

INDIGENOTES

An ancient Bur Oak with lower limbs and understorey grasses, flowers and animals shaded out, disappearing, or gone, as brush invades in the absence of fire. Photograph from "Just a few oddball species" by Steve Packard in *Helping Nature Heal*.

Prairie University

**An excerpt from
*In Service of the Wild - restoring and
reinhabiting damaged land***

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'I want it to be next spring already,' says John Balaban. Balaban is one of a network of 3,800 volunteer stewards, laypeople who donate their time to the work of restoring prairie and savanna ecosystems in northern Illinoisan nature preserves. Many of these preserves are suburban and cluster around the North Branch of the Chicago River, within fifteen to twenty miles from the downtown Loop. At the height of summer, Balaban wants it to be 'next spring already' because with every passing year, more is learned about the art and science of repairing damaged landscapes, and for many years John Balaban and Jane, his wife, have been ace practitioners.

Jane Balaban, a hospital administrator, is bright with enthusiasm for stewardship and restoration as she welcomes me to her comfortable home and offers me some lunch. It's August 1991. I have come here to rendezvous with Steve Packard, Science Director of the Illinois chapter of the Nature Conservancy and a prime mover of the North Branch Prairie Restoration Project and the Volunteer Stewardship Network. He has kindly consented to take me on a field trip to some of the sites the volunteers are working on within the Forest Preserve District of Cook County, 67,000 acres of mostly wild land scattered north and westward through the Chicago metropolis. (Despite the sylvan name, the ecosystems contained in these preserves are not only forests, but grasslands and savannas, which the early settlers called oak openings.)

Fire is the elemental fact in the evolution and dynamic equilibrium of these landscapes, as it is in Leopold's southern Wisconsin country, and all grassland ecosystems. Left to its own vegetal devices brush would shade out the oaks, and the many native grasses, sedges, rushes and forbs that characterize these rich tapestries of life in which no single color or thread, no one species, predominates.

The midwestern tallgrass prairie all but vanished, overturned by the steel-bladed plow in favour of the relentless monotony of agriculture, which amounts to planting lots of the same damn thing - corn in Illinois usually - and then attempting to protect it from all the plagues that even-aged monocultures are prey to. Sodbusters and years later the advance of suburbia made wild fires, and hence the prairie and oak openings that depended on them, even more a thing of the past. Benign neglect will not suffice to keep these precious few remnant ecosystems alive. Fires must be lit and skillfully managed, and many other tasks performed as well.

Prairie and savanna restoration work is terrifically

labor-intensive, requiring thousands of hours of work to remove exotic species of plants from the areas to be restored, to lop the light-hogging buckthorn and ash saplings, to scythe weeds, to burn the leaf litter and grasses, and to gather, thresh, label, store, and then sow and rake seed from hundreds of different varieties of rare plants. Volunteers are sine qua non.

The 'idea that these sites can't exist without our help anymore' - as John Balaban put it, 'you can't just preserve something by building a fence around it,' because of 'how dependent that structure (of the ecosystem) is on our interference' - convinced the Balabans of the need for their stewardship as it has hundreds of other volunteers.

The North Branch Prairie Restoration Project is a remarkable mobilisation of human energy and is instructing a sizable group of amateurs in the Chicago megalopolis in some of the finer points of prairie and savanna ecology, preserve management, field botany, plant conservation, and horticultural technique. To enhance and embellish this learning, volunteers coordinated by Laurel Ross, who like Packard works for the Illinois chapter of the Nature Conservancy, publish a thrice-yearly catalogue for 'Prairie University.' This university-without-walls has a curriculum consisting of courses available at educational institutes throughout the region as well as workshops, seminars, and field trips offered by various museums and learned societies and some by the volunteers themselves. Among the scores of offerings listed are: aerial photography, art/nature, biology, birds, botany, chemistry of the environment, controlled burns, ecology, endangered species, entomology, environmental science, evolution, field methods, gardening and landscaping, geography, geology, mapping, mushrooms, trees, wetlands, and zoology. The City of Chicago's motto is 'Urbs in Horto'. The Prairie University motto is 'Discere in Horto.' It means 'learn in the garden' (also, but unintentionally, 'learn by exhorting'). Paging through the Prairie University catalogue is a cheering experience, evidence of the hankering of so many members of the human community to exchange knowledge of natural history and promote ecological literacy.

'Know the plants' may be coequal with the injunction to know thyself as a fundamental responsibility of Homo sapiens. Plants tell us where we are, are the basis of our sustenance and our atmosphere. They make the life of the land. Ecological restoration is very

much about the reinstatement of native plant populations and communities, and letting loose the processes they require for their evolution.

It is also important, in becoming native again, ourselves, to know the animals. And, since *Homo sapiens* are calling the shots, working with the dynamics of our own species is a fundamental aspect of restoration. In addition to all the botanical and occasional entomological savvy that informs the work on the North Branch Prairie Restoration Project, there is a good deal of human understanding. Not for nothing was Steve Packard a student of social anthropology. He and his prairie project colleagues work in an urban setting where people are overwhelmingly the dominant species.

What Steve Packard is famous, even notorious (among pedigreed plant systematists), for is his assertion that there is a distinct but forgotten community of grasses, shrubs, and wildflowers existing in oak savanna. Before Packard's savanna hypothesis, the idea was, roughly, that what hadn't been oak forest had been tallgrass prairie. Therefore, prairie was what it would make sense to restore to in these open woodland places. The problem was that the prairie restoration didn't take. In areas of the Cook County forest preserves where the great old oaks lingered, even after clearing out the underbrush and planting prairie species in the newly opened but partly shaded ground, volunteers observed that the presumed natives failed to thrive. The prairie plants couldn't seem to take hold and displace the invading woody species. At the same time, what Packard referred to as 'a few oddball species of plants' characteristic of neither prairie nor forest kept popping up in the sites.

By some masterful sleuthing Steve Packard began to speculate about what community of vegetation might have flourished originally under scattered tree canopy. Through taxonomic and historical research, he assembled the identities of the few 'oddball species' and many other plants in the oak savanna complex. Eventually he came up with a list of plants that turned out to be comprised of woodland, not prairie, grasses, and many herbs. Scouts began to locate other small remnants of savanna communities within the vicinity of the preserves and to gather seed and propagate plants for savanna restoration work.

Before we set out for the Somme Woods Preserve, northernmost of the North Branch project sites, and Packard's 'favorite place in the world,' he took me around to the side of the Balabans' house to show me a little garden where the couple was growing some of the rare prairie and savanna plants that they and other volunteers are restoring to these sites. Household cultivation of these scarce plants weaves humans together with nature, and the developed landscape with the reflowering landscape of the preserves.

Over the long run this learning in restoration - along with the landscaping-with-native-plants practice increasingly promoted by garden clubs, enlightened landscape architects across the country, and networkers like Louise Lacey (editor and publisher of the northern Californian *Growing Native*) - could enliven, maybe even transform, the biological monotony and heterogeneity of human settlements. Such work, and the propagation going on in the Balabans' garden,

and hundreds like it, is clearly reinhabitory.

