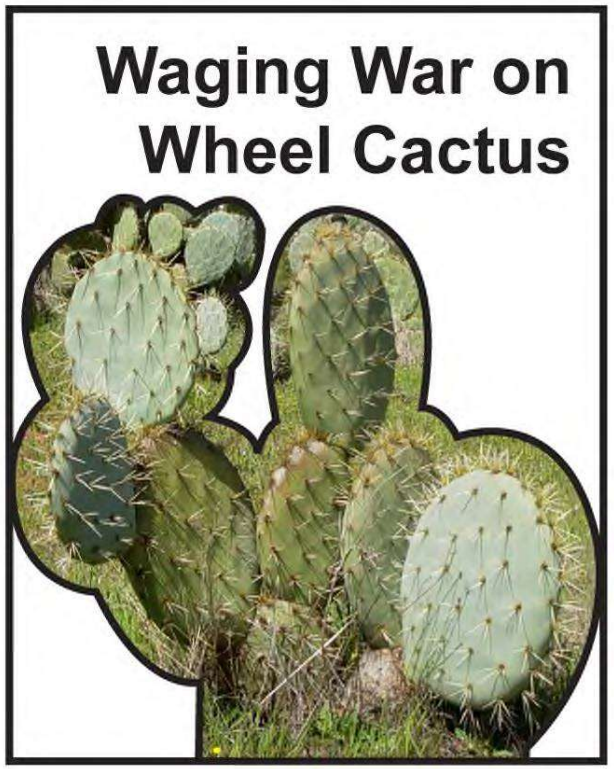
Tarrangower Cactus Control Group Inc.

Lee Mead



50 Years of Wheely Prickly Cactus

50 Years of Wheely Prickly Cactus

Invasion of **Wheel Cactus (*Opuntia robusta*)** in the **Maldon district** (Central Victoria)

The Past

- What we know about wheel cactus in the 'Maldon Shire' in 1950s - 2005

The Present

- The past 10 years of our war on wheel cactus
  - Achievements of Tarrangower Cactus Control Group Inc.
  - Ongoing Challenges

The Future

- The changes we hope for, to
  - control current infestations and
  - prevent further invasions

My Story

- Born and bred in Mallee, northwest Victoria
- Carefree childhood on farm and in bush surroundings
- Moved to the city for education and career
- Never belonged, frequently visited the countryside to escape

My Story

- Spent a lot of time around Maldon and a property at foot of Mt. Tarrangower in the late 1970s and early 1980s
- Don’t remember seeing any Wheel Cactus
- Moved to live in Maldon in 2006
- Alarmed to see many large infestations of wheel cactus
- Joined TCCG and became a ‘wheel cactus warrior’

Wheel Cactus *(Opuntia robusta)*

- Introduced species from Central America
- Grow to 2m shrub with many branches
- Large, round, blue-green pads, flattened stem segments
- Produces yellow flowers and fleshy, purple fruit
- Covered in short and long spines

Wheel Cactus **Extremely Difficult to Control**

- **Spread**
  - Vegetative, regenerates from segments
  - Seeds, dispersed by birds, also foxes and water
- **Grow**
  - Wide range of climates and soil types (shallow rooted)
- No natural predator

Wheel cactus in the Maldon Area: Typical terrain in district

The Past Wheel cactus in the Maldon Shire

How, when and why did it get here?

- As an ornamental garden plant?
  - Early in 20th century?
- Heaviest infestations always near Cairn Curran Reservoir
  - Introduced by workers employed for the construction of Reservoir?
  - 1940s?
- Very similar to Prickly Pear (*Opuntia stricta*)
  - commonly found within the Maldon district
  - has never spread or become a problem weed like wheel cactus
- Older residents remember heavy wheel infestations in 1950s
  - Mt. Tarrangower, Pigeon Hill, Nuggetty Ranges

The Past **Wheel cactus in the Maldon Shire**

Initial Control

- An article in the *Maldon Times* published in 1963 titled **Wheel Cactus Eradication**
- From 'Vermin and Noxious Weeds Destruction Board'

- '…….. directed all inspectors controlling areas within the Maldon Shire to carry out remedial measures immediately against the spread of Wheel Cactus'

- '……. had been instructed that strict enforcement of the Act was necessary. Landholders who fail to comply with the provisions of the Act will be liable to prosecution'.

MALDON TIMES

Established 1858

With which is incorporated "The Maldon News"

Circulating in Maldon, Baringhup, and Rich Loddon River Districts.

Published Weekly

Registered at the G.P.O. Melbourne, for transmission by post as a newspaper.

WEDNESDAY, MAY 13, 1962.

PRICE: 4d. PER COPY

TENDER ACCEPTED FOR MALDON SHIRE OFFICES

Maldon Shire Council has accepted a tender of £14,660 for the erection of the new shire offices, council chamber and baby health centre. Successful tenderer was Sherman and Holland of Bendigo.

There is every possibility that the contractor will begin work on the project within the next two weeks.

The time limit on the job is sixteen weeks.

The building will be of brick veneer, single storey, to be erected in front of the present croquet green in the shire hall grounds.

Estimate of costs for the new baby health centre, part of the new offices at Maldon, has been confirmed by the architects.

Estimated cost for building, including cupboard and built-in fittings is £4,000.

External paving and fencing associated with the [illegible] architects fees are £301.

WHEEL CACTUS ERADICATION

Chairman of the Vermin and Noxious Weeds Destruction Board, Mr R. H. Tully, informed the Maldon Shire Council that he had directed all inspectors controlling areas within the shire to carry out remedial measures immediately against the spread of Wheel Cactus.

Mr Tully said the recommended method of control of this weed was by spraying with arsenic pentoxide.

This mixture was poisonous to stock which should be removed from the area before spraying.

Mr Tully said that as much of the weed was growing on roadsides, another chemical would have to be used for its eradication.

Mr Tully said that infestations of wheel cactus would be treated by the Board.

Its inspectors had been instructed that strict enforcement of the Act was necessary. Landholders who fail to comply with the provisions of the Act will be liable to prosecution.

Maldon Progress, Publicity and Tourist Association asked council to consider applying for a grant to erect concrete tables and seats at the tower on Mt. Tarrangower.

