Upper Blue Mountains Conservation Society NEWSLETTER

No 60 - JUNE, 1985 Price 20¢ - P.O. Box 29, Wentworth Falls

Editor: E.Collings, 20 Parkes Street,WENTWORTH FALLS

PATRON: Allen Strom, A.M.

ACTING PRESIDENT: Michael Dark (58-7061). VICE PRESIDENTS: Joy Anderson (57.1602) E.Blick (88.1051) SECRETARY: David Horton-James (57.3270)
TREASURER: Ross Fitzgerald (57.3267)

COMING MEETINGS: AT THE CONSERVATION HUT,VALLEY OF WATERS RESERVE, VALLEY ROAD,WENTWORTH FALLS AT 7.30 P.M.

For speakers at coming meetings held on the last Friday of the month,please see Public Notices in the 'Gazette'.

Walks Programme

COMING WALKS:

July, Sunday 7th: - Wollangambe Wander. Mt Wilson - Wollangambe River
Meet Mt.Victoria Station 9.30 a.m. Interesting rock formations. Ground ferns. A peep into the canyons. Medium
Leader: David Noble 87.8342

July,Thursday 18th: Wentworth Falls
Meet at south end of Falls Road 10.00 a.m. A walk to Den Fenella, undercliff walk to Wentworth Falls. Lovely views. Interesting vegetation.
Leader: Beverly Thompson. 57.2076

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Leaders or participants with any problems please ring Walks Conveners Keith Sherlock 57.1927 or Lloyd Jones 57.2270

REPORT ON WALK TO THE RUINED CASTLE

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Twenty five of us set off down the Golden Stairs from the parking area on Narrowneck. Another couple joined the group as we were walking along the old shale railway track which is now, of course, the access track to the Ruined Castle and Mount Solitary.

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Keith Sherlock.

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Now the good news is that a sister edition is about to be published called 'Native Plants of the Lower Blue Mountains'. It should be ready about August in time for the spring wild flowers.

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HELP! HELP!

Volunteers are wanted to keep agapanthus, privet, blackberries and other exotic weeds at bay round the Hut. These pests have become established over the years and need to be replaced by native plants.

Working bees are arranged every second Tuesday, from 10 a.m. If you can help, please ring 57.2131.

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WILSON'S PROMONTARY

A VISIT TO THE BEAUTIFUL WILSONS PROMONTORY NATIONAL PARK

One of Victoria's largest and most spectacular national parks, Wilsons Promontory or the Prom as it is affectionately known, has long been popular with bushwalkers and sightseers. Never attempt to visit the area in holiday periods however, as the place is crowded out and in fact camp sites are balloted. Located 230 km south-east of Melbourne, the Park is probably unique in Australia in-so-far as a whole peninsula has been closed off for a national park,thus preventing the intrusion of mankind with all the problems he brings in terms of pollution,the introduction of exotic species etc.

BYGONE DAYS

Aborigines once gathered shellfish around the shores, but little evidence of their activities remains today.

In the early 1800s, sealers and whalers operated around the Promontory, while other activities have included timber-cutting, tin mining and grazing, and during World War 2, commando training.

Concern for the threat of exploitation of the Prom's resources and for the preservation of its outstanding natural features led to its permanent reservation as a national park in 1905. Additions since have brought the park to its present size of approximately 49,000 ha,and includes a number of off-shore islands which are of vital importance as undisturbed breeding-grounds for seals and seabirds. No longer do sealers go ashore with clubs and knives as they did last century.

GRANITE AND SAND

The main part of the Promontory is a granite mass,forming rugged ranges to 754 m. Several times in the last million years, changes in sea-level have turned Wilsons Promontory into an island. The last occurred about 120,000 years ago, after which sand gradually built up in the gap between the island and the mainland. The Promontory was subsequently joined to Tasmania by a land bridge which was broken by a rise in sea level about 15,000 years ago.

HABITATS AND WILDLIFE

Many different habitats occur in the park, and over 700 species of native plants are recorded. There are tall forests on the mountains slopes, luxuriant fern gullies in the valleys, open heaths, and swamps.

All these provide shelter and food for native mammals and birds. Kangaroos, wallabies, koalas, wombats and possums were some of the mammals we saw, and emus, rosellas, lorikeets, wattle birds and numerous seabirds were amongst the many birds. In fact, we kept returning to the fine Park Headquarters with its excellent displays in an attempt to identify birds and flowers we had seen on a particular hike. At one stage we thought it would be great to have Jill Dark and Graham Alcorn along with us to identify the many plants and birds but then decided that would not have been a good thing as our progress would probably have been restricted to about 300 yards per hike while Jill and Graham became lost in a world of plants and birds!