In the Balabans' garden several members of the preserve ecosystems are making themselves right at home to the point of reproducing. 'The tomatoes are over there,' says Packard. 'The endangered small sundrops are here.' More than 100 members of the Volunteer Stewardship Network are, like the Balabans, gardening for seed, most of which is used in the preserves (although there is some seed sharing with other worthy restoration projects nearby). Wild seed is gathered from spontaneous prairie and savanna plant populations within a close radius of the preserves. It goes to the Chicago Botanic Garden for propagation, and seed yielded by these plants also is returned to the preserves, or shared. 'The Garden doesn't have the resources to get the seed that we do, because we have so many people who are out crawling around who can recognise the rare plants,' explains Packard. Meanwhile, the Botanic Garden has facilities such as greenhouses and mist tables that are crucial to propagating.

Packard points to a particularly strange and wonderful prairie plant in the Balabans' garden - the pale Indian plantain, which lurks at ground level for years in the form of a modest rosette of leaves, sending down its root system, all unseen. Then the plantain bolts, thrusting up a six-foot stalk with clusters of pale fragrant flowers which attract quite an amazing convention of flying insects. Among them was a raven-colored wasp, a midnight jewel prowling and flicking its way among the creamy little blossoms.

It is possible to grow the rare prairie and savanna species in plain old backyards because such domestic landscapes reproduce, albeit in extremely simplified form, the basic structure of the savanna: 'Grass, and trees and flowers, partial sun and partial shade - that's what people like,' says Packard. Indeed savannas are thought to be the landscape in which we *Homo sapiens* differentiated from our tree-swinging ancestors. As climates got drier (as they are wont to do from time to geological time), trees became too widely scattered for brachiation. Eventually some - pithecus or other confronted the necessity of walking upright in a parklike world of grasses, trees, and flowers, partial sun and partial shade, and found it good.

The visionary prairie-ophile landscape architect Jens Jensen played a leading role in the establishment of the Forest Preserve District of Cook County. Jensen practiced in the region around Chicago in the early twentieth century. In addition to being one of the first to celebrate native ecosystems in public parks, Jensen promoted volunteer participation in the work on certain of his projects. But neglect of the necessary management practices led to the preserves' degeneration. Enter the North Branch Prairie Restoration Project, whose *raison d'être*, according to its Mission Statement, is 'to assist the Forest Preserve District of Cook County and other agencies in protecting and restoring native Illinois ecosystems.'

The preserves were established sixty years before the Volunteer Stewardship Network got started. There have been no fires in them since the mid-nineteenth century. In their ecologically degenerate state, much of the land in the preserves had been abused and used the way vacant lots generally are - as kids' rendezvous, party

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spots, offhand trash heaps. Removal of soggy car seats was an early step in the restoration process. The absence of fire had allowed a proliferation of brush, particularly the European buckthorn, which shades out the oak seedlings and stifles the lower branches of the centuries-old oaks that remain, talismans of a time before Chicago's settlement by Europeans. The restoration work on these preserves includes bringing the brush to heel, then planting seeds of the native climax vegetation. The theory is that the former climax community will succeed, in both the vernacular and ecological senses of that term. A climax community maintains conditions - soil texture and nutrients, shade, and biotic richness - that favor its continuation. Barring disturbance, climax communities are very stable through time. Nature being the prankster she is, however, disturbance inevitably occurs, and in the disturbed areas successional processes are set in motion. Different groups of plants are adapted to take advantage of the set of conditions prevalent at the moment, each through its life cycle changing those conditions toward climax. In the succession to forest, for instance, the movement is from open, sun-drenched poor soil through ephemeral light-hungry species to long-lived, shade-tolerant trees that will form a canopy with moderated conditions of temperature and humidity below. Grassland communities and oak savannas seem to create the conditions required to invite periodic burns which kill the fire-intolerant brush species that would shade out their light-loving members. Notes Packard: 'Prairie, savanna, and oak woodland might all be called 'fire climax' communities. Many other ancient communities are also known now to require occasional disturbance (fire, flood, blow-down, disease). Natural disturbance functions differently from the catastrophic disturbance that humans often wreak.'

From the roadway, there's no clue to the extraordinary botanical goings-on at the Somme Woods Preserve. The crafty stewards have left a hedge of buckthorn around the perimeter of the woods, an impenetrable barrier to deter the insensitive, or the destructive visitor (the sort who, until recently, had come to drink, and neck and hare around on dirt bikes). On arrival we threaded through a small opening. Packard charged me to behold a 'sick, miserable ecosystem that used to be oak savanna.' At the beginning this place must have looked horribly unpromising. 'There were pockets of good stuff and dribs and drabs of this and that species, in dwindling numbers, dodging the disturbances,' notes Packard. 'Or perhaps even dependent on those disturbances - in the absence of fire.' He pointed to a stand of locust trees that volunteers had girdled, killing them to let the light shine on the tree species that belong there - bur oaks and white oaks. He pointed to a young oak that was saved from dark demise under a dense canopy. He explained the hallmarks of fire-adapted trees: their corky bark, their fat twigs, their ability to resprout.

Our passing from dark to light to dappled light was the subtext for the lesson that Packard imparted as we walked. We moved first through dark, sterile thickets, with their bare, caked mud floors, then prairies, and then the oak savannas that Steve Packard considers the epitome of desirable terrain. The contrast between the richness of the communities that the network has

reestablished in the savannas and the nullity of the ground under the buckthorn is truly dramatic. I had no idea there were so many different kinds of grasses. In the course of our walk we remarked perhaps two dozen different species and many sedges as well.

This list of names from my notes as we toured the Somme Woods Preserve may give the reader some fractional sense of all that's there: Satin grass, Slender wheat grass, Nodding wild onion, *Carex aurea*, Mad dog skullcap, Virginia wild rye, Bottlebrush grass, Canada wild rye, Wood reed, Woodland nodding fescue, a monarda, a vervain, Ironweed, Rice cut-grass, Illinois rose, Hop sedge, Bulrush, Sweet black-eyed Susan, Kalm's brome, Hill's oak, Great Saint-John's wort, mullein, foxglove, sneezeweed, *Cirsium discolor* (Pasture thistle), Prairie dropseed, Riddell's goldenrod, Meadow rue, Indian hemp. This random list does not include the really obvious prairie plants that any school kid ought to know, like Big Bluestem, Blazing star, Leadplant, Rattle-snake master, Prairie dock, and Compass plant.

There's a level of perception at which vegetation is generic. For most of us the landscape either has green things growing on it or not. It takes a while to begin to learn the difference between old-growth and second and third growth forest, or the difference between open land populated by exotic species - old fields - and open land like the tallgrass prairie that is richly populated by a diversity of species.

Accustomed as we are to having to visit zoos to see exotic animals and botanic gardens to see rare plants, it's quite a wonder to be able to look out across a pelage of dozens of rare, and some endangered, species, all growing together and turning their faces to the same sky that arched over their ancestors' arrival 10,000 years ago on plains recently bared by the glaciers' retreat. At the restoration sites in the Cook County forest preserves, a respectful visitor can tread a narrow footpath past healthy populations of plants that, until a few years ago, were rare waifs and getting mighty lonely.

