UF IFAS UNIVERSITY of FLORIDA

Assessment of Non-native Plants in Florida's Natural Areas

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Assessment date: 9 March 2015

	***Dolichandra unguis-cati (Macfadyena unguis-cati, Bignonia tweedieana, Bignonia unguis-cati, Doxantha unguis-cati)* Cat's claw vine**	**Answer**	**Score**
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to FL climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	y	2
3.02	Garden/amenity/disturbance weed	n	0
3.03	Weed of agriculture	y	4
3.04	Environmental weed	y	4
3.05	Congeneric weed	n	0
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic		
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals		
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens	n	0
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems	n	0
4.09	Is a shade tolerant plant at some stage of its life cycle	y	1
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.	y	1
4.11	Climbing or smothering growth habit	y	1
4.12	Forms dense thickets	y	1
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	y	1
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic	y	1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)		

7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y	1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	y	1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	n	-1
8.01	Prolific seed production	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	n	-1
8.03	Well controlled by herbicides	?	
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.	?	
	Total Score	**18**	
	Implemented Pacific Second Screening	**n/a**	
	Risk Assessment Results	**High Risk**	

section	**# questions answered**	**satisfy minimum?**
A	11	yes
B	10	yes
C	19	yes
total	40	yes

	Reference	Source data
1.01		No evidence of selection for reduced weediness.
1.02		
1.03		
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (00 Month 0000).	No computer analysis was performed. 1. Global hardiness zone: 8, 9, 10, 11, 12, 13; equivalent to USDA Hardiness zones: USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15°F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11a: to USDA Zone (40 °F) USDA Zone 11b: to (45 °F) USDA Zone 12a: to (50 °F) USDA Zone 12b: to (55 °F). 2. Native to NORTHERN AMERICA Mexico, SOUTHERN AMERICA Caribbean: Antigua and Barbuda; Bahamas; Barbados; Cuba; Dominica; Grenada; Guadeloupe; Hispaniola; Martinique; Montserrat; Netherlands Antilles; Puerto Rico; St. Lucia; St. Vincent and Grenadines; Virgin Islands (British); Virgin Islands (U.S.), Mesoamerica: Belize; Costa Rica; Guatemala; Honduras; Nicaragua; Panama, Northern South America: French Guiana; Guyana; Suriname; Venezuela, Brazil: Brazil, Western South America: Bolivia; Colombia; Ecuador; Peru, Southern South America: Argentina [n.]; Paraguay
2.02		
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf).	1. Distribution in the native/cultivated range occurs in Cfb, Cfa, Csb, Cwa, Bsk, Aw, Am, Af, Bsh, BWh, BSk
2.04	1. USDA Animal Plant and Helath Inspection Service, Weed Risk Assessment for Dolichandra unguis-cati (L.) L. G. Lohmann (Bignoniaceae) – Cat's-claw June 4, 2013 Version 1 2. Global Biodiversity Information Facility (http://www.gbif.org)	1. Native or naturalized in areas ranging from 10 inches to 100+ inches of annual rainfall. 2. Species occurs at the very tip of Baja California, which is intermixed with 10-20 inches of annual precipitation.
2.05	1. Dhileepan K. 2012. Macfadyena unguis-cati (L.) A.H. Gentry – cat's claw creeper. In: Biological Control of Weeds in Australia: 1960 to 2010 (eds M Julien , RE McFadyen & J Cullen), pp. 351–359. CSIRO Publishing, Melbourne, Australia 2. Space, J. C., and T. Flynn. 2002. Report to the government of the Cook Islands on invasive plant species of environmental concern. U.S.D.A. Forest Service, Pacific Southwest Research Station, Institute of Pacific Islands Forestry, Honolulu, Hawai'i, USA. 3. Global invasive Species Database http://www.issg.org/database/species/ecology.asp?si=1227&lang=EN (2-20-2015)	1. Introduced as an ornamental, the vine became naturalised in several countries in Asia (China, India, Malaysia, Nepal, Sri Lanka and Thailand), Australasia and the South Pacific (Australia, New Zealand, Indone- sia, Micronesia, New Caledonia, Hawaii and Cook Islands), Europe (Sicily, Switzerland, Serbia and Monte-negro, France and Greece), Africa (Kenya, Mauritius, South Africa, Uganda and Zimbabwe) and North Amer- ica (southern USA). 2. It is a problem species in Hawai'i. It is cultivated as an ornamental in Australia, was observed on Niue and is reported to be moderately invasive in New Caledonia (Meyer, 2000). 3. Known introduced range: Asia (China, India, Malaysia, Nepal, Sri Lanka), Australiasia and the South Pacific (Australia, New Zealand, Indonesia, Java, Sumatra, Micronesia, New Caledonia, Hawaii, Cook Islands), Europe (Sicilia, Switzerland, Serbia and Montenegro, France, and Greece), Africa (South Africa, Kenya, Uganda, and Zimbabwe), and North America (southern United States