WALKS

The Prom contains many fine walking trails taking in a variety of scenery. Perhaps the most outstanding one was the Lilly Pilly Gully Nature Walk. It was an introduction to the Prom's plant and animal communities and takes in all manner of scenery from heathland, dry sclerophyll forest, rainforest and a climb to Mt. Bishop with wonderful views of the Park and coast.

Other excellent walks which will remain in our memory - Mount Oberon Nature Walk with its changes in vegetation as one climbs to the top; Millers Landing Nature Walk where Saw Banksias and Black-tailed Swamp Wallabies abound and you can see the southernmost mangrove trees in the world and finally, Tongue Point, a fine hike through Messmate and Shining Peppermint, She-oak etc, on to open forest and then descending to low heath land with magnificent views of the coast and a spectacular mass of flat granite disappearing into the water for all the world like a giant tongue - hence the name of this walk.

We look forward to a return trip to the Prom and trust that next time we have better weather - half a days sunshine in a week and walking with an umbrella in one hand and raincoat in the other is ridiculous!

Judy and Graham Kerr

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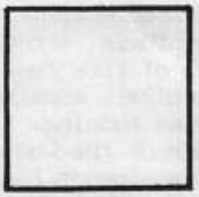
MEMBERSHIP FEES

Members are reminded that fees for the year are due from 1st April 1985. They are as follows:

Single Pensioners and Juniors	$2.00
Married Pensioners	$3.00
Single Membership	$5.00
Family Membership	$8.00



If the square on the right contains a red dot, your membership fees are due. Two red dots indicate that membership fees are owing for more than a year. Please forward to "The Membership Secretary, P.O. Box 29, Wentworth Falls, 2782."

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LIBRARY.

The Society's Library has a list of some 180 books and magazines on a great range of subjects connected with wild life and conservation.

If you would like a list of books available, please let your friendly Librarian know at the next General Meeting, or phone 57.2131.

Prescribed Burning and Forest Nutrition

THIS IS THE FIRST PART OF AN ARTICLE PUBLISHED RECENTLY IN THE SUMMER 1984/85 EDITION OF ECOS, CSIRO'S MAGAZINE ON SCIENCE AND THE ENVIRONMENT.

In classical mythology, fire was given to man as a gift from the gods. In more recent history, however, uncontrolled fire has become a major problem to man - in Australia, the ravaging flames of bushfires have left wide trails of destruction and have burnt themselves into the nation's memory through outbreaks like the 1983 Ash Wednesday disaster.

Most of Australia's native vegetation has evolved in the presence of fire and much of the country is extremely fire-prone. Fire affects the distribution and growth of plants either directly or through its influence on soil properties and nutrient supplies. And it is essential for the survival of some Australian plant species. But its long-term effects on Australian plant communities are poorly understood - fire can either benefit or damage an ecosystem, depending on the length of time between burns, the intensity of the fire, the season when it occurs, soil characteristics, and so on.

Prescribed burning

Uncontrollable wildfires begin with a potent mixture of highly flammable eucalypt fuels, strong winds, and heat-wave conditions. To prevent excessive build-up of fire fuel - twigs, leaves, bark and understorey vegetation - in Australia's eucalypt forests, foresters use hazard-reduction burning, or prescribed burning. This technique - initially researched by Mr Alan MacArthur of the Commonwealth Forest Research Institute and then by the CSIRO Division of Forest Research, in co-operation with State forest services has been used in this country for 20 years to reduce the bushfire risk. Every 3-8 years, low-intensity fires are started by incendiary devices dropped from aircraft in a predetermined firing pattern during mild weather in autumn or spring. About a million hectares are subjected to this prescribed burning each year. The immediate effect is to reduce available fuel and assist fire control, but do these frequent fires have other effects on our forests?

Dr John Raison, Dr Partap Khanna and Mr Paul Woods, of the Division of Forest Research, have been examining various aspects of this question since 1977. They are studying the nature and magnitude of the effects of low-intensity prescribed fire on fuel dynamics, pools of nutrient (nitrogen,phosphorus, potassium, sulfur,and calcium) and nutrient-cycling processes in three contrasting sub-alpine eucalypt forest communities situated in the Brindabella ranges near Canberra. The forests are dominated by snow gum, alpine ash, and mountain gum-peppermint eucalypts. These communities are typical of large tracts of mountain forest in south-eastern Australia.

Most Australian forests grow on nutrient-poor soils that receive only very low rates of nutrient input from weathering, rainfall or nitrogen-fixing understorey shrubs. Such communities are likely to be sensitive to disturbance caused by regular burning. We know a little about how particular species of plants in various Australian forest communities respond to burning, but very few data exist on the effects of fire on the soil, particularly on biological processes related to nutrient cycling and soil fertility.

Fuel dynamics

The rate of litter decomposition (which includes both physical breakdown of leaves, twigs,etc and mineralization processes)in forests affects the rate of build-up and total quantity of accumulated litter (fuel), the amount of organic matter in the soil, and the rate at which nutrients cycled in litterfall return to a form available for re-use by vegetation.

