



NPA Bulletin

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National Parks Association ACT

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The Sentry Box , Gudgenby Nature Reserve

PRESIDENT'S FOREWORD

Billy Billy Ridge Threatened by Ski Development

The Department of the Capital Territory is currently negotiating with a company seeking a lease to construct skiing facilities on Billy Billy Ridge, above Smokers Gap. This ridge forms the southern flank of the Tidbinbilla Valley with the boundary of the Tidbinbilla Nature Reserve running essentially along the ridge top. The lease under consideration is for a trial period of four years to allow skiing conditions using artificial snow to be evaluated. As more details of these developments have become available (somewhat grudgingly) from the DCT, our concern for their environmental consequences has mounted.

If the proposal goes ahead in the form we now understand, severe environmental damage will follow. Erection of buildings, roads and car parks will entail the clearing of native forests; construction of ski runs will mean not only the clearing of native forest, but of almost all vegetation for slope grooming. All this construction means not only loss of forest cover, but alteration of water run-off conditions, erosion, increased stream turbidity and destruction of fauna habitat. The damming of Gibraltar Creek for water supplies (both for snow-making and visitor use) will permanently alter the flow conditions in Gibraltar Creek, threatening its aquatic flora and fauna including the already endangered Austral Pillwort. Alteration of the flow in Gibraltar Creek could also degrade picnic areas such as Gibraltar Falls, Woods Reserve and others further downstream along Paddys River. Pollution of Gibraltar Creek by sewage effluent is also a possibility.

A further cause for concern is the possible effect on Billy Billy Rocks as an outstanding natural area and on the Aboriginal rock shelters and campsites on the Billy Billy Ridge. A number of these sites are already listed on the register of the National Estate.

I think I have said enough to indicate that the NPA is totally opposed to this development in its present form. I am asking for your support to have these proposals for this area withdrawn, to protect this area from long term damage and despoliation. Even though the current proposals are for a four year lease only, if trials are successful it will be impossible to restore this environment to its natural state and it will remain permanently degraded. We are already seeking support from other interested groups to speak against these proposals. Your support is urgently needed if we are to succeed.

Helping Manage Our National Parks

The NPA has been monitoring efforts by groups (particularly NPA groups) in other States to carry out projects in National Parks on a voluntary basis. In Victoria, for instance, a group called 'Friends of National Parks' has been formed by VNPA members to carry out projects in Victorian national parks. Articles in this issue of the Bulletin describe some projects by volunteer groups to help understand and restore damaged landscapes - surely a very practical way to show environmental concern.

In this coming 'Year of the Tree' we would like to begin a project in the Gudgenby Nature Reserve to plant up to 500 trees to help restore a small area originally cleared for grazing more near to its natural state. We may be able to use these plantings to eventually re-introduce koalas to the Reserve if we choose suitable species and localities for planting. If we are to carry out such a project successfully a great deal of support from members will be required, for preparation, planting and after care. If you would like to be part of this project, please let me know; its viability depends on your response.

The Bulletin

On yet another topic, this issue of the NPA Bulletin makes another break with the past; the Bulletin is now published in A4 size to conform with metric standards. The new covers, depicting local scenes, will also continue for the time being, a new cover design being chosen for each issue. Our Editor Reg Alder works hard to bring you a stimulating and interesting Bulletin each issue. He would like to hear from interested readers with comments, good or bad, and especially ideas and material on conservation and related topics. This is your Bulletin - help keep it active.

COOLEMAN HOMESTEAD AND CAVE CREEK

A weekend walk in the Cooleman Plain area of the Kosciuszko National Park recently gave members an insight into the fascinating natural phenomena and cultural history of the area, as well as a first-hand look at some of the management problems confronting the park administration.

After a pleasant drive across the Brindabellas and some hair-raising driving through the thick powdery dust along the Rules Point Road, a party of 23 met on Long Plain at the beginning of the Cooleman Track. Amid a field of yellow and white paper daisies, leader Reg Alder pointed out features of the topography, including the source of the Murrumbidgee River, near Peppercorn Hill about four kilometres to the north-west in the Fiery Range.

We left the cars on the Peppercorn Creek-Murrumbidgee River Saddle, on the 1430 metre contour, and set off for Cave Creek via Coolamine Homestead - a comfortable 6.5km in mild, sunny conditions. The route provided a lot of interest, being mostly limestone terrain with several easily discernible sinkholes and also part of the old Brindabella-Kiandra gold miners' track, a stock route and now mapped as a four-wheel drive road.

Nearing Coolamine Homestead, we noted that the track had been torn up and blocked either end with rubble to prevent vehicular access to the historic complex. However, to our consternation we saw a heavily-laden Subaru station-wagon circling around the buildings. Its four-wheel drive capacity had obviously found the broken earth an easy hurdle. Such a method of sight-seeing does not add to the lifespan of the rustic slab huts already quaintly tilting at odd angles.

Coolamine Homestead, a freehold enclave of the Kosciuszko National Park until 1975, has a documented history associated with the early use of the high plain country for summer grazing. The four main buildings illustrate various bush construction techniques - split and weathered drop logs, rounded drop logs, interlocking log and galvanised iron - and together present a picture of such a property around the turn of the century.

Coolamine Homestead has been listed in the Register of the National Estate on the basis of its architectural and cultural significance and in the 1980-1981 financial years \$10,000 was allocated

under the National Estate Grants Program to the NSW National Parks and Wildlife Service for urgent conservation work on the complex.

At the time of our visit late February, the stripping up of the road, a general tidy-up and the installation of a plaque proclaiming it as an historic site and warning of a fine for vandalism were the only signs of any conservation work. Vandalism, including use by campers of the 100-year-old slabs from the old buildings as firewood, remains the major threat. Much of the destruction has been recent. The entire slab infill on the western wall of the oldest hut has been stripped since a photograph was taken in 1977. Many portable historic relics have been removed and the paper-lined interior walls are getting thinner as visitors peel off the pages of the Smith's Weekly and the antiquated Women's Weekly, presumably to locate more interesting snippets underneath. From the use of 1883 newspapers in the lining, it has been estimated that the larger building was erected about 1882. The hut with the unusually high-pitched roof and the log 'cheese house' are thought to have been built about 1892 by the Southwells. Early records show Stanley Southwell and his wife lived at Coolamine for about 20 years and raised seven children there. Earlier squatters, including the McDonalds, lived nearby.

Around 1907, Mr Fred Campbell of Yarralumla sent the Taylor family to Coolamine and in 1927 Campbell sold the property to the Litchfields of Cooma. In 1934 it was bought by the Naughton brothers.

Other visible historical features of the site today include deciduous trees and the remains of fences, a large stockyard, a water supply channel from a nearby spring and two 'earth closets', one a double-seater!

The draft Plan of Management for Kosciuszko National Park (1981) has proposed that a detailed management study of the homestead complex should be undertaken in consultation with technical experts, historic conservation bodies and community interest groups. The type of options being considered include restoring and reconstructing the entire complex as closely as possible to its original form, restoring the remaining buildings to their former condition or arresting decay and maintaining the site more-or-less in its present condition. Consideration is being given to the options of prohibiting camping altogether, allowing camping only nearby the buildings or allowing it to

THE COVER picture was taken on the Association back-pack walk to examine Aboriginal stone arrangements on Sentry Box Hill. The Sentry Box is on the southern ACT border ridge at the western extremity of Sentry Box Hill. It is observable from many vantage points in the southern end of the Gudgenby Nature Reserve. Extensive views down to the snowy peaks of the Kosciuszko National Park as well as most of the Gudgenby Nature Reserve can be had from the many stony outcrops along the ridge. Some of the rocks in these outcrops have formed into shapes which could have been included in the ceremonies of the Aborigines. Photography by Reg Alder.

Members are invited to submit photographs, preferably taken in the ACT on national park or environmental themes for use on the cover of the Bulletin or within the text. To be suitable for reproduction the photographs should have a high contrast with large mass detail. If the photograph can be satisfactorily reproduced on a Xerox copying machine it would meet the printing requirement. Photographs submitted should be of the size intended for publication.

continue as at present. The draft plan says short-term stabilisation of the site, followed by 'restoration, maintenance and protection' is to be given priority. Let's hope 'priority' means action before the whole place collapses.

We made our camping spot, on a bend on Cave Creek past the picnic area and just before the gorge, in time for a late lunch. It was easy to see how this area, with subterranean water gushing out from the Blue Water Hole, the dramatic gorge and the caves, has earned its reputation as a place of beauty, scientific importance and legendary historical events. It is rumoured that bushranger's gold is still buried somewhere in the caves. A member of Ben Hall's gang by the name of Glover planted the proceeds of a mail robbery in the area. Two Kiandra diggers also allegedly cached their gold there and subsequently could not locate it. A skeleton found in one of the caves, called Murderer's Cave, has been attributed to Glover's misdoings and Glover himself met his own end at the end of a noose for the murder of an Aboriginal around Adaminaby way.

The discovery in 1910 of another collection of bones, cut off at the joints, neatly stacked and surrounded by a border of stones, in Blackfellow's Cave indicates the caves had ritual significance for Aborigines. Around 1869 there were reports of Aboriginal paintings in the caves. There have not been found again, although it is known that great chunks of limestone have been removed over the years.

The area is honeycombed with caves, but our speleological observations on this trip did not go much further than the entrance to a few of the easily-accessible ones. Some internationally significant investigations into the hydrology and geomorphology of limestone areas have been carried out in the Cave Creek area. There are some interesting mineral occurrences, the abandoned Mount Black Mine and good trout in the stream.

On Saturday afternoon we followed the gorge down to the waterfall and on return to the campsite a few hardy individuals braved the icy waters of the creek. It was difficult to actually swim as the water was so cold it took the breath away.

Early Sunday morning - after a magnificent crisp and starry night - we climbed up the ridge at the back of the camp and walked about 3.5km along the top of the gorge and down to the junction of Cave Creek and the Goodradigbee River. Here again, in a heavily wooded area, we were disturbed to see signs of the ubiquitous four-wheel drives. There was a track right down to the river and beer cans and other litter through the bush.

