Re-introducing Traditional Indigenous Land Management Practices

Trialling the re-introduction of Traditional Indigenous Land Management Practices proposed by Rodney Mason under the Kosciuszko to Coast Partnership – Adopting Traditional Land Management Practices on the Monaro Project 2012-2013

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THE GREAT EASTERN RANGES
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Table of Contents

Preface by Rod Mason	2
The Project	3
About Rod Mason	7
Country	10
Are Traditional Indigenous practices still relevant?	12
Burning can be cool	15
Managing forests, woodlands and grassy ecosystems	18
Minimising fire risk - removing dead matter and litter	19
Culturally sensitive vegetation (orchard and garden farming) communities	21
Wicks and soil rebuilding	24
Native animals - the original landscape gardeners	26
New products and industries	28
Proposed on-ground practices	30
Monitoring the TLMP sites	37
How to access further information	40

Cover photo: Trial burning at the Friends of Grasslands workshop under the Indigenous Values in the Landscape Project at the Garuwanga property, Nimmitabel, 2012

Preface by Rod Mason

Rod Mason

This booklet is an opportunity for me to share with the general community some of my knowledge about the area, the language, the stories of its landscape features and the plants and animals.

There are many things I cannot talk about – some for spiritual reasons and some because the information belongs to other families.

It is important for the reader to understand that the information here has come down through my family – it is what I have been taught by uncles, aunts, grandparents and so on.

It is neither 'right' nor 'wrong'. It is my family's information.

Other families will have their own stories and information for this area and that is how it's always been.

To claim, as some do, that certain Indigenous information is 'wrong' ignores this traditional indigenous approach to the ownership of stories and is an affront to those generations who passed those stories on.

I hope this booklet provides indigenous and non-indigenous people with an insight into how we see country and perhaps add another dimension to their personal land management endeavours.

Rod Mason

The project

Rod captivating the audience

Our K2C Adopting Traditional Indigenous Land Management Practices Project (TLMP) came about in a succession of projects and agreements. Thanks to the efforts of Geoffrey Simpson, then Head of the Indigenous Unit, Murrumbidgee Catchment Management Authority (MCMA), a ten year Cultural Heritage Agreement was signed in 2007 between the MCMA and Margaret Ning and Geoffrey Robertson, the owners of a property named Garuwanga (near Nimmitabel).

Rod was a key element in formulating this agreement, and in early discussions, the idea of holding a series of workshops on "Indigenous Values in the Landscape" was conceived. In 2010, Friends of Grasslands (FOG) successfully applied for and received a MCMA Community Partnerships Grant to run these workshops.

As part of that grant, four two-day workshops, entitled "Indigenous Values in the Landscape", facilitated by FOG and delivered by Rod took place in 2011, with a fifth and final workshop held in April 2012. Two half-day field trips, one to the Cascades (near Numeralla) and one to Kooranbool (Bullocks Flat, near Jindabyne), were held in November 2011.

In 2011, the Kosciuszko to Coast Partnership (K2C) applied for and was successful in two further grants; one under Caring for our Country entitled, 'Monaro Landscape Connectivity Project ' and a MCMA Communities Partnership Grant entitled 'Adopting Traditional Land Management Practices on the Monaro Project'. Knowledge gained from both projects has helped develop this booklet, funded by the latter grant.

The assumptions underlying the Project are as follows:

- An understanding of Traditional Indigenous Land Management Practices will provide insights into our current appreciation of landscape function and biodiversity.
- Adoption of Traditional Indigenous Practices will improve biodiversity and farming outcomes.
- The project is therefore aimed at the Custodians of Country, farmers, reserve -managers, and anyone actively involved in land management.
- The success of adopting Traditional Indigenous Land Management Practices can be measured scientifically and it is hoped that ecologists might start to consider how this may be done.
- As we are attempting to adapt Traditional Practices to a somewhat new situation, and as many of the concepts and practices will be new and challenging to those who participate in the project, we propose that the Traditional Indigenous Practices outlined in this document should be trialled on a small scale basis, before being applied more widely.
- Embracing the Practices outlined in this document will lead to a better understanding of, and respect for, Traditional Indigenous values and will hasten the realisation that both Aboriginal and non-Aboriginal people belong to country and, in turn, hasten the process of Reconciliation.

The aims of the Project were:

- To prepare a booklet on Rod Mason's landscape perspectives and Traditional Indigenous Land Management Practices and engage up to 12 land-holders in the K2C region who would be willing to trial the various TLMP practices on their own property.
- To prepare a number of web based documents (or bring together existing material) on food, fibre and medicinal plants in the region and publicise these on the K2C website and other relevant websites.
- To prepare web-based documents (or bring together existing material) on connective walking trails from the coast to the high country including information on three significant camping sites on this journey. Three significant sites are described by Rod Mason that were the location of the early FOG workshops (see overleaf).

* **Tuross Falls**, a sacred water feature that supported people as they arrived, having scaled the Great Eastern Escarpment via the Cascades.

* **Lambie Gorge**, a rich natural area near Cooma, on the route between Numeralla and Kosciuszko. This area, and its resources and management was described by Rod during the workshops.

* **Kooranbool** (near the Skitube at Perisher Valley), was the great traditional meeting place each summer of many of the tribes in south-east Australia. It was also a site for resource gathering and ceremony.

The project has involved several workshops to outline and demonstrate Traditional Indigenous Practices and property visits to trial the particular practices. We wish to thank the land-holders who have agreed to monitor each of the TLMP trials as described in this booklet.

In conjunction with this TLMP project, Rod spent considerable time working on the Monaro Landscape Connectivity Project (MLC) that was funded by Caring for our Country. Over two years, the MLC Project allowed him to access over 50 properties including some sites where he performed cool burns as part of a series of workshops. The cross fertilisation of the two projects allowed us to gather richer material from Rod as we were able to spend more quality time with him on the ground. Land-holders engaged in the MLC Project were inspired by Rod's landscape interpretations and were delighted to receive a collage of the visit.

Collage provided to all land-holders who received a visit and interpretation by Rod as part of the MLC Project 2011-2013.

This document was written and prepared by Geoffrey Robertson and Lauren Van Dyke , based on material from Rod Mason. Additional input was provided by other Kosciuszko to Coast Partners.

About Rod Mason

Rodney Mason, is a respected Ngarigo elder from the Wolgal/Bemmerangal clan and describes himself as a "Traditional Land Manager and knowledge holder".

Most of Rod's family avoided living on Aboriginal reserves and it is from his family members that Rod learned traditional methods of living. Rod has devoted himself to learning, teaching and sharing Traditional Indigenous Land Management Practices and it is his dream to have land-holders and land managers, the current Custodians of Country, reintroduce traditional indigenous land management practices.

Rod after a cool burn.

Rod is one of a small group of people who have undertaken the Graduate Diploma of Natural and Cultural Resource Management Course. He has been a community consultant and employee of the NSW National Parks and Wildlife Services for more than 35 years and as a NPWS Ranger, trained staff and visitors on cross cultural awareness on Traditional Indigenous Land Management Practices, landscape function and biodiversity.

Although Rod is a Ngarigo man, he does not speak on behalf of the Ngarigo people. Like any Aboriginal person, he can only talk with authority about his family's and his own Wolgal/ Bemmerangal history and experience. However, those who listen to Rod will realise that much of what he says is also said authoritatively by many other Aboriginal people.

Members of Rod's family have imparted much knowledge to him about the past, including Story Lines, stories of Captain Cook's arrival, and the location of burials and massacres. Rod's great, great, great grandfather, "Murray Jack", was a local chief and was adorned with a silver breast plate. Rod's ancestors also come from many parts of Australia and hence he has an affinity not only with the K2C region but with country a long way distant.

Traditional learning is very different from the non-Aboriginal way of learning. Our non-Aboriginal way of learning includes largely choosing what we want to learn, a formal education where a teacher provides lessons, and education materials are readily accessible.