The association considers that seats and tables will be greatly appreciated by many people who visit the tourist attraction during the year.

Hon. secretary of the association, Mr R. H. Grigg, said the organisation would be willing to pay half the cost towards the provision of seats and tables.

WORKS APPROVED

Maldon Shire Council's proposal to effect 5280 lineal feet of reconstruction and widening on the Castlemaine-Maldon road has been approved.

Estimated cost is £2200 and the work is to be done by direct labor.

Divisional Engineer, Mr L. Upton, said council would be re-imbursed 4/5ths of the expenditure incurred. The Board's liability is limited to the amount of the grant, £176.

BRIEFS FROM MALDON SHIRE COUNCIL MEETING

The provision of toilet facilities at the Butts Reserve is not a project which can be subsidised from the tourist fund.

Cr. J. Harkins, chairman of the Tourist Development Authority, gave this reply to Maldon Shire Council which had applied for funds.

The Education Department sought council's co-operation to ensure the success of the celebration of British Commonwealth Day at district schools on Friday, May 18. It also advised of the dates of Education Week and sought council's assistance if requested by the District Inspector of Schools.

Cr. A. C. Pittard (City of Maldon) and Cr. J. Reilly (Shire of Metcalfe) have been elected to membership of the Central Highlands Regional Committee for a further three years.

Miss D. Rodda, Parker St., Maldon, reminded council of the condition of the road fronting her residence. She requested that council consider the possibility of sealing the street.

An extension in which to claim the balance of a subsidy for Maldon Swimming Pool, has been granted until December 31.

Secretary for Local Government, Mr P. P. Mithen, said the extension was on an original subsidy of £1250.

Secretary for Local Government, Mr. Mithen, said that a supplementary allocation of £10 on a £2-£1 basis had been approved towards the cost of boundary fencing at Maldon Recreation Reserve. Work should be completed and the subsidy claimed by May 15.

The appointment of a committee of Management for Baringhup Recreation Reserve has been notified in the Government Gazette.

The committee is Messrs J. Jennings, W. R. Walder, [illegible]

PROGRESS ASSOCIATION MEETING

A meeting of the Maldon Progress Association was held last Friday night at which several important decisions were dealt with.

Recently, a working bee repaired the toilets at the hall and these are now in a good condition; also the grounds were cleared of all debris and bottles. Thanks were expressed to all those who took part in the work.

With the gift of £190 from the Easter Fair Committee, a discussion took place on a new floor for the hall, and it was decided that the secretary obtain particulars re price; also facilities for a kitchen was mentioned.

The president suggested that the Association go into the matter of purchasing slickers, for putting on mail and other correspondence, depicting Maldon, and these to be sold to tourists and the public. He had seen the idea at a nearby town, and was informed that it is a very good source of revenue, and excellent publicity of the town. The secretary will obtain all necessary information.

Seats and tables for the top of the Mount. The Association are waiting a reply from the Council. If this project is carried out, it will be a great advantage for visitors, as at the moment, there are no seats at the summit of the Mount.

The placing of signs on various places of historical interest, also on the rock formations was discussed, and this will be dealt with at the next meeting.

The tourist map in High Streets is to be repainted and repaired and further additions added.

Several ladies of the town have volunteered to hold a street stall to aid the funds of the Association. This will take place next Friday, May 18. Gifts, suitable for sale would be appreciated and may be left with any member of the committee, or Mrs Frank Cann, as she is the lady in charge of proceedings.

CONSERVATION DISTRICT COMMITTEE AT TALBOT

Following an invitation by the Shire of Talbot, the Upper Loddon Soil Conservation District Advisory Committee inspected a scheme to eradicate spiny rush from Back Creek, in the township of Talbot, prior to its meeting in the Shire Hall.

Cr. A. Hall, representing Talbot Shire, showed the committee the three-quarter section of the creek in which a channel was being defined by bulldusing out spiny rush and coarse gravel.

The committee did not consider that removal of the rush would aggravate erosion in that part of the stream-bed, but was concerned at erosion along a tributary, Nuggesty Gully, which poured a heavy load of silt into Back Creek.

It has suggested that the Soil Conservation Authority and the Forests Commission might investigate the planning of remedial measures in the catchment which is mainly State Forest.

Present at the meeting were Messrs T. H. Stanyer, Chairman, P. T. Longmire, C. K. Hyett and A. S. Murdoch representing landholders, G. Raynor, Department of Agriculture, K. G. Knights and B. Baldwin, Soil Conservation Authority.

Mr. Longmire said 40 people had attended the Saturday afternoon field day at Campbells Creek, held to allow "week-end" farmers to hear speakers from the Soil Conservation Authority, Forests Commission and Lands Department.

Other reports by members included details of a swamp drainage scheme being carried out on Messrs J. Vallance and Sons' property, using a 21-inch pipe line, and gully filling and dam construction work in Baringhup, where neighboring landholders Mr N. Nelson and Mrs P. Dohnt are co-operating to eliminate erosion problems.

The next meeting of the committee will be in August or September.

The Past Wheel cactus in the Maldon Shire

1960s

- 'Maldon Times' article confirms that Wheel Cactus was a **problem in the Maldon area in the 1960s**

- Government authorities were very involved in trying to **solve this problem** at that time
  - providing inspectors to spray the plants and
  - enforce the new law

- Wheel cactus **declared a Noxious Weed** in Victoria in 1963
  - Significant impact on control activities

The Past Wheel cactus in the Maldon Shire

1970-80s

- Anecdotal evidence implies there was **no significant** wheel cactus problem during the **1970s**
- Maybe due to combination of
  - government **support**, and possibly
  - more compliant and **committed landholders** in that era
- Farmers also believe the **rabbit plague** during these decades helped keep wheel cactus under control
- Stories of wheel cactus **re-appearing in late 1980s**

The Past

Wheel cactus in the Maldon Shire

1990s

- **Local farmers** anxious of renewed spread of Wheel Cactus on their properties
- **Landcare groups** alarmed at the proliferation of Wheel Cactus in our historic goldfields parks
- Concerned neighbours **joined forces** to determine the best way to destroy these plants
- They tried **many** different delivery **techniques and various herbicides**
  - Spears
  - Axes
  - ‘Shotgun’

The Past

Wheel cactus in the Maldon Shire

Trial Techniques

- **Burning:** high moisture content prevents burning
- **Surface spraying**: not effective because of the thick waxy skin of the pads
- **Mechanical**: also ineffective
  - rugged terrain
  - sticky substance of the plants
  - regenerates from broken segments

The Past

Wheel cactus in the Maldon Shire

- These pioneers developed an early model **injection system**
- Using **screwdriver & drench gun** attached to a backpack tank filled with herbicide
- Although **labour intensive** and expensive, injecting herbicide was the **most efficient** method
- 1998 begun demonstrating this equipment to other farmers

Successful kill of local 'Prickly Pear'

A Nuggetty farmer and his son are engaged in an experiment that promises control of the noxious, multi-spined Wheel Cactus that is slowly spreading over nearby granite country. The method was demonstrated last Thursday to department officers and about ten local people.

