Examination and Condition Rating Report for Peppercorn Trees – Narromine and Trangie, 17th September 2020
Compiled by Michael Longhurst and Alan Welch

Summary and Main Conclusions:

The symptoms evidenced on the trees (spread of necrotic damage emanating from extremities of foliar growth) support the observation for both the group plantings and individual tree statistics that the majority of these trees are suffering significant or very significant foliage loss to an extent where a large number of trees are unlikely to survive.

Of the 56 Peppercorn individual street trees in Narromine 15 have full to mostly full foliage, 28 have moderate foliage loss, 9 have significant foliage loss, 2 have very significant foliage loss and 2 are dead.

Of the 68 Peppercorn individual street trees in Trangie only 2 have full to mostly full foliage, 14 have moderate foliage loss, 40 have significant foliage loss and have very significant foliage loss and 2 are dead.

The Peppercorn street trees in Trangie are far more significantly affected than the Peppercorn street trees in Narromine.

In Narromine, the group plantings around the airport and the golf course are more affected than the street trees in Narromine.

Further investigations are recommended to establish the cause of the reduced foliage to Peppercorn trees including possible agro-chemical spray drift damage and the direction of this possible drift in relation to the differences between the North Western group plantings compared to the individual Peppercorn street trees in Narromine, and also the significant difference damage between the street trees in Trangie compared to Narromine.

The purpose of this visual survey of Peppercorn Trees (*Schinus molle*) in the adjacent townships of Narromine and Trangie was to provide a snapshot of the health of the trees to support further investigation of the link between agricultural chemical spray drift and observed decline of vegetation on a number of species in this district.

Authors and scope:

The field work, observations and estimations of expected foliage cover and recording of data were carried out by Michael Longhurst (Master Environmental Management & Restoration -CSU) and Alan Welch (Bachelor of Science Degree -UNE). Both authors have had extensive careers in landscape management including in regulatory, design and compliance matters across large areas of the State but with particular emphasis on the Central West zone. Michael has worked in native vegetation assessment, river restoration and natural resource management for over 30 years. Alan has accumulated over 45 years experience in soil and vegetation management.

This survey is presented as preliminary findings based on observations of symptomatic damage of foliage recorded as graded estimates evident at the date of study. A more detailed investigation of vegetation health of these Peppercorn trees with more resources would be required to support more detailed conclusions to explain the causes of the decline of these trees.

Observations were made of the Peppercorn street trees in Narromine and Trangie on the 17th September 2020.

Survey method:

The authors utilised a 5-level visual scale to describe the amount of foliage that could be observed while driving along urban streets in Narromine and Trangie. This approach is congruent with suggested vegetations assessment protocols presented at a community meeting held with EPA staff in the Narromine District.

The amount of foliage for each tree or group of trees was visually scaled as:
A – full to almost full foliage with greater than 75% remaining and dense canopy where the trunk and major branches could not be seen through the leaves, and few or no twigs above the canopy as expected for healthy specimens.

B – moderate foliage loss (50-75% remaining) and some outline of branches visible with less canopy density and with some small branches and bare twigs protruding from the canopy;

C – significant foliage loss (25-50% remaining), most branches visible, significant bare branches and bare twigs, considered to have declining health but might recover;

D – very significant foliage loss being less than 25% of foliage remaining, all trunk and branches visible and appears to be dying; and

F – dead, no leaves.

The survey method included driving along each named street in both Narromine and Trangie inspecting each tree or group of trees and classifying the state of health as described above. The survey was conducted within the town boundaries delineated by the 100km signs at the edges of town.

Individual trees where observed were condition scaled and recorded as A, B, C, D or F.
Where Peppercorn trees were found in large group plantings they were recorded as groups rather than individuals and a percentage estimate of each definable group was scaled (eg 80% B, 20% D).

The trees in groups assessed by this method were found and recorded in the tables as: Airport (APT), Golf Course West (GCW) on the Mitchell Highway, Golf Course East (GCE) on the Gilgandra Road, Dubbo Road near rockwall Van Park (DRF) and at the old polo ground (OPG).

Another group planting outside of the main study areas was at the old Lime Farm (OLF) on the Mitchell Highway between Trangie and Narromine.

Condition Summary of Group plantings inspected:

GROUP	A %	B %	C %	D %	F%
APT	0	0	90	10	0
GCW	0	5	75	20	8
GCE	0	5	75	20	6
DRF	45	45	5	5	0
OPG	0	0	60	40	0
OLF	0	0	90	10	0

Individual Tree Summary:

Of the 56 Peppercorn individual street trees in Narromine 15 have full to mostly full foliage, 28 have moderate foliage loss, 9 have significant foliage loss, 2 have very significant foliage loss and 2 are dead.