The scientists studied the litter decomposition in both unburnt and burnt subalpine forests and found that the major release of organically bound nutrients does not occur until litter has undergone several years of decay, when decomposition rates increase as leaves become fragmented and incorporated into lower moister litter layers. After prescribed burning, the amount of solar radiation absorbed by the forest floor increases; this in turn hastens the rate of drying of the remaining and newly fallen litter after rain, reducing litter decomposition rates.

These studies provide information for answering two important questions; how does repeated fire change nutrient balance and cycling processes, and how quickly do fuels build up after a fire? Knowing patterns of fuel accumulation in different types of forests is essential for formulating scientifically based fire management plans.

To answer the second question, the scientists compiled information from two sources - the published results of previous studies and their own measurements in the Brindabella mountains. They found that, for dry sclerophyll forests after fires,litter accumulates to dangerous levels in 3-6 years, severely limiting the period during which prescribed burning provides protection from wildfire. The rapid build-up of nutrients in litter also means that they are highly susceptible to loss in smoke during subsequent fires.

After a low-intensity fire, litter accumulates very rapidly at first, mainly because the total amount of it decomposing on the forest floor decreases markedly while rates of litter input remain as high as before. The litter build-up can be readily predicted from simple equations and always approaches a 'steady-state' value - indicating that fire risk does not continue to increase with time but rather reaches a constant level.

In the Brindabella study, litter weights of up to 12 tonnes per hectare, sufficient to create control problems under high to very high fire-danger conditions, accumulated within 4 years of a fuel-reduction burn. Earlier studies by other researchers have shown that maximum fuel weights consistent with hazard-reduction requirements range from about 10 to 15 tonnes per hectare. Similar rates of fuel accumulation occur in many other Australian eucalypt forests.

Not only litter, but undergrowth as well, contributes to fuel; apart from adding to the total weight of fuels, its presence may affect fire spread by passing on flame above the litter layer and by influencing wind fields. some shrubs, such as Daviesia species, are highly combustible. Combustion of elevated fuels (shrubs or eucalypt litter suspended by ground vegetation) usually results in increased fire intensities and greater 'scorch' heights.

Dr Raison, Dr Khanna and Mr Woods stress that, currently, inadequate knowledge of the relations between fuel weight and fire behaviour under high to very high fire-danger conditions makes it impossible to define with any certainty a safe maximum mass for fuel,and thus to determine the number of years for which prescribed burning will effectively reduce fire hazard.

They suggest that, where studies of fuel dynamics indicate that prescribed burning gives only a short period of effective hazard reduction, forest managers need to consider alternatives to short-rotation,broad-scale burning. They stress the need for integrated fire management and have proposed the use of strategically located buffer zones, which are frequently burnt and the lengthening of fire rotations for areas between these. More effective fire detection and monitoring and greater suppression capability, are also needed.

The researchers emphasize the importance of assessing the long-term ecological impacts of repeated burning and using these assessments as a basis for selection of appropriate management strategies.

Studies by Dr Sid Shea of the Western Australian Forests Department and other researchers indicate that frequent burning with low-intensity fire can alter the under-storey species composition, In parts of Western Australian jarrah forest, non-leguminous understorey species have replaced important nitrogen-fixing legumes after low-intensity burns.

Another significant question in relation to prescribed burning concerns its impact on ground cover and soil erosion. Erosion depletes soil and can adversely affect the quality of water, the vital product of forest catchments.The few data available suggest that, on impermeable soils, erosion rates increase after burning;this is an area requiring further research.

LAND AT KINGS TABLELAND

The Land Fund Committee has recommended some environmentally important land on Kings Tableland near the Kings Table for purchase for addition to the Blue Mountains National Park. The landholder is interested in selling the area. The National Parks and Wildlife Service will gladly take over the responsibility of buying the land using the Land Preservation Fund's money, if the Society can come to a satisfactory agreement with the owner regarding price.

About thirty Members have already visited the area and have given unanimous approval. All Members are invited to inspect the land.

Please phone Winsome ~~Gordon~~ GREGORY - 57.1573.

LAND PRESERVATION FUND

The Society has a Land Preservation Fund which was set up to give lovers of the bush an opportunity to help to preserve some environmentally important land in the Blue Mountains by its purchase and dedication as a reserve.

Tax Deductible Donations (Minimum $20.00)

The forms below show you how to make a tax deductible donation to the Australian Conservation Foundation, advising ACF of your preference that the funds be used for the Land Preservation Fund of the Upper Blue Mountains Conservation Society.