Splendid as it all seemed to me, the drought that summer of 1991 was affecting the physiognomy of the site, and Packard fretted about the fact that the restorations weren't putting their best face forward. Under normal rainfall conditions, there would have been many more flowerings, he said. A climax ecosystem such as this, though, has evolved to deal with extreme variations in weather. If the native community can regain its foothold in these places, runs the theory of successional restoration, they won't all look great every year but they'll outcompete the invading exotics. It's the diverse community against the monoculture.

The thing that is changed forever (or for a long time into the future, anyway) about the life of this renewed ecosystem is that the fire it needs must be set and tended by knowledgeable humans. It calls for modern urban slash and burn horticulture. The volunteers cut out the brush to roll back the shade. Once there's enough fuel on the ground - leaf litter from the native plants - then fires can burn now and again and maintain the vegetation complex. Prior to settlement most of these fires were set by indigenous people to maintain clearings for game. Other wildfires would have been lightning-set. The occurrence and intensity of the fires

was as irregular as rainfall. Different fires burn at different temperatures; different plants succumb to different fires burning at different temperatures. The fact that some plants survive and some don't results in a mosaic pattern in the vegetation rather than in wall-to-wall carpet of repetitious motif.

There was a moment of pure bliss for me in this postage stamp of healthy land. We walked in an island of wilderness that had a surf of automobile traffic noise beating around its shores. But there were enough cicadas stridulating to give the traffic some stiff competition. The weather couldn't have been improved on, the sky blue and bright with high clouds, twinkling with butterflies. Butterflies like these places. Packard remarked that even if you didn't like plants, this work would be worth it for the butterflies. We watched a Tiger swallowtail and an ebony-colored swallowtail, or it may have been a mourning cloak of similar size, dancing a *pas de deux*, or they may have been contending for territory across a prairie opening. There was just something about the light. And about the excitement of being among so many different kinds of plants, of feasting the eye and the subtler senses on bountiful detail. Always something fresh to point to and ask, 'What's that?' It was a great privilege to be with someone who knew the answer, who may in fact have caused the cluster of false indigo or Indian grass to be growing there at all.

The Somme Woods site which we toured is, as is any restoration site, a lab. It's a story featuring the uneasy waltz of Science and Nature (Science all too often showing up for the dance in steel-toed work boots while Nature goes barefoot). Restoration ecology is experimental science, a science of love and altruism. In its attempts to reverse the processes of ecosystem degrada-

tion it runs exactly counter to the market system, to land speculation, to the whole cultural attitude of regarding the Earth as commodity rather than community. It is a soft-souled science.

At one point in the ramble I asked Packard what he felt in such places, if he'd been there by himself what would he be feeling? Would he feel a sense of satisfaction? After some thought he said he was wary of taking personal credit for this. He likes almost to forget that he and others had anything to do with this place, this recovering ecosystems. It is as it should be, and that's the point. He talked about the satisfaction that comes of being a part of something good and useful. He made an analogy with taking a child to do something fun. The child may not necessarily thank you, but being able to witness his or her enjoyment is reward enough.

Packard talks about organizing the 'generous impulses that people have towards their world.' As an organizer his method is to say, 'Here's the necessary support, here's the necessary freedom and authority: go ahead.' It amounts to a deft liberation of energy, akin to the emancipation that the burning and girdling of underbrush affords the hitherto scarce plants like the Sweet Black-eyed Susan which, said Packard, 'needed the same release that the people needed.'

An ecological community is founded on plants, the primary producers, with intertwined loops of consumers - herbivores, carnivores, and omnivores - relating hungrily in the midst of the vegetation. An ultimate index of health is the presence of big, wide-ranging predators. Because the preserves are so constricted and isolated in size, the likelihood of reinstating larger animals seems slight just now. But very large animals once were integral to these ecosystems. Chicago was a

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place where the buffalo roamed and what became Vincennes Avenue was once a bison track. However, the Somme Woods Preserve, as Packard told me that day, is host to Red-tailed hawk, Sparrow hawk, and the rare Cooper's hawk. Evidence that a goshawk wintered here is provided by the piles of pigeon feathers found all over the preserve. So there are avian predators and coyotes that have returned, but no wolves or bison are expected for a while. The question is whether these restorations will be sustainable indefinitely in absence of the larger animals that were once part of these communities. On the savannas and prairies humans have to stand in now for the forces of nature, to play the part of lightning storms, of buffalo, and of wolves and cougars, as they cull the deer.

White-tailed deer have become so numerous in the North Branch prairies that their grazing threatens to do irreversible harm to these painstakingly restored ecosystems. The decision to kill as many of the deer as possible triggered a controversy among the Chicagoans paying attention to such things, and prompted some opposition by animal rights activists.

Laurel Ross, who coordinates the Volunteer Stewardship Network, engaged the subject in her writings: *"These caring and well-meaning people speak loudly and passionately against the culling of deer, as if saving some individuals should take precedence over saving the precious and irreplaceable system which supports them. It is important for us not to lose sight of the fact that we are animal rights activists. We put our time and energy into restoring and preserving habitats so that hundreds of species of animals and plants may thrive.*

When newcomers to the Prairie Project challenge the seemingly brutal methods used to control brush and pest plant species, it is explained how and why this is critical to the recovery of an ailing ecosystem.

Deer control parallels other management techniques. Because we know fire is essential but cannot live with uncontrolled wild fire in a populated area, we have substituted safe, controlled burning. Nature provided wolves, bears, mountain lions and people to keep deer populations in balance. If we cannot tolerate these large predators in our cities, then we owe our natural areas a substitute they can live with."

So how does the Forest Preserve District actually do the dire deed? A trench is dug to hide a net. Bait is set out for the deer. When they are gathered in sufficient numbers, they trigger the flinging, by small rockets, of a net over the herd. Then the deer are shot point blank. Their meat is distributed to various charities.

Counterbalancing the drama of sweat, smoke, and blood being shed in controlling superabundant species, an aspect of savanna restoration, which is in some ways the essence of the whole thing, is seed collection. There's no catalogue whence you can order seed envelopes for the scores of woodland species the project seeks to reestablish in their rightful venues. (Besides, even if such could be purchased, it would lack the critical attribute of ecotype - genetic adaptation to a certain locale.)

Seed collection is the endeavour Laurel Ross superintends as a volunteer. On a visit in the fall of 1992 to a different restoration site in the forest preserves - the Bunker Hill Prairie - I tagged along during a field exercise. During this consultation with restorationist Tom Vanderpoel, Ross was also reflexively scouting seeds. As we walked along in the company of John and Jane Balaban and several other volunteers interested in refining their understanding of, and planning for, the ongoing restoration and management of this preserve, Ross noticed smilax seeds ripening. In another place, she noticed that a certain sedge's seeds were ripe and produced a half-dozen plastic bags into which we were directed to gather the harvest.

Plants are impressively protean, taking many different forms, shapes, and sizes in the course of their lives. Consider, for instance, the difference between an acorn and an oak. An untrained observer (such as myself) may see the same plant in a half a dozen different places, having made its adaptation to a half a dozen different sets of circumstances - to peculiarities of microhabitat or to passage of time - and be unable to perceive that they're all individuals of the same species. Thus the ability to recognize hundreds of different plant species, and in the various stages of their life cycle, is real *savoir vert*.

