

# STEP Inc. Newsletter

Community Based Environmental Conservation Since 1978. No. 66 April 1994

## AUTUMN BUSHWALK

Our autumn bushwalk will see us take to the bush at the **Canoon Rd. carpark at 2.00pm on Sunday, 1st May 1994**. Robin Buchanan will lead the walk, taking in the STEP track and returning to the carpark. Robin will point out the features of regeneration growth following the bushfires. For many of us this will be a unique opportunity to see and appreciate how natural regeneration works, and perhaps how we can help to prevent weed invasion.

**Robin Buchanan** has been involved in bush regeneration for many years, as many STEP members would know. active in bush management and regeneration programs and has taught and supervised the Bradley method while working with the National Trust. She is the author of several publications relating to bushland and is currently a teacher at Ryde College of TAFE. (Her book "Bush Regeneration -- Recovering Australian Landscapes" is a valuable resource for anyone interested in the subject)

After the walk there will be tea and biscuits to give us all a rest and a chance to chat.

## CATS & WILDLIFE

At Easter and at other holiday periods the presence of domestic cats in bushland fringes always appears to increase. Our natural fauna is particularly vulnerable following the destruction of normal cover by the fires, and we should be doing everything possible to avoid exposing them to additional danger from unattended and straying pets.

## POPULATION

Population is again in the news, this time due to the formation by the House of Representatives of a Standing Committee for Long Term Strategies, chaired by Barry Jones, MP, to conduct an Inquiry into Australia's Population Carrying Capacity.

Taking a somewhat narrower focus, STEP has submitted comment to the Committee to the effect that Sydney metropolitan area has a population capacity limit, which would be ignored at our peril. Some excerpts from our submission are quoted here: "...The Sydney Basin has a finite population carrying

*capacity, and it is clearly approaching the limit of its capacity to absorb further pollution of its air and its waterways.....it is unable to accept further large scale extensions of residential land-use because of its effect on the Hawkesbury-Nepean river system.....just as important are the limits to population increase by increased density,...(which)...if allowed to or indeed encouraged to proceed unchecked in all areas will inevitably result in degradation of .....the quality of life for future generations...Consequently a planned limit on the geographic area of metropolitan Sydney and a planned limit on the ultimate population is absolutely essential,.....if it is contemplated to allow Australia's population to increase considerably,.....such increases must be accommodated outside the Sydney metropolitan area, and after careful consideration of environment and social aspects".*  
In taking this stand STEP does not necessarily comment on the need for Australia to be a good global citizen

and play its part in the problem of refugees created by conflicts in the trouble spots of the world. Nor does STEP advocate that Australia should erect a barrier against immigration, but that we should cooperate with all efforts to solve problems at the source, rather than accept the results of unresolved problems.

In any case it would seem to be wise to adopt the precautionary principle of underestimating Australia's population carrying capacity when formulating policy. (It would be very interesting to hear members' views on this matter. Ed.)

The Australian Conservation Foundation is convening a Public Meeting at the Hallstrom Theatre (Australian Museum) at 6.30pm on Friday July 15, 1994, to address the topics of "Population Impact on the Environment" and "Australia's Population Carrying Capacity". Guest Speaker will be Senator Margaret Reynolds who is Convenor - Population Working Group, Parliamentarians for Global Action.

## SWEET PITTOSPORUM

You may recall John Martyn's comment in the last Newsletter that Pittosporum (*P. undulatum*) could form a useful barrier against bushfire. This has drawn a response from Judie Rawlings, who wrote to us: "...A few words about Pittosporum. I see that STEP is of the view that Pitto (sic) can be an effective fire break and that it "retards" fire -- a view that was promulgated by the NCC some years ago. Unfortunately this is not the case. The leaves of the Pittosporum are full of oil and if you have ever seen it during a fire, spitting sparks in all directions like a Catherine Wheel, you would realise just how flammable it is. The reasons the Pittosporum ....did not burn....probably has less to do with their inherent moisture retaining capacities than with their position along a watercourse.....or.... in sheltered positions near rock overhangs."

## Sweet Pittosporum AGAIN

On the same subject, we draw attention to Robin Buchanan's book "Bush Regeneration -- Recovering Australian Landscapes" which contains an authoritative section on Sweet Pittosporum. It refers to the fact that sweet pittosporum has a profound effect on species diversity where it grows, limiting the ability of other species to germinate under its canopy. It produces a heavier leaf litter than eucalypt and maintains moister conditions, which in turn may be part of the reason why John found areas covered by pittosporum to have slowed the propagation of the fires. But her message is clear, that in Sydney bushland it has an undesirable effect.