In Traditional Indigenous society, a person is selected to learn about a particular animal or a particular skill etc. Formal learning is not imparted. Story telling is an important element in this way of learning. Learning is largely undertaken by watching, doing, and by gaining experience. Young people may be sent out to the bush for many days at a time to learn survival skills or a other particular skills. Surviving, and mastering a particular skill is proof that one has learnt well.

There is no distinction between knowledge and practice - knowledge is learnt through practice. Throughout life, one will be chosen for particular roles and new roles are assigned as one ages.

No-one has access to all the learning available. Each group and person specialises in a particular aspect of the available learning. Rod's family are "water people" and he believes that his family's spirits return to the water when they die. Other people's spirits return to the sky land. Rod has a responsibility for water animals and their management. For example he can provide ducks for consumption by others but he is not allowed to eat duck himself. Much teaching is unstructured. Rod's stories have many levels of meaning and it is often difficult for a listener to absorb what is said at one sitting. Writing this booklet is in a way the antithesis of learning in the traditional indigenous ways. Words cannot fully convey the experience that the words themselves are trying to convey - experience is gained by doing.

Rod teaches using a 'show and tell' and 'story telling' style. He has moved away from the 'stones and bones' cultural teachings of the past and is reintroducing knowledge around the living environment, the plants and animals that are here now. Rod has a great capacity to articulate his knowledge to those he meets, particularly land-managers, and in so doing immensely assists the maintenance of Indigenous culture.

Rod at an MLC Project site visit 2012.

Rod has been involved in the successful campaign to return Lambie Gorge (near Cooma) to Aboriginal management. He has been honoured by being awarded the title of Local Citizen of the Year in 2008 by the Snowy River Shire Council and by having his face on a postage stamp. He is also a talented traditional indigenous artist.

Rod is saddened by the loss of traditional indigenous knowledge and particularly by the loss of traditional indigenous land management where he believes this void has been largely responsible for the decline in landscape function and biodiversity. He believes that only by reintroducing the traditional indigenous practices can we can begin to recover our biodiversity and, at the same time, obtain better farming outcomes.

Reconciliation of Aboriginal and non-Aboriginal people is essential for the self -respect of all Australians. Aboriginal people belong to Country, as do non-Aboriginal people, and it may be the understanding of this one single fact and everything that flows from it, that is the keystone of Reconciliation.

Rod shows tremendous leadership and courage in his advocacy and he is arguably one of our greatest treasures in this region. During Rod's time working with K2C, he was honoured by receiving first place in the Murrumbidgee Catchment Management Authority Indigenous Award 2013.

Painting by Rod Mason.

Rod with his MCMA Award

Country

This spider is making use of Country

The Aboriginal view is that Country owns you and that Country teaches you what you need to know. If you can learn from Country - “if Country speaks to you - then you belong to Country”

Rod shares this view and is ready to help land-owners and land-managers, the current Custodians of Country, to access to this traditional Indigenous knowledge and practices, so that they may become part of Country.

If Aboriginal people and non-Aboriginal people belong to Country, respect it, and have a common view of its management, including recognition of the importance of traditional Indigenous management, then it is possible that we will have taken an essential step forward.

Knowing the traditional Indigenous history, beliefs and ways of life of the Traditional Owners is an essential part of this. Rod Mason is happy to be a catalyst for this process.

Rod’s people arrived in south-eastern New South Wales from the Western Desert. Rod believes that they brought with them many of the plants and animals from that region. Other peoples in the region, unlike Rod’s people, came from other parts of the country, including rainforest areas.

His people lived on the South Coast in the cold season and travelled up the Great Eastern Escarpment onto the Monaro Tablelands in the warmer months. Not all people ventured higher into the alpine country. Many stayed in the lower open plains. It was mainly the spiritual leaders who climbed to the higher altitudes and did so to meet with different clans, to seek spiritual connections and to practice old language through song and dance.

Most features and landmarks in the landscape have their own traditional Indigenous name. Rod's people saw and described the broader landscape as a set of north-south landscapes, as follows:

Wallaga (the coast),
Wadbillaga (the area between the coast and the escarpment),

Nallaga (the escarpment country - a mosaic of grasslands, woodlands and forest),

Narrawallee (the tall grass country centred around Cooma, the treeless Monaro plateau),

Burrungubbagee (the foothills of the Snowy Mountains, centred around Jindabyne) and

Tidbillaga (the Snowy Mountains).

Rod points to the landscape and believes that any of the pointed distinct mountains one can see in the distance are old campfires, some of which he says with a grin, are still warm - warm underground. These old campfires, the mountains, are effective identifiers in the landscape and help people to navigate from one camp to another.

Rod believes the giant granite boulders you see scattered around the countryside are elders passed away and should be respected, as they are on watch. The bigger the boulder the more powerful the spirit, and every landscape has a caretaker rock – the "Gurrubung". Many people would go and sit at the base of these rocks to seek comfort and gain spiritual benefits.

Rod also believes that the Black Cypress-Pines (*Callitris endlicheri*) originated out of the sky and these trees allows people to come down or go up into the other world.

These are but a small sampling of the stories that Rod has shared - his beliefs and the stories associated with the natural environment are endless.

When discussing traditional Indigenous land management practices, Rod has a constant mantra - that there are three lores that must be highly respected and must be worked with in any land management practice. The three lores are Wind, Rain and Fire.

These three lores guide everything – humans and animals alike. Only in respect of these three lores does Country provide all the resources that are needed for food, fibre, shelter, medicine, weapons, toys and ceremony.

Are traditional Indigenous practices still relevant?

It is becoming increasingly accepted that when people arrived in Australia with the First Fleet, they observed a managed landscape. Bill Gammage's recent book, '*The Biggest Estate on Earth"* provides an account of this.

According to Gammage, early settlers observed that much of the landscape comprised grasslands and woodlands. The understoreys of the woodlands were essentially native grasses with patches of tidy shrubs. Often these observers described the countryside as parkland. Water was retained in the landscape. It is said that this managed landscape was less fire prone, as management methods isolated shrub patches, and burnt in such a way that the risk of fire going from the understorey layer to the crown canopy was minimised. However, within fifty years of the settler's arrival the landscape had changed.

Gammage states that the introduction of different farming methods, the destruction of natural resources, and the destruction of Aboriginal societies all resulted in the parklands turning wild. Woodlands became untidy, thick with trees and matted with shrubs, gullies appeared and became eroded as natural vegetation was removed, pastures deteriorated as nutritious grasses were replaced by less desirable species and there were declines of native species and many species became extinct. The introduction, mostly deliberate and sometimes accidental, of exotic plant and animal species has added to this degradation.

While some in the scientific community do not agree with all of Gammage's assertions, it is clear that Aboriginals must have had a great influence in their unbroken tenure of Australia over many thousands of years. It is also clear that the land management introduced by the settlers and their descendants have left a landscape in need of repair.

Although farming and land management practices have improved, better practices are not universal and landscape restoration may improve if, as the authors of this booklet believe , our current Custodians of Country adopted traditional Indigenous practices.

The view is often expressed that traditional Indigenous practices, while appropriate in the past, are no longer relevant. Such statements are based on a misunderstanding of what traditional Indigenous practices are, and no doubt reflect a fear of the unknown. The authors believe that Traditional Indigenous Practice has much in common with good farming and land management practice and, on a smaller scale, many good gardening practices. Traditional Indigenous Practice also provides a middle course of action that may help reconcile the sometimes opposing positions of farmers and conservationists.

A traditional Indigenous view, which is shared by farmers, is that Country is a resource to be used to sustain people. In this world view, plants and animals are viewed as important if they have a use. Most plants and animals have many uses, but if they don't their presence may not be considered desirable and may be discouraged. Conservation and sustainability are practiced.