At length we came to a setting that Vanderpoel figured would favour savanna grasses and forbs. 'You can really bomb away with the good stuff here,' he said, meaning seed in it heavily. Packard, alluding to the preciousness of such seeds, dryly pointed out that one wouldn't be strewing megabombs but thimblefuls. (Ross later noted that she had counted seeds once or twice to remind herself that there can be many thousands in a thimbleful.) Pinch by pinch, inch by inch, is how this work actually goes.

Further on, Packard pointed out a stand of box elder and other woody fellows that have snuck into what fifteen years ago, when the North Branch Prairie Restoration Project was started, was an open field. 'You just have to go toe-to-toe with brush,' said Vanderpoel. 'You've got to be fanatic.' Cut it down, hit every stump with herbicide to prevent its resprouting was the advice. Yes, restorationists do use herbicides, albeit very selectively. They are just a tad defensive when questioned about the practice, which seems to be here to stay. In the emerging armamentarium of ecological restoration, there's a gadget called a Wonderbar which allows the brush-battler to apply herbicide to a cut stump without stooping. Another gadget's called a weed wrench, which is a vise levered onto a long handle that allows the worker to prize out and uproot woody undesirables.

Participants in the stewardship network seem to favor old-fashioned tools, such as scythes, hatchets, and drip torches. I noticed in Steve Packard's hard-working car an enigmatic little object, a short, smoothed cylinder of wood with a small circular band of metal attached. I learned that it was a snath, the detachable handle of a scythe. Low-tech, and with a romance all its own. Clearly part of the knack of organizing volunteers is entrancing them with the work, by all manner of means.

Laurel Ross's transitive goodness has to do with connection - her connection with the people working as

stewards on the prairie and savanna restoration projects dotted throughout Chicago; and the connections she effects between people and the communities of flora whose revival is the network's reason for being. One gets the impression that she, and her colleague Steve Packard, are never not busier than mere mortals could, or should be.

Their projects, wildly successful in many respects, are extensive (27,364 acres, 207 sites) and intensive (about one steward per site, 3,809 volunteers, over 50,000 hours worked in 1992). It's also abundantly clear that these people love their work, thrive in it to an uncommon degree. Ross exhibits an appealing combination of sensitivity and practicality, and general wisdom, sources for that latter quality likely being her engagement with its two biggest wellsprings, Nature and Culture. Hope does not seem to be a problem for her. Her stories of restoration endeavours and volunteers are colored by delight. No misanthropy in this kid. In February 1993, downtown in Chicago, Ross spent an hour in conversation with me, speaking of the rewards in the work.

The reason why people are so willing to work so hard in the Volunteer Stewardship Network,' said Laurel Ross, 'is that they are looking for something meaningful to do. People think of raising their children as important. People think of making art as important. This is right up there. It's more important to a lot of people than their jobs.'

'So many of the life forms we're dealing with are in such serious trouble. Endangered and threatened are two very strong words, and rare's pretty powerful, too. Sometimes I wonder why everyone isn't hysterical about the loss. Of course the reason people are so interested and involved in the stewardship network is that most times when people get an inkling of how important action is, they don't have a clue as to how to do it. The hole in the ozone, for instance: I'm upset about it, but I don't really know what I can do about it besides political things. The Volunteer Stewardship Network offers a way to act, and not just a tiny role.'

'This year we've started a five-year project as part of the federal recovery plan for the prairie White-fringed orchid

(*Plantanthera leucophaea*), which is threatened. Illinois is mostly where it used to be - we're not on the edge of its range or anything - there should be lots of it. Volunteers will be going out to where there are a few remaining populations and pollinating the flowers, with toothpicks. We'll be coming back later and collecting a portion of those ripe seeds and taking them out to places where that plant should be and once was and planting those seeds and monitoring the plantings year after year. About five years later we may see some flowers - that's about how long it takes.'

Ross later added that 'one reason the plant is so rare today is that the hawkmoths that pollinate them are not finding the widely scattered populations. The main reason why they're so rare is that their habitat has become so degraded. As we improve the habitat through stewardship the orchids will be able to thrive. Pollination guaranteed, seed dispersal enhanced, habitat improved - we're interrupting the cycle that's eliminating this plant; a holistic approach really. We're only restoring the plant to places where they will be protected - through management and through legal protection.'

'If you had to pay scientists or even students to do the work, it would be expensive - it's so time consuming and labour intensive. Yet it's easy work to do...You could, anyone could, save a species from extinction!'

'I like organizing,' Ross continued. 'It makes me feel that if there's something wrong, there's something you can do about it. My practice involves getting excited and jumping in head-first and then figuring out, once I'm going down for the second time, what parts of the work to keep and what parts not to keep. If I tried to think it through in advance I probably would be a lot more timid.'

'A lot of my work is matching up people with jobs when there's all this work to be done, trying to figure out who would be good at what and how to get them started in it so they'll be successful and it will be good for them and good for the project. People really appreciate being tempted by big juicy projects that they might not think up for themselves.'

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'A lot of times you'll describe a project and people's first instinct is to say, 'Well, I could do two percent of that.' I think they really appreciate being led to understand that they can do sixty percent of that - a hundred and ten percent. It helps them think more about their abilities.'

'The experiences get bigger and bigger - you're girdling whole trees, and you're setting fire to the woods, setting fire to the prairie with these big roaring flames - you're actually making choices about the course that the management will take. I don't mind it if we make some mistakes. Usually we'll notice it and stop making them. Somebody will learn something from it. You can eventually set it right. Some mistakes are pretty costly but it's a lot riskier to not do anything. We're pretty sure that if we don't do something it's going to be a lot worse.'

In a practice of accentuating the positive to eliminate the negative, Ross said, 'This year we're trying to manage Bluff Springs Fen (an extraordinarily rich ninety-acre mosaic of prairie, fen, and savanna ecosystems forty miles west of Chicago) as a model preserve. We want to get a lot of people in there but in a way that it won't hurt the preserve and so we're going to organise a whole series of little things. Every weekend there'll be something going on - there might be a Saturday morning bird walk with ten people. There might be a Friday night sedge identification walk. We want people in there because we want people to love the place. We also want people in there who are doing good things we like there, because there are also people doing really bad things in there - people with dirt bikes, people having messy parties, and doing some pretty destructive things. Cops are not the only answer to that, fences are not the answer to that, and laws aren't the answer to that. What we've found is that having people in there - our people in there - is a big part of the answer to that. People don't want to go where there are people who might see them at their mischief. The more people who know what a rare thing is and what their effect on it is, the more people are going to act appropriately.'

'We had this little boy last fall along with us as we were seed collecting. He was so taken with it and he was so smart. He came up to me afterward with this one Rattlesnake master seed and asked permission to take it home and plant it. He was so respectful!'

'People do develop almost a patriotism to this magnificent mid-western landscape. It's what we have here, and it's available every day. Savanna is not something people grew up longing for, or thinking about, or writing poems about. So this is a change.'

'The network is so good at peer teaching. People do take it as a real responsibility to help other people see what they're seeing. That's how I've learned most of the plants I know - by being out there with people who know a different one than I do. John Balaban and I were walking through the Miami Woods Prairie and he bends down and says in a sort of teacher way, 'Laurel, do you know what this is?' and it's a tiny thing about a quarter-inch high. I bent down and looked at it and it was a baby Rattlesnake master. If you looked at it closely enough you could see that that's what it was - it

had all the characteristics. That was a great moment. (Rattlesnake master - *Eryngium yuccifolium* - a member of the parsley family, is a distinctive character in the grassland community. It can grow to be five feet tall, which is why John's ability to recognise it as a tot is virtuoso botany.)