The Director
Australian Conservation Foundation,
672B Glenferrie Rd.,
HAWTHORN VIC 3122

Dear Sir,

I attach a donation to the Australian Conservation Foundation. I prefer that this donation be spent for the purposes of the Upper Blue Mountains Conservation Society * Land Preservation Fund. I understand that this donation is tax deductible and therefore look forward to your receipt.

* formerly Katoomba & District Wildlife Conservation Society.

Name (block letters) .....

Address .....

.....

Amount ..... Signed ..... Date .....

The Treasurer,
Upper Blue Mountains Conservation Society,
P.O. Box 29,
WENTWORTH FALLS 2782

Dear Sir,

I have forwarded today to the Australian Conservation Foundation a donation expressing a preference that it be spent for the purpose of the Upper Blue Mountains Conservation Society Land Preservation Fund.

Name .....

Address.....

.....

Amount ..... Signed ..... Date.....

UPPER BLUE MOUNTAINS CONSERVATION SOCIETY

(registered under Charitable Collections Act)

ANNUAL REPORT

MARCH 1985

Objects of the Society as set out in the Constitution are:

a) To disseminate and foster an understanding of the ideals of Conservation among members of the Society and the public generally, particularly in relation to the unique resources of the Blue Mountains.

b) To conduct meetings, excursions and research, and such other activities as may be determined by the Society in relation to Wildlife Conservation, and especially through the Conservation Hut at the Valley of the Waters, Wentworth Falls, to provide information on Conservation matters.

c) To maintain friendly relations with other Conservation Societies especially local bodies.

Affiliations:

The Society is a corporate member of:The Australian Conservation Foundation, Total Environment Centre, National Parks Association,National Trust of Australia(N.S.W.), David Stead Memorial Foundation, Nature Conservation Council of N.S.W.,Wildlife Preservation Society of Australia, Gould League, Colong Committee.

UPPER BLUE MOUNTAINS CONSERVATION SOCIETY
P.O. Box 29, Wentwoth Falls

MEMBERSHIP RENEWAL FORM
March, 1985.

The Membership Secretary:
I enclose a cheque or postal note for..... for the renewel of my membership.

Name.....

Address.....

Single $5.00
Family $8.00
Conses.$2.00

PRESIDENTS REPORT-1985

This meeting brings to an end another year of dedicated effort by members of our society.Membership has risen and now stands at 330 members.

THE HUT - The hut has been repainted inside and out and some radical changes have been made to the exhibits. A hut sub-committee has been formed and is currently looking at the possibilities of replacing the hut with a more suitable building. Several working bees to clean up and replant around the hut have been held during the year. Many thanks are due to the roster volunteers and their organiser.

MEETINGS - Speakers during the year were Jill Dark on attracting birds to the garden; Keith Sherlock on a members safari to Northern N.S.W. National Parks; Tony Williams on Plans for N.P.W.S. Heritage Centre at Blackheath; Malcom King on the value of murals on public buildings; Rowe Morrow on the work of The Australian Trust for Conservation Volunteers; Steve McDonald on a cycling trip in W.China, and treking in in the Himalayas; and Irene Coates on the Blue Mountains Highway improvements.

NEWSLETTER- It was decided that the newsletter should be professionally printed - this allows the inclusion of sketches, resulting in a much improved and attractive newsletter. Many thanks to the editor and helpers.

NATIVE PLANT DAYS - These continue to be popular and in fact the February day attracted over 60 people to hear Jill Dark and Graham Alcorn combine to talk about birdscaping your garden.

LIBRARY - This has been ably managed by Betty and Ewart Collings, with several important new acquisitions.

Other activities undertaken included society members working with A.T.C.V. projects and assistance given to N.P.W.S. with a visitor survey of Blue Mountains National Park undertaken by N.P.W.S.

PRESIDENTS REPORT (CONT.)

Finally I would like to thank all members of the Management Committee who really carried the Society through the year. Special mention must go to our retiring Secretary for a truly magnificent effort.

M. Dark
President

LAND PRESERVATION FUND COMMITTEE

The Committee is pleased to report another successful year with over $2,000 being added to the Fund. It is very grateful for the support it has received.
The Committee has recommended purchase of approximately 3h.a. near the King's Table,Kings Tableland,Wentworth Falls for addition to the Blue Mountains National Park. The Society is at present negotiating with the landholder.

Winsome Gregory
Convener

WALKS REPORT

Again during the last twelve months we managed to break some new ground in regard to Society walks. The trend commenced with the walk to Gibralter Rocks led by John & Olive Noble. Most of the Six Foot Track has now been traversed and there remains only the section from the Caves Road to the Caves House along the original Six Foot Track to be done.
A somewhat tougher walk than usual was the Govett's Leap to Perry's Lookdown via The Junction and Blugum Forest. The day was fine and we all managed the ascent of Perry's without having to call for helicopters.
Some old favorite walks were also undertaken and these included:

WALKS REPORT(CONT.)