Aboriginal people "farmed" the land to ensure that animals and plants were located where they could be easily harvested. Burning, using cool fires, was done strategically, so that fresh grass was maintained in key areas, and shrub and herb patches, which were harvested each year, were vigorous. What was occurring here could be called "weeding" (removing unwanted competition), and "soil enriching" (by planting in areas of rich, moist soil or by moving soil to sustain the plants, and ash was also used as a fertiliser). Because Aboriginal people had great understanding of plants and animals, traditional Indigenous knowledge of biodiversity and ecology may not have been rivalled.

Different people had different responsibilities, ensuring the abundance of species and at the same time preventing the over-exploitation of species. Traditional Indigenous practice was not a fossilised knowledge - Indigenous people were quick to adapt to new technologies and had developed numerous techniques to support their lifestyle.

Through the series of FOG workshops, it became apparent to the participants that one does not have to choose between traditional Indigenous practices or so-called modern land management practices. Traditional Indigenous practices offer a range of methods for active management of our landscapes, vegetation communities and fauna. We advocate that current Custodians learn and trial traditional Indigenous practices.

Land-holders soaking up Rod's knowledge at a June MLC Project workshop prior to a cool patch burn on a property in Michelago.

In a response to a first draft of this booklet, Bill Gammage pointed out that our task may be different now. In 1788, Aboriginal people maintained a landscape already well laid-out, but we have first to restore it. In particular localities, there may be little difference between 1788 and now, but not everywhere. Sometimes much preparation may be necessary before reintroduction of traditional Indigenous practices. With a forested area, traditional Indigenous practices might be reintroduced after a wildfire or a controlled burn. Then, new forest paths can be maintained and refuges burnt as the forest re-grows. These areas may be maintained with trickle fires at the appropriate times to re-establish what Rod refers to as old burning patterns. These patterns become established and managed fires will follow them in successive years.

We also need to exercise care and to ensure that habitat is maintained in highly sensitive areas, such as those containing threatened communities. The trick in using traditional Indigenous practice is to ensure that our multiple objectives are achieved. We now turn to what are some of those traditional Indigenous practices and Rod's reasons for re-introducing them.

Burning can be cool

Rod conducting a cool burn in Burra as part of the MLC project.

Using fire is an essential tool in traditional Indigenous Land Management. The method may be described as 'cool burning' as fires are lit on cool mornings, in late autumn and early winter, especially in foggy conditions or under low cloud when there is little or no breeze. Burning sets off numerous processes; nutrients become available to the soil triggering fresh growth, seeds affected by the heat and smoke will germinate and the burnt area is less prone to damage from extreme wildfires.

While gaining experience in cool burning, it is recommended that land-owners and managers choose small, safe patches and learn the burning properties of individual plants and types of litter. Generally dead plant material and other litter will burn. However, some plants are very flammable, for example River Tussock (*Poa labillardierei*) and mat-rushes (*Lomandra* spp.). Rod refers to his burning months as the three sisters and their first cousin - April, May, June and July.

Initially experimenting with burning should be done in groups, with someone with proper experience on hand. If you do intend to cool-burn vegetation, you should follow the steps set out in the following page.

Before you light that Fire!

This document was endorsed by the Rural Fire Service and was provided to all land-holders who K2C engaged during the rolling out of our K2C indigenous projects.

Kosciuszko to Coast (K2C), through its Traditional Land Management Practices and Monaro Landscape Connectivity Projects, is attempting to illustrate the benefits of the sensible use of fire.

K2C is a partnership of eleven natural resource management groups and agencies committed to building the resilience, extent and connectedness of natural vegetation and halting the further decline and loss of species across the K2C region—an area that extends east from the Kosciuszko high country to the South East NSW coast including the whole of the ACT and south to the NSW/ VIC border. K2C is a regional partner of the broader Great Eastern Ranges (GER) Initiative.

Through intensive consultation and on-ground trials with Ngarigo Indigenous Land Manager, Rod Mason and local fire experts within the NSW Rural Fire Service (RFS), K2C is learning that the use of cool and well managed burning in certain areas in the K2C region is a vital tool in maintaining healthy ecosystems.

However, there are legal requirements to be observed before one lights a fire in the open. A very useful document, found on the Rural Fire Service (RFS) website, is entitled - ***Before you light that fire*** –

http://www.rfs.nsw.gov.au/file_system/attachments/State08/Attachment_20120824_635CF0D2.pdf

It sets out the steps that need to be done before lighting up. For example, if you want to burn in October to the end of March (***Fire Danger Period***) you will require a ***Fire Permit*** which can be obtained from your local RFS Fire Control Centre.

However, if you are burning outside the fire danger period and in native vegetation you will require a ***Hazard Reduction Certificate*** - an environmental approval that must be obtained from your local RFS Fire Control Centre. To obtain this certificate you will be required to complete an ***Environmental Approval Application Form***. The form is short and easy to complete with clear instructions. It will ask you about known fire history including hazard reduction, threatened species populations, ecological communities and any known aboriginal relics or cultural heritage sites. RFS staff and K2C can assist to help you answer these questions. The ***Hazard Reduction Certificate*** will remain current for 12 months and will contain conditions which must be adhered to. Normally a ***Hazard Reduction Certificate*** will be issued in seven to twenty one days.

In all situations where you are lighting a fire it is a requirement to inform your neighbours and your local RFS brigade.

The RFS is keen to see land-holders learn about and undertake hazard reduction burns and encourage fire readiness. Hence there is a happy coincidence of purpose in this and traditional burning. RFS officers have been present at a number of the K2C Traditional Land Management Practices trial burns and we very much appreciated their skills and assistance.

K2C requires land-holders to record information about the site before they burn and to monitor it after the burn. K2C is happy to provide land-holders with further assistance on this.

For further information contact the K2C Facilitator, facilitator@k2c.org.au or go to www.k2c.org.au or to find your local Rural Fire Service phone numbers go to www.rfs.nsw.gov.au

Here are some other tips after you have satisfied all of your local and branch level RFS requirements and they have given you the go-ahead:

- Choose small safe sites. It is important to know how the plants and litter in the patch will burn, and, until experienced, avoid burning large sites with highly flammable plants.
- Prepare the edge. The edge may be already present (a road or path) or created by slashing, removing flammable material, removing plant material to expose bare soil and/or by creating a wet-line by thoroughly wetting a barrier around the burn-site.
- Ensure the weather conditions are safe and there is no expected change.
- Determine direction that fire will take from the prevailing breeze, and what should be the fire front. Burn small pockets starting from the down-wind edge and working backwards.
- Have as many people around the burn with water and other equipment, such as rakes, shovels, wetted bags, etc., available to control and/or extinguish the fire.
- Pull back heavy litter and remove it from the bases of trees and shrubs. Do not allow large logs to set alight as they can remain alight for many days even weeks after a small fire.
- Rake litter to avoid hot spots and possibly remove excess litter all together.
- Intervene as necessary to keep fire contained. Put fire out if necessary.
- Don't leave the fire unattended. If you need to leave the site, make sure the fire is totally extinguished.
- Ensure strict supervision and control and ensure that only designated people who understand all the above rules light the fire.

Rod conducting an MLC Project burn in native grassland in 2013

Managing forests, woodlands and grassy ecosystems

Grasses were burnt to manage kangaroos, wallabies and other animals. Aboriginal people know that herbivores prefer fresh grass to hayed-off grass. On the Monaro, burning took place in early autumn and are described as “cool burns”. These burns took place as Rod’s people left the Monaro on their way to the coast.

Strategic burning ultimately resulted in the production of life-saving food, fibre and medicines.