The draft Plan of Management acknowledges 'the extremely complex drainage network of the caves and the entire limestone area' and 'the sensitivity of the soils and plant communities to damage under some conditions'. It states as management objectives that the scenic qualities should be maintained, that the caves should be protected from disturbance and that the waters of the area should be maintained in as natural condition as possible.

Following our visit, the President wrote to the park authorities supporting

these management objectives and expressing concern about the intrusion of the four-wheel drive vehicles. He also stated our opinion that the new road under construction should be located away from Cave Creek. Taking the road right into Blue Water Hole is only encouraging greater numbers of people to use the picnic area for camping and this intense use already has rendered the water no longer in a 'natural condition'. We hope to discuss these issues on site with the ranger from Tumut sometime in the next few weeks.

The party broke camp after lunch on Sunday and fairly leisurely we retraced our steps out. At the Brindabella-Rules Point Road junction the party split - many opted for the longer drive home through Kiandra, Adaminaby and Gudgenby rather than the thrills of the Brindabella Road. One of the nicest aspects of the weekend was that we had several people doing their first packwalk with NPA. With the Coleman Plain walk as a starter, it surely won't be their last.

Denise Robin

PASTORAL ACTIVITY IN GUDGENBY RESERVE

It is with some regret that I find myself in disagreement with the President's Foreword to the March issue of the NPA Bulletin. It may be heretical but I can see no good reason why all pastoral activity must be removed from the reserve.

I certainly do not advocate unlimited farming but where good grazing areas exist within the reserve as in parts of the Orroral, Gudgenby, Naas and Grassy Creek valleys, on level and long cleared valley bottoms, I believe that some pastoral activity can continue without detriment to the reserve. Nor do I see why, when a family has built a charming residence as in Gudgenby, they should not continue to make their home there for as long as they like.

There must of course be provisos. The public should be allowed reasonable access through the grazing areas. The occupants should conform with the policies evolved for the reserve. They should not cut down trees or operate cat farms. They should not undertake commercial activities other than farming.

If all grazing activity is barred the valley bottoms will slowly, very slowly, revert to coarse scrub. The blackberry will be one of the first plants to take over. I suppose in 60-100 years time some forest may have redeveloped but it is by no means certain that it will closely resemble the original forest cover unless elaborate and costly schemes of reforestation are undertaken with the might mix of species. Aesthetically the growth of poor scrub will be far from pleasing. Personally I find the juxtaposition of grassland in the valley bottoms and forest on the slopes to have great charm.

The areas of the reserve and the contiguous parts of the upper Cotter which should eventually be included in it are very large. A cessation of grazing would

no doubt in time lead to change in the species of animals and plants living or growing in the valley bottoms which are now covered with largely exotic grasses. But I cannot think of any animals or bird life (except perhaps feral pigs) which will derive great benefits from the change and the kinds of plant which would recolonise the area would not all be Australian species. The public will not make much use of the areas left idle unless restricted camping is permitted along the stream-sides with the attendant problems of sanitation and litter.

From my own observations I would say that the worst damage to the reserve comes from feral pigs. The eradication or control of these pests (and feral dogs) is of far greater importance than closing the valley bottoms to grazing. The performance of the reserve management in this regard is unimpressive though I appreciate that management is no doubt short of funds and has to devote most of its resources to managing the popular areas which cater for visitors en masse.

I believe that doctrinaire insistence on expelling all farmers and graziers from National Parks has tended to be counter productive. I regard the Gudgenby Reserve as essentially a National Park at an early stage of development. It had to be called a Nature Reserve because National Park legislation does not exist in the ACT and it would have taken an interminable time to get it drafted. Obviously there are areas in National Parks where grazing must be stopped - as in the Kosciusko high country. But it has happened that land owners or occupiers - many of whom love the countryside as much as any national parker - see their land in or adjoining a National Park fall in value and become unsaleable no matter how well they may have cared for it. If and when it is resumed, it is liable to become little more than a sea of blackberries. The resulting resentments cost the National Parks movement natural allies. Land in or adjoining a National Park should in many cases appreciate in value because its environs cannot (or should not) be spoiled by destructive developments.

I do not dispute the need to reduce the dreadful erosion that bad farming practices have caused over so much of Australia. But there is little serious erosion in the kinds of land holding that I think should enjoy reasonable security of tenure and protection from being taken over. By far the worst and most devastating scenes of erosion that I have seen are in purely agricultural areas far from any National Park.

Alastair Morrison

GUDGENBY NATURE RESERVE RABBIT CONTROL

Gudgenby Nature Reserve of over 52,000 ha is mostly forested, but the valleys and some of the lower slopes cleared earlier for grazing support relatively large populations of rabbits.

Field trials of various eradication techniques are being carried out by using the traditional methods of distributing

the European rabbit flea with the subsequent release of the Lausanne strain of myxomatosis and 1080 trail baiting using carrot baits for short-term control.

When the land was cleared for grazing extensive areas of fallen timber provided good harbour for the establishment of warrens and this has been of major importance in the maintenance of large rabbit populations. The timber is now being removed by windrowing and burning and the exposed borrows ripped and seeded.

Access to some areas in the reserve by vehicle is difficult or impossible and conventional methods of warren destruction techniques cannot be applied and it is in these areas that a blasting technique is being used. Nursery Swamp, because it can only be reached by foot or helicopter, has been selected for trial and evaluation.

The blasting technique requires dogs to force surface rabbits into warrens while two staff set up charges in the warren entrances. Two other staff men fill in the entrances and subsequently level the site. Entrances to warrens vary from one to 120 with an average of about 20. At Nursery Swamp, 1350 sticks of gelegnite were exploded and a further 20 required to close re-opened entrances. The site was regularly inspected and 5.3% of the entrances had to be retreated and of these only 3.5% were due to rabbit activity.

The trials have shown that explosives can control rabbits effectively but at \$1.4 per entrance the cost is high, consequently explosives may only be used in inaccessible or environmentally sensitive areas. The best time to use explosives would be after myxomatosis outbreaks or 1080 poisoning.

The treatment area will be monitored at the completion of the programme.

In the 'Australia Ranger Bulletin'
(Condensed from an article by
P. Higginbotham and R. Brownlie of the
ACT Conservation Service)

WALKING IN NEW ZEALAND STEWART ISLAND

For those walkers who relish plodding through the mud and slush of south western New Zealand and are looking for an alternative to the tourist saturated tracks of Milford, Routeburn, etc. then a visit to Stewart Island might be worth considering.

Stewart Island is the smallest and southernmost of New Zealand's 3 major islands, with an area of approx 1680 sq km and separated from the South Island by Foveaux Strait which has a minimum width of 24 km. The Island is named after Captain William Stewart, a whaler and sealer who in 1809 determined the northerly points and proved it was an island, thereby correcting Captain Cook's charts which showed it as a peninsula. It was known to the Maoris as Rakiura, 'The Island of the Glowing Sky'.

The island is naturally divided into two quite distinct regions by the Freshwater valley which extends westwards from Paterson Inlet and forms a swampy lowland almost right across the island. In the north is a complex rugged highland containing the highest point, Mt Anglem

(980m). During the recent new year period son David, nephews Malcolm and Ross, and I completed a 10 day circuit of this northern region using tracks and huts established and maintained by the NZ Forest Service.

Logging is no longer carried out on the island and the Forest Service is now concerned primarily with conservation. This includes the encouragement of endangered birdlife such as the kakapo as well as attempting to eradicate the introduced pests, deer, opossum and wild cats.

Access to the island is by ferry from Bluff or by Nomad aircraft from Invercargill. We flew into Halfmoon Bay, a small fishing village which is the only permanent settlement on the island, and then started on an anticlockwise circuit to camp the first night beside a small stream beyond Horseshoe Bay. The sandflies were vicious and after sunset the mosquitoes took over. Although we used repellent to keep them at bay the noise was sufficient to ensure that a sleepless night was had by all.

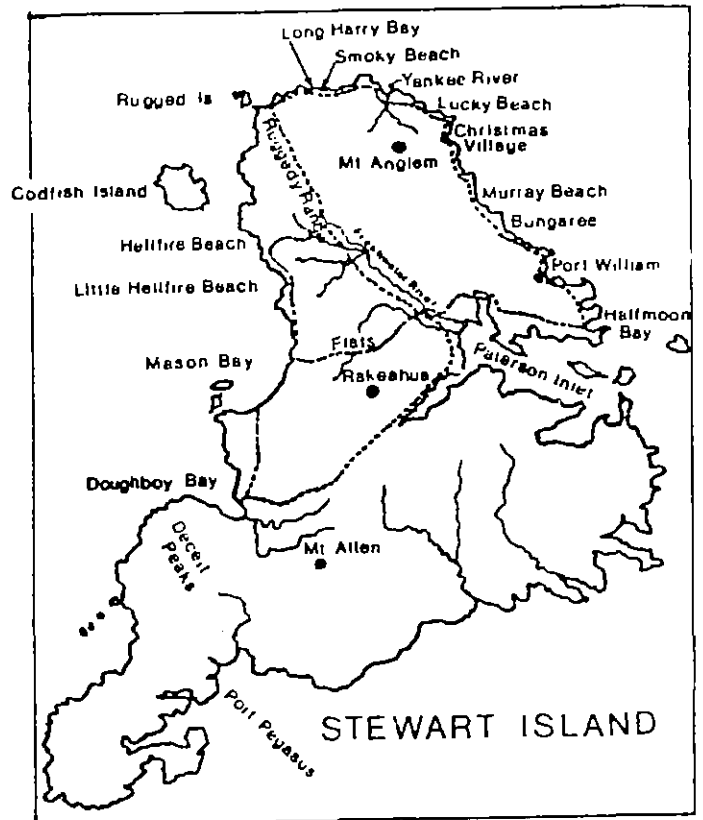
Huts have been established along the track at intervals which should be within the daily capacity of the average tramping party. However the times given in the Forest Service guide are walking times only and do not allow for rests, tea breaks or poorer than usual conditions and when planning a trip walkers used to an N.P.A. type pace should apply a factor of 30-40% to the times quoted. Grumbles about the times taken between huts was the most common remark in the Hut books. The listed times are approximately 4 to 5 hours so ample time is available for exploring once the huts are reached. The huts range in size from a 6 bunk unit at Long Harry to the 30 bunk mansion at Port William. Nearly all contain an old coal range. These are actually a nuisance as it restricted the number of people who could cook on the fire at any one time and all smoked badly.