The Wheel or Round Cactus is of the same family as the notorious Prickly Pear but its skin is too tough for the cactoblastis moth to penetrate and destroy as it did to 24 million hectares of infestation in Queensland early this century.

The experimenters are Barry McKnight and his son Robert who have about 20 hectares of farmland heavily infested on the rocky north slope of the Nuggetty Range. Barry started the demonstration of his technique on a large cactus at the base of Tarrangower off Watersons Road. With a hand gun he injected a couple of centimetres of Roundup weed killer fed by a tube from a backpack tank. The nozzle of the gun has been closed into a sharp point for easy penetration and to stop the hollow point blocking up with pith. The chemical comes out through holes just behind the point. The probe is moved about to form a pocket inside the plant and the small, undiluted dose, injected.

Questioned by his audience Barry said it was best not to inject too much as this kills the 'leaf' and stops penetration beyond it and throughout the whole plant.

Simple Equipment

The equipment used can be bought from any agricultural supplier and for small infestations a cheap simple gun would be suitable. The important thing was to get the poison in. He started on the method when he recalled that his father years ago had killed off cactus by opening an entry and pouring in some poison. He has improved on this and so has the quality of the available chemicals.

At his property on Nuggetty road he and Robert have killed several hectares of cactus operating part time since last November. The yellowing dying plants can be seen clearly from the road. Many begin to die three weeks after poisoning. Although the work is labour intensive as each plant has to be individually treated it is less laborious than digging out the big, dangerously spiky plants. Digging with machinery is almost impossible in country covered with large rocks.

Cactus Drowns Easily

Parks Victoria Ranger Daryl Glover, who is responsible for this area, gave a history of previous attempts to clear up the cactus and told how it was discovered by accident that cactus will die in water. Three years ago many were bulldozed up on the Watersons road frontage and some 30 tones put into an unused gravel pit. Heavy rain flooded the pit and the cactus died. The plant is hard to kill if dug up as it will live for years even hanging on fences or on the top of rocks. Some tonnes have been cleared from uncluttered ground and buried successfully at the tip.

Other officers attending were Catchment Management Officers Jarrod Coote and Rob Sewell who work with the Nuggetty and Baringhup Landcare Groups. Mr Coote said he can be contacted on 5444 6661 for information and another demonstration might be arranged if enough people were interested.

Thursday March 26, 1998

The Past **Wheel cactus in the Maldon Shire**

- Difficult to destroy
  - extremely costly and labour intensive
    - very **serious threat** to their land, livelihood and parks

The Past

Tarrangower Cactus Control Committee

- 2005, members of Landcare groups (Maldon, Nuggetty and Baringhup) formed a **new committee specifically to control Wheel Cactus**
- This new committee applied for funding from the Victorian Govt.
  - succeeded in a grant of $30,000
- To work with **Parks Victoria** to kill Wheel Cactus on **private and public lands**

The Advertiser, Wednesday, July 6, 2005

NEWS

Cactus fight wins funds

By TAMARA GLUMAC

THE State Government has announced a $30,000 funding grant to help bring under control a cactus infestation threatening Mount Tarrengower, near Maldon.

The water wheel cactus has invaded a large section of land on the slopes of the mount, as well as neighbouring farm and residential land.

Local landcare groups have been campaigning to stop the pest further spreading, undertaking control methods and lobbying for state government funding.

Yesterday, Acting Environment Minister Bob Cameron announced funding grants of $10,000 a year for the next three years, to help tackle the spread of the cactus.

Parks Victoria will continue a chemical control program, spraying large infestations of the pest.

Parks Victoria volunteers and trainees in the Regional Employment and Environmental Program will also assist in manually removing the cactus.

Wheel cactus is a noxious weed that is dispersed when eaten and carried by birds and animals.

It can also be spread through seed or plant pieces carried by stock or farming equipment.

Once established, the drought-resistant cactus can grow up to four metres high.

INFESTED: Water wheel cactus on Mt Tarrengower.

Mr Cameron said the funding would be used primarily for additional spraying of the wheel cactus.

Mr Cameron praised the efforts of local landcare groups who had assisted in developing a new method of chemical control to tackle large infestations.

"The cactus has been there for a long time — the only way we are going to tackle it is if everyone works together," he said.

Anti-wheel cactus campaign co-ordinator Ian Grenda yesterday welcomed news of the funding.

"Its great the State Government is working with landholders to help us bring the cactus under control," he said.

Area of Concern: Maldon – Baringhup – Nuggetty Ranges

The Past

Field Demonstrations

- October 2005 '**Open Day**' in **collaboration with Parks Vic**.
- The first in a series of events to demonstrate and educate landowners
- Evolved into regular monthly Community Field Days

WHEEL CACTUS

WANT TO LEARN HOW TO TREAT IT?

NEED SOME HELP?

OPEN DAY.
SUNDAY OCTOBER 23
10.00am onwards
Corner of Bryant Street
&
Maldon/Bridgewater Road

For further information contact Chris Pollock, Landcare Coordinator Mt Alexander and Macedon Ranges Shires.
0427 048 615
Or Noel Muller, Parks Vic, 0429 854 522

An early Open Day 2006

The Past

Tarrangower Cactus Control Group Inc.