Silver Wattle (*Acacia dealbata*) provided products such as wax for glue, wattle seed for food, and long straight stems for spears and building shelters. This species is also preferred by the Sugar Glider (*Petaurus breviceps*). Wattles growing in clusters (thickets) also enriched soils by fixing nitrogen and circulating nutrients and these were known to produce good soils. Thickets of Silver Wattle were reinvigorated by burning to remove competing plants. This encouraged new growth, which attracted insects and hence restarted the food chain. Burning also produced ash, a product to enrich soil. Enriched soils could be moved and used to create or refurbish herbs and fruit-producing shrub gardens.

According to Rod, eucalypts (*Eucalyptus* spp.) are in a family called “Balluk”, with the smooth-barked ones referred to as “Durana” and the rough-barked ones “Mayanba”.

According to Rod, forests of Durana trees are burnt to remove excess litter on forest floors, to restrict the bark at the base of the trees to the height of the nearby grasses and to burn off the bark higher up their trunks. Removal of excessive litter allowed trees to breathe through their roots and encouraged a flush of new growth. The new growth, with its lower toxicity, attracted insects, the base of the food chain and browsers. New growth also attracts animals like the Common Brush-tailed Possum (*Trichosurus vulpecula*), which are attracted to healthy trees and are said to bring in seeds, which increases the diversity of plants under the trees. Burning was also considered to be a fire-safety issue.

Not all forests were burnt. Rainforests were left unburnt. Aboriginal people kept away from and did not burn forests of rough-bark trees, the Mayanba (e.g. peppermints) as this was considered dangerous.

Minimising wildfire risk

Cool burn around old Yellow Box trees to stimulate mid story plant germination, allow trees to breath but more importantly protect them from wildfire damage.

Excessive dead plant material and litter is a fire hazard. Aboriginal management aims to keep vegetation functioning and to minimizing fire risk. Aboriginal burning may have some features in common with the modern practice of 'controlled burning', however, it is more subtle and the emphasis is on cool burning.

Grasslands and the understoreys of grassy woodlands, if not adequately grazed or burnt, senesce. That is, they dry off and become rank, and become less palatable. Their dormant roots make it difficult for fresh roots to grow. The impact of their shading, along with the heavy ground littering, as dead material falls off, prevents new plants from establishing in inter-tussock spaces. Grazing animals will go elsewhere rather than eat poor quality food that rank grasses offer. Eventually nature takes care of such situations with the final death and collapse of such plants, or by consumption in a fire. Well-targeted fire management, or other methods, may keep grasslands functioning.

Rod states that the excessive build-up of ground litter within forests is a sign that the litter is not breaking down fast enough. Build-up of litter can prevent new plants establishing and prevent trees breathing through their roots and sending out new flushes of growth.

Dead plant material in shrubs and herbs, if not broken down or removed, can likewise have a detrimental effect, occupying space that new growth could take up. Over years, this can become a wildfire threat. Removing dead material, pruning and fire singeing, as gardeners know, will stimulate new growth. Properly functioning forest floors or garden patches team with invertebrate life. Fresh growth also attracts the larger browsing animals.

According to Rod, the sign of a poorly functioning system is the excessive build-up of dead plant material or litter. Trees with bent or leaning trunks and/or with excess bark attached to the trunk well beyond the height of the resident grass around it are also signs of a weakened landscape.

It could be said that Rod has a bug bear about trees having to be upright and have straight trunks. Rod is very disappointed to find trees in a bent state and often says “poor tree” when he sees a tree with a twisted or s-shaped trunk. His answer to why the trees have become bent and unhealthy or if their bark has travelled up past the height of the surrounding grasses, that is, mostly just above knee height, is because the practice of regular cool burning has long ceased. The process of regular scorching around trees serves to remove excess bark, allows their roots to breath and returns nutrients from the burn back into the soil. Rod says the trees need to be “retrained”. Rod believes that this retraining would not take very long; perhaps two or three burns over a series of years, dependent on the tree type and surrounding vegetation will bring the site back to a more healthy state.

Rod describes how trees should stand tall and have straight trunks

According to Rod, bark on smooth-barked trees should be kept at grass height. Dead bark above the level of the surrounding grasses is a sign of poor tree-health and should be removed or singed off. Even lopping or removing most of the trunk could be considered.

Aboriginal fire management also resulted in mosaic burning. Use of cool, rather than hot burning, usually results in more patchiness in the burnt sites. It is widely recognised that a mosaic of vegetation, where vegetation patches may be at different stages in their life circle, or comprised of different communities, encourages biodiversity by providing more food and habitat choices for plants and animals.

Today, it may not always be desirable or practical to use fire management, and alternatives to burning may include grazing, slashing, weeding, removing litter, adding nutrients and pruning. These may be just as effective as fire, or can be used in conjunction with fire. However, each method has its own consequences. For example, grazing may remove rare grazing-sensitive plants. So in choosing fire management or another management method, one needs to be aware of each method’s advantages or disadvantages.

Culturally Sensitive Vegetation Community (orchard and garden farming)

Rod looking over fruit-producing shrubs in a "fruit orchard"

Rod is very keen to ensure the protection and reinvigoration of areas that have more than 10 or 20 specimens of a particular fruit or seed plant in one cluster. This is what he refers to as a "Culturally Sensitive Vegetation Community" (CSVC), and often also called "Indigenous fruit orchard" or "Indigenous garden". Rod suggests that these areas need to be looked after and protected from disturbance and or damaging wildfire. Rod advocates that the periphery of the CSVC patches be treated by a cool burn to encourage health and new growth and return nutrients back into the soil. These CSVC patches are in effect orchards and provide food, fibre and shelter, but more importantly many of them provide necessary medicines.

Traditional Indigenous practice aims to establish, maintain and replenish CSVC patches, both for direct use by Aboriginal people and by indirect use, through the creation of food sources and habitat for animals. Over time many of these CSVC patches have disappeared leading to a lessening of resources available to people and animals. This may be part of the explanation for the decline of many native species. The CSVC patches can be reintroduced to provide seeds, fruits and habitat for fauna.

Woodlands and forests provided CSCV patches, including "fruit orchards", "seed gardens" and "herb gardens" that Aboriginals tended carefully. Areas around campsites were particularly well-maintained and each member of a group, men, women and children, had a responsibility to manage a particular patch. If this wasn't done well, one would receive the ire of the group.

Note, the word 'community' is used here by Rod to denote a group of plants of the same species growing together and therefore this term is not used in its strict ecological sense in this document.

Berries and seeds were food for birds, including pigeons and quail, which were, in turn, also valuable food sources. The shelter provided by taller, bushier "fruit orchards" was also an important consideration. For example thickets of geebungs (*Persoonia* spp.) provided food and shelter for pigeons. The plants provide berries for food, with the seed passing through the gut of the pigeons enabling recruitment of these plants. Geebungs, and other fruit-bearing species often require this type of treatment, because not only does the plant require the action of passing through the birds' guts to assist in germination by breaking or abrading a hard seed coat, or in some other way breaking the seed's dormancy, but when they have passed through the bird, the seeds are accompanied by a parcel of nutrients in the form of manure that helps it to germinate.

Geebungs grow rather thickly, making it difficult for raptors to penetrate. Once the geebung bushes or the birds die out, this niche ecosystem disappears.

A plant known by the local name of "Bushman's Bootlace", also referred to by Rod as Snowy Mountain Plum (*Pimelea pauciflora*) also has edible berries, and the bark, which is very stringy was used for making string Bogong Moth nets and fishing nets. Many other local species have edible fruit, including Alpine Pepperbush (*Tasmannia xerophila*), Wild Cherry (*Exocarpos cupressiformis*), Pale-fruit Ballart (*Exocarpos Strictus*), Nodding Saltbush (*Enadia nutans*), Gruggly Bush (*Melicytus dentatus*), Urn Heath (*Melichrus urceolatus*), Daphne Heath (*Brachyloma daphnoides*) and Peach Heath (*Lissanthe strigosa*). Many of these produce hard seeds that are more likely to germinate having travelled through the gut of a bird. There are a number of fruit-eating bird species in our region, some such as the Emu (*Dromaius novaehollandiae*) are now rare, while a number of others are still common, including Olive-backed Oriole (*Oriolus sagittatus*), Mistletoebird (*Dicaeum hirundinaceum*), and Pigeons (*Phaps* spp.) and Currawongs (*Strepera* spp.). It is not uncommon to find an "orchard" of Wild Cherry with a mat of Nodding Saltbush as an understorey, where clearly fruit-eating birds have visited one species to feed on its berries, having previously eaten fruit of the other species.