There is a side track to Mt Anglem from Christmas Village with a return trip time of 6 hours. However as it was covered in low cloud we didn't wait to make the trip as we had no idea how long before it would clear. We did climb Benson Peak from the hut of that name later in the trip and this provided a good view of the surrounding coastline, offshore islands and the aptly named Ruggedy Range. Looking across the Freshwater flats was like a scene from the movie 'The African Queen'.

All food needs to be carried and brought from the mainland in case the store at Halfmoon Bay is not open upon arrival. Parties are also recommended to carry tent and primus in case the huts are full and this also allows a more flexible choice of camp sites. We took a tent-fly which was adequate weather protection but no use in keeping out the sandflies and mosquitoes.

The general climate is 'unpredictable' with rain falling on many days of the year but the temperature on the whole is mild. A cautionary note in the Forest Service guide book on 'Track and Hut Information' quotes at one point:

'Many of the swamp-holes and creeks are quite deep following rain. Use a pole as a probe before attempting a crossing.'



So having been warned what then are the rewards? Stewart Island has miraculously escaped most of the blighting effects of modern man's occupation, probably because the soil is too poor for farming (and there being no wild rivers to dam!!!). Early sawmilling has left its mark in the valleys but secondary growth although inferior is at least covering the scars. Therefore seeing true NZ rain forest with its stands of Rimu and Totara still intact was certainly one of the highlights.

Other memorable features were:

- Appreciation of the varying types of coastline. One beach would have fine golden sand and yet the next beach around the intervening headland would be covered in boulders, the next in multi-coloured pebbles.
- Camping on rarely visited beaches and walking through genuine wilderness areas.
- Sitting on a sand dune watching 20 or so dolphins gambolling in the surf along a kilometre long beachfront.
- Sighting seals ashore and afloat, penguins, deer and many varieties of birdlife. It is also the most likely place for seeing a kiwi in the wild. The hut books recorded many sightings and we considered ourselves unlucky not to have seen one.
- Catching fish which were positively suicidal - even I caught a few. And the grin on David's face when he caught the first one would have been a credit to any toothpaste advert. At our camp on Big Hellfire beach we ate fish for breakfast, dinner, and tea. Certainly a welcome change after days of rice and t.v.p. and a greater appreciation of Gran's baked dinners when we got home! Further information can be obtained

from:

New Zealand Forest Service
P.O. Box 3
Halfmoon Bay
Stewart Island, N.Z.

Garth Abercrombie

DEATH OF A LANDSCAPE - IS THE NPA DOING ITS JOB?

Summary of talk to the Association on 18th November 1981. The talk was supported by transparencies and slides.

The slow decline and death of the Australian landscape over the whole continent has been of great concern to me over the last decade. To me, we are one and all to blame for this because we have not been successful in making the political machinery at local state and federal level aware of this problem.

Furthermore, we have not been able to convince them, that unless they do something about it, they will remain in power to do anything about anything. This unfortunately seems to be the only way our politicians seem to work. When I say we are all at fault, I mean us as private individuals, as a community and as professional people. I could show how all bear some blame for what is occurring. Generally this blame results from what I call the 'POLARISED ATTITUDE' to various functions of groups or working professionals. Take my old profession of forestry for example. It is a fact, which some choose to ignore, that the community requires wood and wood products. While conservation and recycling can reduce this need there still is a demand. It must come from somewhere, so politicians through government departments instruct and calculate how much wood is required. Calculations complete. 'John' forester then plants his trees to produce the wood. Produce the wood he does, but so often with little regard for other values. The same can be said for engineers, town planners, architects and yes even natural resource managers. All perceive their primary goal as to be the all and end all of life and refuse or cannot see themselves in the context of the wider meaning of their role in the community and the environment within which the community lives. So too, conservation groups to me appear very 'polarised' in their attitudes and actions. Perhaps they have been pushed into this role by a sensation orientated press and experiences that tell them it is the only way to succeed. I find it sad that its the only way we get things done in this community. Similarly the N.P.A. could be regarded as throwing the greater part of its efforts at the landscape PRESERVATION end of the spectrum, with the result that landscape CONSERVATION over the broader areas of the continent suffer.

When one looks at the aims and objectives of the Association these read: 'The promotion of national parks and of measures for the protection of flora, and fauna, scenery and natural resources in the Australian Capital Territory and elsewhere and the reservation of specific areas'. The flora and fauna elements most threatened on the Australian continent would probably not be those at the wilderness end of the landscape spectrum but rather those that are exposed to the cultural influences of man. This tends to happen in the more accessible country of

the rural and urban landscapes.

'Scenery and natural features' are for the greater part outside national parks, yet we do not have any means of conserving these values. Scenery is another word for landscape or more accurately the visual expression of the landscape. The scenic value, or visual resource value of any landscape is the sum of natural elements of the landscape eg. topography, vegetation, water etc. and man made elements eg. roads, fences, buildings, services etc. At one end of the landscape spectrum 'wilderness' natural elements dominate, man made elements are all but absent. At the other end of the spectrum the urban environment man made elements often dominate. Between these two extremes a range of mixes exist, e.g. forestry areas, agricultural areas etc. It is the natural elements, especially vegetation which is threatened in areas where man uses the land for production be it rural or urban.

These areas receive very little attention from conservation groups like the NPA. For the greater part, the effort is focused on the wilderness end of the spectrum eg. SW Tasmanian wilderness, Preservation of rainforest areas etc. This is not in itself wrong but it has an unfortunate side effect. The media focus on issues which are often spectacular media events eg. people lying down in front of dozers, climbing trees etc. It however creates the feeling in the general public that this is all that is wrong, if we can stop this all will be well on the environmental front. Another unfortunate aspect is that all conservation groups efforts and subsequent media attention is focused on preservation of resources. While this is a very valid land use for part of our landscape resource, it cannot apply to the majority of the landscape. If conservation groups do attempt to draw attention to landscape conservation problems away from the forestry, mining, hydro electric bodies they will have an uphill battle.

One major reason is the lack of media interest. If a group can focus media attention of wood chipping sand mining etc. an immediate effect is recognisable, and the media especially in its visual forms can communicate this easily, spectacularly and generally very effectively to the public. But try and focus the same attention to other conservation issues, such as the slow unspectacular decline of trees in the rural landscape and see how much media interest and hence public awareness you get.

While not giving up battles for preservation of areas that conservation groups think are important, I feel some focus should be bought on to landscape problems in other areas. While the NPA and other groups should not be alone in this effort the community do look to them as the watchdogs of the environment. All I am saying is 'bark' at problems all over the continent not just in the small but important percentage (maybe 5%) where preservation issues are being fought.

This can be achieved by developing a broader front, by forming subgroups within the association that can identify and look at various landscape problems. The Association should be prepared to make

land use recommendations including forestry, agriculture, urban development etc. and not just focus on preservation recommendations. Has the Association ever done this? Make positive statements about land use when a good job is done, possibly this will make your negative statements carry more weight when they are made. Remember what happened to the boy who called 'wolf' all the time. Try to develop guidelines for good landscape management for all types of land use. This will give a measure by which to lavish praise or pass criticism.

While the NPA should not be alone in this effort to make people more aware of the problems our landscape faces, it and groups like it can make a major contribution to focusing attention to these major but unspectacular problems.

Possibly this 'year of the tree' is a good time to 'have a go' by bringing some attention to the problem of trees in the rural and urban landscape.

John van Pelt

(This year the A.C.F. fights the 'Kingdom of the Dust' with a special year-long campaign under the banner of 'Save the Earth'. The campaign is compatible with the theme of John van Pelt's lecture and the 'Year of the Tree' in that, a Commonwealth Government report estimates that more than half of Australia's farmland is already affected by soil erosion.

It is not only marginal arid lands but also prime farmlands and orchards which have been forfeited universally for urban and coastal development, recreation and mining. The loss of trees on farmlands, mounting as a serious national problem, the clearing for agriculture of lands prone to erosion and salting, the clear felling of native forests, loss of water quality, pollution of streams, the decimation of wildlife is all part of a web of ruin that begins in the mishandling of the nation's lands and ends in a legacy of dust and deprivation - adapted from 'Habitat').

Editor.

CONSERVATION NOTES

By the end of 1981 the conservation movement had reached a new high. There were three major advances.

The first was the success achieved in the Tasmanian referendum on the Franklin dam. Opposition to the dam was led by the Tasmanian Wilderness Society. In three years the Society, led by Dr Bob Brown, grew from 16 members to 3,000. It raised \$100,000 for the referendum campaign, sent out 1,500 canvassers to knock on 130,000 doors, and had scrutineers at all the 500 polling booths, something that the other parties failed to accomplish. Both the major political parties favoured the damming of the Franklin, but 45% of the voters voted informally, as advised by the Wilderness Society. Fourteen per cent of the voters did not vote at all, and no doubt many of the 47% who voted for the

lower Franklin dam voted for their party policy rather than the dam.

On 9 June 1975 Mr Fraser told his electorate that 'No decrees of government can turn back the clock and save lost species or a lost wilderness. That is why a Federal Government has a national obligation to make decisions on any issue that affects our heritage. This is a responsibility that our Government has accepted'. This declaration will be meaningless if the Commonwealth approves funding for the dam, and lumps the taxpayer with an enormous outlay (\$1,400,000,000) on which neither interest or capital will ever be recouped.