'Last fall we were clearing a huge area and a little boy and his dad were discussing the work - we had been explaining what we were doing and had talked about the shade and the light and so forth, and this kid, as if he'd been scripted, said to his dad, 'Remember how dark it was when we came in? Look how light it is now!' And his dad said, 'You've got to have the photo for the synthesis.' That boy will never forget that - he learned it. That's the kind of thing that we're hoping will happen with kids - that the way things grow won't just be some sort of book stuff that doesn't mean anything to them, that they'll actually get it because they saw it, they did it.'

'Have you ever seen any of the crazy newsletters that are produced by the Volunteer Stewardship Network? There are dozens! Every region has its own newsletter that goes out to two or three hundred people. There's all this obscure stuff being written on subjects like how to build a brush pile - there are people who clip things out and put them on their refrigerator, I'm sure.'

'We talk about the 'restoration community' - it does feel like a community, and sometimes it's more like a cult. After three meetings three nights in a row discussing all this stuff I begin to think I've gone a little beyond normal range. In the height of seed-collecting time I sometimes question how much time I'm spending on it. My personal volunteer role is as a seed-collecting coordinator of the North Branch Prairie Project. It has its moments. There have been times when my house has been filled with bags and bags of seeds and little bugs that have come out of the seeds crawling all over. Doing something with all of your heart is irresistible. My job is so filled - packed - with delightful people, people who are striving to be productive and happy and do a good thing. You can't help but be positive if that's what your experience is day after day.'

To spotlight Laurel Ross, who for years volunteered for the North Branch prairie restorations before she became a full-fledged staff person at the Nature Conservancy's Illinois field office; and Steve Packard, whose intelligence and charisma have stimulated and animated much of the work, is to ask these two people to stand for a great many others. They would certainly demur from taking much of the credit for this remarkable program of earth healing. But it's only human to focus on individuals rather than on populations - the many hundreds of volunteers who bend their backs to the task - so I must ask the reader to pardon the synecdoche.

Packard and Ross both seem averse to ideology. Their pragmatism, as matter of fact, is very much the institutional culture of their employer, the Nature Conservancy, and of most land conservancies. You don't raise sums large enough for the purchase and protection of sizable tracts of land by denouncing the failings of private ownership and the excesses of capitalism. Quite possibly Ross and Packard feel that empowering thousands of volunteers to save species in northeastern

Illinois, indeed to be encouraging the rescue of savanna ecosystems throughout their former range, is plenty to accomplish; and that the practice of restoration, inherently transforming, is enough.

Update on the small Golden Moths Orchid

An orchid on the edge of extinction - previously reported in the SGAP, Keilor Plains Group newsletters No. 72 and 73.

At our April meeting Peter Rice, who attends 'Save the Orchid Coalition' meetings gave a report on the state of play.

As you may know the Altona site where the orchid grows was declared Critical Habitat by the secretary of the Department Natural Resources and Environment (DNRE) under the Flora and Fauna Guarantee Act [the first Critical Habitat designation ever]. However the Department and the Minister Marie Tehan have failed to protect the site. Drainage work carried out on this site has resulted in heavy trucks driving over the area covered by the Critical Habitat Determination, thus compacting the soil to a depth of 10 centimetres. Neither DNRE nor the City of Hobsons Bay have stopped this desecration. Recently the developer of the Slough Estate died, thus complicating an already complex situation.

Two hectares of grassland have been temporarily set aside for scientific study in Harcourt Street which is a continuation of Burns Road, Altona, where the orchid was sighted in Spring 1995. In 1996 the area was burnt and botanists say it takes two years for the orchid to regenerate. Past attempts to translocate the orchid to a nearby area proved unsuccessful, possibly due to the absence of the appropriate mycorrhiza. The area may also be critical habitat for the orchid's pollinator which is believed to be the small native sweat or alkali bee. Several other species listed as threatened under the FFG Act are also known to occur on the land - the Plains Rice Flower (*Pimelia spinescens*) and the Small Milkwort (*Comesperma polygaloides*).

The problem seems to be a lack of political will. If you didn't write that letter to Marie Tehan, now is the time to do it. The Minister has the power to save this orchid and the native grassland it grows in.

Mrs Tehan's electoral office is at:

1/16 Church Street, Whittlesea, Vic 3757. Telephone: (03) 9716 1038, Fax (03) 9637 8121.

Source: Society for Growing Australian Plants - Keilor Plains Group Newsletter, No 75, May 1997.

Coming Events:

For IFFA events see back cover

Talks/Conferences/Workshops

June, Sun 1. 'Bushfood & Bush medicines' - Part of a series of one day workshops held at Alcoa's Warrambeen Landcare Education Centre. Warrambeen is a historic sheep property on the western plains of Victoria. Cost \$45.00. For bookings contact Trish Taylor on (03) 5281 3250. More workshops this year at Warrambeen include Rural Women's Day on Wed 18/6, 'Alternative uses for farm trees' on Wed 13/8, 'Water Quality & blue green algae' on Wed 15/10, 'Importance of birds on farms' on Wed 15/10, and two Indigenous Grass Identification workshops to be held on the Sun 30/11 & Sun 7/12.

June, Tue 3. 'Total community involvement and the environment'. A forum presented by Greening Australia Victoria to provide an opportunity for informed discussion on the issues associated with empowering the community, and increasing a sense of ownership. Issues include: means of accessing ethnic groups not currently represented; case studies of successes and failures; maintaining involvement. Cost: \$35, GAV members/community group \$20. Lunch included. Bookings contact Gerard Clark at GAV (03) 9457 3024.

June, Tue 17 (6.30 - 8.30pm), Sat 21 (2 - 6pm) & Sun 29 (9am - 5pm) 'Birds of the Melbourne Region'. Presented by the Royal Australasian Ornithologists Union and Victoria's Council of Adult Education. The course consists of one lecture and two field trips to give the practical knowledge and skills to understand and appreciate our avian wildlife. Fees: \$139, Child \$119, Seniors Cardholders \$128. Contact (03) 9652 0733 or (03) 9652 0784.

June, Tue 17. 'Biolink' - corridors in the Wimmera. A training day presented by DNRE and GAV. Session includes: the role of corridors in conservation; establish effective corridors; ecological considerations. Location: Little Desert Lodge. Contact Ron Dodds (03) 5391 8207.

July, Sat 19. 'Expanding your propagation skills'. Training day presented by Greening Australia Victoria. Develop your skills in plant propagation. Learn a range of seed treatments; design a plant production program; select and apply propagation techniques. Cost: \$30, GAV members \$10. For registrations contact Gerard Clark at GAV on (03) 9457 3024.

July, Thu 24. 'Monitoring your revegetation project'. A training day presented by Greening Australia Victoria. Develop skills in setting short and long term goals; managing finances and record keeping; setting performance indicators; evaluating project outcomes. Cost: \$30, GAV members/community group \$10. Contact Gerard Clark at GAV on (03) 9457 3024.