Of the 68 Peppercorn individual street trees in Trangie only 2 have full to mostly full foliage, 14 have moderate foliage loss, 40 have significant foliage loss and have very significant foliage loss and 2 are dead.

The Peppercorn street trees in Trangie are far more significantly affected than the Peppercorn street trees in Narromine.

In Narromine the group plantings around the airport and the golf course are more affected than the street trees in Narromine.

Location	Type	Observations for Tree Groups	Group/ Individual	Individual Tree Scoring	Tree Category Score				
					A	B	C	D	F
NARROMINE Nth of Rail line									
Aerodrome 1		~25 trees, 90% C, 10% D							
Golf Course 1	Hwy	5% B, 75% D, 20% D, 8 trees F (dead)	Grp						
Golf Course 2	Gil Rd	5% B, C 75%, D 20%, F 6	Grp						
Third	Ave		Ind	NIL	0	0	0	0	0
Fifth	Ave		Ind	B	0	1	0	0	0
Sixth	Ave		Ind	NIL	0	0	0	0	0
Dandaloo	Rd		Ind	BB	0	2	0	0	0
Merilba	St		Ind	BBA	1	2	0	0	0
Meryula	St		Ind	NIL	0	0	0	0	0
Alagala	St		Ind	NIL	0	0	0	0	0
Manildra	St		Ind	BABA	2	2	0	0	0
Meringo	St		Ind	BBAAD	2	2	0	1	0
First	Ave		Ind	D	0	0	0	1	0
Nymagee	St		Ind	B	0	1	0	0	0
Fifth – back lane	Ave		Ind	B	0	1	0	0	0
NARROMINE Sth of Rail line									
Dubbo- Railway	Rd		Ind	A	1	0	0	0	0
Dubbo- Rock Fence	Rd	A 45%, B 45%, C 5%, D 5%	Grp						
Dubbo- Old Polo Ground	Rd	C 60%, D 40%	Grp						
A'Beckett	St		Ind	NIL	0	0	0	0	0
Davis	St		Ind	NIL	0	0	0	0	0
Morgan	St		Ind	C	0	0	1	0	0
Murgah	St		Ind	F	0	0	0	0	1
Manildra	St		Ind	B	0	1	0	0	0
Meryula	St		Ind	B A	1	1	0	0	0
Temoin	St		Ind	CCF	0	0	2	0	1
Merilba	St		Ind	AABBBBBB	2	5	0	0	0
Third	Ave		Ind	NIL	0	0	0	0	0
Fifth	Ave		Ind	C	0	0	1	0	0
Cathundril	St		Ind	ABBC	2	2	0	0	0
Jones	Crt		Ind	CCBBCC	0	2	4	0	0
Minore	St		Ind	BCBBAAB	2	4	1	0	0
Terangion	St		Ind	AABB	2	2	0	0	0
TRANGIE									
John	St		Ind	CC	0	0	2	0	0
Dandaloo	St		Ind	BCBB	0	3	1	0	0
Temoin	St		Ind	CCDA	1	0	2	1	0
Mullah	Park		Ind	DDDDFDDDF	0	0	0	7	2
Enmore	St		Ind	CCCCCC	0	0	6	0	0
Enmore	St		Ind	CCCCCCCCCCCC	0	0	12	0	0
Bimble Box	St		Ind	BC	0	1	1	0	0
Mitchell	Hwy		Ind	BCCCBBCCCABBC	1	5	7	0	0
Croudace	St		Ind	BBCCCD	0	2	3	1	0
Derribong	St		Ind	BBBCCCD	0	3	3	1	0
Harris	St		Ind	C	0	0	1	0	0
Nicholas/Burraway	St		Ind	C	0	0	1	0	0
Mungery	St		Ind	C	0	0	1	0	0
Old Lime Farm									
Mitchell	Hwy	C 90%, D 10%	Grp						

Conclusion:

The patterns of foliar damage observed throughout the survey areas are not consistent with either insect or moisture stressors being the causative agents.

Further investigation is recommended to establish the causes of the reduced foliage to Peppercorn trees including possible agro-chemical spray drift damage and the direction of this possible drift in relation to the differences between the North Western group plantings compared to the individual Peppercorn street trees in Narromine, and also the significant difference damage between the street trees in Trangie compared to Narromine.