3.01	1. Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the Flowering Plants of Hawai'i (Revised ed., vols 1 & 2). University of Hawaii Press & Bishop Museum Press, Hawaii, U.S.A. 388 pp. 2. Weed management guide, weed of national significance, Australia (http://www.weeds.org.au/WoNS/catsclawcreeper/docs/WMG_CATS_CLAW_CREEPER-final.pdf) 3.Acevedo-Rodríguez & Strong. 2012. Catalogue of Seed Plants of the West Indies. Smithsonian Institution, Washington D.C. 1192 pp. 4. King et al. 2011. Biological control of Cat's claw creeper, Macfadyena unguis-cati (L.) A.H.Gentry (Bignoniaceae), in South Africa. African Entomology 19(2):366-377. 5. Kairo et al. 2003. Invasive Species threats in the Caribbean Region - report to the Nature Conservancy. CAB International.	1. Naturalized in Hawaii 2. First reported naturalized in Australia in the 1950s 3. Exotic and invasive in Cuba 4. Naturalized and spreading in South Africa Naturalized and invasive in the Bahamas
3.02		no evidence
3.03	1. ARC-Plant Protection Research Institute (ARC-PPRI Cat's claw creeper (Dolichandra unguis-cati) (Bignoneaceae) http://www.arc.agric.za/arc-ppri/Pages/cat's-claw-creeper.aspx (2-27-2015) 2. Invasive Species South Africa http://www.invasives.org.za/invasive-species/item/278-cats-claw-creeper-dolichandra-unguis-cati.html (2-27-2015) 3. Downey, P. O., and I. Turnbull. 2007. The biology of Australian weeds: 48. Macfadyena unguis-cati (L.) A.H.Gentry. Plant Protection Quarterly 22(3):82-91.	1. Within these provinces the weed has become a significant invader of cultivated orchards and plantations, riparian corridors, natural forest remnants and disturbed areas such as roadsides and urban spaces. 2. This climber invades forest margins, woodlands, plantations, roadsides and urban open spaces. 3. It poses a serious risk for forestry operations as it is difficult to control and can stress and kill trees
3.04	1. Osunkoya OO, Pyle K, Scharaschkin T, Dhileepan K (2009) What lies beneath? The pattern and abundance of the subterranean tuber bank of the invasive liana cat's claw creeper, Macfadyena unguis-cati (Bignoniaceae). Australian Journal of Botany 57, 132–138. 2. Global invasive Species Database http://www.issg.org/database/species/ecology.asp?si=1227&lang=EN (2-20-2015) 3. King, A. M., H. E. Williams, and L. G. Madire. 2011. Biological control of Cat's claw creeper, Macfadyena unguis-cati (L.) A.H.Gentry (Bignoniaceae), in South Africa. African Entomology 19(2):366-377 4. Downey, P. O., and I. Turnbull. 2007. The biology of Australian weeds: 48. Macfadyena unguis-cati (L.) A.H.Gentry. Plant Protection Quarterly 22(3):82-91.	1. Cat's claw creeper, Macfadyena unguis-cati (L.) Gentry (Bignoniaceae) is a major environmental weed of riparian areas, rainforest communities and remnant natural vegetation in coastal Queensland and New South Wales, Australia. In densely infested areas, it smothers standing vegetation, including large trees, and causes canopy collapse. Quantitative data on the ecology of this invasive vine are generally lacking. 2. M. unguis-cati effects all layers of infected forest ecosystems by spreading both vertically and horizontally across everything with which it makes contact. It forms a thick carpet of leaves and stems on the forest floor, outcompeting the understory plants and stopping germination of other species. It grows to top of the forest and spreads across the canopy, killing the host trees with its weight and shade. 3. The exotic vine Macfadyena unguis-cati (L.) A.H.Gentry (Bignoniaceae), cat's claw creeper, has become a significant threat to the biodiversity of a variety of sensitive ecosystems in South Africa. 4. Destabilizes banks in riverine systems
3.05		No evidence found
4.01	1. Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the Flowering Plants of Hawai'i (Revised ed., vols 1 & 2). University of Hawaii Press & Bishop Museum Press, Hawaii, U.S.A. 388 pp.	No evidence of these chracteristics in the species description.
4.02		no evidence
4.03	Nickrent, D. 2009. Parasitic plant classification. Southern Illinois University Carbondale, Carbondale, IL. Last accessed June 12, 2009, http://www.parasiticplants.siu.edu/ListParasites.html.	Not a member of parasitic family. [Family: Bignoniaceae]

