and wear sturdy footwear. Contact (03) 9309 1052 for more information.

**October, Thu 30. Briza Attack on Fourth Hill.** A Friends of Warrandyte State Park Morning activity. Meet on site 10am. Last year we removed quaking grass (*Briza maxima*) from a good orchid area on Fourth Hill. The results are most encouraging so we will carry on from where we left off. More hands, less Briza. Leader Pat Coupar. Meet at the car park at the end of Tunnel St, off Webb St, Warrandyte, Melways 35 F1. Contact Jenny Hoskin 9808 9231. Other Friends activities include maintenance and fencing of the Nursery garden on Nov 13, at 10am - meet at the WSP depot, Pound Bend Road, Warrandyte, Melways 23 C10. And Propagation activities at the WSP depot nursery on Nov 20th starting at 10am.

**November, Sat 1. Friends of Loughie's Bushland - working bee.** Meet for a 9:30am start at Kubis Drive, Ringwood North, opposite Werac Drive. Melways 49 E12/F3. Contact Carol Clarke (03) 9870 8126 or Eva Buchanan (03) 9870 5201.

**November, Sat 1. Friends of Brushy Creek Wetlands - working bee.** Meet at Village School, 9 - 13 Holloway Road, Croydon North for a 9am start. Melways 37 B6. Bring gloves, gumboots and smile. Contact Kay Vine (03) 9727 2771.

**November, Sun 2. Knott Reserve, Litter Removal morning.** 9:30am. Knott Reserve, Clifton Hill. Contact Friends of Merri Creek (03) 9480 5492.

**November, Sat 8. Candlebark Community Nursery - maintenance and working bee.** Join us any time from 10am to 4pm as we establish, plant and mulch garden beds, transplant seedlings, paint, mend and tidy etc. Sausage & veggieburger sizzle for lunch, coffee, tea and cordial provided. Enquiries: Nursery 0419 362 254.

For Australian Trust for Conservation Volunteers activities, contact ATCV: (053) 33 1483

For Melbourne Parks & Waterways Activities Program contact the Hotline on 13 1963

For those interested in a range of volunteer activities run by Birds Australia please contact (03) 9882 2622

A large range of activities such as bushwalks and "Friends" activities are published by the Victorian National Parks Association in their newsletter. Contact VNPA on (03) 650 8296.

Visitors/participants are welcome to all events listed in Indigenotes.

Thank you to all the people who contact us regarding on-coming events their groups are organising. If you wish to have your events covered, or you can see corrections that need attention, please contact Lincoln Kern or IFFA's mailing address. Best wishes to everyone undertaking their Spring activities... regards, Elissa Kerassitis.

## Other Events:

### Gippsland Plains Wildflower Tour

**Saturday 1 November 1997**

**Another NRE/VNPA Wildflower Tour is on...we will visit grasslands and grassy woodlands of the Gippsland Plains**

#### Proposed Itinerary:

8:00 am Sharp Leave from VNPA office, 10 Parliament Place, Melbourne.

11:00 am Tour of the property of Judy Traill and Ian Smith, Newry.

12:00-1:00 Lunch (BYO) at Judy and Ian's (Bring mug)

Afternoon: Planned visits to Briagolong Cemetery, Munro Rail Reserve and Moormung Flora and Fauna Reserve.

End of Tour - Going Home directly or via Dawson, by 8:00 or 10:00

Bring lunch, drinks, camera, hat, raincoat, sunblock

Cost: \$10 for workers and \$5 for students

Book through Vanessa Craigie on (03) 9412 4199 or Tim Barlow on (03) 9650 8296

### Other Grassland Tours:

**Sunday 26 October -**

#### Merri Creek and Keilor Plains

Rare chance to see private land at Mt. Ridley, possibly the Craigieburn site and Evans Street. In conjunction with the VNPA Conference on 24-25 October.

Departs from MCMC office, 2 Lee St. Brunswick at 12:30 pm, To register, contact Tim Barlow

#### Saturday 8 November - Bannockburn, Cressy Plains

Some great sites in this area, rail reserve, cemetery and bushland reserve and we might get as far as the Cressy trotting track.

Contact Tim Parlow for details...

# Environmentally Sensitive Development: **Round the Bend Co-operative**

The Round the Bend Conservation Co-operative Limited was formed by a group of people who thought that there was an active and positive way of preserving the Australian bush on a small scale. Our inaugural meeting was held at the home of Neil Douglas in the Bend of Islands, Christmas Hills South on the 2nd May, 1971 after many in depth discussions over several months.