- 2008 group became incorporated body and member of FTLA
- Committee is now mostly townsfolk concerned about their environment

The Present **Achievements of the TCCG**

- **Funding** from NCCMA, MASC, Vic. Govt.
- **Partnerships** with Parks Vic., MASC, FTLA
- **Associations** with AICN, Connecting Country, Landcare groups

The Present Achievements of the TCCG

Increased community awareness:

- Since 2005, increasing **awareness and knowledge** has been a priority
  - Community commonly believed Wheel Cactus was ‘just Prickly Pear’ and of no great concern
- **Education**: the threat and control methods of Wheel Cactus
  - Community Field Days
  - Compiling and distributing a number of different brochures
  - Dedicated website www.cactuswarriors.org
  - Regular media releases, reports, notices and information
  - Participation in community events

Promotion of TCCG by participating in local events

Information stall at the annual Agricultural Show 2005

Stall at Maldon and Baringhup Agricultural Show 2014

TCCG brochure distributed to property owners

*****Warning *****Wheel Cactus*****

Don't let this happen to your property

Wheel Cactus (*Opuntia robusta*)

Wheel Cactus (a native of Mexico) we believe was planted in a garden near Maldon in the mid 1900s. Since then it has infiltrated pastures and parklands around Maldon, Baringhup and Nuggetty and is rapidly spreading further afield. Some infestations are now so dense the land is inaccessible. Wheel Cactus has a significant negative impact on our local economy and environment, rendering farmland worthless and killing livestock, and displacing native flora and fauna.

Different to Prickly Pear

Wheel cactus is not Prickly Pear (*Opuntia stricta*) but is often mistaken for this close cousin. They have different shaped lobes; Wheel Cactus having round disks while Prickly Pear has oval shaped lobes (pictured at right). These two cacti grow very differently in our local environment.

Legislation

Wheel Cactus was declared a ***Noxious Weed*** in Victoria in 1961 and a ***Weed of National Significance*** in 2012. Due to its status as a "Regionally Controlled Weed", all property owners must take all reasonable steps to prevent the growth and spread of wheel cactus on their land.

Eradicating Wheel Cactus

Wheel Cactus is a very difficult plant to destroy, so please don't ignore them and **kill them before they mature and bear fruit.** The lobes have thick, waxy skin and don't absorb surface sprays, so the most effective methods are by digging and burying small plants, and injecting larger plants with herbicide. This cactus regenerates from any piece of lobe so it cannot be dug up and left lying on the ground. The mature plant has red fleshy fruit containing hundreds of seeds which are spread by birds and animals, and can survive for up to 20 years in the soil.

Tarrangower Cactus Control Group

Our goal is to eradicate Wheel Cactus from our local environment. We hold **Community Field days** around the Maldon area on the **last Sunday of each month** (April-Nov) (check our website for locations) where we demonstrate how to kill the plants and offer support and technical advice. For information and help please contact us via our website www.cactuswarriors.org

NORTH CENTRAL Catchment Management Authority · Parks VICTORIA Healthy Parks Healthy People · MOUNT ALEXANDER SHIRE COUNCIL · Victorian Landcare Program · VICTORIA State Government

How to Kill Wheel Cactus

Very Small Plants (less than 50mm)

- squash them under foot completely (until unrecognisable) or spray with 5% Glyphosate.

Small - Medium Plants

- dig them up and bury entire plant under half metre of soil, or burn on a very hot fire.
- or dispose of plant in your domestic rubbish bin or take to Maldon Tip for disposal (free)

Large Plants

- inject at least all outer wheels (lobes) with herbicide (1:3 Glyphosate in water)
  (If only the inner lobes are treated, the outer lobes can fall off the plant and then regrow.)

Very Large Plants

- remove the fruit to prevent birds eating and spreading the seeds
- dispose of fruit in sealed rubbish bin or incinerate
- inject at least all first and second outer wheels (lobes) with herbicide (as above)

How to Inject Wheel Cactus Plants

- Load backpack onto your back and check the injector gun is working properly by pointing the needle towards the ground and squeezing the trigger
- Pierce the wheel cactus lobe from the edge of the wheel towards the middle of the lobe, pushing the needle well into the lobe (see picture below)
- Pull the needle back out half way to form an empty pocket of air in the middle of the lobe
- Squeeze the trigger so that 4 ml of herbicide (glyphosate) is squirted into the empty pocket
  (If you don't pull the needle back out of the lobe, there is nowhere for the liquid herbicide to go and it will squirt back out of the plant)
- Pull the needle out of that lobe
- Continue to do the same to **at least all first and second outer lobes** on the wheel cactus plant
- Mark a lobe with spray paint to show this plant has been injected (see below)

****It's important to first inject all fruiting plants to prevent the spread of seeds**

- **don't dig up a cactus plant and leave it lying on the ground, it will regrow**
- **don't break off part of a lobe and leave it lying on ground, it will regrow**

Caution

- Wear protective clothing, gloves, boots and glasses to protect against the cactus prickles and herbicide.
- Seek advice on how to correctly inject the cactus lobes; to prevent inhalation, ingestion or absorption of the herbicide.