July, Sun 27. "Indigenous plant products" A training day presented by DNRE and GAV. Session includes: farm diversification opportunities using indigenous plants; choosing appropriate species; getting started

on your farm. Location: Freeman's Farm, Kardella. Contact Kate Walsh (03) 5659 5236.

October 4 to 7, 1997. RAOU's Annual Congress and Campout. RAOU's VicGroup is responsible for organising the exciting events. The Congress will be held from the 4th-5th at the Charles Sturt University in Albury, NSW. Theme is woodland birds, but any papers and posters of ornithological interest welcome. Campout is the 6th - 10th and is in Cornishtown near the Chiltern box-ironbark forest park. Contact Congress Convenor, Margaret Cameron (03) 5229 9792.

December 6 to 9, 1997. 'The 3rd International Megapode Symposium' - for science and Conservation. You are invited to share the adventure of Megapode research - in the heart of Victoria's Little Desert National Park. Speakers include academics, professional ornithologists, field ecologists, wildlife managers and naturalists. The 4 day event includes presentations, field trips and free time to enjoy the mallee - home to the a most unusual megapode, malleefowl. Accommodation is Whimpey's Little Desert Lodge, Nhill. Contact Dr. Darryl Jones, Faculty of Environmental Sciences, Griffith University, Nathan Qld 4111, Australia, Phone (07) 3875 7451, Fax (07) 3875 7459, E-mail: D. Jones@ens.gu.edu.au

9 - 12 December 'The Other 99% - The Conservation and Biodiversity of Invertebrates'. Sydney, NSW. Objective of the meeting is to demonstrate the importance of invertebrates in biodiversity research and nature conservation. Probable symposia topics include: Assessing the Other 99%; Describing the Other 99%; and Invertebrate Conservation. Contact the Australian Museum, Invertebrate Biodiversity Conference, 6 College St, Sydney NSW 2000, Fax (02) 9320 600, E-mail: invert@amsg.Austmus.oz.au

Excursions and Field Trips

June, Fri 6 - Mon 9, 1997. 'A Royal Commission into Rotamah Affairs' - Presented by Rotamah Island Bird Observatory. If you are ready for a weekend adventure in the deep jungles of Rotamah Island, this is for YOU! Follow the fearless leader in search of hidden, unusual creatures not even dreamed of, and The Wardens! From spotlight walks in the dead of the night, to quizzes to tax the best of mind, to slide shows, this long weekend will certainly uncover some of the dark secrets of Rotamah Island. Cost \$205, Child \$115 - full accommodation and dinner on Friday to lunch on Monday. Contact Rotamah Island Bird Observatory, (03) 5156 6398.

June, Thu 12. Explore Westerfolds Park at Night - beginning at dusk. Learn about the native inhabitants of the park as experienced guides take you on an exciting adventure of discovery. We cater for all ages and interest groups. These nightwalks are held every second Thursday evening. Cost \$5 per person, \$16 per family of four. Bookings are essential. Contact Envirotechniques on (03) 9439 9599.

June, Thu 12. Pound Bend Walk. Join the Friends of Warrandyte State Park on an afternoon wander beside the river along the Pound Bend walking track. Meet at the WSP depot, Pound Bend Rd, Warrandyte (Melways 23 C10). Contact Cathy Willis (03) 9844 1841.

July, Fri 4 - Sun 6, 1997. 'A History Tour of the Gippsland Lakes' - with Coral Dow, Presented by the Rotamah Island Bird Observatory. Humans left traces of their presence around Gippsland Lakes long before the lakes were formed, and we continue to leave traces for future historians to see. Includes a boat tour of the Lakes. Fee \$150, Child \$60 - includes boat trip, accommodation and meals from dinner on Friday to lunch on Sunday. Contact Rotamah Island Bird Observatory, (03) 5156 6398.

July, Fri 18 - Sun 20, 1997 'Capturing birds with pencil and paint' - Presented by Rotamah Island Bird Observatory. A chance for budding artists to capture the essence of birds under the guidance Nicholas Day, known for his paintings in 'The Field Guide to Birds of Australia'. Join in the fun and rewards of a weekend at Rotamah Island capturing birds without touching a feather. Fee \$145, Child \$60 - includes accommodation and meals on Friday to lunch on Sunday. Contact Rotamah Island Bird Observatory (03) 5156 6398.

Restoration Activities

Thu, 29 May, FO Warrandyte State Park - Fiddler Fence Extension. 10am, morning activity. Fiddler Fence was our very first rabbit exclusion plot. It is so successful it needs enlarged. The rangers welcome our help. Meet at Fiddler car park off Webb St, Warrandyte (Melways 35 G3). Leader: David Van Bockel. Contact Mike Coupar (03) 9903 9567.

Sun, 1 June, FO Merri Creek Litter Removal Activities. Meet 9.30 am. We will be working from Albion Street to Blythe Street. Contact Ray Radford W (03)9380 8199, H (03)9386 8695.

Thu, 12 June, FO Warrandyte State Park - Park planting morning. 10am. Plenty more plants to put in. Location is the Pound Bend Tunnel fence, the ground will be soft and no rabbit guarding is required. Meet at Pound Bend Tunnel car park, Pound Bend Rd, Warrandyte (Melways 23 A11). Contact Mike Coupar (03) 9903 9567.

Thu, 19 June, FO Warrandyte State Park - Species Enrichment Survey. 1pm. We will pool cars to have a look at sites at Jumping Creek and The Common where rare species have been planted in the last few years. How have they survived the summer? Meet at WSP depot, Pound Bend Rd, Warrandyte (Melways 23 C10). Contact Mike Coupar (03) 9903 9567.

Sun, 22 June, FO Merri Creek - Weedmat Removal at Rushdale Reserve. Help pull up weedmat that has been down for ten years, between Rushall Station and the High Street Bridge. Meet 10am. Contact Ray Radford W (03)9380 8199, H (03)9386 8695.

Sun, 29 June, 4th Hill Extravaganza. 9.30am - 12.30 pm. Rediscover Whipstick Gully! See how well our plants have grown and add more. Come to the Air-shaft to see Warrandyte's most successful revegetation fences. A little handweeding should keep the site in check. Followed by a nature walk. BBQ provided, with meat, bread. BYO salads and drinks. Contact Mike Coupar (03) 9903 9567.

For a range of fun family activities in Melbourne's parklands contact the Parks Victoria Information Centre on 13 1963.

For information about Parks Victoria's 1997 Community Training Program, or DNRE's Rural Seminar & Training Program, both presented by Greening Australia Victoria, contact Gerard Clark on (03) 9457 3024. The programs include training sessions, seminars, bus tours and a forum all aimed at developing skills of people interested and involved in conservation and revegetation work.

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

Thank you to all the people who have contacted us regarding on-coming events their groups are organising. And thank you to Judy Spittle for her great illustrations of hardworking regenerators on last month's 'Regular Restoration Activities' insert. For more copies of the insert please contact Lincoln. Elissa Kerassitis (03) 9486 6768.

From the Editor:

We have started this issue with another story from North America. I hope you enjoy it; it seemed quite inspirational to me. There's many threads running through it that strike a chord with many of the things happening here.