4.04	Downey, P. O., and I. Turnbull. 2007. The biology of Australian weeds: 48. Macfadyena unguis-cati (L.) A.H.Gentry. Plant Protection Quarterly 22(3):82-91.	Lack of evidence, the plant often grows in the canopy so grazing is not always a control on this species.
4.05		Palatable to cattle
4.06		no evidence
4.07		no evidence
4.08		no evidence
4.09	1. Kaufman, S. R., and W. Kaufman. 2007. Invasive Plants: Guide to Identification and the Impacts and Control of Common North American Species. Stackpole Books, Mechanisburg, PA. 193-194 pp. 2. University of Florida IFAS Extension http://edis.ifas.ufl.edu/fr391 (2-24-2018) 3. Downey & Turnbull. 2007. The biology of Australian weeds: 48. Macfadyena unguis-cati (L.) A.H.Gentry. Plant Protection Quarterly 22(3):82-91.	1.Prefers and thrives in full sun to part shade. 2. The vine only flowers in full sunlight. [No evidence the plant can grow in full shade] 3. Can grow and persist in shady environments.
4.10	USDA Natural Resource Conservation Service Soils, Global Soil Regions Map http://www.nrcs.usda.gov/Internet/FSE_MEDIA/nrcs142p2_050722.jpg (2-27-2015)	1. Soil map shows overlap of soil type in native range and all three soil zones of Florida.
4.11	1. McClymont, 1996. Cat's Claw Creeper (Macfadeyena unguis-cati). BRAIN (Brisbane Rainforest Action and Information Network) Newsletter, April 1996. http://www.brisrain.org.au/01_cms/details.asp?viewMode=printable&ID=285 2. Vivian-Smith, G. and Panetta, F.D. (2004). Seedbank ecology of the invasive vine, cat's claw creeper (Macfadyena unguis-cati (L.) Gentry). Proceed- ings of the 14th Australian Weeds Conference, eds B.M. Sindel and S.B. Johnson, pp. 531-7. (Weed Society of New South Wales, Sydney). 3. Space, J. C., and T. Flynn. 2002. Report to the government of the Cook Islands on invasive plant species of environmental concern. U.S.D.A. Forest Service, Pacific Southwest Research Station, Institute of Pacific Islands Forestry, Honolulu, Hawai'i, USA.	1. Each tuber produces individual climbing runners that climb all surrounding vegetation. 2. A vigorous, invasive vine that can climb structures to 15 m or more in height. 3. Macfadyena unguis-cati (cat's claw climber) is an aggressive vine that climbs trees and also forms a dense mat on the ground.
4.12	1. Lin Besaans (2011) © ARC Plant Protection Research Institute CAT'S CLAW CREEPER (formerly Macfadyena unguis-cati A.H.Gentry) FACT SHEETS ON INVASIVE ALIEN PLANTS AND THEIR CONTROL IN SOUTH AFRICA http://www.arc.agric.za/arc-ppri/Fact%20Sheets%20Library/Dolichandra%20unguis-cati.pdf (2-24-2015)	1. The vine is particularly damaging in forested areas where thickets of vegetation can develop in the canopy which, through shading and sheer mass, break branches and can eventually kill trees. Invasion is not restricted to the forest canopy however, as the plant is able to grow along the ground, forming a dense groundcover which smothers indigenous vegetation, and prevents germi- nation of native species.
5.01		Family: Bignoniaceae
5.02		Family: Bignoniaceae
5.03		No evidence. The Bignoniaceae is not one of the plant families known to contain nitrogen-fixing species
5.04	Vivian-Smith, G. and Panetta, F.D. (2004). Seedbank ecology of the invasive vine, cat's claw creeper (Macfadyena unguis-cati (L.) Gentry). Proceed- ings of the 14th Australian Weeds Conference, eds B.M. Sindel and S.B. Johnson, pp. 531-7. (Weed Society of New South Wales, Sydney). 2.Osunkoya OO, Pyle K, Scharaschkin T, Dhileepan K (2009) What lies beneath? The pattern and abundance of the subterranean tuber bank of the invasive liana cat's claw creeper, Macfadyena unguis-cati (Bignoniaceae). Australian Journal of Botany 57, 132–138. 2. Vivian-Smith, G. and Panetta, F.D. (2004).	1. When on the ground, they can penetrate the soil, producing tubers at the nodes and forming below-ground tuber networks. 2. Our findings suggest this may not be all encompassing; close to 90% of the plants excavated had a rather small number of tubers (1 or 2 tubers per plant), with an average length of 2.5 cm (range 0.5–10 cm) and there was a greater number of genets rather than ramets.
6.01		no evidence