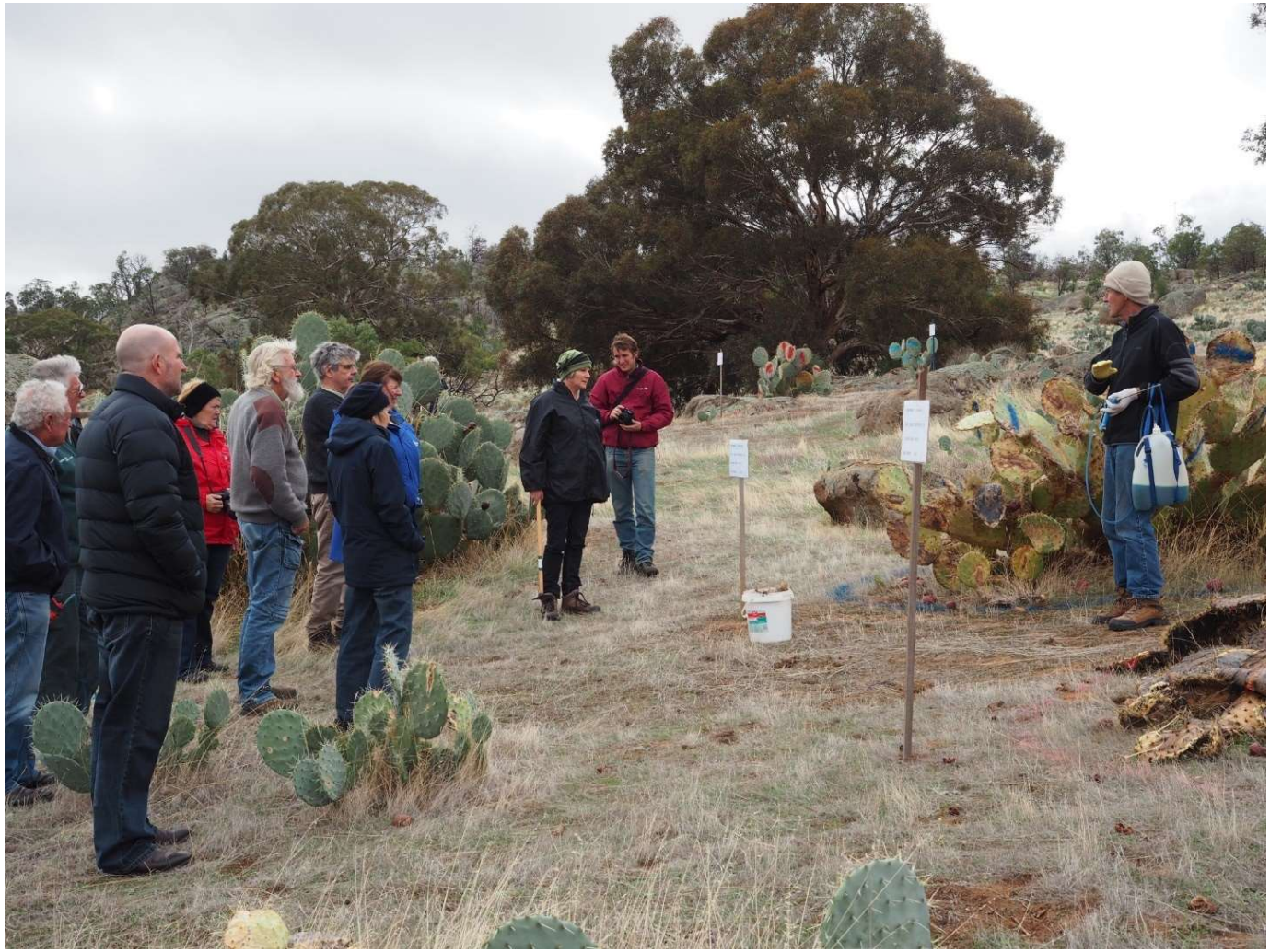
Tarrangower Cactus Control Group Inc. P.O. Box 1, Maldon, Vic. 3463.
Email: info@cactuswarriors.org

v7 4/2016

The Present Achievements of the TCCG

Workshop and Field Trip - May 2015

- Invited participants from surrounding Shires, Govt. authorities and contractors
- To advise surrounding districts to not ignore outlying wheel cactus



The Present Achievements of the TCCG

Increased Land Owner Participation:

- 10 years **informing, teaching and assisting** the landowners
  - monthly community field days
  - individual demonstrations and assistance
- as **incentives** we provide
  - free loans of injecting and digging equipment
  - free disposal at local tip
- endeavour to give **friendly and optimistic advice**
  - maintain positive relationships

- successfully **increased** the number of local property owners who **control wheel cactus on their land**

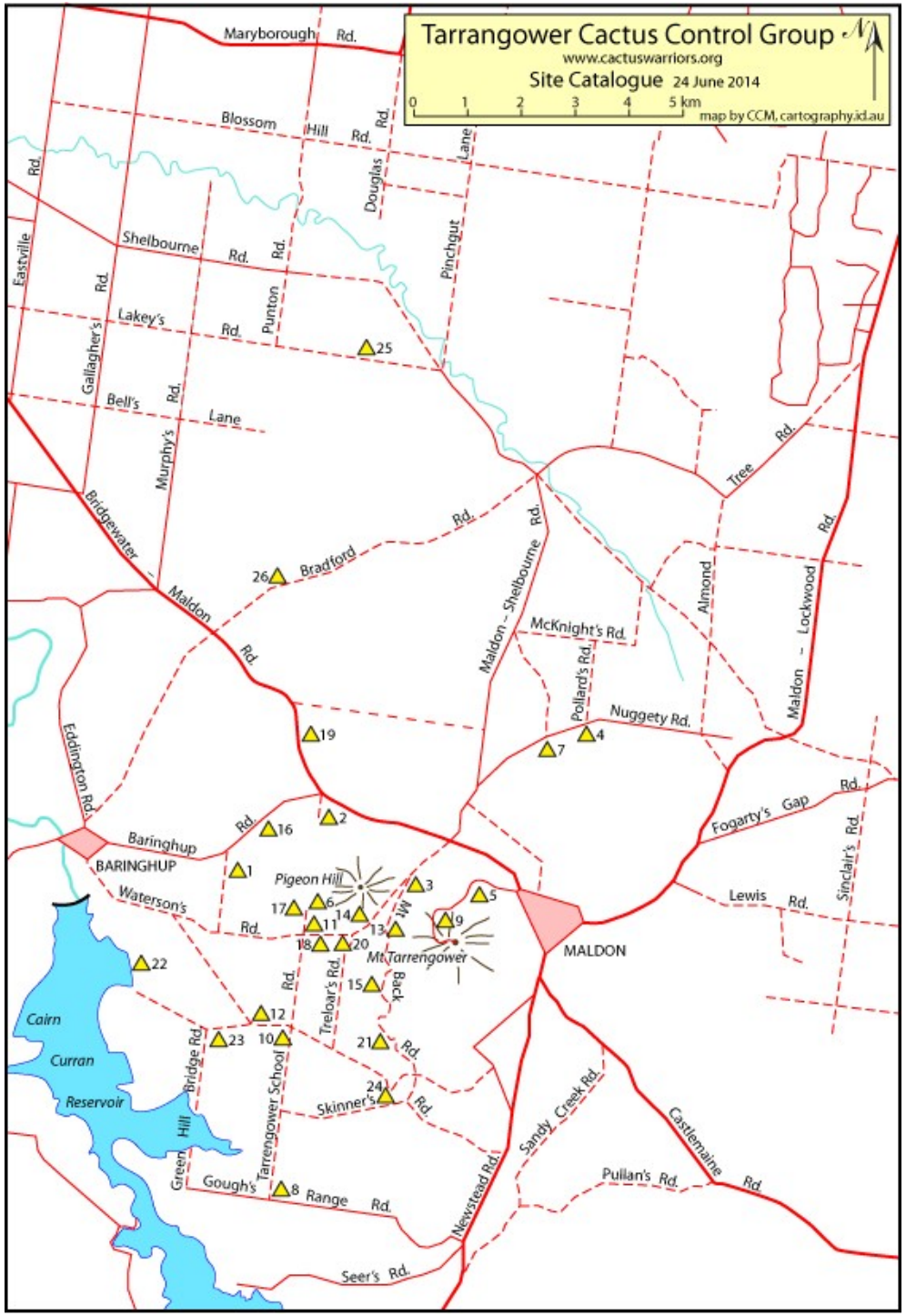
Community Field Day attendances grown from <10 to >50