Bluegum Swamp(Jill Dark), Wentworth Pass inthe rain!(Graham and Judy Kerr), Wall's Cave(Rachel Makinson), Mount Banks, Gordon Falls(Beverley Thompson), Lockley's Pylon(Jill Dark), The Grand Canyon(Graham and Judy Kerr), and Dante's Glen to Fairy Falls(Grace Bailey). Keith Sherlock

OFFICE BEARERS

The following were elected at the Annual General Meeting held on the 29th March,1985:

President:MickDark (for 3 months only);Vice-Presidents:Eric Blick and Joy Anderson;Secretary:David Horton-James;Treasurer: Ross Fitzgerald;Membership Secretary:Ross Fitzgerald; Correspondance Secretary:June Blick;Hut Curator:Lois Sattler; Publicity Officer:Eric Blick;Newsletter Editor:Ewart Collings; Hut Roster:Beverley Thompson;Hut Supplies:Olive Noble;Librarians: Betty Collings and Sue Gardner;Walks Co-ordinators:John & Olive Noble;Minute Secretary:Rick Maskey;Hut Supplies(Publications):Barbara Towers;Land Use Committee members:Bary Barnes, Mick and Jill Dark,Barbara Towers,Sue Gardner,Lois Sattler, Meridith Brownhill,David Horton-James;Land Preservation Committee members:Winsome Gregory,Jill Dark,B. West,Management Committee:Mick Dark,David Horton-James,Ross Fitzgerald, Eric Blick,Joy Anderson,John and Olive Noble,Lois Sattler, June Blick,Beverley Thompson,Lloyd Jones,Shirley Jones,Noel Higgs,Ewart Collings,Betty Collings.

FINANCIAL STATEMENT (as of 29/3/1985)

General Account.....	$1659,77
Savings Investment Account.	2924,01
Life Members Int. B. Dep.	200.00
Land Preserv. Account.....	824.90
Land Preserv. Invest. Savings.....	2835.02
Land Preserv. Aust. Savings Bonds.	7500.00

The Society is grateful to Lyle M. Davis, A.A.S.A. Registered Accountant of Richmond,N.S.W., who audited the accounts.

Mick Dark,President David Horton-James,Secretary

This version of the Newsletter was re-typed from the original by Phoebe Coster in February 2023 to enable search engines to 'see' the text. Minor changes have been made to correct typographical errors and to add clarity.

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Patron: Allen Strom, A.M.

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Concern for the threat of exploitation of the Prom's resources and for the preservation of its outstanding natural features led to its permanent reservation as a national park in 1905. Additions since have brought the park to its present size of approximately 49,000 ha, and includes a number of off-shore islands which are of vital importance as undisturbed breeding grounds for seals and seabirds. No longer do sealers go ashore with clubs and knives as they did last century,

GRANITE AND SAND

The main part of the Promontory is a granite mass, forming rugged ranges to 754 m. Several times in the last million years, changes in sea-level have turned Wilson Promontory into an island. The last occurred about 120,000 years ago, after which sand gradually built up in the gap between the island and the mainland. The Promontory was subsequently joined to Tasmania by a land bridge which was broken by a rise in sea level about 15,000 years ago.

HABITATS AND WILDLIFE

Many different habitats occur in the park, and over 700 species of native plants are recorded. There are tall forests on the mountains slopes, luxuriant fern gullies in the valleys, open heaths, and swamps.

All these provide shelter and food for native mammals and birds. Kangaroos, wallabies, koalas, wombats and possums were some of the mammals we saw, and emus, rosellas, lorikeets, wattle birds and numerous seabirds were amongst the many birds. In fact, we kept returning to the fine Park Headquarters with its excellent displays in an attempt to identify birds and flowers we had seen on a particular hike. At one stage we thought it would be great to have Jill Dark and Graham Alcorn along with us to identify the many plants and birds but then decided that would not have been a good thing as our progress would probably have been restricted to about 300 yards per hike while Jill and Graham bgecame lost in a world of plants and birds!

WALKS

The Prom contains many fine walking trails taking in a variety of scenery. Perhaps the most outstanding one was the Lilly Pilly Gully Nature Walk. It was an induction to the Prom's plant and animal communities and takes in all manner of scenery from heathland, dry sclerophyll forest, rain forest and a climb to Mt Bishop with wonderful views of the Park and coast.

Other excellent walks which will remain in our memory – Mount Oberon Nature Walk with its changes in vegetation as one climbs to the top; Millers Landing Nature Walk where Saw Banksias and Black-tailed Swamp Wallabies abound and you can see the southernmost mangrove trees in the world and finally, Tongue Point, a fine hike through Messmate and Shinning Peppermint, She-oak etc, on to open forest and then descending to low heath land with magnificent views of the

coast and a spectacular mass of flat granite disappearing into the water for all the world like a giant tongue – hence the name of this walk.