6.02	1. Osunkoya OO, Pyle K, Scharaschkin T, Dhileepan K (2009) What lies beneath? The pattern and abundance of the subterranean tuber bank of the invasive liana cat's claw creeper, Macfadyena unguis-cati (Bignoniaceae). Australian Journal of Botany 57, 132–138. 2. Vivian-Smith, G. and Panetta, F.D. (2004). Seedbank ecology of the invasive vine, cat's claw creeper (Macfadyena unguis-cati (L.) Gentry). Proceed- ings of the 14th Australian Weeds Conference, eds B.M. Sindel and S.B. Johnson, pp. 531-7. (Weed Society of New South Wales, Sydney).	1. Macfadyena unguis-cati can propagate both from seeds and vegetatively from belowground tubers. 2. The presence of viable seeds in samples of deposited instream litter is evidence that water is a likely secondary seed dispersal agent.
6.03		no evidence
6.04	1. Vivian-Smith, G. and Panetta, F.D. (2004). Seedbank ecology of the invasive vine, cat's claw creeper (Macfadyena unguis-cati (L.) Gentry). Proceed- ings of the 14th Australian Weeds Conference, eds B.M. Sindel and S.B. Johnson, pp. 531-7. (Weed Society of New South Wales, Sydney). 2. Global Invasive Speices Database http://www.issg.org/database/species/ecology.asp?si=1227&lang=EN (2-22-2015) 3. Downey, P. O., and I. Turnbull. 2007. The biology of Australian weeds: 48. Macfadyena unguis-cati (L.) A.H.Gentry. Plant Protection Quarterly 22(3):82-91.	1. Multiple seedlings emerged from more than 40% of seeds, suggesting polyembryony (a form of apomixis). 2. The flowers of M. unguis-cati are bisexual 3. Multiple seedlings from a single seed suggests it is facultatively apomictic
6.05		no evidence
6.06	1. Osunkoya OO, Pyle K, Scharaschkin T, Dhileepan K (2009) What lies beneath? The pattern and abundance of the subterranean tuber bank of the invasive liana cat's claw creeper, Macfadyena unguis-cati (Bignoniaceae). Australian Journal of Botany 57, 132–138. 2. Dhileepan K. 2012. Macfadyena unguis-cati (L.) A.H. Gentry – cat's claw creeper. In: Biological Control of Weeds in Australia: 1960 to 2010 (eds M Julien , RE McFadyen & J Cullen), pp. 351–359. CSIRO Publishing, Melbourne, Australia. 3. Vivian-Smith, G. and Panetta, F.D. (2004). Seedbank ecology of the invasive vine, cat's claw creeper (Macfadyena unguis-cati (L.) Gentry). Proceed- ings of the 14th Australian Weeds Conference, eds B.M. Sindel and S.B. Johnson, pp. 531-7. (Weed Society of New South Wales, Sydney).	1. The study revealed that M. unguis-cati vine recruitment is both from seed and vegetative propagation 2. The plant can be propagated from seed, and vegetatively from below-ground tubers. 2. Persistence of infestations following regular control efforts may be largely due to regeneration from the below-ground tuber bank.
6.07	USDA Animal Plant and Helath Inspection Service, Weed Risk Assessment for Dolichandra unguis-cati (L.) L. G. Lohmann (Bignoniaceae) – Cat's-claw June 4, 2013 Version 1	For seed-produced individuals, evidence suggests a minimum generation time of four years or more
7.01	1. Australian Weeds Committee (2013) Weeds of National Significance, Draft Cat's Claw Creeper Strategic Plan. Australian Weeds Committee, Canberra. 2. ARC-Plant Protection Research Institute (ARC-PPRI Cat's claw creeper (Dolichandra unguis-cati) (Bignoneaceae) http://www.arc.agric.za/arc-ppri/Pages/cat's-claw-creeper.aspx (2-27-2015) 3. BioNET-EAFRINET (http://keys.lucidcentral.org/keys/v3/eafrinet/plants.htm)	1. Cat's claw creeper is a serious environmental weed which continues to spread from urban areas. 2. Within these provinces the weed has become a significant invader of cultivated orchards and plantations, riparian corridors, natural forest remnants and disturbed areas such as roadsides and urban spaces. 3. tuberous roots may be spread by floods and during human activities involving significant soil movement.