## URBAN STORMWATER

Stormwater run-off is a problem in all Australian cities. Up to 90% of rainfall runs off built up areas, up to 50% of which is covered by hard surfaces.

The aquatic ecosystems that developed prior to European settlement have evolved to handle small scale flows, and are literally swamped by the flood flows generated from the hard surfaced catchment which has resulted mainly from the rapid post WWII metropolitan development. These flood flows add insult to injury by also carrying huge loads of silt,

litter, nutrients and pollutants and are low in oxygen content. The CSIRO draws attention to these facts in an article in the Winter 1993 issue of its Ecos magazine entitled "Urban stormwater -- A valuable resource goes down the drain". It estimates that the stormwater run-off from Australian cities is roughly equal to the amount of town water being supplied to the cities, of which about 50% is used for purposes such as garden watering, toilet flushing etc., which could be performed by lower quality water such as collected rainwater.

In Sydney the problem is exacerbated by sewer overflows, which number between 6000 and 10000, and which overflow up to 50 times per year.

Obviously the Sydney Water Board's drive to eliminate illegal stormwater connections to the sewer system is a step in the right direction, and would reduce the amount of pollution which is dangerous to

humans and harmful to native flora and fauna, but it is not a total solution. The major part of the problem stems from the rapid run-off created by the hard surfaces of roads, roofs and pavements.

The article goes on to suggest some measures which should be taken, such as:

- # grassed waterways to intercept sediments,

- #litter booms or grates to trap debris,

- # swale drains and sedimentation basins, which should include dry retention basins to fill in high intensity precipitation, and wet retention basins, which would provide habitat for wildlife and attractive landscape features while performing the flood protection function.

Apart from being expensive to instal and maintain, some of the larger scale measures would also have impacts of their own on the environment, which would need to be considered.

Since the problem has resulted from human activity, perhaps the solution should be sought in the modification of human activity, viz. in the way we deal with rainwater at source. Should we intercept the roof water in tanks in the way our forebears did? Should we collect the run-off from our drives and patios etc. into garden ponds?

Such measures are difficult to introduce in fully developed residential areas, and would take years to pay for themselves, even at the increased price of town water. But policy initiatives could be taken by Local and State Government to give householders the incentive to move in that direction, and to ensure that any dual occupancy developments are required to take such steps, rather than adding to the run-off problem.

One final thought suggests that such tankwater would serve a very useful purpose as a fire-fighting source for the many Ku-ring-gai residents living close to bushland.

## AQUATIC PLANTS IN THE LANE COVE CATCHMENT

(This is an edited version of an article contributed by John Martyn)

There are a number of unique features in the aquatic habitat:

# The number of species is very small compared with the terrestrial flora.

# The majority of species are cosmopolitan or exotic. This is in total contrast to the terrestrial scene.

# The aquatic flora was largely unaffected by the bushfires and owe no evolutionary debt to fire

# Many aquatic plants are sensitive to pollution, positively or negatively, and could therefore be good indicators.

### Vascular Plants

The recorded vascular species are mostly monocotyledons, one fern and a few dicotyledons.

#### Azolla - *Azolla pinnata*

This is a small floating fern, endemic and confined to still water locally found only on Avondale Dam. Sometimes grown as an ornamental in gardens or aquaria it can be prolific, but since it is not noted in the catchment outside this artificial confinement, it may not be truly native here.

#### Knotweeds - *Persicaria* spp.

Part of the Polygonaceae family, which includes *P. capitata* or Japanese Knotweed, the various docks (*Rumex* spp.) and the invasive Potato Vine or Turkey Rhubarb (*Acetosa sagittata*). Three native representatives, *P. decipiens*, *P. hydropiper* and *P. lapathifolia* have been identified by Smith & Smith (1993) in the Pennant Hills Park, and they certainly occur elsewhere in the catchment. They survive semi-submerged or even in the wet ground bordering creeks, i.e. not fully aquatic.

#### Common Starwort - *Callitriche stagnalis*

A cosmopolitan species, not likely to be native to this area, but may be indigenous to Australia. Bright light

green rosettes of rounded leaves are a familiar sight in most creeks, especially as spring warms the water, but dying back in late summer.

#### *Potamogeton* spp.

Three species of this widespread genus (family Potamogetonaceae) have been recorded in this area. All are cosmopolitan. Curly Pondweed (*P. crispus*) is quite common in the Lane Cove river. Look for it in the "Bog Hole", the large pool with the swinging rope, upstream from Rocky Crossing (S. Turramurra/Marsfield). A submerged plant, its translucent, lanceolate, brownish-green leaves are distinctly wavy. (Described as "uncommon" by Robinson).