The second major advance was the result of the McNair Anderson survey on rainforest preservation funded by the National Trust. Seventy per cent of those questioned favoured the preservation of rainforests. The percentage rose to 87 if full compensation were given for loss of employment. The importance of the issue, and the fact that these forests will be saved now or never, has been recognised by the setting up of a State Cabinet sub-committee to study the question under the chairmanship of Mr Wran.

The third significant development is the support of the press. Not so long ago this was hard to gain, but on Tasmania the press has been on our side. Criticism of the Tasmanian Government has been made by journalists in leading and feature articles without any prompting by conservationists. The Tasmanian Government's window dressing engagement of Harry Butler was condemned. The Financial Review cartoonist depicted Harry Butler standing in water up to his waist holding a fish by the tail and saying: 'I think I will never see a poem lovely as a tree'. The leaves of the tree were dollar notes.

Conservation has come a long way since the days we could little but write letters to departments and Ministers, and occasionally score a letter in the press.

Alex Colley

FITZGERALD RIVER

NATIONAL PARK ASSOCIATION

The Fitzgerald River National Park is situated along the south coast of Western Australia between Bremer Bay and Hopetoun. Covering about 2,560 square kms, the Park extends up to 60km inland. It is one of two areas in WA granted International Biosphere Reserve status during 1978, the other being the Prince Regent River Nature Reserve.

In 1980, the Fitzgerald River National Park Association was formed to press for sound planning and management in the Park and its members are mainly living close by. Because of a close liaison between the Association and the National Park Authority, local people are able to make a useful input to the management of the Park. At least on one day a year the members will assist rangers on some useful project such as thatching an area of sand dunes where wind erosion is a problem. Other members undertake periodical biological studies and surveys in their spare time.

Under the guidance of the National Parks Authority, a home, built at the site for mining spongolite, has been renovated by members of the Association. The site known as Twertup (Aboriginal for 'place of the dog') is in approximately the centre of the Park. The building was opened in December 1981 and is available at a small fee for the accommodation of small groups.

SOME BUTTERFLIES OBSERVED ON A PACKWALK TO MT JAGUNGAL

Four species of butterflies were positively identified on the weekend and two others observed but not identified (in the absence of a net and fieldguide). Undoubtedly the most striking was the Racleay's Swallowtail (*Graphium macleayanum macleayanum*) which occurred at the higher altitudes, first being noticed on the top of Farm Ridge. (Occasionally one comes across a reference to the 'Alpine Swallowtail' which is the same butterfly). Males of this species are often found 'hill-hopping' and are common at times in summer on Mt Ginini in the Brindabellas. On this occasion many were noticed near clumps of *Tasmania lanceolata* (mountain pepper) - a bush with distinctive red stems. This plant is a larval food plant for Racleay's Swallowtail. The butterfly is easy to identify. It is of medium size, with pale green upperside, and face and hindwings broadly edged with black. Extending from the hindwing is a distinctive black clubbed tail. Underneath the wings, the colours are darker green and brown. Three sub species of this butterfly are found in the Snowy Mountains occurs throughout eastern Australia from Tasmania to central Queensland mainly at altitudes above 300 metres. The other sub species occur in north Queensland and western Tasmania. North Queensland specimens tend to be larger in size.

The three other identifications were the Australian Painted Lady (*Vanessa kershawi*), Readow Argus (*Junonia villida calybe*) and the Common Grass Blue (*Zizina labradus labradus*). The latter is Australia's commonest butterfly found fluttering close to the ground in open areas especially where there is clover. It is a small butterfly with bluish lilac colouring on the upperside of the wings.

The Australian Painted Lady was very common throughout the walk and was to be observed on or near the track resting with its wings outspread (ie flat). It is a crisply patterned butterfly with an orange-brown and black upperside. The forewing outer corner contains small white bars and spots. It flies very quickly but will remain settled, relying on wing colouring for camouflage. Larval food plants include members of the Asteraceae family ('daisies') and the introduced Scotch Thistle.

The Readow Argus has a similar habit of resting with outstretched wings and relying on camouflage. It is usually to be found on open areas (gravel patches, bush tracks and roads). Found throughout Australia its size and colouring are quite variable. Orange-brown colours predominate on the upperside. At their

outer margins both forewing and hindwing have a large and small circle (ocelli) edge in orange. Larvae feed on a range of native and introduced herbaceous plants.

Two other observations are worthy of note. In a cool crevice near the Jagungal summit there was a Bogong moth aestivation site. The moths apparently provide a feast for the summer ant plague in the mountains as the crevice was littered with eaten out bodies with wings still attached.

The only live moth was a pathetic half eaten one fluttering helplessly on a ledge while ants scurried around.

The other was a Corroboree Frog (*Pseudophryne corroboree*) which was found under one of the logs being used as a seat near the campfire. The bright yellow and jet-black stripes of this frog make it the most striking and unusual frog in Australia - and impossible to confuse with any other. The corroboree frog is found throughout the alpine and sub-alpine country (including the Brindabellas and associated ranges) above 1500 metres. Sphagnum bogs are their breeding grounds. Below the treeline they may be found near creeks and marshes.

For more details see:
Common, I.F.B. and Waterhouse, D.F., 1981, 'Butterflies of Australia', (Rev Ed) (Angus & Robertson, Sydney)
Edwards, E.D., 1980 'A list of butterflies from Kosciusko National Park', (CSIRO, Div Entomology, Canberra)
Barker, J. and Grigg, G., 1977, 'A Field Guide to Australian Frogs', (Rigby, Adelaide)

Kevin Frawley

RESTORATION OF A DAMAGED LANDSCAPE

'There are few things more pleasing than the contemplation of order and useful arrangement arising gradually out of tumult and confusion; perhaps this satisfaction cannot be anywhere more fully enjoyed than where a settlement of civilised people is fixing itself upon a newly discovered or savage coast.' Governor Phillip, 1789.

For nearly two hundred years that sort of attitude has dominated the Australian mentality. The bush, the seemingly limitless, inhospitable wasteland, was the enemy to be ruthlessly subdued. Victory was marked by ringbarked trees and in recent years, blackened windows of bulldozed timber, fencing, introduced pasture and farm buildings brought the 'order and useful arrangement' while the 'tumult and confusion' of the bush rapidly retreated under the force of land settlement. Forest concealed good grazing land, so you cut it down leaving just a few remnant shelter trees as a reminder of what had been destroyed. Few settlers could see the inherent values of the bush, as a windbreak, as a habitat for animals and birds, particularly the insect predators, and as a check on erosion. Even fewer understood its unique beauty.

By the 1970s a worldwide concern for conservation and a new interest in

Australian native plants had begun to make its mark. The over-extensive and often uneconomic land clearing was, and still is proceeding, but a new appreciation had dawned on the community, public bodies and governments of what the writer, Alexander Pope, had described 260 years before as the 'amiable simplicity of unadorned nature.'

In Victoria this belated enlightenment is represented by four widely differing areas: a national park, a state park, a game reserve and a forestry plantation. Despite differences in management and geography, they have one thing in common: they have all been established on formerly cleared land. While their total area is relatively small, their significance is enormous. They signify the recognition that land clearing, the great pathfinder of progress, is not inevitably beneficial. In some cases it can and should be reversed.

Tower Hill State Game Reserve

'Tower Hill and its lake This sheet of water is 24 miles in circumference and is also very deep; it abounds in fish principally eels. It is not perceived until the highest point in the ridge is gained, when the lake is suddenly seen darkling at the foot of a steep slope two hundred and fifty feet below. It is nearly circular in form, and from its centre rises an island known as Tower Hill; the lake is surrounded by lofty hills and the whole country is of volcanic origin. Although not now devoid of charm, it must have been very beautiful before the hills and the island became partially denuded of timber, as they have been by bush fires and greedy axes with no sense of the picturesque, no regard for the future.' Historical Sketch of Victoria, 1886. Tower Hill is one of Australia's most recently active volcanoes, the lake lies within a three kilometre-wide crater or caldera.

Fortunately another observer had seen Tower Hill before the Irish immigrants denuded its rich basalt soil for their farms. He was the landscape painter, Eugen von Guerard, who painted Tower Hill in 1855 on commission from local property owner, James Dawson, from a ridge above the lake now traversed by the Princes Highway. Von Guerard was paid 100 guineas for the painting and also received the acclaim of the art critics: it established him as one of the leading landscape artists in the colony. He portrayed a rich habitat for water birds on a lake dotted with reed beds and surrounded by green wooded hills. Despite the depredations of settlement, the area's beauty was always recognised and in 1892 it became Victoria's first National Park. However that status brought none of the strict controls associated with modern national parks and restoration did not begin until 1961. Regrettably the National Parks Service lost its bid for control and Tower Hill became a game reserve. Using Von Guerard's painting as a guide, an ambitious tree-planting program began with more than 210,000 saplings of mainly manna gum, blackwood, black wattle, drooping sheoak, swamp gum, woolly tea-tree and involving hundreds of volunteers. Only a few old pine

plantations and a quarry are left to mark some of Tower Hill's former uses. Native mammals are gradually being reintroduced and water birds are returning in increasing numbers to breed on the lake. From the ridge where Von Guerard once sat by his easel, the modern traveller can now well understand why the 'Argus' critic described his painting as 'one of the most beautiful landscapes we ever saw.'

Organ Pipes National Park

Melbourne's northern approaches have always been distinctly unattractive. The picture last century: 'The monotony of the prospect is only relieved by the ranges which emboss the line of the horizon to the north, south and east. Destitute of timber, these basaltic plains, covered with small boulders, are as hot in summer as they are cold in winter. Where a few trees have been planted by way of a windbreak near a lonely house, they loom ragged and dishevelled, as though the struggle for existence in such an exposed position were an arduous and painful one.' One hundred and fifty years of settlement have only added man-made ugliness to the bleak volcanic plain. It formed an easy entry and exit route to and from Melbourne, for the drovers bringing mobs of cattle from interstate to Newmarket and for the goldseekers leaving the infant city to seek their fortunes. In more recent years it has been a natural repository for the spill of post-war suburban and industrial development.