7.02	1. USDA Animal Plant and Helath Inspection Service, Weed Risk Assessment for Dolichandra unguis-cati (L.) L. G. Lohmann (Bignoniaceae) – Cat's-claw June 4, 2013 Version 1 2. Plant World Seeds http://www.plant-world-seeds.com/store/view_seed_item/1476?itemname=MACFADYENA+UNGUIS-CATI 2. Aggie Horticulture, Texas A&M Extension (http://aggie-horticulture.tamu.edu/newsletters/hortupdate/2013/may/catsclaw.html)	1. Originally introduced as an ornamental 2. Still being sold as an ornamental over the internet and in some countries. 2. Promoted by Texas A&M Extension as a vine to be planted if there is a need for a vigorous vine to cover a large wall area or to climb over unsightly objects in the landscape such as an old shed, there cannot be a better subject.
7.03		no evidence
7.04	1. Kaufman, S. R., and W. Kaufman. 2007. Invasive Plants: Guide to Identification and the Impacts and Control of Common North American Species. Stackpole Books, Mechanisburg, PA. 193-194 pp. 2. McClymont, 1996. Cat's Claw Creeper (Macfadeyena unguis-cati). BRAIN (Brisbane Rainforest Action and Information Network) Newsletter, April 1996. http://www.brisrain.org.au/01_cms/details.asp?viewMode=printable&ID=285	1. Vine seeds disperse quickly via wind and water. 2. This seed is spread by wind and water.
7.05	1. McClymont, 1996. Cat's Claw Creeper (Macfadeyena unguis-cati). BRAIN (Brisbane Rainforest Action and Information Network) Newsletter, April 1996. http://www.brisrain.org.au/01_cms/details.asp?viewMode=printable&ID=285 2. Kaufman, S. R., and W. Kaufman. 2007. Invasive Plants: Guide to Identification and the Impacts and Control of Common North American Species. 3. Stackpole Books, Mechanisburg, PA. 193-194 pp. 3. Rafter, M.A., Wilson, A.J., Wilmot Senaratne, K.A.D. & Dhileepan, K. (2008) Climatic-requirements models of cat's claw creeper Macfadyena unguis-cati (Bignoniaceae) to prioritise areas for exploration and release of biological control agents. Biological Control	1. This seed is spread by wind and water. A large number of the infestations in Brisbane occur along the creek systems where the seed source has obviously come downstream during floods and during normal stream flow. 2. Vine seeds disperse quickly via wind and water. 3. The seeds of cat's claw creeper are capable of hydrochory and the plant can also regenerate from underground tubers and broken stems.
7.06		no evidence
7.07		no evidence
7.08		no evidence
8.01	1. Osunkoya OO, Pyle K, Scharaschkin T, Dhileepan K (2009) What lies beneath? The pattern and abundance of the subterranean tuber bank of the invasive liana cat's claw creeper, Macfadyena unguis-cati (Bignoniaceae). Australian Journal of Botany 57, 132–138. 2. Downey, P. O., and I. Turnbull. 2007. The biology of Australian weeds: 48. Macfadyena unguis-cati (L.) A.H.Gentry. Plant Protection Quarterly 22(3):82-91.	1. The fruits (15–45cm long), which may contain up to 200 seeds, are flattened linear capsules that mature in late summer to early autumn (February–May in Queensland, Australia). Seeds (2–4 cm long) are also flattened and oblong in shape, and are papery with two wings 2. A seed deposition study estimated rates of 167 seeds per square meter per year directly underneath plant canopies
8.02	Vivian-Smith, G. and Panetta, F.D. (2004). Seedbank ecology of the invasive vine, cat's claw creeper (Macfadyena unguis-cati (L.) Gentry). Proceed- ings of the 14th Australian Weeds Conference, eds B.M. Sindel and S.B. Johnson, pp. 531-7. (Weed Society of New South Wales, Sydney).	Our results suggest that cats claw creeper does not have a persistent seed bank. Persistence of infestations following regular control efforts may be largely due to regeneration from the below-ground tuber bank.