Rod has collected up these cherries from the Pale-fruit Ballart tree (*Exocarpus strictus*)

Mat-rushes (*Lomandra* spp.), referred to by Rod as “bush-rice”, was another favourite group of plants and their gardening was well-attended. The rice-like seed is a staple and is used in making bread and cakes. Seeds from gardens of bush-rice could be carried away for later eating or planting elsewhere. The base of the leaves of mat-rushes are also eaten, while the leaves themselves are good for making strings and baskets.

A Spiny-headed Mat-rush (*Lomandra* spp) bush full of seed. Once this seed starts to mature it will turn an orange brown colour and can be easily collected by stripping it from the plant in an upward motion with your hand.

Herb gardens, such as those that produce of Yam Daisies (*Microseris lanceolata*) or Murrnong, were also cultivated. This species has highly nutritious tubers. There are many other species with edible tubers, including Bulbine Lily (*Bulbine bulbosa*), chocolate-lilies (*Dichopogon* spp.) , vanilla-lilies (*Arthropdoium* spp.) and many orchids.

The fringes around these gardens were burnt to reduce fire risk, to remove the excess dead plant material encourage new growth, to provide ash as a soil nutrient and for aesthetic reasons. Singeing shrubs also helped to prune them and make them more productive. Aboriginal people do not like wild and unkempt areas. Additionally, gardens might be enriched with soils carried in from other sites.

Wicks and soil rebuilding

A “wick” is a root mass of plants that grow closely together. These roots become highly entwined to form a thick mat. This mat of plant material draws on and retains water, and then slowly releases the water in the landscape. Wicks provide important links between the higher and lower parts of the landscape and are important wildlife corridors.

The removal of gardens and wicks has lead to a decline in soil fertility. We are aware of how each plant species has different properties above the ground. We are less aware of the role each species plays below ground. Tea-tree (*Leptospermum* spp. and *Kunzea* spp.) and wattles (*Acacia* spp.) have important roles in soil building and nutrient cycling. Ash from their burning adds another dimension to soil building. Aboriginal people moved soils around the landscape, often in subtle, minor ways. Using soil to build gardens was, according to Rod, a widespread activity.

Tea-tree thickets form important wicks, and apart from their water-holding qualities, they form rich soils, high in nutrients. Additionally, they are an important food resource for invertebrates, the basis of the food chain, and provide important habitat for species such as the Common Ringtail Possum (*Pseudocheirus peregrinus*). Densely growing deep-rooted grasses, mat-rushes and wattles also are examples of wicks.

The maintenance of wicks is important to maintain landscape function. They may be assisted by fringe-burning to remove competition and to encourage new growth. Singe-burning of individual plants can burn off dead material and stimulate individual plants.

The removal of wicks can lead to erosion of gullies and the drying out of the landscape. Rod is an advocate for restoring wicks.

Aboriginal Land Management Practices are likely to be building up soil carbon, even though use of fire is involved. Whereas hot burning may destroy soil structures, cool burning has a far lesser impact on soils. Cool burning is likely to accelerate plant root growth below the soil, resulting in plants discarding old roots and their incorporation as humus into the soil. Burning will also produce ash and charcoal, carbon sinks, that are added to soils.

Fire management of gardens was a form of weeding, removing unwanted competing plants such as grasses from tea-tree and “bush rice” thickets. There is anecdotal evidence that cool burns may help suppress other unwanted plants.

Rod often refers to salt in the landscape and this he sees in the colour of the soil. He talks about blue salt. He believes that the areas that are affected require attention through burning and replacement of species that have the ability to absorb these mineral salts, for example tea-trees and wattles.

To Rod, rocky outcrops or rockeries re special feature areas and he believes they are nurseries for reptiles and other ground-dwelling species because of the warmth, moisture and protective sites beneath and between the rocks.

Left: Clustered Everlasting plants are acting as a wick up to the base of the tree.

Right: A Spiny-headed Mat-rush up against a rock, providing a nursery for reptiles and other small animals

Native animals - the original landscape gardeners

Emu, the bush policeman

Rod is a particularly enthusiastic about emus. The Emu (*Dromaius novaehollandiae*) played many important ecological functions on the Monaro. They ate many fruits and this enabled plants to establish in new sites, because the emus' stomachs corroded the seed crust and their droppings provided manure. Rod eats native fruits to emulate the action of the emu. Emus also provided protection for other animals against predation, by warning of the presence of predators. In this regard they were considered the caretakers of all other fauna species and made the smaller species feel safe. Smaller animals would become more mobile when an emu was around. Rod believes that emus will kill cats and foxes and would be useful deterrents.

Rod is a strong advocate of plant and animal reintroductions. It was common for Aboriginal people to move plant material around the landscape, partly to ensure that food and habitats were available for fauna. According to Rod we must seriously consider reintroducing emus into our region.

Rod believes that animals, particularly the birds, decide where new plants will grow. Rod believes that due to this special animal-plant relationship, it is the animals that have made the Australian landscape what it is, not humans. The animals are the true and original gardeners. Rod often refers to areas as being "pigeon country" or "long neck country" ("emu country"). This is often what he says as we are entering the region.

Rod often talks about animals' functions in the bush. He talks about how there is an order for where animals breed and hunt. He talks about some birds that make use of the high tree-tops, others that benefit from the middle area of the tree and some at the base. Rod points out that Michelago is where the two varieties of Australian Magpie (*Cracticus tibicen*) meet, namely the White-backed and the Black-backed subspecies of this species.

Rod has the same sense of order concerning possums. For example the Common Brushtail Possum (*Trichosurus vulpecula*) should be living in the eucalypts (*Eucalyptus* spp.), the Sugar Glider (*Petaurus breviceps*) in the wattles (*Acacia* spp.) and the Common Ringtail Possum (*Pseudocheirus peregrinus*) in tea-trees (*Leptospermum* spp. or *Kunzea* spp.).

Native bees are said to be key players and differ greatly from the European Honey Bee (*Apis mellifera*) as they have mouthparts that are better adapted to the native flowers and are the only way some plants can pollinate.

Rosenberg's Monitor, a threatened species, that was spotted on its way back, having taken a drink down at the Murrumbidgee River, Bredbo

Products and industries

Green Wattle (*Acacia mearnsii*) produce a unique sap used as a powerful glue - move over Superglue!

Through the Friends of Grasslands workshops and field trips and the other landholder property visits through the K2C projects, Rod introduced participants to many plants, their ecologies and properties. Rod even talks about connections between plants and movements of animal, including the case of wattles flowering at the time that the whales are migrating along our coast.

Knowledge of plants and their properties, as well as fauna, can offer us many possibilities for new foods, medicines, and other resources. Rod is a strong advocate of using local plants for many purposes. He would like to encourage the use of Spiny-headed Mat-rush (*Lomandra longifolia*) "bush rice" as a food staple, and several local fruit seeds as spices. He suggests that there are, potentially, many indigenous resources that may be farmed.

There are hundreds of species of plants with medicinal qualities. Rod refers to many products of these plants as super-foods with incredible muscle conditioning qualities that could replace the current pump-up drinks used by body-builders. Seeds of hakeas (*Hakea* spp.) can be pounded into flour for biscuits and is rich in protein. Rod discusses bush tucker as being an untapped industry. He refers to tea made from Bidgee-widgee (*Acaena novae-zelandiae*) and blends of wattle seeds (including a species that provides a unique, delicious chocolate flavour) that can be roasted and ground into coffee. The super-foods available in this region and provided throughout the year by our native flora are as yet unrecognised by our community. At higher altitudes, the Snowy Mountain Plum (*Pimealea pauciflora*) is a delicacy and Rod says there are two types, one to make you "go fast" and the other to make you "go slow".