We look forward to a return trip to the Prom and trust that next time we have better weather – half a days sunshine in a week and walking with an umbrella in one hand and raincoat in the other is ridiculous!

Judy and Graham Kerr.

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MEMBERSHIP FEES

Members are reminded that fees for the year are due from 1st April 1985.
They are as follows:

Single Pensioners and Juniors	..	..	$2.00
Married Pensioners	..	..	$3.00
Single Membership	..	..	$5.00
Family Membership	..	..	$8.00

If the square on the right contains a red dot, your membership fees are due.
Two red dots indicate that membership fees are owing for more than a year.
Please forward to "The Membership Secretary, P.O. Box 29, Wentworth Falls, 2782."

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LIBRARY

The Society's Library has a list of some 180 books and magazines on a great range of subjects connected with wild life and conservation.

If you would like a list of books available, please let your friendly Librarian know at the next General Meeting, or phone 57.2131.

Prescribed Burning and Forest Nutrition

THIS IS THE FIRST PART OF AN ARTICLE PUBLISHED RECENTLY IN THE SUMMER 1984/85 EDITION OF ECOS, CSIRO'S MAGAZINE ON SCIENCE AND THE ENVIRONMENT.

In classic mythology, fire was given to man as a gift from the gods. In more recent history, however, uncontrolled fire has become a major problem to man – in Australia, the ravaging flames of bushfires have left wide trails of destruction and have burnt themselves into the nations memory through outbreaks like the 1983 Ash Wednesday disaster.

Most of Australia's native vegetation has evolved in the presence of fire and much of the country is extremely fire-prone. Fire affects the distribution and growth of plants either directly or through its

influence on soil properties and nutrient supplies. And it is essential for the survival of some Australian plant species. But its long-term effects on Australian plant communities are poorly understood – fire can either benefit or damage an ecosystem, depending on the length of time between burns, the intensity of the fire, the season when it occurs, soil characteristics, and so on.

Prescribed burning

Uncontrollable wildfires begin with a potent mixture of highly flammable eucalypt fuels, strong winds, and heat-wave conditions. To prevent excessive build-up of fire fuel – twigs, leaves, bark and understorey vegetation – in Australia's eucalypt forests, foresters use hazard-reduction burning, or prescribed burning. This technique – initially researched by Mr Alan MacArthur of the Commonwealth Forest Research Institute and then by the CSIRO Division of Forest Research, in co-operation with State forest services has been used in this country for 20 years to reduce the bushfire risk. Every 3-8 years, low-intensity fires are started by incendiary devices dropped from aircraft in a predetermined firing pattern during mild weather in autumn or spring. About a million hectares are subjected to this prescribed burning each year. The immediate effect is to reduce available fuel and assist fire control, but do these frequent fires have other effects on our forests?

Dr John Raison, Dr Partap Khanna and Mr Paul Woods, of the Division of Forest Research, have been examining various aspects of this question since 1977. They are studying the nature and magnitude of the effects of low-intensity prescribed fire on fuel dynamics, pools of nutrient (nitrogen, phosphorus, potassium, sulfur and calcium) and nutrient-cycling processes in three contrasting sub-alpine eucalypt forest communities situated in the Brindabella ranges near Canberra. The forests are dominated by snow gum, alpine ash, and mountain gum-peppermint eucalypts. These communities are typical of large tracts of mountain forest in south-eastern Australia.

Most Australian forests grow on nutrient-poor soils that receive only very low rates of nutrient input from weathering, rainfall or nitrogen-fixing understorey shrubs. Such communities are likely to be sensitive to disturbance caused by regular burning. We know a little about how particular species of plants in various Australian Forest communities respond to burning, but very few data exist on the effects of fire on the soil, particularly on biological processes related to nutrient cycling and soil fertility.

Fuel dynamics

The rate of litter decomposition (which includes both physical breakdown of leaves, twigs, etc and mineralization processes) in forests affects the rate of build-up and total quantity of accumulated litter (fuel), the amount of organic matter in the soil, and the rate at which nutrients cycled in litter-fall return to a form available for re-use by vegetation.

The scientists studied the litter decomposition in both unburnt and burnt sub alpine forests and found that the major release of organically bound nutrients does not occur until litter has undergone several years of decay, when decomposition rates increase as leaves become fragmented and incorporated into lower moister litter layers. After prescribed burning, the amount of solar radiation absorbed by the forest floor increases; this in turn hastens the rate of drying of the remaining and newly fallen litter after rain, reducing litter decomposition rates.

These studies provide information for answering two important questions; how does repeated fire change nutrient balance and cycling processes, and how quickly do fuels build up after a fire? Knowing patterns of fuel accumulation in different types of forests is essential for formulating scientifically based fire management plans.