8.03	1. Raghu S, Dhileepan K, Trevino M (2006) Response of an invasive liana to simulated herbivory: implications for its biological control. Acta Oecologica 29, 335–345. 2. Australian Weeds Committee (2013) Weeds of National Significance, Draft Cat's Claw Creeper Strategic Plan. Australian Weeds Committee, Canberra.	1. Chemical control is difficult given the sensitive habitats (riparian and rainforest edges) invaded by this plant and the large belowground tuber reserves 2. Herbicides can be effective, providing they are carefully chosen and selectively applied when plants are actively growing. The main herbicide application methods for cat's claw creeper are described below. Stem injection and basal bark application are less commonly used. Basal barking in particular poses the risk of off-target damage because cat's claw creeper stems are usually firmly attached to the stem of the host tree.
8.04	1. Rafter, M.A., Wilson, A.J., Wilmot Senaratne, K.A.D. & Dhileepan, K. (2008) Climatic-requirements models of cat's claw creeper Macfadyena unguis-cati (Bignoniaceae) to prioritise areas for exploration and release of biological control agents. Biological Control 2. Global Invasive Speices Database http://www.issg.org/database/species/ecology.asp?si=1227&lang=EN (2-22-2015) 3. Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the Flowering Plants of Hawai'i (Revised ed., vols 1 & 2). University of Hawaii Press & Bishop Museum Press, Hawaii, U.S.A. 388 pp. 3. Downey & Turnbull. 2007. The biology of Australian weeds: 48. Macfadyena unguis-cati (L.) A.H.Gentry. Plant Protection Quarterly 22(3):82-91.	1. The seeds of cat's claw creeper are capable of hydrochory and the plant can also regenerate from underground tubers and broken stems. 2. Young plants will also sprout when damaged 3. This species tolerates mutilation. It often roots at nodes 3. Resprouts after fire.
8.05		research ongoing