*P. javanicus*, obviously cosmopolitan, also thrives there. It resembles Curly Pondweed but it also has small oval lanceolate floating leaves with distinct longitudinal veins.

Floating Pondweed (*P. tricarlinatus*) resembles *P. javanicus*, with broader leaves and reminiscent of a small waterlily is common in Avondale Dam.

#### Dense Waterweed - (*Egeria densa*)

This plant (family Hydrocharitaceae) is almost identical with Canadian Pondweed (*Elodea canadensis*), a popular aquarium and ornamental plant. With whorls of translucent brownish-green leaves, Dense Waterweed forms largely submerged masses in Shrimptons Creek and lower down the Lane Cove river. Its delicate, floating, three-petalled flowers are attractive.

#### Sagittaria - (*Sagittaria graminea*)

This weed has lanceolate leaves on long emergent stalks with a clear network of longitudinal and transverse veins. Whorls of three stalks produce spikes of three-petalled white flowers. Common on Avondale Dam. It is closely related to Arrowhead (*S. sagittata*) which is common throughout the world.

#### Water Plantain (*Alisma plantago-aquatica*)

Almost identical with *Sagittaria* with smaller flowers on massed sprays, it is a cosmopolitan and has been recorded in the Lane Cove R. downstream from the pipe bridge.

#### Water Lily (*Nymphaea* sp.)

Exotics probably escaped from a garden into Avondale Dam, they have pink-tinged creamy-white flowers.

#### Duckweeds

A number of miniature floating species inhabit still water and rarely found in the Lane Cove catchment. *Wolffia*, the world's smallest flowering plant is sometimes seen as a light green speckly film on still pools in summer.

#### Rushes, reeds and sedges

Not covered by this article.

#### Algae

They deserve a special article, especially because of their topicality as reflections of pollution and nutrient levels.

#### Pollution and Aquatic Plants

Sainty and Jacobs tell us that Dense Waterweed is found where enhanced nutrient levels prevail, no surprise to find it in the Lane Cove R.. Robinson states that Potamogetons are sensitive to pollution, and disappearance should be regarded with alarm.

#### References

- Auld, B.A. & Medd, R.W., 1992. *Weeds: An Illustrated Botanical Guide to the Weeds of Australia*. Inkata Press, 255pp.
- Robinson, Les, 1991. *Field Guide to the Native Plants of Sydney*. Kangaroo Press, Kenthurst, 448 pp.
- Sainty, G.R., & Jacobs, S.W.L., 1981. *Water Plants of NSW*. Water Resources Commission of NSW. 550 pp.
- Smith, Judy, & Smith, Peter, 1993. *Vegetation and Fauna of Pennant Hills Park*. P&J. Smith Ecological Consultants, Blaxland, NSW. (Report for Hornsby Shire Council), 85 pp.

## BOOK REVIEW

**WINNING BACK THE CITIES** by Peter Newman & Jeff Kenworthy with Les Robinson. Australian Consumers' Association.

Peter Newman and Jeff Kenworthy drew on their research to put together this informative and easy-to-read booklet which deals with the crisis of our major cities. It covers the problems of suburban sprawl, smog, energy costs, road safety, deterioration in public spaces, social inequity, isolation and loneliness and future mobility.

A chapter on how car use has defined cities compares 32 cities for density, road length per head, public transport and how these factors have shaped them. About Sydney it says: "...*In the entire post-war period, forecasted increases in volumes of car traffic inevitably resulted in decisions to construct new roads. What was overlooked was that subsequent actual increases in car traffic were largely generated by the new roads themselves.*"

The authors then offer an integrated solution, involving light rail, urban villages and traffic calming. Each of these concepts is discussed in detail, giving examples of successful applications, illustrated with many photos. The book is a mine of information and conveys a sense of hope for the future, providing sensible and practical ideas to convey to our politicians. If they would just listen! "Winning Back..." is available from STEP for \$10.(1992, 48pp.)

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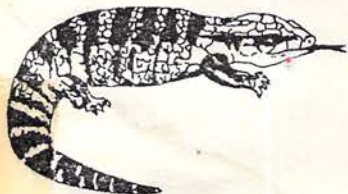


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## TAILENDERS



1. The official launch for John Martyn's "Walks Guide" is scheduled for October, 1994.

Watch this space! Don't miss it!

2. Friends of Lane Cove National Park have called for community effort to remove post-fire weeds. They would welcome help, donations, membership or cooperation. Call 412 1811 or write to 10 Godfrey Rd, Artarmon, 2064.