Community Field Day on a private property

The Present

Achievements of the TCCG

Record of Community Field Day Locations



The Present Achievements of the TCCG

Successful control in Historic Parks:

Very successful **partnership with Parks Victoria**

- destroyed majority plants in our historic goldfields park lands
- prevented new infestations in these public areas

Hosting work teams from

- 'green army'
- 'work for the dole' participants
- tertiary student field trips

Happy ‘Cactus Warriors’ preparing for 2015 Maldon Easter Parade

The Present Achievements of the TCCG

Improving techniques

- Continue to **investigate** and try new techniques
- Currently use **combination**
  - Direct injection herbicide into larger plants
  - Physical removal and burial of smaller plants

- To **reduce the use** and cost of chemicals
- Some volunteers don’t like using glyphosate
  - All volunteers are kitted out with protective gear

Direct Injection Equipment

Manual Digging with Hoe and Bucket

Extremely physically demanding techniques

Single plants taking 2 hours to inject with herbicide

Extremely difficult to destroy wheel cactus

Regrowth on an injected wheel cactus plant

The Present **Improving techniques**

- Pilot trials comparing different equipment, methods and herbicides
- 2015 trial to compare Glyphosate and Daconate herbicides

Injecting Glyphosate

Injecting Daconate

The Present: **Improving techniques**

Glyphosate Vs Daconate Trial (March-May 2015)

Plant	Number Days Since treatment	Herbicide	No. of 4ml Injections	Volume Chemical used	Cost of Chemical	Time taken to Inject
A1	54	Glyphosate	146	195 ml	$1.37	7.5 min
A2		Daconate	22	88 ml	$1.50	3 min
B1	35	Glyphosate	14	19 ml	13 cents	40 sec
B2		Daconate	1	4 ml	7 cents	8 sec
C1	14	Glyphosate	15	20 ml	14 cents	50 sec
C2		Daconate	2	8 ml	14 cents	18 sec
Plot 1	7	Glyphosate	163	217 ml	$1.52	10.5 min
Plot 2		Daconate	30	120 ml	$2.04	5 min

Large plants injected with Glyphosate Vs Daconate after 40 days

The Present Ongoing challenges

Increased Seed Bank

- Despite efforts there remains an **increasing wheel cactus** problem in the Maldon area

- Some of the oldest, heaviest infestations on private property have been **ignored by the landholders** for decades
  - now **impenetrable**
  - containing thousands of extremely large, mature, fruiting plants

- Infestations no longer limited to under trees
  - Open pastures also covered in plants