Land-holders possess many of these species on their properties, but may be unaware of them. Rod would be delighted if land-holders took a greater interest in the potential of their plants, to research the bush tucker for themselves becoming familiar with the value of these plants and including when and how to harvest and process them.

Rod talks about how the sap from the Green Wattle (*Acacia mearnsii*) is a unique substance and was commonly used as a powerful glue. Hakea seeds are a substitute for sunflower seeds. Some other plant uses include Blackwood (*Acacia melanoxolyn*), which was used for tanning large leather rugs by Aborigines. This species was harvested in large quantities in the early 1900s and sent to Plymouth, England where this same tanning agent was used in the commercial leather industry.

Out in the field Rod often reminds us of the different coloured flowers and their medicinal features. For example, blue to purple flowers are good for the blood, liver and kidneys and yellow to white flowers are good for sweat glands and fat metabolism (areas under the skin), while red coloured flowers are for eyes and hair condition. More specifically, flowers of Old-man's-beard (*Clematis* spp.) are used for the treatment of headaches and the leaves of cassinias (*Cassinia* spp.) are used as a poultice for deep cuts. Brush Cherries (*Exocarpos cupressiformis*) can be fermented into a bush wine.

When out in the bush seeing the wattles (*Acacia* spp.) in full bloom, Rod makes a point of mentioning that the whales must be migrating. He claims that the plants tell what the animals are doing and *vice versa*.

Urn Heath berries—a very good source of nourishment. This is a species of epacrid that requires the seed to pass through the gut of an animal to germinate best.

Proposed on-ground practices

Ten Traditional Land Management Practices have been chosen for trialling in the Traditional Indigenous Land Management Practices Project. In most cases, land-holders and others interested in these practices were invited to participate in the trials.

Practice 1. Create a tea tree and wattle thicket

It is easier than you think to create a tea-tree and wattle thicket according to Rod. First choose a suitable site in an area where these species naturally occur. Rod suggests choosing a sloping site beside a running creek or near a watercourse. It is important, however, not to run wicks down existing drainage lines, as this may pose an erosion threat. Choose a minimum area of about 10 m long by 10 m wide. Use trailer loads of cut tea-tree or Silver Wattle branches, or a mixture of the two, and spread these over the site. When the material is dry, undertake a cool burn, or allow the material to mulch down.

Either distribute seeds of tea-tree or wattle (or a mixture) onto the patch, or plant tubestock of these species into the patch, making sure to put the tea-trees closer to the water and the wattles further up the slope. This should establish a tea-tree and wattle thicket.

The site for this trial was at Bush Heritage Australia's Scottsdale Reserve, near Bredbo. Here, a small patch, 20 m by 30 m, was cool burnt in August 2012. The site was then treated by scattered dead tea-tree and wattle material and then burnt again one month later. Seeds of wattles and native grasses were then sown and plants of River Tussock, wattles, tea-trees and cassinias were planted.

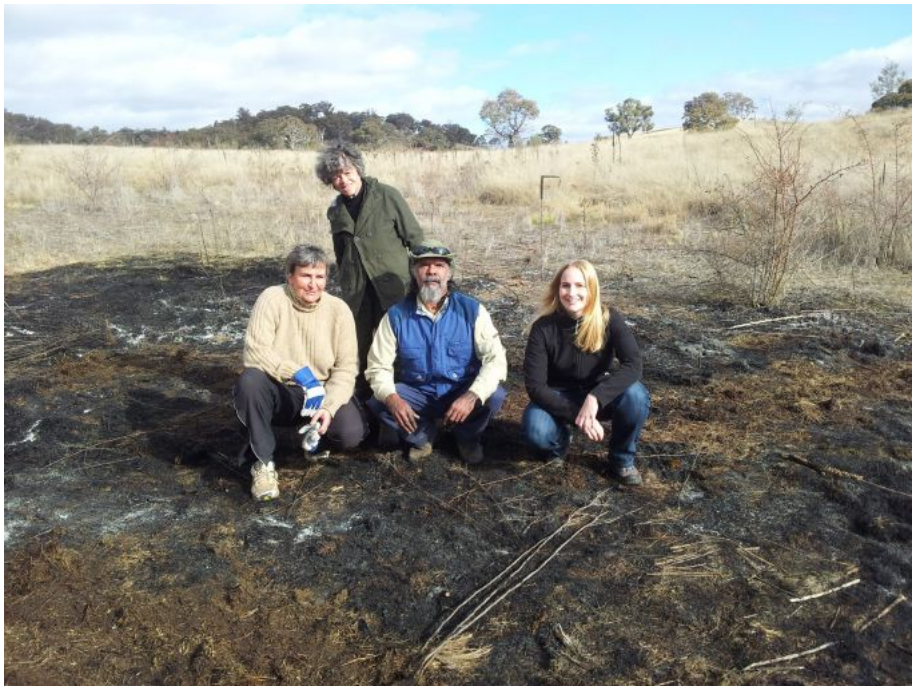
Rod and the workshop team after a cool burn and sowing tea-tree, wattle and native grass seeds at the BHA Scottsdale Reserve

Practice 2. Establish native grass hockey sticks

According to Rod this may be a useful method to help replace weeds with a native grass species, for example, replacing African Love- grass (*Eragrostis curvula*) with a native winter growing grass such as Weeping Grass (*Microleana stipoides*).

In the middle of an infested patch of lovegrass, dig a line parallel with the natural contour. At the end of the line continue back up the slope at a ninety degree angle (in the shape of a hockey stick). Ensure that you break up the roots of the weedy grass sward. In this "hockey stick", sow seeds of a winter-growing native grass known to grow in your area.

The site for this trial was established in July 2013 across a 20 m x 20 m area on the Epona property in Colinton. The site was burnt prior to digging the ground, as the African Lovegrass was impenetrable. The hockey stick beds were installed across the burnt lovegrass patches.



Land-holders, Rod and Tandi from the Great Eastern Ranges Initiative after establishing the grass seed hockey sticks.

Practice 3. Enhancing 'native bush rice' gardens

Rod explains to workshop attendees how many values are in the native "bush rice" gardens and how they will be improved by a cool burn

Spiny-headed Mat-rush (*Lomandra longifolia*), also known as 'bush rice', has many desirable food and fibre qualities. It is also important in Aboriginal gardens for making wicks and for soil building.

To enhance bush rice thickets, a cool burn is undertaken around the perimeter to enhance the establishment of a bush garden.

If you are in a region where Spiny-headed Mat-rush plants grow, but it is missing from your site, a good project would be to plant them in clumps. They are readily established and grow well in rocky areas.

The site for this trial was across a 20 x 20 m area on a property at Googong. In June 2013 the area was burnt as it contained rocky patches that included existing mat-rush plants.

Practice 4. Maintaining tree and understorey health and reducing fire risk

Rod believes that burning around trees will promote their health and they will grow stronger and straighter. He tells us that healthy trees need to breathe through their roots and so it is important to remove excessive litter from around their bases. An excessive amount of ground litter will also stop other plants from establishing. Too much bark on the upper trunks of smooth-barked trees and excessive ground litter is also a fire danger.

Garuwanga property owner looking over his tree which received a cool burn around its base to allow the roots below to breath.

Rod is careful to point out that his people did not burn around rough-barked eucalypts and burnt around those with smooth bark (the "gum-barked" species such as Snow Gum (*Eucalyptus pauciflora*), Brittle Gum (*E. mannifera*), Candlebark (*E. rubida*) and Scribbly Gum (*E. rossii*). Any eucalypts with smooth bark should not have excessive bark higher than hip-height, otherwise the bark will be a fire risk to the tree during a wildfire.