To answer the second question, the scientists compiled information from two sources – the published results of previous studies and their own measurements in the Brindabella mountains. They found that, for dry sclerophyll forests after fires, litter accumulates to dangerous levels in 3-6 years, severely limiting the period during which prescribed burning provides protection from wildfire. The rapid build-up of nutrients in litter also means that they are highly susceptible to loss in smoke during subsequent fires.

After a low-intensity fire, litter accumulates very rapidly at first, mainly because the total amount of it decomposing on the forest floor decreases markedly while rates of litter input remain as high as before. The litter build-up can be readily predicted from simple equations and always approaches a 'steady-state' value – indicating that fire risk does not continue to increase with time but rather reaches a constant level.

In the Brindabella study, litter weights of up to 12 tonnes per hectare, sufficient to create control problems under high to very high fire-danger conditions, accumulated within 4 years of a fuel-reduction burn. Earlier studies by other researchers have shown that maximum fuel weights consistent with hazard-reduction requirements range from about 10 to 15 tonnes per hectare. Similar rates of fuel accumulation occur in many other Australian eucalypt forests.

Not only litter, but undergrowth as well, contributes to fuel; apart from adding to the total weight of fuels, its presence may affect fire spread by passing on flame above the litter layer and by influencing wind fields. Some shrubs, such as Daviesia species, are highly combustible. Combustion of elevated fuels (shrubs or eucalypt litter suspended by ground vegetation) usually results in increased fire intensities and greater 'scorch' heights.

Dr Raison, Dr Khanna and Mr Woods stress that, currently, inadequate knowledge of the relations between fuel weight and fire behaviour under high to very high fire-danger conditions makes it impossible to define with any certainty a safe maximum mass for fuel, and thus to determine the number of years for which prescribed burning will effectively reduce fire hazard.

They suggest that, where studies of fuel dynamics indicate that prescribed burning gives only short period of effective hazard reduction, forest managers need to consider alternatives to short-rotation, broad-scale burning. They stress the need for integrated fire management and have proposed the use of strategically located buffer zones, which are frequently burnt and the lengthening of fire rotations for areas between these. More effective fire detection and monitoring and greater suppression capability, are also needed.

The researchers emphasize the importance of assessing the long-term ecological impacts of repeated burning and using these assessments as a basis for selection of appropriate management strategies.

Studies by Dr Sid Shea of the Western Australian Forests Department and other researchers indicate that frequent burning with low-intensity fire can alter the under-storey species composition. In parts of Western Australia jarrah forest, non-leguminous understorey species have replaced important nitrogen-fixing legumes after low-intensity burns.

Another significant question in relation to prescribed burning concerns its impact on ground cover and soil erosion. Erosion depletes soil and can adversely affect the quality of water, the vital product of forest catchments. The few data available suggest that, on impermeable soils, erosion rates increase after burning; this is an area requiring further research.

LAND AT KINGS TABLELAND

The Land Fund Committee has recommended some environmentally important land on Kings Tableland near the Kings Table for purchase for addition to the Blue Mountains National Park. The land holder is interested in selling the area. The National Parks and Wildlife Service will gladly take over the responsibility of buying the land using the Land Preservation Fund's money, if the Society can come to a satisfactory agreement with the owner regarding price.

About thirty Members have already visited the area and have given unanimous approval. All Members are invited to inspect the land.

Please phone Winsome Gregory – 57.1573.

LAND PRESERVATION FUND

The Society has a Land Preservation Fund which was set up to give lovers of the bush an opportunity to help to preserve some environmentally important land in the Blue Mountains by its purchase and dedication as a reserve.

Tax Deductable Donations (Minimum $20.00)

The forms below show you how to make a tax deductible donation to the Australian Conservation Foundation, advising ACF of your preference that the funds be used for the Land Preservation Fund of the Upper Blue Mountains Conservation Society.

FORM NOT INCLUDED IN THIS RE-TYPE

UPPER BLUE MOUNTAINS CONSERVATION SOCIETY
(REGISTERED UNDER Charitable Collections Act)

ANNUAL REPORT
MARCH 1985

Objects of the Society as set out in the Constitution are:

a) To disseminate and foster an understanding of the ideals of conservation among members of the Society and the public generally, particularly in relation to the unique resources of the Blue Mountains.

b) To conduct meetings, excursions and research, and such other activities as may be determined by the Society in relation to Wildlife Conservation, and especially through the Conservation Hut at the Valley of the Waters, Wentworth Falls, to provide information on Conservation matters.

c) To maintain friendly relations with other Conservation Societies especially local bodies.

Affiliations:
The Society is a corporate member of : The Australian Conservation Foundation, Total Environment Centre, National Parks Association, National Trust of Australia (NSW), David Stead Memorial Foundation, Nature Conservation Council of NSW, Wildlife Preservation Society of Australia, Gould League, Colong Committee.