With the onslaught of settlement, the fragile plains environment soon succumbed to the impact of grazing animals, timber cutting, rabbits, foxes and noxious weeds. Diggers on their way to the Ballarat and Bendigo goldfields caused further damage and soon only a few native plants, lizards, snakes, a few possums, water rats and the odd echidna remained. The Jackson's Creek Valley where the Organ Pipes are located, became choked with noxious weeds - 24 species covered 90 per cent of the existing National Park area by 1972. Boxthorn, artichoke, thistle and horehound, the main species, are vigorous growers and extremely difficult to eradicate.

Despite the degraded appearance of the area, naturalists had been pressing for it to be converted into a National Park to protect the basalt Organ Pipes that rise about 30 feet from the creek bank. They were formed as the lava cooled and contracted. Vertical cracks developed and as the lava continued to crystallise and harden the basalt mass was completely divided into columns. The Organ Pipes were revealed as Jackson's Creek cut a deep valley through the plain.

In 1972 65-hectares of land was reserved for a National Park and the huge job of repairing 140 years' damage began. The weeds were firstly slashed and sprayed, an endless process because of their great regenerative capacity. Then with the help of the Victorian National Parks' Association Friends of the Organ Pipes group, a massive program of revegetation began. Only native plants growing in the area were reintroduced, involving plant collecting excursions to nearby properties including land at

Tullamarine Airport where wallaby grass (*Danthonia*) was growing. The National Park was divided into five zones for planting based on rock, soil type, slope, aspect and on what was known of the original vegetation. Along Jackson's Creek was the Red Gum zone with bottle brush, tea tree, silver wattle and blackwood; on the steeper rocky slopes, the lightwood wattle zone with sheoak, clematis, cypress pine and hop bush; on the higher slopes the sheoak zone with small plants and grasses and in the deeper basalt soils, grey box with sheoak, lightwood and grasses.

Despite the harsh climate with strong northerly winds and low rainfall and an early problem with rabbits attacking the native seedlings, the trees and shrubs have grown rapidly and the Organ Pipes National Park is beginning to look like a natural timbered valley. After seeing the weed infested disaster area only months after it was declared a National Park, the transformation now is staggering. For their work the Friends of the Organ Pipes won an environment award and with the expertise of the National Parks Service, have shown that man is capable of restoring a natural area that he once all but destroyed.

Cape Nelson State Park

Situated near the rapidly developing regional city of Portland, the park covers an area of 176 hectares, bought by the State Government six years ago after it had been mostly cleared. The main object was to preserve the stands of soap mallee (*Eucalyptus diversifolia*) which in Victoria is restricted to Cape Nelson.

A nature trail takes the visitor past bulldozed windrows and mature stands of moonah (*Melaleuca pubescens*) and mallee left by the would-be grazier as windbreaks to protect his sheep. Considering the harsh coastal climate, regeneration is proceeding rapidly as the young soap mallees grow from the roots of bulldozed trees and golden wattles emerge from a seed bed provided by the clearing. Within ten years the park should have regained an almost natural appearance with only the long, low mounds of the bulldozer marking the developers' short-lived intervention.

The Strzelecki Reafforestation Project

The few people who have time to look across to the bare green Gippsland hills while tearing along the Princes Highway would hardly imagine that they were once on the edge of a vast, almost impenetrable forest. The forest was dominated by mountain ash and blue gum, some with diameters of two to three metres. Beneath grew a jungle of hazel, musk, wattle and blanket leaf, intertwined with thickets of sword-grass and wire-grass. The gullies were filled with tree ferns. Aborigines entered the area only intermittently and probably no man had traversed the whole area before 1840. In that year Count Strzelecki departed from Sydney with the intention of reaching Port Phillip Bay and then going on to Tasmania. On February 15 he climbed and named Mt Kosciusko and then pushed south towards Gippsland. After crossing the La Trobe River his party entered the vast forest and after a 22-day

ordeal they reached Westernport Bay. They were forced to leave behind their horses and at times were unable to cover more than three kilometres a day.

It took another 20 years before someone tried to survey a proper route through the forest. A Scottish-born surveyor, George McDonald, took two years to survey the track along the main ridge of the western Strzeleckis running from Lang Lang to Morwell. Twelve years later the first settlers moved in to south west Gippsland to clear the forest and establish a precarious livelihood.

In the western Strzeleckis the problems of weeds, rabbits, bad roads and communications and the ruggedness of the terrain forced many would-be farmers from the land to leave it in scrub and weed-covered desolation.

With remarkable foresight for those times a State development committee concluded that the land had to be restored. 'It is a tragedy that so much effort was put into the destruction of these forests, only to find that the majority of it was unsuitable for the purpose for which it was cleared. The job of restoration of the forest will be long and expensive, but it is vital that this wide area of the State should not remain unproductive but should once again become the source of high quality forest produce and that further deterioration of the soil be prevented,' the committee said.

In the early 1930s the Forests Commission began buying land and were joined by APM Forests Pty Ltd in the 1950s. Over 300 individual purchases of land have been made now by the Forests Commission, totalling 22,300 hectares. In addition nearly 9000 hectares of Crown Lands have been dedicated as Reserved Forest, the bulk of which was once farm land that had reverted to the Crown after being abandoned by the owners.

The plantations comprise radiata pine and mountain ash. The pine of course has a very limited ecological value but immense commercial value. The mountain ash plantations cannot replace the magnificent mature and varied forests that once clothed the Strzeleckis: the plantations are tree farms with no old mature trees to act as bird and animal meeting places and have a limited variety of understorey shrubs. Nevertheless the plantations have replaced a weed-covered wasteland and most importantly have taken some of the pressure off some of the more natural forests for intensive timber extraction. They hopefully point the way for the future where land that never should have been cleared is bought by companies to provide their timber needs from reafforestation. Such plantations will never provide all the commercial timber needs but they should help lessen the ecologically-dubious imposition of 'modern silvicultural practices' to groom more natural forests for exploitation.

Stephen Johnston

THE UNIQUE GARDENS OF JABIRU

One of the implications of the uranium mining township of Jabiru in the Kakadu

National Park is that it will have unique gardens. Only plants native to the Park, and exotic plants considered to be environmentally safe, will be allowed to be grown. This also applies for trees lining the streets, all amenity plantings, and plants used in erosion control and mine-site vegetation.

The Australian National Parks and Wildlife Service is trying to avert the danger of accidental spread of exotic plants from somebody's garden into the National Park. Australians should bear in mind that Paterson's Curse escaped from Mrs Paterson's beautiful garden, and other weeds (such as prickly pear and water hyacinth) have got started in a similar way.

So what will grow in a Jabiru country garden?

Last year the ANPWS provided funds to enable two officers of the National Botanic Gardens in Canberra, Mr John Wrigley and Mr Ian Telford, to go on two field trips to Kakadu (one in April, the other in August).

Travelling by four-wheel drive vehicle and helicopter, they set out to collect propagating material - cuttings, seeds, or rootstocks - from as many species as they could find. At the end of each day they packed the material and sent it by air to Canberra. The aim was for the National Botanic Gardens to propagate as much of it as they could in their glasshouses and to assess the suitability of plants for ornamental planting, soil stabilisation, and revegetation of disturbed areas.

An additional aim was to increase the number of Northern Territory plants growing in the Gardens.

Mr Wrigley and Mr Telford took cuttings of 304 species, made 244 seed collections, and dug up 123 specimens for transplanting. In addition, they collected 1153 herbarium voucher specimens. This rich collection of more than 500 species included dozens of new ones, including several un-named *Boronia* species.

Most of the collection had never been grown in cultivation before and considerable experimentation was needed to determine the optimum conditions for their germination and growth.

Despite the heat and distance, the cuttings travelled remarkably well, arriving in Canberra in fresh condition and, in general, they struck root at an encouraging rate.

The results of seed germination varied. In many cases this was because the seed could not be collected at its optimum maturity. Many of the seeds needed high temperatures (around 30°C) to persuade them to germinate.

Transplanted material didn't do very well as a rule. Aquatic plants didn't respond kindly to transport, and improved collection techniques are proposed for future collections. Nevertheless, some successful and worthwhile transplants were made.

In all, about 150 plant species were thought to have horticultural value. This indicates that the flora of the Kakadu National Park has potential for horticultural exploitation, as Jabiru and other places besides. Almost 1000 plants, propagated at the gardens, have now been sent to the Northern Territory for trial planting.

The list of 150 is, however, only a beginning, and more collecting trips to the Park are planned.

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UP AND DOWN IN KASHMIR

On 18 February Reg Alder took his audience back to June and July of last year when, as one of a party of 30 (two groups of 15 each), he spent five weeks in the mountains of the State of Kashmir and Jammu. His own somewhat laconic commentary complemented and accentuated the beautiful slides he took throughout the tour. We were introduced to the scene by a map of the area and a diagram representing the peaks up whose flanks the party scrambled and the valleys into which they plunged, the whole thing looking like a temperature chart for a bout of undulant fever.

Although I took notes throughout Reg's talk, I should find it impossible to report the tour day by day: only Reg himself could do that. So I decided to take out the highlights and hope that readers may gain some idea of the other-worldliness of that remote and rarified land. It must have required considerable physical adjustment to altitude, first of all, for the party moved between heights of from 6,000 to 17,000 feet and most of the time were above 10,000 feet. On our comparatively level plateau we are at a mere 2,000 feet in Canberra, and Bimberi is 6,300 feet, while Kosciusko tops 7,000 feet. Yet Everest surpasses the mighty peaks we beheld in Reg's photos by another 12,000 feet, or the height of Mount Cook, Aorangi, the Cloudpiercer, in New Zealand! The party had to be fit, but even those who were had bouts of diarrhoea and blistered feet.

Most of Reg's companions were Australian. However, there were as well a gallant Englishman and his wife, two cheery Canadian teachers, a male nurse, three female nurses, an electrician and an engineer making up the party, the first one away from Srinagar, where they had had a couple of familiarisation days in a comfortable houseboat on a water-lily lake.