The site for this trial was across a 20 m x 20 m area at a property near Nimmitabel. Working around a cluster of trees the build-up of vegetation litter was carefully pulled away from the tree-trunk and then burnt in August 2012. The trees themselves were only lightly scorched during this burn.

Practice 5 Edge-burning tea-tree and wattle thickets

Tea-tree and Silver Wattle thickets build soils, help retain water in the soil and provide habitat for fauna, particularly insects, the base of the food chain. However, tea-tree and wattle growth can be hindered and their value reduced if they are allowed to become too woody and other plants, for example grasses and weeds, become excessive in their understorey. Hence weeding and pruning with fire, especially around the fringe of patches, is encouraged. The idea of patch burning in tea-tree thickets that are diffuse can be to re-train the tea-trees or wattles into thickets.

The site for this trial was across an area of 50 m x 50 m on a property at Carwoola, where senescing tea-tree thickets had spread into a patch of Snow Gum Woodland. Prior to the September 2012 burn a 50 m monitoring transect was established and a comprehensive species list was collected as a baseline for future research.

A Carwoola landholder and Rod after the burn

Practice 6 Create and maintain fruit gardens and seed orchards

Many shrubs provide important nutritious fruits. Recreating shrub gardens and caring for them with the fringe-burning techniques will assist in re-establishing important food sources and habitat. Gardens may be harvested for their fruit.

For established patches of Culturally Significant Vegetation, remove excess litter and burn around the fringes of the patch. Individual plants may be singed or pruned to remove dead material. Soil around the shrubs will be enriched by absorbing carbon and ash.

The site for this trial is across a 20 m x 20m area located in the Yaouk district. Due to poor burning conditions, the grove of Snowy Mountain Plum at this site will have to wait until next season for a singeing around its boundary.

Rod, says that high numbers of this plant forms a patch of Culturally Sensitive Vegetation (see page 19). The berries are extremely sweet and provide energy. This species is referred to by Rod as an untapped super-food.

A Snowy Mountain Plum (*Pimelea pauciflora)* orchard due to receive a fringe-burn to enhance its fruiting potential.

Practice 7 Create herb gardens using soil enrichment

Herbs, such as Yam Daisy (*Microseris lanceolata*) and Bulbine Lily (*Bulbine bulbosa*) are important food sources for Indigenous people. Encouraging plant growth, as any gardener knows, requires a good rich soil base. Some native plants are very good at providing their own mulch and increasing the availability of nutrients, particularly nitrogen fixing plants such as legumes, including the bush-peas (*Pultenaea* spp.), native soyas (*Glycine* spp,) and wattles (*Acacia* spp.). Also ash and charcoal from native vegetation that has been burnt in the past gives the soil important sources of carbon and other nutrients.

Rod believes Aboriginal people collected the soil under healthy stands of wattle trees and transported it to establish food gardens elsewhere.

As part of this trial very rich soil was removed from under a healthy stand of wattles at a site near the Tinderry Range in September 2012. The soil was then watered and a number of species grew.

While many native plants grew in this sample soil box, for example Burgan (*Kunzea ericoides*), a sedge (*Carex* sp.), Small St John's Wort (*Hypericum gramineum*), a woodrush (*Luzula* sp.), Common Bog-sedge (*Schoenus apogon*), a rush (*Juncus* sp.), and other, there was also a large density of exotic weeds, mostly Sheep's Sorrel (*Acetosella vulgaris*) amongst others. It was decided that this soil not be placed onto a new site due to the threat of introducing weeds to the site. So, unless a perfectly weed-free soil can be guaranteed, this method cannot be recommended.

The box of soil collected from under a healthy wattle forest has grown a number of native species. It has also produced some weeds.

Practice 8. Grassland invigoration

Grasslands may senesce if not managed by some form of biomass control in the form of grazing, slashing or burning. Native grasses benefit from light grazing as would have been applied by pre-settlement macropod grazing, or cool burning, as previously applied by Indigenous land-management practices. It is important to not over-graze grasslands or burn them at the wrong time.

To encourage grassland regeneration, Aboriginal people burned grasslands, which enabled the grasslands to regenerate by removing dead material, litter and unwanted plants, and opened up opportunities for plants, including forbs to continue to establish populations.

The site for this trial was across an area of 50 m x 50 m on a grassland property called 'Crookshanks' at Dry Plain near Cooma. A series of shallow gullies were burnt in June 2013 to encourage and increase the health of native grasses. Some native wattle seeds were spread into the gullies to prevent erosion.

Rod explains to workshop attendees how the burning process prompts new growth and helps ensure a healthy grassland.

Practice 9 Create a landscape wick

Rod articulates the importance of 'wicks' to transport nutrients up-hill and believes that wicks should be left unbroken, or if broken, they should be recreated. Rod points to vegetation standing isolated without a wick to support it as being in poor health. It is important to note that the current scientific validity of the functionality of a wick has not been tested.

Rod steps out to indicate where to establish the wick

Wicks can be retrained through fringe-burning to increase the health of existing plants, or where broken, can be recreated through planting. Plants used in a wick are usually shrubs planted in close proximity to each other, to provide the interconnecting matrix from a water-course up the slope of an adjacent hill. Some trees, such as wattles, can also be beneficial in supporting a wick.

It is important to be careful in site selection for wick. Do not site wicks in drainage lines, as disturbing soils in sites such as these poses a considerable erosion threat.

The site for this trial is across a 10 m x 60 m area on a property named Gundhawar at Michelago. The wick was established in September 2013 by planting Spiny -headed Mat-rush and Silver Wattle plants in a patch from a gully up an adjacent hill to an existing, though isolated, patch of woody vegetation.

Gundhawar property land-holders are keen to closely monitor the wick.

Practice 10 Reintroduce emus and other fauna

Fauna serves many functions. Plants and animals go hand in hand and Rod believes that we should always remember that animals created the landscape. The birds drop seed strategically. For example, the Emu, once spread throughout the region, provided an environmental service through the distribution of hard-coated seed that were passed through their digestive tracts. Many heath species require this process to germinate. Not only this, the Emu played another important role acting as the protector for many other animal species as they provide a good deterrent against predators. Rod talks about them as being the "bush policeman".

Reintroduction of emus and other species now missing or low in numbers should be a priority. Unfortunately it was outside the scope of this project to deliver on this practice. However, as part of the Monaro Landscape Connectivity Project, which included a TLMP component, during which Rod visited more than fifty properties, of these fifty, twenty land-holders expressed an interest in re-introducing emus.

Re-introductions of Emus and other previously present fauna species are being trialled by other projects in the region. For example, several small mammal and bird species have been introduced at the Mulligans Flat Sanctuary in the ACT in a project undertaken by the ACT Government and its research partners. Such projects should only be undertaken by reference to strict scientific guidelines and after going through the appropriate legislative steps. Reintroductions of sensitive fauna species should only be done in areas that are free from the predators that are likely responsible for their initial demise in the region.

Emus digest hard seeds which are later more easily germinated. They act as "bush policemen" in the landscape

Monitoring the TLMP trials

This chapter has been kindly provided by Friends of Grasslands, as some members, particularly the President, Sarah Sharp, have many years experience in monitoring on-ground effects. This chapter will be beneficial if you are interested in trialling the practices listed previously.

Monitoring the state of plants and animals throughout managed areas is the way to keep track of changes resulting from actions such as burning.

Human memory of slow and varied changes can sometimes be unreliable, so it is important to keep track through collecting and keeping good records. These will probably become very valuable to you as the land owner or manager. They are also valuable to other people trying to learn more about the effects of your actions - this will include other owners and managers who could be interested in starting up similar practices and also groups in government and in agricultural and environmental industries. Each record needs to have enough detail so that someone other than you can pick up your record, go back to the exact place, and continue the monitoring you have started.