This meeting brings to an end another year of dedicated effort by members of our Society. Membership has risen and now stands at 330 members.

THE HUT – The Hut has been repainted inside and out and some radical changes have been made to the exhibits. A Hut sub-committee has been formed and is currently looking at the possibilities of replacing the Hut with a more suitable building. Several working bees to clean up and replant around the Hut have been held during the year. Many thanks are due to the roster volunteers and their organiser.

MEETINGS – Speakers during the year were Jill Dark on attracting birds to the garden; Keith Sherlock on a members safari to Northern NSW National Parks; Tony Williams on Plans for NPWS Heritage Centre at Blackheath; Malcom King on the value of murals on public buildings; Rowe Morrow on the work of The Australian Trust for Conservation Volunteers; Steve McDonald on a cycling trip in W. China, and treking in the Himalayas; and Irene Coates on the Blue Mountains Highway improvements.

NEWSLETTER – It was decided that the newsletter should be professionally printed – this allows the inclusion of sketches, resulting in a much improved and attractive newsletter. Many thanks to the editor and helpers.

NATIVE PLANT DAYS – These continue to be popular and in fact the February day attracted over 60 people to hear Jill Dark and Graham Alcorn combine to talk about birdscaping your garden.

LIBRARY – This has been ably managed by Betty and Ewart Collings, with several important new acquisitions.

Other activities undertaken included society members working with ATCV projects and assistance given to NPWS with a visitor survey of Blue Mountains Park undertaken by NPWS.

Finally I would like to thank all members of the Management Committee who really carried the Society through the year. Special mention must go to our retiring Secretary for a truly magnificent effort.

M. Dark
President.

LAND PRESERVATION FUND COMMITTEE

The Committee is pleased to report another successful year with over $2,000 being added to the Fund. It is very grateful for the support it has received.

The Committee has recommended purchase of approximately 3ha near the King's Table, Kings Tableland, Wentworth Falls for addition to the Blue Mountains National Park. The Society is at present negotiating with the landholder.

Winsome Gregory
Convener

WALKS REPORT

Again during the last twelve months we managed to break some new ground to Society walks. The trend commenced with the walk to Gibralter Rocks led by John & Olive Noble. Most of the Six Foot Track has now been traversed and there remains only the section from the Caves Road to the Caves House along the original Six Foot Track to be done.

A somewhat tougher walk than usual was the Govett's Leap to Perry's Lookdown via The Junction and Bluegum Forest. The day was fine and we all managed the ascent of Perry's without having to call for helicopters.

Some old favourite walks were also undertaken and these included: Bluegum Swamp (Jill Dark), Wentworth Pass in the rain! (Graham and Judy Kerr), Wall's Cave (Rachel Makinson), Mount Banks, Gordon Falls (Beverly Thompson), Lockley's Pylon (Jill Dark), The Grand Canyon (Graham and Judy Kerr), and Dante's Glen to Fairy Falls (Grace Bailey)

Keith Sherlock

OFFICE BEARERS

The following were elected at the Annual General Meeting held on the 29th March, 1985:

President: Mick Dark (for 3 months only);
Vice-President: Eric Blick and Joy Anderson;
Secretary: David Horton- James;
Treasurer: Ross Fitzgerald;
Membership Secretary: Ross Fitzgerald;
Correspondence Secretary: June Blick;
Hut Curator: Lois Sattler;
Publicity Officer: Eric Blick;
Newsletter Editor: Ewart Collings;
Hut Roster: Beverly Thompson;
Hut Supplies: Olive Noble;
Librarians: Betty Collings and Sue Gardner;
Walks Co-ordinators: John & Olive Noble;
Minute Secretary: Rick Maskey;
Hut Supplies (Publications): Barbara Towers;
Land Use Committee members: Barry Barnes, Mick and Jill Dark, Barbara Towers, Sue Gardner, Lois Sattler, Meredith Brownhill, David Horton-James;
Land Preservation Committee members: Winsome Gregory, Jill Dark, B. West;
Management Committee: Mick Dark, David Horton-James, Ross Fitzgerald, Eric Blick, Joy Anderson, John and Olive Noble, Lois Sattler, June Blick, Beverly Thompson, Lloyd Jones, Shirley Jones, Noel Higgs, Ewart Collings, Betty Collings.

FINANCIAL STATEMENT (as of 29/3/1985)

General Account……	$1,656.77
Savings Investment Account……	$2,924.01
Life Members Int. B. Dep……	$200.00
Land Preserv. Account……	$824.90
Land Preserv. Invest. Savings…….	$2,835.02
Land Preserv. Aust. Savings Bonds.	$7,500.00

The Society is grateful to Lyle M. Davis, AASA Registered Accountant of Richmond, NSW, who audited the accounts.

Mick Dark, President David Horton-James, Secretary