

Weed (Scientific name)	Opuntia aurantiaca	
Region	Greater Sydney LLS region	
Management Area		
Landuse	3.2 Grazing modified	
Assumptions	Also occurring in grazing land, e.g. 2.1 Grazing natural vegetation and 3.2 Grazing modified	
Invasiveness	Score	Total
Q1. What is the ability of the weed to establish amongst existing plants?		2.0
Q2. What is the weed's tolerance to average weed management practices in the land use?		3.0
Q3. What is the reproductive ability of the weed in the land use?		1.0
(a) Time to seeding	0.0	>3 yrs/never
(b) Annual seed production	0.0	None
(c) Vegetative reproduction	2.0	Frequent
Q4. How likely is long-distance dispersal (>100m) by natural means?		2.0
(a) Flying animals	1.0	Occasional
(b) Other wild animals	2.0	Common
(c) Water	2.0	Common
(d) Wind	0.0	Unlikely
Q5. How likely is long-distance dispersal (>100 m) by human means?		2.0
(a) Deliberate spread by people	1.0	Occasional
(b) Accidentally by people and vehicles	2.0	Common
(c) Contaminated produce	0.0	Unlikely
(d) Domestic/farm animals	2.0	Common
Total		6.7

Source and comments

Q1	High capacity has been proven in field sites in Greater Sydney. from Hunter WRA: Besides invading in disturbed habitats such as pasture and
Q2	Treatment sites in Greater Sydney have shown high persistence. It requires multiple follow ups and is very costly, with no guarantee of success. Query capacity to spread from underground root systems, as it seems to regrow in from Hunter WRA: This plant is exclusively spread through vegetative means, not seeding.
Q3	Species is a sterile hybrid. Fruit and seeds are produced but are not viable (Parsons & Cuthbertson 2001). Reproduces vegetatively from fallen cladodes and fruit (Parsons and Cuthbertson 2001).
Q4	from Hunter WRA: 'Segments are dispersed by adhering to animals and vehicles or in run-off water' (Auld and Medd, 1992) At EMAI Camden: cladodes with attached bird down suggestive of waterfowl spread. At EMAI: often associated with macropod tracks and rabbit burrows. At EMAI: movement downslope in concentrated water flowlines.
Q5	from Hunter WRA: 'The most important method of dispersal has been human movement of plant parts, either promoting the plant as an ornamental or hedge plant, or disposing of it on rubbish tips, waste areas etc.' (Parsons & Cuthbertson, 2001).

Impacts	Score	Total
Q1. Does the weed reduce the establishment of desired plants?		2.0 10 - 50% reduction
Q2. Does the weed reduce the yield or amount of desired vegetation?		2.0 10 - 25% reduction
Q3. Does the weed reduce the quality of products, diversity or services available from the land use?		3.0 High
Q4. What is the weed's potential to restrict the physical movement of people, animals, vehicles, machinery and/or water?		3.0 High
Q5. What is the weed's potential to negatively affect the health of animals and/or people?		3.0 High
Q6. Does the weed have major positive or negative effects on environmental health?		2.0
(a) food/shelter	1.0	Major negative effect
(b) fire regime	1.0	Major negative effect
(c) altered nutrient levels	0.0	Minor or no effect
(d) soil salinity	0.0	Minor or no effect
(e) soil stability	0.0	Minor or no effect
(f) soil water table	0.0	Minor or no effect
Total		7.9
Potential Distribution		
Q1. Within the geographic area being considered, what is the percentage area of land use that is suitable for the weed?		4.0 20-40% of land use
Comparative weed risk score		211
Weed risk category		Very high

Q1 from Hunter WRA: Estimated based on pictures of infestations and Victorian WRA. In drier communities, dense infestations must impede recruitment.

Q2 from Hunter WRA: Estimated based on pictures of infestations and Victorian WRA that states major displacement of ground layer flora.

Q3 from Hunter WRA scored as a medium: "Dense infestations bound to be impacting herb and shrub plant species. Visual amenity affected and reported impacts on Koalas being tangled in infestations and dying prematurely from spines (North
Grows into dense thickets in Greater Sydney and any contact results in an injury or spread.

Q4 from Hunter WRA: 'Armed with needle-sharp, barbed spines, about 1-3cm long' (Zimmerman, 1978)

Q5 Recommend a high scoring in Sydney where population densities and land use from Hunter WRA:

Q6 a) can harbour rabbits (Parsons & Cuthbertson, 2001), trap and ensnare wildlife.
b) 'Because of their high moisture content, plants are not easily burnt' (Parsons & Cuthbertson, 1992), hence in fire prone communities such as grasslands and grassy woodlands, this species would inhibit many fires.