Each party was accompanied by a tribe of bearers and cooks, chief of whom was a dramatic character who had been a chef in the days of the British Raj and maintained a proper sense of how things should be done. Two large flat baskets of white fowls were part of the cargo, travelling cluckingly on top of ponies, their number mysteriously diminishing as time went on. The Luncheon Pony carried a leaning tower of Pisa of steel containers fitting one into another and holding the excellent food cooked the night before by Sibana and his offsideers. Everything except the individual pack was carried by the sturdy mountain ponies who took the day's work and its adventures and misadventures in their patient stride, arriving at each night's campsite an hour or two after the main party. On one occasion a pony fell

into a crevasse, to be followed by his handler; both of them were eventually safely extricated. At night the ponies were hobbled and found enough food by grazing to carry them on without supplementary rations.

The start was usually at first light, for various reasons: usually the afternoons were so hot that it was best to reach the day's destination by lunch-time; also, the hot sunshine was liable to melt the higher snow and send a tidal wave of water, timber and carcasses careering down whichever river the party was following. One of Reg's most exciting slides was of the aftermath of one of these watery avalanches: a neat row of coloured tents beside what had been a placid stream when they pitched camp, but it woke the occupants with a menacing roar in the early morning, the lumps of ice and general flotsam just missing the encampment. There were wonderful slides of misty forests clinging to impossible steepes, and of stark, soaring peaks, still in half-darkness, their tips bathed in dawn sunlight.

In the valleys, such as the Wadvan which they followed for 5 days, from 6,500 to 15,500 feet, there were meadows of flowers and often quite luxuriant grass on which the nomadic mountain folk were grazing their sheep and ponies. The rivers were sometimes fordable without assistance, but usually a sort of handrail rope was taken across by a guide, to act as a stay in case someone stumbled in the swift water. At other times the party crossed on felled trees, swing bridges with yawning gaps in the planking, or once even by a proper bridge, though the perilous old bridge, not yet dismantled, had in the end of the used because the end of the new bridge finished in a chasm where work had not been completed.

Climbing to the passes, up moraines or glaciers, along steeply zigzagging trails must have been arduous in the extreme, and somewhat alarming, for instance the day when they crossed the Boktal Pass, from misty mountain sides loud with the roar of avalanches. The final pass which led them over to the Indus Valley and Kangi, where the buses awaited them for the return journey to Srinagar, was through mountains unbelievably contorted and grotesque, yet with their own wild beauty. By this time the party was lean and fit (even the tall, spare Reg lost 11 lb. on the tour) and probably beyond astonishment.

Reg had many slides of the local folk: a school, showing assorted nationalities in the facial characteristics of the wide-eyed youngsters, monks wearing quaint felt hats with upturned brims, one with a red-streaked beard to show he had been to Mecca, hawk-faced men and their handsome wives, weavers (always men) and wood-gatherers (always women), women wearing complicated turquoise-studded head-dresses.

The monasteries belonging to Buddhism and two different forms of Mohammedanism were always picturesque and difficult of access, usually ancient, occasionally new. One particularly interesting religious house had a subterranean kitchen detached from the main building, with solid twig reinforced clay chimneys the size of oast-houses coming up out of the ground. The monastery at Ringdom stood at 12,500

feet.

The houses were primitive, dark and begrimed, clinging to the mountainsides or perched on terraces above the torrents. They were roofed with shingles, sometimes very long, and on top was a storehouse of firewood and dried dung, often looking like a complete camouflage.

Apart from the ponies, goats and sheep, there appeared to be no animals except for a small furry marmot which would emerge squeaking with wonder to watch the passers-by without apparent fear.

When the party finally debouched at Kangi, their achievement was celebrated by a campfire and a ceremonial dinner. It was 80 miles by bus to Leh, following the Indus to 300 miles from its source along the irrigated valley floor, at 12,000 ft in a side valley. As there was a long Army convoy waiting to start, Reg's party in their none-too-young bus made their last dawn start, in order not to be held up. And so down the other side by the snaking, precipitous mountain road to Srinagar and their houseboat.

Slightly breathless ourselves, even in the safety of our Griffin Centre chairs, we warmly seconded President Neville Esau's vote of thanks and came back to 2,000 feet. After such an experience, I did wonder whether Reg, or Dan from Cooma, would ever be able again to tread with enthusiasm the old, weatherworn, blunted mountain tops of Kosciusko National Park. Perhaps, like Olive Buckman, they'll be off again, to tackle Mount Everest next time.

P. Wardle

NADGEE SAND DUNES

Chris Watson, one of our members, asked for information on the extensive sand dunes which are in or border on the Nadgee Nature Reserve. The following reply was received from the NPWS, Eden.

'Only about 10ha of the active sand dunes at Cape Howe are actually within the Nature Reserve. The remainder, north of the border trig station, fall within a Trigonometrical Reserve which is controlled by the Department of Lands. South of the border trig, where 99% of the active dunes are situated, the land comprises Croajingalong National Park and is administered by the Victorian National Parks Service (address is 240 Victoria Parade, East Melbourne, 3002).

Enquiries which I have made of long term residents in the Mallacoota Lakes area indicate that the coastal sand dune area has been grazed and periodically burnt since earliest European settlement up until as recently as the early 1970's. However, none of my informants was able to say that grazing and burning were the stimulus for the dunes to become active. Indeed, some claim that most of the present dune area has always had a tradition of being active (i.e. within memory and family history). This may be partly correct. The Victorian authorities suggest that the unvegetated dunes have resulted from an actively receding coastline and may therefore be a natural

evolutionary feature of the local landscape. Accordingly, they further suggest that no attempts should be made at stabilisation unless human interference is proven.

From the scale of the dunes, you will appreciate that it would be a waste of effort for the NSW National Parks and Wildlife Service to attempt stabilisation in isolation of other land use authorities. In any event, any stabilisation attempts may be in the face of natural erosive processes. Further research work needs to be done in this regard.

At present, the Service is not planning any stabilisation work in the area.'

VOLUNTEER WORK IN NATIONAL PARKS AND RESERVES

Members in this and previous issues of the NPA Bulletin will have noted an increasing amount of detail of the work carried out by volunteers in national parks and reserves.

The Queensland National Parks and Wildlife Service has adopted a co-ordinating role to direct the efforts of those willing to improve the parks by the removal of rubbish, weeds, old fences and buildings etc., plant seedlings, carry out investigations, assist in interpretive programmes, form walking tracks, restore buildings.

A new programme was initiated at the end of 1980 and a magazine called 'The Volunteer' gives regular information on the activities undertaken or proposed. The December 1981 issue marked the completion of the first year of the new programme and reported that the success and goals achieved to date can only be attributed to the enthusiasm and assistance of the volunteers involved. Citizens are encouraged to assist in parks within the urban areas as well as in those larger parks spread over the state.

One particular example has been at Pine Ridge Environmental Park where the Queensland NPWS and the Gold Coast City Council invited community groups to a 'Groundsel Eradication Day'. The groups, using hand tools, herbicide, and transport supplied by the Service and Council, chopped into the noxious weed under the watchful eyes of ecological experts. The success of this pilot scheme has encouraged similar projects throughout Queensland's parks and reserves.

On a similar note a volunteers' day was held at National Bridge National Park. The volunteers cut trails through lantana and planted out eucalypt seedlings to re-establish a forest canopy, filter the light and by doing so inhibit the lantana growth and allow the establishment of shade-tolerant rainforest species.

A volunteer programme involving Australian wildlife studies is now in its twelfth year and attracts people from all over Australia. The scheme has been successful in providing valuable information about the numbers, movement and habitat of nature animals, thereby helping the State Government to formulate protection and conservation policies. The scheme is so popular that it has now reached saturation point and in some areas assistance cannot be accepted.

LETTERS TO AND FROM THE ASSOCIATION

To: The Hon. Ian Wilson MP
Minister for Home Affairs &
Environment, 18 March 1982

'Proposed Artificial Snow Ski Run
Smoker's Gap ACT'

Information has been received from the Department of the Capital Territory on the progress that has been made with W & G Promotions towards the establishment by that company of an artificial snow ski run at Smoker's Gap on the Corin Dam Road in the ACT.

The stage reached is that a lease is being negotiated with a firm known as W & G Promotions. An agreement in principle has also been reached by the Capital Territory Health Commission with the firm as to the requirements for the disposal of effluent.

Conditions mentioned as being negotiated are

- . skiing will take place on artificial snow
- . buildings for a ski lift and car parking will be erected
- . public skiing is anticipated
- . clearing of forest for buildings, access road, and car parking will take place
- . water drawn for snow making will be from Gibraltar Creek. The quality and quantity of water drawn will be monitored.
- . conditions will be set for source and storage of drinking water, sale of food, toilet facilities and sullage disposal.

There has been no mention so far as to the preparation of an Environmental Impact Statement under the Commonwealth Environmental Protection (Impact of Proposals) Act by the proponent. As this project will have possible large scale effects on the environment, representation has been made to the Department of the Capital Territory regarding their proposals for the preparation of a statement and when this will be available for public comment.

My Association is very concerned at the large scale of clear felling which will take place to establish the ski run, for the erection of a ski lift, and for service/amenities building. The area proposed is at the swamp source of Gibraltar Creek and any despoliation will have serious effects on the flow and quality of the creek water. In addition, the base of the ski run and position of buildings and car parks is, as far as can be ascertained, in one of the few known aboriginal camps in the ACT. Important artifacts have been found there.

Has your Department been informed of these developments and, if so, have you initiated requirements for the preparation of an EIS with the proponent? The National Parks Association believes that, considering the scale of developments proposed, leases should not be granted until all requirements under the Impact of Proposals Act have been met.

Your support in ensuring the carrying out of this procedure would be appreciated.

From: Mr E Bedford, Minister
for Planning and Environment
23 February 1982

I refer to your letter dated 14th December, 1981, concerning military training exercises in that part of Morton National Park that comprised the former Tianjara Training Area.