Coming Events is small this month as well. The "Regular Restoration Activities" insert makes this possible. The same events aren't repeated again and again. You just have to keep track of the April issue so it can be referred to again. We would like to make it bigger and better next year so start spreading the word about getting an entry in to this amazing feature. And give me a call if you need any more copies for your friends.

I will remind all of you again... Indigenotes is what you make it! Send in your interesting stories about indigenous flora and fauna and its restoration as well urgent conservation issues that others need to know about. We need articles, events, snippets and drawings.

Thanks, Lincoln Kern

Economic Benefits of Native Grasslands on Farms

Whether we live on the urban fringe of Melbourne or are inner urban gardeners, many of us are always interested to read something that addresses how we conserve native grasslands, or native pastures as it is on farms.

Jim Crosthwaite, an environmental economist has written an about-to-be-published report on the economic benefits of native grassland on farms. He aims to promote productive farming integrated with conservation objectives. Jim's case study based on south western Victoria evaluates the profitability of retaining native pasture or replacing it, or run down pasture, by sowing an introduced perennial pasture.

Most opinion within Australasian agricultural circles in the last fifty years has been that, compared to sown pasture, grasslands have relatively very little to offer farmers in 500mm+ rainfall areas. Jim found that by conducting interviews on twenty eight farms that native pasture complements and underpins commercial farming operations, but this could change on most farms if management changed, hence their conservation status isn't secure. Jim looks at the whole farm operation, stocking rates, wool prices, native grass seed cost, rate of pasture decline, land degradation, drought and benefits from native pasture.

Native pasture complements other aspects of the farm operation. It has a clear role on hilly or rocky areas that aren't arable; it has low input costs; it provides shelter for lambing; it's a good stop gap while introduced pastures are needed for fattening up lambs and steers; it provides green pick in dry conditions and dry matter in wet conditions; it's a good place to feed out hay; it helps to run sheep there to reduce worm problems, or if footrot is likely.

Native grass seed is currently \$150/kg because of lack of availability and small demand. Jim concludes that sowing native pasture would be a feasible option for many farmers if the price of seed could be reduced to \$50/kg.

Jim also looks at developing policy directions for the next ten or twenty years. He asks, what form of intervention is most appropriate?

His options include:

- changing legal title through land purchase or covenanting. Covenants can be arranged in Victoria through the Trust for Nature.
- educating and providing information to current landholders.
- regulating to restrict activities that can be carried out.

- removing disincentives to conservation.
- changing taxation provisions at the national, state and local level, for example the Melton Shire's Environmental Enhancement Policy which gives rate rebates to land owners who combat noxious weeds, rabbits and soil erosion.
- entering into management agreements with financial incentives.
- providing other financial incentives.
- promoting a conservation ethic via community based activity such as Landcare and Land for Wildlife.

In these days of privatisation and economic rationalist thinking, the trend away from establishing an adequate public reserve system means it is crucial that farm management embraces native grassland conservation. Most farmers have a utilitarian attitude to nature and so comprehensive strategies are needed to achieve conservation goals on private land. In the meantime the recommended practice is continued - light grazing, no fertiliser and no cropping.

The aim of Jim's research is to find the best prospects for procuring the future of remnant native grasslands. This really is a book for farmers to read but native grassland conservationists need to take note of his facts and figures so they can argue their case in the broader community.

The report, published by the Department of Natural Resources and Environment, it is called 'Economic Benefits of Native Grasslands on Farms' by Jim Crosthwaite, and will be available from DNRE later this year.

Source: Society for Growing Australian Plants - Keilor Plains Group Newsletter, No 75, May 1997.

Write to Oppose Freeways through Grassland and Green Wedge!

Lots of politicians need to hear about your disgust for the destruction of the natural environment for the sake of shorter travelling times. Write your local Councillors, your State Members of Parliament and your Federal Member of Parliament. And while your at it write to the RACV if you're a member; they are a powerful organisation.

More Freeways: The Hume Freeway

This freeway would duplicate the Hume Highway from Craigieburn to Mahoney's Road in Campbelltown. Why do we need it, you may ask, the Hume Highway is a big road already? That isn't totally clear but somewhere a connection is wanted for the Western Ring Road.

The money hasn't yet been allocated for it but VicRoads has much of the planning in place for it already. The cheapest route for the freeway is through the Nationally significant Craigieburn Grasslands and the State significant Cooper Street Grasslands. This route avoids land that is valued for its quarrying potential and digging up rocks is much more lucrative than saving grassland.

There are other options like:
upgrading the existing Hume Highway
extending the electric railline to Craigieburn and
other routes through less sensitive areas.

We need to speak up now to save these places. The Friends of Merri Creek are organising a campaign. If you want to be involved please contact them at P. O. Box 7, Northcote 3070 or on (03) 9480 5492

"No Ring Road through the Green Wedge"

The Ring Road through Green Wedge of Eltham, Research and Warrandyte is back on the cards. Many of the commissioners at Councils were supporting it and some elected Councillors may continue to. The planning of the Scoresby Freeway from Frankston to Ringwood is proceeding quickly and if it is built the Green Wedge is the last slice left. Building a ring road around Melbourne has been controversial for decades (see article in *The Age*, Saturday 10 May 1997 for a history) and building it piece by piece is possibly a method of making it a *fait accompli* without having to debate the merits of the whole thing.

Several questions about the Ring Road remain:
Who wants to drive from Eltham to Frankston anyway?

Doesn't the City Link solve the problem of linking the two sides of the city now?

If you would like help resist the project contact the Anti-Ring Road Organisation:
Fia Clendinnen (03) 9844 3454 and
Mark Gardner (03) 9844 3799
ARRO, P. O. Box 126, Warrandyte 3113

Weed Management News

Centre for Cooperative Research in Weed Management Systems

The CRC for weed management systems is a partnership with 3 core participants the CSIRO Division of Entomology, NSW Agriculture and the University of Adelaide. Supporting participants include Agriculture Western Australia, Avcare, Charles Sturt University, CSIRO Division of Plant Industry, Grains Research and Development Corporation, University of New England, Victorian Department of Natural Resources and Environment.

The mission of the CRC is:

- "to increase sustainability of agriculture and protect the natural environment by developing ecologically sound, cost effective weed management systems."
- "to raise the level of awareness, knowledge and adoption of integrated weed management systems by practitioners, land managers and the community."

The CRC's research focuses on developing integrated weed management strategies using herbicides, biological control and vegetation management.

The CRC has established 5 program areas and these are:

1. Cropping systems. The leader of the program is Dr Deidre Lemerle of NSW Agriculture. The aim is to develop environmentally and economically sustainable weed management systems in the cropping zone of southern Australia.
2. Perennial pasture ecosystems. The leader of the program is Dr David Kemp of NSW Agriculture. The aim is to develop practical, integrated weed management systems to enhance sustainability and productivity of temperate Australian perennial pasture ecosystems.
3. Natural ecosystems. The leader of the program is Dr Richard Groves of the CSIRO division of Plant Industry. The aim of the program is to develop integrated strategies for sustainable management of invading weeds in natural ecosystems in temperate Australia and to prevent further degradation.
4. Education. The leader of the program is Assoc Prof. Rick Roush of the University of Adelaide. The aim of the program is to co-ordinate weed science and management education programs for undergraduates, postgraduates, professionals, natural resource managers and the community.
5. Communication and Adoption. The leader of the

program is Dr Jim Fortune of the University of Adelaide. The aim of the program is to communicate the results of weed research and encourage the adoption of integrated weed management strategies.