The Co-operative consists of 132.1 ha (326 acres) of bushland in the Christmas Hills/Kangaroo Ground area in the south-east of the Nillumbik Shire, approximately one hour by road from Melbourne. The co-op is a part of the Environmental Living Zone which was established in the mid '70's and is incorporated in the the Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan, now administered by the Nillumbik Shire.

The co-operative is registered under the Victorian Co-operation Act (1958) as a Community Settlement Society limited to 32 shares which can be owned jointly or individually. Each share entitles it's owner/s to a long term lease of an area of 1500 m<sup>2</sup> for the purpose of building a house and kitchen garden. The locations of the sites have been selected to minimise the impact on the environment. Experience has shown us that it is practical to utilise only a small portion of the site as kitchen garden (generally as part of waste water treatment on transpiration beds), due to the poor soil and the amount of water required to maintain a large garden. Consequently the co-operative does not aspire to self-sufficiency. To date 18 of the 32 shareholders have built on the land with a couple of new houses at the planning stage.

The objective of the co-op is to conserve its land while allowing its shareholders to build dwellings on pre-determined sites and to cultivate small kitchen gardens with firm guidelines and controls so as to minimise impact on the environment and create a residential

sanctuary. The dual objective of bushland conservation and community settlement have been seen in the past as being in conflict. However, with proper planning and management the Co-operative is proving that these goals can be achieved.

The Co-operative's Rules and Land Management Plan provide a comprehensive description of specific policies which are binding on all members. These rules and policies reflect our commitment to conserving the natural bush under our care. Examples of the rules include: dogs and cats are not permitted;

exotic trees and plants are not to be planted further than 1 m from dwellings or outside garden sites;

revegetation is restricted to plants indigenous to the area;

trees may not be cut and bush may not be cleared without the consent of the directors and fallen trees are left as habitat and

approvals of house designs and site plans are done in consultation with neighbours and the Directors to ensure building are sympathetic to the environment.

In the main, these rules reflect in an even more specific way the provisions in the Planning Scheme for the Environmental Living Zone of which it is a part.

There are four types of membership; full, associate, life and honorary. Associate membership is available to anyone supporting the concept of the Co-op, whether or not they wish to become shareholders, and is a prerequisite for full membership; it costs \$20 a year and entitles the member to meeting minutes and free visiting of the property. To become a shareholder (full membership) a person/s must purchase a share, some of which are currently for sale; the current recommended price is available from the Secretary.

A prospective purchaser needs time to assess what it means to be a member of the Co-operative and the Directors need to get to know the applicant is aware of all that membership implies before they approve a share transfer. The approval procedure is informal and involves becoming aware of the culture of the Co-operative by attending meetings, work parties etc. over a period of time, usually 12 months or more. Prospective purchas-

# A new breed of developer in Tasmania?

ers also need to be aware that it is not possible for a shareholder to use the leasehold as security to obtain a loan.

The Co-operative has developed and implemented a Land Management Plan which focusses on the maintenance of the diversity of plant communities and wildlife habitats. The plan also includes issues such as the control of pest plants and animals, protection of landscape values. Members contribute a minimum of six work days a year on activities related to the plan. These activities include weed control, track maintenance and prescription burns. The burns are rotated across the property so that each of ten sections are burnt in succession.

The Co-operative has developed successfully since its establishment in 1971. The soundness of its policies and approach to residential conservation have been proved effective and practical. They are currently focussed on encouraging more members to join and participate, implementing the Land Management Plan, address conservations on neighbouring land and educating the members to better understand the intricacies and values of our bushland.

For further information about the Co-operative, write to P. O. Box 122, Kangaroo Ground, Vic or contact the following members: Neil Harvey (03) 9712 0462, Anitra Nelson (03) 9712 0010 or Hilary Jackman (03) 9712 0458.

The consultative process initiated by a Hobart company offers a model for how developers can better approach housing developments in bushland areas. By talking with local community, conservation groups and government agencies, the developer, Malwood Pty. Ltd., hopes to avoid conflict and delays in the planning appeals process while delivering gains for conservation and the community.