Even monitoring as simple as taking photographs before a burn, and on a series of dates afterwards, can be highly informative. A procedure for doing this is attached, together with a record sheet to be kept along with the photos. It is highly recommended that you plan to do this at least at some of your managed sites. Remember that when selecting photo sites ahead of burning the edges of the burnt area are not predictable, so you need to cover a range of monitoring possibilities.

It will be even better if you also go beyond photo-monitoring. This will require a bit more time but it will tell you a lot more about what has been achieved and help you and others to better plan actions for the next time.

Vegetation monitoring is done in many ways and you could explore your options using the web, libraries, and so on. However, you might like to know that recently, in the K2C region, a set of basic methods has been written down in documents that are easy to follow.

One of these is compiled by Sarah Sharp and Lori Gould (Sharp S and Gould L, 2013, *ACT Region Vegwatch Manual, Vegetation and habitat condition assessment and monitoring for community*, Molonglo Catchment Group, Canberra). You could approach Molonglo Catchment Group for more information on the program and manual. In NSW, The Office of Environment and Heritage has an online data-capture system in which monitoring data can be stored and retrieved for data analysis.

K2C can help to put you in touch with the right information and people - please contact us.

Photographs are a valuable basis for monitoring the on-ground activities outlined in your Traditional Land Management Practice report.

The photo-point site: For each photo site, a point is selected for a permanent marker from which photos can be taken and retaken over time. A sequence of photos taken at suitable intervals over a period of time can provide a rich source of information.

Some key points to consider when selecting the site: Try to take the photo facing roughly south so that the sun is behind you when you take the photo, and that the sun is reasonably high in the sky to minimise shadows.

Avoid locating the photo-point where other factors may influence changes or trends, for example long tracks, near water points, etc.

Once the location has been selected, a permanent, visible and labelled marker is required to identify the site and act as the 'fixed point' from which the photograph is taken - for backup, locate it using a GPS. Two posts, known as the marker and sighter pegs should be hammered into the ground roughly 10 m apart – see Figure 1 below. Occasionally it may be appropriate to use landmark features, which future photos can be matched up with. While the marker peg needs to be permanent, the sighter peg can be taken away and returned just for taking the photo. The sighter peg can be made even more useful in 2 ways (a) coloured bands of tape can be used to mark a size or scale - for example space them equally along the peg 10cm apart. (b) Write the date and location code in large letters on an A4 sheet, point it towards the marker peg and attach to the top of the sighter peg.

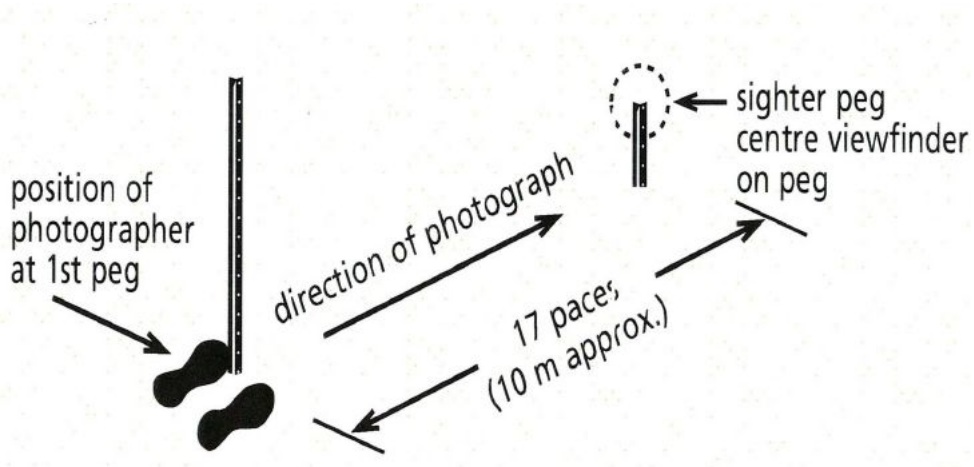


Figure 1. Layout of photopoint site.

Camera settings

Choose a camera setting that gives a good picture, so it is advisable to keep the settings simple to allow photos taken on different dates to be easily compared. Use the camera's default focal position and do not zoom when taking the photo. Make a note of the camera settings in your records for future reference.

Figure 2. Example of a monitoring photograph with sighter peg

Take the photo

Hold the camera so that the image is taken with a landscape perspective – that is where the picture is wider than it is high. The photo should be taken with the camera at eye level standing directly behind the marker peg. Frame your scene so that the top of the sight peg is in the middle of the camera viewfinder and focus on infinity. The lower part of the photo will then clearly show the understorey vegetation.

Photos should be taken twice a year at set months, preferably in spring and again in autumn, with the same photo direction, angle, and focus point each time.

Photographs accompanied by information that affect the site such as management actions, climate and natural events and observational measurements (eg. seedling survival, weeds present and abundance) greatly help to interpret and possibly explain the changes that are visible. Such details of photograph and site information can be recorded on a 'Photopoint record sheet' – an example is given below.

PHOTO-POINT RECORD SHEET
Property name and address:
Landholder:
Photopoint details
Site name: **Site number:**
Date: **Time:**
GPS Location: S: E: GPS system: (eg GDA94)
Photographer's name:
Site management (in the period between this photo and the previous photo):
Observations/Comments:
Attach photograph here. If electronic image, enter name of file and place where it is stored.

Photo management and maintaining records

To enable monitoring to be useful and valuable in the long term, it is imperative that the details of the photograph and site are appropriately recorded and stored together. (This is why the recommendation about a sheet of information attached to the sighter peg is made - such information is stored inside the image!). Each photo should be labelled in your computer and on any print so that you can easily recover the site number, site name, date and time.

How to access further information

Land-holders and land-managers are encouraged to learn more and consider adopting some of the practices outlined in this document.

Under the project we conducted a series of workshops with Rod to elaborate and explain the methods outlined in this document and to explain how participants can follow up on the workshops.

The following references elaborate on Rod Mason, his background and his teachings.

Crombie, S. (2011) *Natural Born Traveller - Ice-People*, 4 Jul 2011, www.youtube.com/watch?v=-zK2M68AOV0

Gammage, B. (2011) *The Biggest Estate on Earth: How Aborigines Created Australia,* Allen & Urwin, October 2011

Goonrey, M. (2012) *The Cascades, with Rod Mason*, News of Friends of Grasslands Jan-Feb 2012, www.fog.org.au

Holman, J. (2011) *Indigenous Land Management on Farms in the Monaro*, ABC Rural, Nimmitabel, 3 May 2011. http://www.abc.net.au/site-archive/rural/content/2011/s3205249.htm

K2C Traditional Land Management Practices Newsletters No. 1 http://k2c.org.au/files/TLMP%20newsletter%20No%201.pdf

K2C Traditional Land Management Practices Newsletters No. 2 http://k2c.org.au/files/TLMP_Newsletter%20No2.pdf

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A PlaceStory featuring Rod Mason and his involvement in the Monaro Landscape Connectivity Project, hosted by Murrumbidgee Catchment Management Authority, Murrumbidgee Landcare Inc and Koscuizsko to the Coast Partnership at http://placestories.com/folks/MLCproject#!v=stories

Many articles on Rod Mason and his work in the K2C projects are available at www.k2c.org.au

This Project aims to improve information about Rod, his background and teachings and was undertaken by the Kosciuszko to Coast Partnership (a regional partner of Great Eastern Ranges) in conjunction with Friends of Grasslands and is funded by a Murrumbidgee Catchment Management Authority - Community Partnerships Grant.

Kosciuszko2Coast LANDHOLDERS - LINKS - LANDSCAPES

Murrumbidgee CATCHMENT MANAGEMENT AUTHORITY

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