Q1 from Hunter WRA: they gave a 10-20% of land use: 'Based on most Opuntia being able to grow in climates with 150 to 800 mm of rainfall (Dance et al. 2003), and the amount of grassland, grassy woodland and riparian areas present in NSW (Keith

Control Costs		Score	Total	
Q1. How detectable is the weed?			2	
(a) Distinguishing features	0			always distinct
(b) Period of year shoot growth visible	0			> 8 months
(c) Height at maturity	2			<0.5 m
(d) Pre-reproductive height in relation to other vegetation	2			below canopy
Q2. What is the general accessibility of known infestations at the optimum time of treatment?			1	medium
Q3. How expensive is management of the weed in the first year of targeted control?			5	
(a) Chemical costs/ha	4			very high (>\$500/ha)
(b) Labour costs/ha	4			very high (>\$500/ha)
(c) Equipment costs	3			high
Q4. What is the likely level of participation from landholders/volunteers within the land use at risk?			1.0	medium
Total			7.5	
Persistence		Score	Total	
Q1. How effective are targeted management treatments applied to infestations of the weed?			2	medium
Q2. What is the minimum time period for reproduction of sexual or vegetative propagules?			1	1-2 years
Q3. What is the maximum longevity of sexual or vegetative propagules?			0	< 2 years
Q4. How likely are new propagules to continue to arrive at control sites, or to start new infestations?			2.0	
(a) Long-distance (>100m) dispersal by natural means	1			occasional
(b) Long-distance (>100m) dispersal by human means	2			frequent
Total			4.5	
Current distribution				
Q1. What percentage area of the land use in the geographical area is currently infested by the weed?			0.1	<1% of land use
Q2. What is the number of infestations, and weed distribution within the geographic area being considered?			1.0	scattered
Total			0.9	
Comparative feasibility of coordinated control score			31	
Feasibility of coordinated control category			Medium	

Q1 a) from Hunter WRA: Low-growing cacti with extremely sharp spines (Dance 2003), most other similar cacti are greater in height (Richardson et al. 2011). Easy to distinguish but due to colour and being low-growing, also easy to overlook. Must be ground-truthed, not assessed from vehicle.

Q2 Most often in open woodland contexts but in Sydney also grows in amongst African Olive, boxthorn thickets, Bursaria thickets etc. which would lower ease of access for treatment.

Q3 I disagree with the Hunter WRA assessment for this due to the dense nature of infestations and the labour-intensive spot spraying required, so have increased the score for each category.

Q4 Barragal Landcare group is controlling some; private landholders are, NPWS has infestations down to maintenance levels. A awareness and extension campaign will likely increase participation levels, particularly for small new incursions.

Q1 Hunter WRA: medium, estimate based on Parsons and Cuthbertson (2001), Ensbey (2009)
 Sydney: repeated spraying @ EMAI paddock still has not resulted in eradication. A Seeds not viable but it is estimated that stem segments and fruit could root and reproduce (i.e. stem segments broken off) within 2 years.

Q2 from Hunter: <2 years 'A detached segment has been known to survive indoors for 3 years' (Parsons & Cuthbertson, 1992).

Q4 Known to be spread by macropods and rabbits in Sydney, also by sheep, on boots and vehicle tyres. Also water dispersal.

Q1 generally scattered, small-scale sites.

Q2 11 sites currently known about on the Cumberland Plain. Largest infestation known is at EMAI, Camden. Council areas: Campbelltown, Camden, Blacktown, Hawkesbury.

<p style="text-align: center;">Management priority category</p> <p style="text-align: center;">Calculation of overall uncertainty score</p> <p style="text-align: center;">Response</p>	<p>Contain spread</p> <p>0%</p> <p>Submit Assessment</p>
<p style="text-align: center;">Positive Impacts</p>	
<p>References/Other comments</p>	
<p>This assessment was done by Jen Schabel, Greater Sydney Local Land Services, 24/05/2018.</p> <p>The GS Regional Weeds Strategy currently lumps this species with other Opuntias and Cyclindropuntias in an Asset Protection category.</p> <p>Jen recommends assessing this species as a separate entity, potentially at containment level.</p> <p>This is considered to be the worst of the Opuntia species in NSW and some other regions have it assessed separately to other Opuntias in the WRAs.</p> <p>Other information from Hunter WRA:</p> <p>Family Cactaceae</p> <p>Synonyms: none</p> <p>Common name: Tiger Pear</p> <p>Origin: Argentina and Uruguay</p> <p>References</p> <p>Auld, B.A., Medd, R.W. (1992). Weeds. An Illustrated Botanical Guide to Weeds of Australia. Inkata Press, Melbourne.</p> <p>Australian Weeds Committee (2013). Tiger Pear, <i>Opuntia aurantiaca</i>. Online at: http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=plant.tpl&state=&s=&ibra=all&card=S28 (accessed 7 February 2013).</p> <p>Carr, G.W., Yugovic, J.V., Robinson, K.E. (1992). Environmental Weed Invasions in Victoria. Department of Conservation and Environment, Melbourne.</p> <p>Dance, D., Adams, R., and Simmons, D. (2003). Distribution and potential impact of <i>Opuntia aurantiaca</i> (tiger pear) along Little River, Victoria. <i>Plant Protection Quarterly</i> 18(3): 107-109.</p>	