Impenetrable infestation on private property

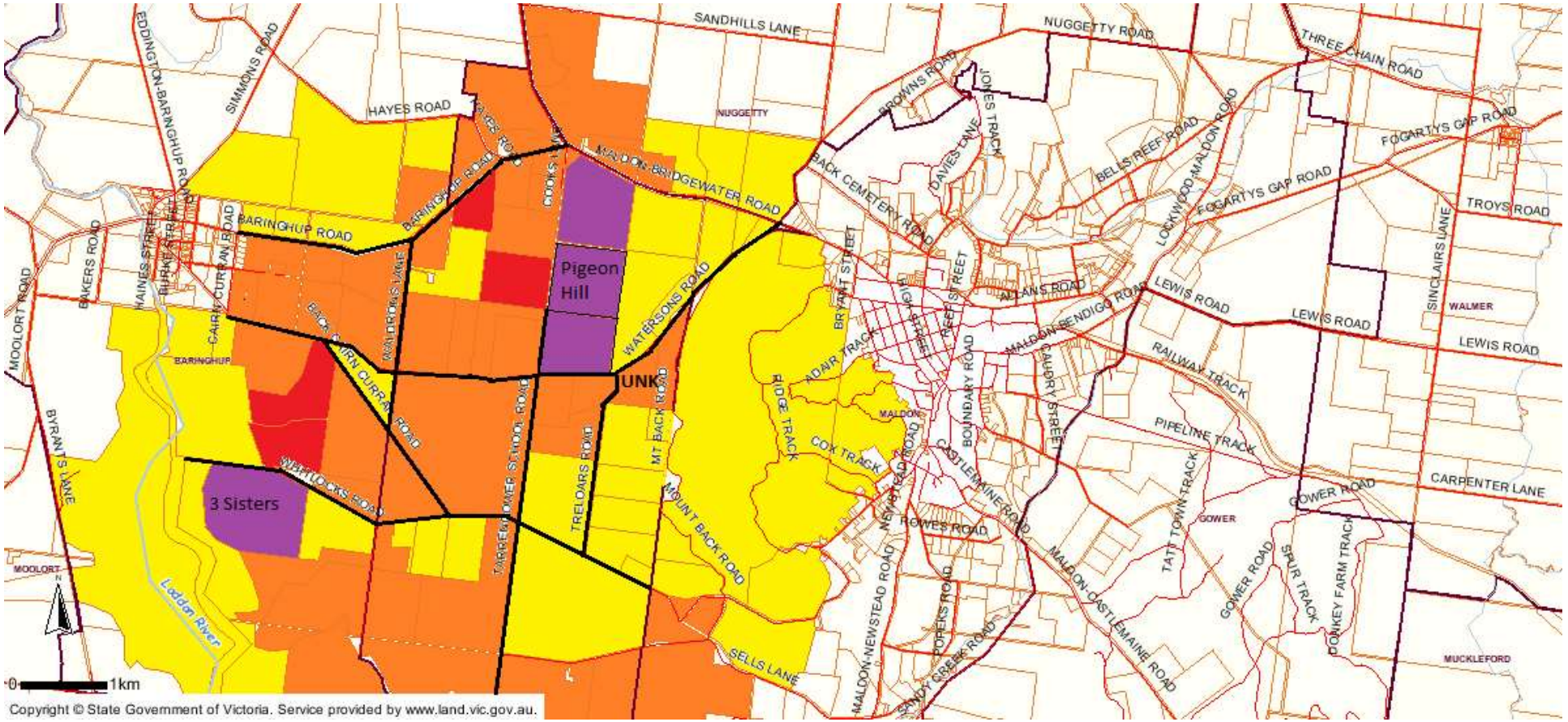
The Present: Ongoing challenges

Increasing Seed Bank

- Each fruit contains **hundreds of seeds**, viable for 20 years
- Seeds now spread by more ground animals and heavy rain
    - Previously restored landscapes becoming **reinfested**

The Present **Ongoing Challenges**

Map of property infestations



Extreme Heavy Medium Light

The Present: Ongoing challenges

More extensive spread

- **New properties** continue to become infested
- Reports from farmers
  - **dying livestock**
  - **wool contaminated** with spines
  - **pastures no longer viable** for grazing
- **Roadside locations** extending >30 km in all directions from Maldon
- **Outlying parklands** becoming infested

Typical infestation along roadsides around Maldon district

SPREAD OF WHEEL CACTUS

Lockwood
Laanecoorie
Shelbourne
Eddington
Baringhup
PIGEON HILL
Maldon
Harcourt
Muckleford
Castlemaine
Newstead
Sandon
Yandoit

The Present: Ongoing challenges

Non-compliance

Absentee property owners

- **main offenders** are often absentee landholders
  - **ignorant** and **indifferent** to weeds
  - not aware they have legal responsibilities to control weeds on their property

'Hobby' farmers

- **high prevalence** of 'hobby' farms in district
- increasing sub-division and **'lifestyle'** landholders
  - live on their property, don't work their land or run livestock
  - lack regular attention

Infestation on a ‘absentee’ owner property (2015)

The Present: Ongoing Challenges

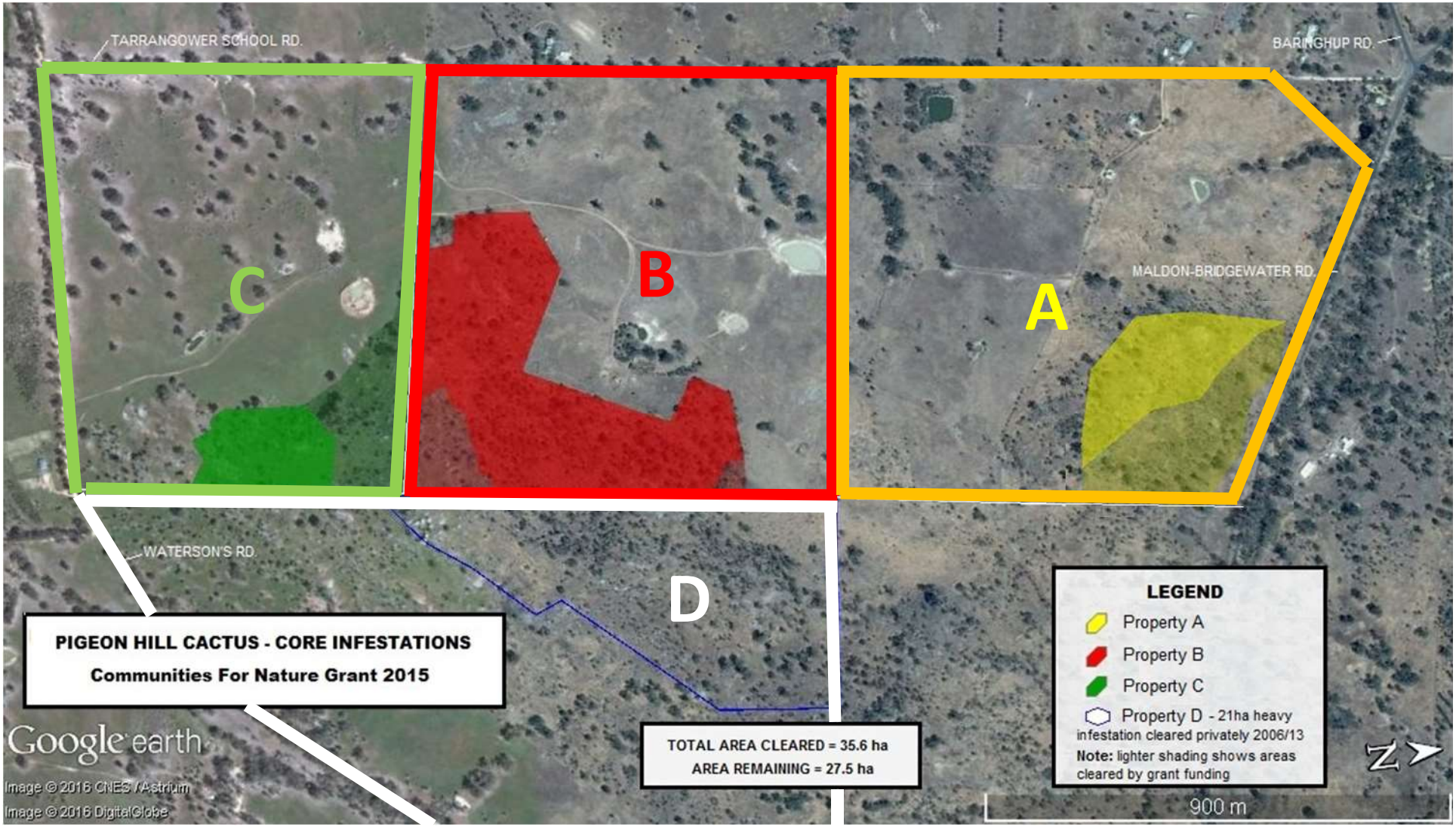
Overwhelmed property owners

- **cost of control measures** is inhibitive to many of the landholders with the worst infestations
  - in some cases, the cost of control **exceeds the current value** of their property
- Some owners
  - both **financially** and
  - **emotionally** unable to deal with their wheel cactus problem
    - **not actively participating** in control measures