The Director of National Parks and Wildlife has advised me that the Service has pursued a policy of opposing defence force activities in Service areas but that in a few cases applications have been approved. One set of circumstances where approval has been given is where established activities existed prior to the acquisition of, or the Service establishing an interest in a particular area. This is the case with the Tianjara area, and in addition, one of the conditions on which this land was made available for inclusion in the national park was that the Service would continue to negotiate with relevant federal authorities for future use of a suitable area for military exercises.

Your concern at the impact of recent military exercises on the area is shared by the National Parks and Wildlife Service. The matter has been taken up with Headquarters, 2nd Military District, Australian Army, to negotiate an interim agreement on usage. The Service is currently studying the Army's standing orders in respect of the use of the Tianjara Training Area as a prelude to negotiating such an agreement.

In the long term, detailed leasing arrangements for specific areas will be negotiated to permit continued military use. The leases will specify the terms and conditions for usage and will be binding on all parties. However, before the leases are negotiated a number of studies are being carried out for the Department of Defence, at the request of the Service.

The Division of Land Use Research, CSIRO, is undertaking an environmental study covering a description of the environment, the Defence impact on that environment and means of mitigating this impact. The Department of Prehistory Research is conducting an Aboriginal relics survey of Tianjara. The results of these surveys will be invaluable in determining the areas to be leased and the conditions to be applied.

In regard to the land presently excluded from the national park in the vicinity of Mount Tianjara, objections to dedication have been received from the Department of Mineral Resources. The Service is pursuing this matter.

To: Mr D Collins
15 March, 1982

The National Parks Association of the ACT recently conducted a weekend outing in the Cave Creek area and I understand that

several of our members had discussions with you during the return trip regarding developments in the area. You indicated a willingness to meet NPA members and discuss the forthcoming Kosciusko National Park Plan of Management proposals for Cave Creek.

We would very much appreciate the opportunity to discuss proposed development and to inspect the area with you. To help us plan a meeting, could you indicate if you are available on weekends. If so, would either Saturday or Sunday, 22/23rd May be a suitable date?

During our walks in the Cave Creek area we noticed a number of new developments which gave members cause for concern. Could you answer the following questions prior to our visit:

1. The new Kosciusko National Park Plan provides for a new road into Cave Creek and we assume this is the road now under construction. However, the Plan states that the road will be relocated away from the Creek and the existing camping area; the new road seems to follow the old route down to and across the creek; will the road be relocated or is this the new route.

2. The Plan proposes new camping and parking areas away from the existing areas beside the creek. Will this proposal be followed? If so, where are the new camping/parking areas to be located. NPA members regard the relocation of the car access areas as a matter of importance. The impact of continued car camping along the creek is extremely detrimental to the ecology of that area.

3. There is extensive evidence of intrusions by 4WD vehicles downstream from the present camping area; tracks have been forced along the ridges overlooking the creek all the way to the Goodradigbee junction. This has caused extensive environmental damage as well as introducing litter, rubbish, and possibly alien plant species. Can such vehicular incursions be prevented by suitable signs and barriers?

I hope you can give these questions your attention and I look forward to meeting you in the near future.

SAND DUNE FERTILITY

Sand dunes are traditionally regarded as an infertile medium, and the sight of mature rainforest flourishing on coastal dunes can come as a surprise.

The sand grains themselves consist of little more than silica, and owe their yellowish colouring to coatings of iron and aluminium oxides around the quartz grains. Electron probe analysis has shown that these coatings hold several elements necessary for plant growth.

To the root of the tree, these sands grains are therefore like tiny gobstoppers. Their oxide coatings trap such nutrients as calcium, magnesium, phosphorous and sulphur. Some trace elements such as zinc and molybdenum, are probably caught in the coatings too.

However, these nutrients are held in chemical complexes from which roots cannot readily extract them. Plant physiologists

have, for example, regarded the phosphorous attached to sand grains as largely unavailable to plants. It has now been shown that plants colonizing mobile dunes do make use of the nutrients around sand grains - thanks to fungi.

Ramifying through the sand beneath the dune vegetation are enormous numbers of fine fungal threads called hyphae. They particularly abound in rainforests, but even bare sand near the sea contains fungal spores, and hyphae grow around the roots of plants colonizing the youngest dunes.

These fungi form mycorrhizas - intimate associations between roots and fungal hyphae in which the fungi make nutrients available to the higher plant, which in turn probably supplies various organic compounds that the fungus, having no chlorophyll, cannot synthesize for itself.

Such symbioses are familiar to growers of orchids and pine trees. Some hyphae even invade cells of the plants' roots, forming endomycorrhizas.

The CSIRO scientists found that all the colonizing plants on young dunes either formed mycorrhizas or possessed proteoid roots - the roots found in members of the family Proteaceae, such as Banksia and Grevillea, that are particularly efficient at extracting phosphorous from soil.

Hyphae abound on certain parts of the dunes. Between 2 and 20cm below the surface, each millimetre of sand near a colonizing plant holds up to 4m of fungal hyphae extending out from the plants' roots and clinging strongly to sand grains. Although the threads themselves are microscopic, you can often see long strings of grains, revealing the presence of hyphae.

By clumping grains in this way, fungi help to stabilize bare sand. X-ray fluorescence analysis has shown that the grains next to hyphae are poorer in nutrient elements than other grains, and it seems certain that the hyphae have extracted these nutrients and transported them to the roots of the plants. The fungi probably boost the supply of water to their associated plants too.

A fuller understanding of the role of mycorrhizal fungi in helping higher plants become established on bare ground could be of value in projects to revegetate dunes and other areas disturbed by various forms of mining throughout Australia. Further studies have been initiated.

From 'The Dunes of Cooloola'
CSIRO-ECOS Issue 30

NEW MEMBERS

The following new members are welcomed to the Association: Elizabeth Brereton, Queanbeyan; Dennis Brown, Braddon; Ursula Callus, Higgins; E. Jill Davidson, Curtin; Heather Davidson and family, Kambah; Mr & Mrs M. Day, Deakin; Barbara Hicks, Cook; Linda Hopkinson, Rivett; Mrs M. Kusel, Weetangera; Greg McLeod, Kaleen; John Messner, Campbell; David & Margot Reedy, O'Connor; John Rohde, Braddon; Hugh & Ruth Southan, Red Hill; Brenda Sweetnam, Holt; Babs Thompson, Garran; Mrs W. Tietz, Narrabundah; Margaret Vickers, Red Hill.

'YEAR OF THE TREE'

PHOTOGRAPHIC COMPETITION

As a project within the 'Year of the Tree' the Association is conducting a photographic competition with the subject as 'Trees of the ACT'. Entries should be handed to the Secretary by 31 October 1982 and will be judged by Colin Totterdell. The entries will be displayed at the November General Meeting.

Photographs should be 20.3cm x 25.4cm (8x10 inches), black and white on glossy paper. The winning entry, if suitable, will be used as the cover picture on the Bulletin.

A CURIOUS AND DIVERSE FLORA

The feature of the June General Meeting will be the 60 minute film 'A Curious and Diverse Flora' produced jointly by the CSIRO and the Australian Academy of Science to be first shown at the XIIIth International Botanical Conference in Sydney during August 1981.

Dr Peter Valder of the University of Sydney wrote and narrated the commentary as well as appearing throughout the film to describe, explain and demonstrate the colour, diversity and biological peculiarities of Australia's native plants.

The film has five distinct sections starting with Botany Bay and there depicts some of the species which first caught the attention of Joseph Banks and Daniel Solander when they disembarked from the 'Endeavour' in 1770. The species shown include, grass trees, casuarinas, wattles, eucalypts and banksias.

The second section deals with the most interesting plants in the south western corner of West Australia which, because of their long-term isolation from related plants in other parts of the world, have evolved a most distinctive flora.

Factors which allow hard leaved vegetation to survive in the harsh Australian environment are described in the third section. The fourth section discusses some of the major trends in the evolution of both rainforest and arid vegetation.

Finally, the similarities between Tasmania's flora with those of New Zealand, South America and Antarctica are explored in relation to the theory of continental drift.

A set of 60 colour transparencies (35mm) can be purchased for \$28 from the CSIRO Film and Video Centre, 314 Albert Street, Melbourne, Victoria 3002.

POOR SHOTS

The following is an extract from a report in 'New Scientist' of 7 May 1981 of the debate in the House of Commons on the Wildlife and Countryside Bill.

John Farr, a Conservative backbencher, deplored 'restrictive' clauses...that would harm wildfowling, 'the recreation of the working man'. A ban on shooting redshanks, curlews and bar-tailed godwits would affect tens of thousands of people, he said and was unnecessary because few birds are shot.

NATIONAL PARKS ASSOCIATION OUTINGS

Please notify the leader by the previous Wednesday of your intention to go on any weekend outing.

The Committee suggests a donation of 3 cents per kilometre (calculation to nearest dollar) be offered to the driver by each passenger accepting transportation. Distances quoted, for one way only, are approximate and for guidance only.

All persons joining an outing of the National Parks Association of the ACT do so as volunteers in all respects and as such accept sole responsibility for any injury howsoever incurred and the National Parks Association of the ACT, its officer bearers and appointed leaders are absolved from any liability in respect of any injury or damage suffered whilst engaged on any such outing.

June 6 Sunday Smoker's Flat: Walk
 Leader: John Webster 476769 Ref: ACT 1:100,000
 Meet: Cotter Road-Eucumbene Drive 8.30 am. Walk on tracks from Corin Dam road, 'a bit up and down'. 7km walk. 50km drive.

June 6 Sunday Duffy Pines: Walk
 Leader: Margaret Aston 887563 Ref: ACT 1:100,000
 Meet: Cotter Road-Eucumbene Drive 1.30 pm. Ramble through pine forest and open country west of Duffy. Afternoon tea. 4km walk.