For further information contact:

Mr Peter Ninnes

Executive Officer

CRC Weed Management Systems

Waite Campus

The University of Adelaide

PMB 1, Glen Osmond SA 5064

Telephone (08) 3036590

Facsimile (08) 303 7125

Email: crweeds@waite.adelaide.edu.au.

Bridal Creeper Bibliography

The CRC has produced a report titled "Annotated Bibliography of the Weed *Asparagus asparagoides* (L.) W. Wight (Bridal Creeper)"

By John K. Scott and Peta Beasley

The report contains 224 references with an abstract on each. Essential information for anyone involved in the management of this species.

Contact address:

CRC for Weed Management Systems

Waite Campus

University of Adelaide

PMB 1, Glen Osmond SA 5064, Australia.

New biological control programs for weeds of importance in Victoria

Furze (Ulex europaeus*)**

The Tasmanian Department of Primary Industry and Energy has commenced a program on furze in cooperation with Landcare Research New Zealand. In New Zealand a mite and a number of insects have been released on furze (gorse) the Tasmanian Department is utilising the expertise in New Zealand to test the safety of these agents for possible release in Australia.

Bridal Creeper (Asparagus asparagoides*)**

The CSIRO Division of Entomology has commenced a program on bridal creeper with the proposed importation of three insects from South Africa for host specificity testing under quarantine conditions. A list of about 70 native and commercial species has to be tested against each of these insects to establish whether they are safe to release into the Australian environment. If all goes well the first releases could be expected in 1997-98 and BSV will cooperate with CSIRO to ensure rapid distribution in Victoria.

Serrated Tussock (Nassella trichotoma*)**

NSW Agriculture has commenced a program on biological control of Serrated Tussock with a preliminary survey in Argentina carried out by Dr. Harry Evans of the International Institute of Biological Control. During the short survey, Dr. Evans identified a fungus which attacks the root-stem interface and causes the tussock to die back. Initial tests on closely related native Australian grasses (*Danthonia* and *Stipa* spp.) will commence soon and if these are not attacked a full testing program will commence

Source: Biocontrol Services Victoria Newsletter, July 1996.

Selecting sites for release of a biological control agent

Much of the documentation produced by Biocontrol Services Victoria stresses the importance of choosing an appropriate site for the release of a biocontrol agent. The site selection criteria we advertise may appear to make the whole task more difficult and to be frustrating our purpose. But there are good reasons behind all these requirements. Managers need to understand these reasons if our planning is to be effective.

1. Sites with a dense and persistent weed infestation.

This maximises the chances that the agent can become established. The more of the weed available the better. The weed needs to persist at the site if the agent is to multiply.

2. Infestations connected to other neighbouring infestations.

The agent needs the best possible opportunity to disperse after it is established. It is more difficult for an agent to spread from an isolated pocket of weed than from an infestation which is linked to other infestations.

3. Sites with a long time frame for control and which can be left undisturbed for periods of up to 5 years.

If you want to get rid of your weeds quickly, biocontrol is generally not an option. Many agents used in biocontrol have an annual lifecycle. This means that they breed up slowly and may take a long time to become established at a release site and build up their populations. Disturbance to release sites needs to be minimised so that the weed and hopefully the agent can flourish.

4. Sites with a low priority for control by other methods.

Many weed infestations are difficult to manage with herbicides or cultural practices due to the inaccessibility of the site or other constraints. Biocontrol is an option for these sites because the agents have the mobility which people and machinery lack. In general infested areas with potentially high agricultural productivity or environmental amenity should be treated using conventional methods to quickly reap the benefits; biocontrol is not appropriate for such sites.

5. Sites where biocontrol will contribute to the overall management program.

Biocontrol should be used as a component of an integrated weed management plan. Unless you have a strategy to tackle your weed problems as a whole and have identified the appropriate place in the strategy for biological control we would advise you not to use it.

6. No pesticides should be used within 100 metres of the site.

We want to ensure that the useful insects survive. Thus, in some cases it may be necessary to actually encourage weed growth. It is certainly essential that the weeds not be killed off before the insects have a chance to establish and disperse.

7. Sites located to minimise the chance of accidental disturbance or vandalism.

The process of importing, mass rearing and releasing agents is expensive. We need to be careful to protect this investment. Unless all parties involved in the management of a particular release site are fully informed of site requirements there is a danger that the weed or the agent may accidentally be wiped out. Vandalisation or theft of release cages is a risk when sites are close to public thoroughfares. It is generally preferable to choose sites which are out of the public view.

8. Sites where interested community groups such as Landcare and local weed management authorities can be involved.

Often our agents can be easily redistributed from nursery sites by members of their local community, without the assistance of the experts. Mutual benefit is enhanced when the people who benefit from biocontrol are also the protagonists and are intimately involved with the project.

Scientific staff rely on the local knowledge of farmers, catchment managers and others. Local people are usually very generous in the provision of land, labour and materials. Their experimentation and

close attention to activity in the field can result in refinements or modifications which bring more effective management of the agent and better weed control. Landcare groups are excellent community organisers. Participation of the community helps popularise the local adoption of the approach and makes the activity much more enjoyable.

Ian Faithfull.

Source: Biocontrol Services Victoria Newsletter, July 1996

Contact Ian Faithful at:

Keith Turnbull Research Institute
(03) 9785 0111

Please Note: Biocontrol Services Victoria is the business name of the biological control services unit at the Keith Turnbull Research Institute in Frankston, Victoria.

Biological Control Notes and the Blackberry Management Handbook

The Keith Turnbull Research Institute, KTRI has produced biological control notes on the following species. Notes on Boneseed, Bitou bush, Paterson's Curse and Ragwort are available from KTRI. Also available is *The Blackberry Management Handbook*, written by El Bruzzese and Madelon Lane it is a practical guide to the integrated control of European Blackberry (**Rubus fruticosus* spp. agg.) in southern Australia and covers both agricultural and natural situations. The handbook covers the biology of the species and the problems of invasion and includes information on control by herbicides, cultural methods and blackberry rust. The cost of the book is \$19.95 plus \$4.00 for postage and handling. Inquiries please contact Princy Kroon on (03) 97850111 or fax (03) 97852007.

Source: Biocontrol Services Victoria Newsletter, January 1996

IFFA activities:

IFFA (Vic) Meeting:

More Discussions on Pest Plants

Tuesday 27 May 1997

7:30 PM

Astronomer's Residence

at the Botanic Gardens, South Yarra
(Melways 44 A12).

The Victorian Parliamentary Committee on Pest Plants is meeting in Melbourne through May and June. IFFA is scheduled to have a representative make a submission in June. We will try get an update of what's happened to date and review the main ideas we would like to share with the committee. All welcome.

Committee meeting:

The Committee meeting is now the second Monday of every month.

SPIFFA

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

Membership

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

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

*Memberships should be sent to the
Membership Secretary.*

*Include your name,
address and phone numbers,
and a bit about yourself.*

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