Cost of control exceeds value of property (2015)

Pigeon Hill Our worst infestation

Grant works on Pigeon Hill properties 2015



Fence line between Pigeon Hill properties D and B

Cost estimates of Pigeon Hill properties

	AREA [ha]	HOURS	HOUR/HECTARE	LABOUR @ $50/HR	CHEMICAL @ $130/drum	TOTAL
PROPERTY B						
GRANT WORK	2.66	361	135.7	$18,050	$1,040 [x8]	$19,090
REMAINING	17.2	2,334		$116,700	$6,630 [x51]	**$123,330**
PROPERTY A						
GRANT WORK	6.64	323.5	48.7	$16,175	$910 [X7]	$17,085
REMAINING	5.47	266		$13,300	$780 [X6]	**$14,080**
PROPERTY C						
GRANT WORK	5.3	228	43	$11,400	$650 [X5]	$12,050
REMAINING	4.63	199		$9,950	$585 [X4.5]	**$10,535**
PIGEON HILL INFESTATION						
GRANT WORK	14.6	912.5	N/A	$45,625	$2,600 [x20]	$48,225
REMAINING	27.3	2,799		$139,950	$7,995 [X61.5]	**$147,945**

The Future

Imminent Environmental Disaster

- Wheel cactus infested over **10,000 hectares** in the Maldon district
    - Despite significant **increases in awareness and action** within our local communities

- Wheel cactus is **spreading faster** than we can control it
- Problem now beyond the capabilities of our volunteer group & limited resources

- Governments must play a **primary role in weed control**
- More action is needed to prevent further invasion
        - **Immediate help** to control existing infestations
        - **Permanent changes & support** to prevent future invasions

The Future

Immediate Help to Control Current Infestations:

State Government Support

- **Increased commitment** from State Government to enforce the CLP Act 1994
- Need sufficient **financial support and resources** to increase **'compliance'** on property owners
    - threat of 'compliance' currently seems impotent
- Assist property owners with individual **weed management plans**
- Including economic analyses that demonstrates the **financial benefits of weed control**
    - investment returned at sale of their restored land

2008: Property D before investment of $80,000

2014: Property D after investment of $80,000

The Future

Other serious infestations

- Aware other serious wheel cactus infestations within Victoria
  - **Mt. Buckrabanyule**, north Wedderburn
  - Similar rocky granite terrain
  - Owned by several landholders
- Infestation has occurred **since 1986**
- Large amount Drought Relief funding spent 2007
  - **Little follow-up action**
    - **Since 2008 re-infestation** to greater area and density

Young wheel cactus at Mt. Buckrabanyule 2016

The Future

Victorian Wheel Cactus Task Force

- Infestations spreading further afield in Victoria
- Need **coordinated state wide attack** on Wheel Cactus
- Propose formation of Victorian Wheel Cactus **Task Force**
  - to increase **awareness** and
  - co-ordinate the implementation of **integrated management plans**
    - Injection herbicide
    - Manual removal
    - **Sustained long-term follow-up**
      - Ideally Biological control

The Future

Victorian Wheel Cactus Task Force

- **Commitment from whole community**
    - **public land** managers (DELWP, DEDTR, CMA, Parks Vic., VicRoads, V-line, Water Agencies, Shires)
    - **private land** holders
        - **Communities & neighbours** working together
- Project officers develop individual **management agreements**
- **Rebate** 50% costs for commitment to 3 year program
- Model of neighbourhood working groups with local leaders
    - **Permanent long-term management**

Norman Wettenhall Foundation Funding to TCCG

- Small amount funding to investigate feasibility
- **Map wheel cactus infestations in Victoria**

Restored landscape with controlled Wheel Cactus growth

The Future

Prevention is cheaper than cure

Preventative action plays a critical role in control of weeds

Local government should perform role

- Alerting all new property owners to their **weed control responsibilities**
- **Sending letters to all new residents**

- Threat of infestation granite hills Mt. Alexander and Harcourt
- 'absentee' and 'lifestyle' property ownership likely to increase

Prevent 'naïve purchasing' of land

- action needs taken to remedy current lack of knowledge at the time of purchasing a property

Local property bought by naïve purchasers in 2008

The Future

Prevention is cheaper than cure

State government should impress the legal responsibility of **noxious weed control**

- Introduce a '**weed report**' to be included in the required **documentation for all property sales**
  - long list of other noxious weeds included
- Such a report would
  - inform prospective land owners that control of weeds is a **legal responsibility**
  - advise **which noxious weed problems** that buyers are potentially purchasing
  - NSW new legislation in progress?

The Future Big Picture

Biological Control

A biological control organism is needed for any chance of eradication

- such as the cochineal insect (*Dactylopius spp*.)

- Large amount of funding required to achieve this goal
  - Research into genetic diversity cochineal
    - TCCG very willing collaborators on such a project

- This objective even more urgent since
  - Recent opposition to the use of glyphosate
  - Reports of plants fruiting earlier (climate change?)

Cochineal 2.5 years after seeding

Summary

50 years of wheel cactus control in Maldon :

not a success story

- Wheel cactus was a problem in our district in 1950s
  - Support from Government plus more working farms and committed land owners
    - Lead to good control in 1960s
- **Control actions and support not sustained over following decades**
    - Re-infestation during 1980s and 1990s
- Now in 2010s control is extremely difficult
- But if governments were to increase their support
  - **we may again be able to control wheel cactus in our Shire**

It is possible to restore our landscapes

Conclusion to my story

- Carefree life in Maldon
- Love my new local environment
  - Nightmares of wheel cactus
- Lucky to already be retired
- Privileged to spend time trying to stop the invasion of wheel cactus

Tarrangower Wheel Cactus Warriors