June 12-14 Long Weekend Green Patch: Camp
 Leader: Ian Currie 958112 Ref: Jervis Bay
 Car camp, Green Patch, Jervis Bay. Restricted numbers so contact leader. 250km drive.

June 12-14 Long Weekend: Deua River: Pack Walk
 Leader: Garth Abercrombie 814907 Ref: Araluen 1:100,000
 Contact leader for details. 140km drive.

June 20 Sunday Mr Tennant: Walk
 Leader: Charles Hill 958924 Ref: ACT 1:100,000
 Meet: Mugga Lane-Monaro Highway 9.00 am. Climb 800m up the access road to the fire watching tower; return down ridge. 16km walk. 40km drive.

June 27 Sunday Mt Palerang: Walk
 Leader: Reg Alder Ref: Braidwood 1:100,000
 Meet: Canberra Railway Station 8.30 am. Walk up fire trail and ridge, returning over mountain with minor rock scrambles. 10km walk. 50km drive. Last section rough but negotiable.

July 4 Sunday Billy Billy Rocks: Walk
 Leader: John Webster 476769 Ref: ACT 1:100,000
 Meet: Eucumbene Drive-Cotter Road 8.30 am. Some rough walking through scrub, over fallen timber, and a climb to view huge granite boulders. 10km walk. 55km drive.

July 10-11 Weekend Mt Houghton: Pack Walk
 Leader: Neville Esau 864176 Ref: CMW Budawang Range
 Walk on some tracks, some scrub through rainforest and swamp for a cave camp. Contact leader for details. 25km walk. 160km drive.

July 11 Sunday Hospital Creek Falls: Walk
 Leader: Beverley Hammond 886577 Ref: ACT 1:100,000
 Meet: Mugga Lane-Monaro Highway 8.30 am. Walk along fire trail in Gudgenby, across paddocks, short scrubby climb. 9km walk. 50km drive.

July 17-18 Weekend Pebbly Beach: Car Camp
 Leader: Fiona Brand 479538 Ref: Bateman's Bay 1:100,000
 Camp in Murramarang National Park on the south coast. Contact leader for details. 20km north of Bateman's Bay.

July 18 Sunday Mt Majura: Walk
 Leader: Hansene Hansen 473453 Ref: ACT 1:100,000
 Meet: Riding School, Jukes Street Hackett 10.00 am. Graded walking track, stiles over fences for views of Canberra and Majura Plains. Bring lunch.

July 25 Sunday Cotter Gap: Walk
 Leader: Lyn Richardson 415498 Ref: ACT 1:100,000
 Meet: Mugga Lane-Monaro Highway 9.00 am. Walk up the fire trail and through open forest over the ridge. 12km walk. 50km drive.

July 24-25 Weekend Saw Pit Creek: Ski Camp
 Leader: Garth Abercrombie 814907 Ref: Kosciusko 1:100,000
 Contact leader for details of this camping and skiing weekend.

August 1 Sunday Molongolo Gorge: Walk
 Leader: Olive Buckman 733017 Ref: ACT 1:100,000
 Meet: Picnic Area opposite main gates of Duntroon at 9.30 am. Slow
 walk up gorge on track beside river, returning for barbeque lunch at
 1.00 pm.

August 1 Sunday Mt Booth: Walk
 Leader: Les Pyke 812982 Ref: ACT 1:100,000
 Meet: Mugga Lane-Monaro Highway 8.00 am. Walk up Brandy Flat fire
 trail, then through rocky outcrops and scrub to the top with some steep
 climbs. Perhaps snow. 12km walk. 65km drive.

August 8 Sunday Tinderry Peak: Walk
 Leader: Reg Alder 542240 Ref: Michelago 1:100,000
 Meet: Michelago Post Office 8.30 am. Some scrub and rock scrambling;
 500m climb. 14km walk. 60km drive.

August 14-15 Weekend Bundanoon: Camp
 Leader: Ian Currie 958112 Ref: Moss Vale 1:100,000
 Contact leader for details of this wild flower viewing weekend. 160km
 drive.

August 14-15 Weekend Tuross Gorge: Pack Walk
 Leader: Neville Esau 864176 Ref: Cobargo 1:100,000
 An exploration walk. Contact leader for details.

August 22 Sunday Lake George: Walk
 Leader: Betty Campbell 811771 Ref: ACT 1:100,000
 Meet: Canberra Airport 10.30 am. Bird watching walk on the shores of
 Lake George. 5km walk. 40km drive.

August 22 Sunday Kiandra: Day Ski Tour
 Leader: Denise Robin 814837 Ref: Tantangara 1:100,000
 Yarangobilly 1:100,000
 Contact leader for details of this day ski trip. Beginners' level,
 although some experience preferred. Actual destination to be determined
 by snow and weather conditions. 250km drive.

August 29 Sunday Pierce's Creek: Barbeque
 Leader: President Ref: ACT 1:100,000
 Meet: Cotter Kiosk 11.00 am. Come to the President's Barbeque; short
 walks after lunch.

September 5 Sunday Mt McDonald: Walk
 Leader: Bill Adams 487584 Ref: ACT 1:100,000
 Meet: Eucumbene Drive-Cotter Road 9.30 am. Stroll to Mt McDonald on
 gentle grade and curves with 2km of steep track, to view Cotter area.
 10km drive.

September 5 Sunday McKeahnie: Walk
 Leader: Garth Abercrombie 814907 Ref: Corin Dam 1:25,000
 Meet: Mugga Lane-Monaro Highway 8.00 am. Walk through scrub and broken
 rock up the ridge with 500m climb. 16km walk. 50km drive.

September 11-12 Weekend South Budawang: Pack Walk
 Leader: Babette Scougal 487008 Ref: Corang 1:50,000
 Meet: Canberra Railway Station 8.15 am. Weekend pack walk and cave
 camp. 6km walk into cave with ascent and descent of 200m. Then
 exploratory walks with day pack Saturday afternoon, Sunday morning.
 Contact leader. 120km drive.

September 12 Sunday Middle Creek: Walk
 Leader: Brian Hammond 814777 Ref: ACT 1:100,000
 Meet: Monaro Highway-Mugga Lane 8.30 am. Walk in Gudgenby Reserve up
 Middle Creek, scrub and rough tracks. 12km walk. 50km drive.

September 18 Saturday Black Mountain: Walk
 Leader: George Chippendale 812454 Ref: ACT 1:100,000
 Meet: Belconnen Way entrance 9.30 am. Morning ramble to see the
 flowers for those aged 4 to 80. Bring morning tea; finishes at 12.00.

September 19 Sunday Micalong Swamp: Field Nature Outing
 Leader: John Banks 816641 Ref: Brindabella 1:100,000
 Meet: Goodradigbee Bridge at Brindabella 10.00 am. An outing to
 investigate the ecology of Micalong Swamp on the headwaters at Micalong
 Creek. John Banks will describe a number of interesting features of
 this area including its landforms, flora and the influence of the
 surrounding area.

* People interested in a snow camping experience on the weekend of 28,
 29 August, please contact Babette Scougal - 48.7008(H) 49.2141(W) - by
 the end of June so that forward arrangements can be made.

NATIONAL PARKS ASSOCIATION OF THE AUSTRALIAN CAPITAL TERRITORY INC
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Annual Subscription Rates

1 July - 30 June:	Family members \$12	Student members \$5
	Single members \$10	Corporate members \$5
	Pensioners \$5	Bulletin only \$5

For new members joining between:

1 Jan - 30 June: Half specified rate
1 April - 30 June: Annual Subscription - 15 month's membership benefit

AIMS AND OBJECTIVES OF THE ASSOCIATION

Promotion of national parks and of measures for the protection of fauna and flora, scenery and natural features in the Australian Capital Territory and elsewhere, and the reservation of specific areas.

Interest in the provision of appropriate outdoor recreation areas.

Stimulation of interest in, and appreciation and enjoyment of, such natural phenomena by organised field outings, meetings or any other means.

Cooperation with organisations and persons having similar interests and objectives.

Promotion of, and education for, nature conservation and the planning of land-use to achieve conservation.

DEADLINE DATES for NPA Bulletin contributions: 15 July, 15 October, 15 December, 15 April

OUTINGS SUMMARY

June

6	Sunday	Smokers Flat	Walk
6	Sunday	Duffy Pines	Car Camp
12-14	Queen's Birthday	Green Patch	Car Camp
12-14	Queen's Birthday	Deua River	Pack Walk
20	Sunday	Mt Tennant	Walk
27	Sunday	Mt Palerang	Walk

July

4	Sunday	Billy Billy Rocks	Walk
10-11	Sat-Sunday	Mt Houghton	Pack Walk
11	Sunday	Hospital Creek Falls	Walk
17-18	Sat-Sunday	Pebbly Beach	Car Camp
18	Sunday	Mt Majura	Walk
25	Sunday	Cotter Gap	Walk
24-25	Sat-Sunday	Saw Pit Creek	Ski Camp

August

1	Sunday	Molonglo Gorge	Walk
1	Sunday	Mt Booth	Walk
8	Sunday	Tinderry Peak	<u>Car Camp</u>
14-15	Sat-Sunday	Bundanoon	Car Camp
14-15	Sat-Sunday	Tuross Gorge	Pack Walk
22	Sunday	Lake George	Walk
22	Sunday	Kiandra	Ski Tour
29	Sunday	Pierce's Creek	Barbeque

September

5	Sunday	Mt McDonald	Walk
5	Sunday	McKeahnie	Walk
11-12	Sat-Sunday	South Budawangs	Pack Walk
12	Sunday	Middle Creek	Walk

GENERAL MEETINGS

Held at 8.00 pm, Room 1, Griffin Centre, Bunda Street, Civic.

June - Thursday 17 1982, 60 minute documentary film A CURIOUS AND DIVERSE FLORA. See commentary in this issue.

July - Thursday 15 1982, Sonia Tidemann, Zoology Department, ANU, BOOLIGAL BIRDS AND THEIR HABITAT.

August - Thursday 19 1982, Annual General Meeting and Election of Officers. Slides of the year's outings.