Malwood owns 119 ha of bushland on the Rokeby Hills, one of the prominent hill tops in Hobart's eastern shore. A real urban gem, it contains a rich mosaic of varied forest types, including the threatened tree *Eucalyptus risdonii*, and the blue gum habitat for the threatened Swift Parrot. As well as threatened species, 70 common species of mammals, birds, reptiles and frogs are found in the hills. One of the last patches of bush in the area, it is a popular spot for locals to walk and take their dogs.

At the outset of the consultative process, the developers made a vital concession to seek a 'reasonable profit' rather than a 'maximum profit'. The Clarence City Council had been pressured by community groups to purchase the Rokeby Hills to prevent development. This, however, was beyond its budget, so the Council also wanted another solution.

In a recent article in *The Mercury* newspaper (Battle for the Hills, 5-8-97), one of the part-owners of Malwood, Terry Cromer, said that "since Tasmania's existing planning legislation came into force in 1993, developers could not do what they once could. You do have to go to your community and work your way through these things." In the same article, Malwood advisor Rod Scurrah said "another reason Malwood initiated the talks was to obtain ideas on how to stop degradation of the land caused by activities such as cutting trees for firewood and using four-wheel drive vehicles and trail motorbikes which have aggravated erosion. What we have been trying to do is put together use for the land which met everybody's objectives."

A wide range of community and government groups were involved in the initial phase of the consultation process but detailed negotiations were delegated to a smaller reference group. After 12 months of consultation, the reference group have given qualified approval for 20 house sites on building blocks of 1000 to 2000 m<sup>2</sup>, a total disturbance of 4 to 5 ha. With conditions to: protect threatened species habitats, minimise disturbance of bushland around house sites, retain opportunities for recreational use and minimise visual impact and fire hazard, it is seen as the *best compromise possible*.

The balance of 114 ha is proposed to become a 'bushland park' with the title given to the Clarence City Council. Responsibility for management of the land would rest with a community management committee. The committee would be established under an agreement (similar to a property title covenant) which would strictly control use of the area, including development. The committee would have one representative each of land owners, Council, Tasmanian Conservation Trust and Rokeby Hills Landcare Group, who would also be signatories to the agreement.

Under the agreement, buyers of building blocks would have legally binding responsibilities to manage their land in sympathy with the surrounding council owned bush park. The cost of maintenance would be raised from the people buying blocks within the bushland park and the immediately adjoining landowners. "We are not placing a burden in the council or the community for maintenance" Mr. Scurrah said in the *The Mercury*. The special rate buyers would pay would be "fairly insignificant."

The development plan drafted by the reference group included fine details, such as the requirement that an expert botanist be present when building sites are cleared, to guarantee that no threatened *Eucalyptus risdonii* were felled or damaged.

Doubts persist among community representatives about the potential conflict of interests between the privacy of the future residents and public access to tracks that run virtually through their back yards. The developer, Malwood, judges that blocks of land will sell well with this apparent restriction.

Information was vital to the consultative process. The developer employed a botanist to map vegetation communities, a zoologist to assess and map 'critical fauna habitat' and Swift Parrot habitat and a landscape architect to define areas of visual sensitivity. All this information was compared with the developer's map of preferred house sites. It was then easy to identify any conflicts. After on-ground visits, some house sites were moved to adjacent paddocks or areas of substantial clearing at track intersections. When house sites could not be relocated, a few were dropped entirely and others remained, but with tight prescriptions on clearing and management.

The consultative process was very long, complicated and relatively expensive. This need not be the case for future developers. They can learn from this experience and perhaps councils or the Department of Environment can produce guidelines for consultation. Finding information on the natural values slowed the process. A protocol could be established so developers know where to go for vital information, how to obtain new information, eg. surveys, and how to assess the impact of their development.

The final development proposal will now go to the broader consultative group and if supported, will be submitted to the Clarence City Council for approval. If passed by Council, and pending appeals, the agreement will be signed. The practical stage of a very interesting experiment will then commence.

For further information, contact Peter McGlone, Tasmanian Coordinator, Threatened SPecies Network, Ph. (03) 6231 2760.

Source: *Local Environs, Official Newsletter of Environs Australia - the Local Government Environment Network*, Vol. 8, No. 2, Sept. 1997

# Book Review: **Freshwater Algae in Australia**

**by Timothy J. Entwisle, Jason A. Sonneman and Simon H. Lewis  
Publisher: Sainty and Associates Pty Ltd,  
Potts Point, NSW, Australia, 1997.**

Entwisle, Sonnemans and Lewis' book *Freshwater Algae in Australia* has filled the void of practical guides to identification of freshwater algae. Past publications often limited the selection of algae to only a few groups, making it at times imperative to use more than one reference to positively identify unknown alga. Traditionally, these references used keys based on written descriptions and/or freehand drawings. This can be a frustrating experience for the identifier, as it is often hard to visualise these descriptions or drawings in comparison to observing algae in the field or under the microscope. *Freshwater Algae in Australia* has minimised these identification problems by incorporating colour photographs of the 96 most commonly encountered genera of algae in Australia. These photographs include excellent examples of each genus as seen by contrast microscopy as well as some macroscopic views of algae as seen by the naked eye in the field.

The layout of this new book has been simplified by the use of schematic keys to organise the algae into 13 groups. These groupings are based on key diagnostic features such as single cells, motile single cells, branched filaments, unbranched filaments etc. Each genus entry contains one page with colour photographs and another page with information on habitat, colour, microscopic features, classification, species and distribution, important notes and a list of other like algae genera that it could possibly be confused with. The page with the photographs contains two sets of icons, one running along the right hand edge and other set running along the bottom. The 13 different icons along the edge correspond to the 13 different groupings and are colour coded for quick reference as you flip through the pages of the text. The 5 icons along the bottom of the page indicate whether the genus is microscopic or macroscopic and if you can identify it with the naked eye, hand lens or with the use of a microscope.

This new book is written in such a way that not only would it be useful for professionals in the field but also for amateurs. It is easy to read and cuts out the details of the life cycle and associated physiology of algae (which can be easily researched in many other phycology texts). Although I did find the section "How to use this book" in the introduction a bit confusing and at times poorly written. Since the use of this book relies heavily upon the schematic keys and icons, I felt that more explanation was needed on these concepts to set the

reader straight. For example, I am still confused to the meaning or the practical use of the last two icons along the bottom of each genus entry, referring to macroscopic and microscopic. Since the icons themselves are pretty self-evident in their meaning I can make an educated guess, but feel that more explanation here would have been helpful. Sometimes both macroscopic and microscopic icons are highlighted with no explanation. However, I feel that these oversights in this publication are relatively minor compared to the immense usefulness of this book for the identification of algae.

As an undergraduate working on my Honours thesis project on freshwater algae (in Canada), I collected and identified algal communities from a local stream. Cross checking between many references, I spent months scrutinising over the identity of many of the stored samples. Although I was able to get some expert advice from some of the algae specialists within my department, it was evident to me and the academics from which I sought advice, that a more comprehensive guide to algae identification was needed. A couple of months ago, while visiting the Royal Botanic Gardens of Melbourne, I came across Entwisle, Sonneman and Lewis' book *Freshwater Algae in Australia*. As I flipped through the pages my first thoughts were that this was the type of book that I needed to save me hours of frustration while completing my undergraduate. I believe that in the future this publication will prove to be of much use to professionals, amateurs, students, environmental managers, naturalists or anyone with an interest in algae.

**Reviewed by:**

**Trish Kendal**

**Brunswick, Victoria 3056**

Available for \$36.96 (Softcover) or \$49.95 (Hardcover), both prices include postage and handling within Australia, by mail order from:  
Sainty and Associates Pty. Ltd., P. O. Box 1219, Potts Point NSW 2011 (Ph. (02) 9332 2661 or Fax (02)9331 5372) or Email [geoff@sainty.com.au](mailto:geoff@sainty.com.au) or Website: <http://www.sainty.com.au/>  
Also available from the Royal Botanic Gardens Bookshop in Melbourne or others on request.

# NEROC study maps key habitat and faunal sites in Melbourne's north-east

Significant habitat and faunal sites on Melbourne's north-east have been mapped and categorised in a major study conducted by 12 metropolitan councils including Nillumbik Shire. The 1100 page study, which was financed by the North East Region Organisation of Councils (NEROC) group and the Department Natural Resources and Environment, lists flora and fauna across the region by location and environmental significance.

The NEROC group includes the cities of Banyule, Boroondara, Darebin, Hume, Moreland, Whittlesea, Yarra, Manningham, Moreland, the Shires of Nillumbik, Murrindindi, Mitchell, and Yarra Ranges. The study covers an area of 1000 square kilometres which includes five sites of National faunal significance, 44 of State faunal significance, and over 50 of Regional significance. In addition, the study examines 23 sites of very high, 36 of high and 45 of medium habitat significance. For each site, threatening processes and recommended conservation measures are also outlined. The study incorporates masses of survey data collected over an eleven year period by Hurstbridge-based Dunmoochin Biological Surveys. The report also builds on existing conservation information prepared by the former Land Conservation Council in 1994.

For example, the Plenty River Gorge (which forms the border between Nillumbik and Whittlesea) is described in the report as being of very high habitat and National environmental significance. The report finds that Site 40 - Yarrambat-Morang Wetlands is of National faunal significance, due to the presence of the endangered Regent Honeyeater. The site description includes details on sightings of other fauna including platypus and makes recommendations for the future management of the area.

It is anticipated that the NEROC study will be used as a conservation reference document and its findings will be incorporated into the new planning schemes currently being prepared by Victorian municipalities. Nillumbik Council's Acting Manager of Environment and Land Use Strategies, Michael Bismire, said he expects the study will be referred to when considering planning decisions in Nillumbik Shire. He said the study, which was commissioned in 1991, was thrown into disarray by the amalgamation of Councils in Victoria in 1994. However, Nillumbik's Environment and Land Use Strategies section assumed a leadership role and facilitated the completion of the project in 1997.

"The study is a fantastic resource that will be used widely by land owners, government agencies, students

and schools, Landcare, Friends and environmental groups, Council staff and residents," Mr Bismire said. "It is anticipated that Councils and schools will use the study as a documentary resource for local flora and fauna and use this information for the development of projects."

The complete study is available in CD-ROM format and Volume 1 - 'Introduction and Overview' is available in hard copy. The study includes two maps of the region which identify sites of significance by a code can be correlated back to detailed citations in the text.

All enquiries regarding the report must be directed to Nillumbik Shire Council's Environment and Land Use Strategies section on (03) 9433-3111.

Copies of the NEROC study are on sale from the Shire offices (on Civic Drive in Greensborough) for:  
\$90 Volume 1 (soft cover A4 book), CD-ROM and 2 maps or  
\$30 Complete study on CD only

## A Free Book: **Mangroves in New South Wales and Victoria: Forests of the Tidal Zone in Temperate Australia**

In his new book environmental planner and wetland ecologist Chris Harty encourages us to take a serious look at the way we manage our mangrove wetlands and ensure that their important values are not lost, particularly for fisheries habitat. The book describes the ecology, values, threats and management of Mangrove wetlands in NSW and Victoria. It includes a description of mangroves in these two states and mangrove ecology, the benefits, threats and management issues are also discussed. Finally, Harty provides a management plan for the long-term sustainable use of mangroves in temperate Australia.

The book has been made possible through funding from the National Fishcare Program, and the federal Department of Primary Industries and Energy. It is available free, excepting postage and handling (A4 padded, self-addressed envelope, \$3.10 in stamps) and can be ordered from:  
Vista Publications, P. O. Box 76, St. Kilda, Victoria, 3182, Contact (03) 9534 8881 for further enquiries.

## IFFA activities:

**IFFA (Vic) Meeting will not be happening for the rest of the year because of renovations at the Astronomer's Residence, Birdwood Avenue, South Yarra. Store up your energy for next year...**

## **SPIFFA**

Public meetings are on the first Monday of every month at 7:30 pm at the Waterfall Gully Community Centre, corner of Bayview Rd. and Nixon St., Rosebud.  
Contact: Jon Greening (03) 5985 5561.

## **Membership**

IFFA membership costs  
\$40 for non-profit organizations,  
\$50 for corporations,  
\$25 for individuals and families,  
or \$20 concession.

**Membership includes**  
**11 issues of Indigenotes per year.**

*Members should check the mailing label to ascertain the status of their membership. If people require and invoice, please send a purchase order and we will oblige accordingly.*

*Otherwise we do not issue reminders to members.*

*Cheques can be remitted to the Membership Secretary's P.O. Box as listed. A receipt will be attached to the front page of the following issue.*

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Contributions to *Indigenotes* should be sent to the editors — the deadline for the next issue will be November 9th. Contributions can be typed or hand written but computer disk copies on IBM-compatible format is preferred.

*The views expressed in Indigenotes are not necessarily those of the Indigenous Flora and Fauna Association.*