Invasiveness Assessment Record

Scientific name: *Rubus argutus* Link

Common Name: Florida blackberry

QUESTION	COMMENTS	RATING	CONFIDENCE
Establishment			
1. Germination requirements?	"Seedling establishment appears to be enhanced by soil disturbance" (Tunison, 1985). Requires cold stratification for seed germination (NPDC, 2006). Requires natural seasonal low temperatures to germinate.	**MH**	**MH**
2. Establishment requirements?	Moderately shade tolerant…[as] under a sparse canopy. It can be shaded out or severely suppressed by deep shade" (Tunison, 1985).	**MH**	**MH**
3. How much disturbance is required?	"Able to invade and take over native ecosystems without any apparent disturbance" (Smith, 1985).	**H**	**MH**
Growth/Competitive			
4. Life form?	Shrub (NPDC, 2006).	**L**	**MH**
5. Allelopathic properties?	Not noted in Smith (1985), "none" (NPDC, 2006).	**L**	**MH**
6. Tolerates herb pressure?	Low hedging tolerance by livestock or wildlife with medium palatability (NPDC, 2006).	**ML**	**MH**
7. Normal growth rate?	Rapid (NPDC, 2006).	**H**	**MH**
8. Stress tolerance to frost, drought, w/logg, sal. Fire etc?	"Occurs in wet to mesic habitats…Resprouts quickly following fire (Smith, 1985). Recorded in boggy sites (Tunison, 1991). Tolerates temperatures as low as –25°C (NPDC, 2006). Medium drought tolerance. Not tolerant to salinity (NPDC, 2006). Highly resistant to frost, fire and waterlogging, some drought tolerance but susceptible to salinity.	**H**	**MH**
Reproduction			
9. Reproductive system	Seed and vegetatively (NPDC, 2006) by root sprouting and aerial shoots forming roots with soil contact (Smith, 1985).	**H**	**MH**
10. Number of propagules produced?	High fruit/seed abundance (NPDC), 2006).	**H**	**MH**
11. Propagule longevity?	Unknown	**M**	**L**
12. Reproductive period?	Lifespan is moderate (rather than long or short) relative to most other plants (NPDC, 2006) and forms dense clonal thickets (monocultures) (Tunison, 1991).	**H**	**MH**
13. Time to reproductive maturity?	Floricanes develop in the second year (Tunison, 1991).	**MH**	**MH**
Dispersal			
14. Number of mechanisms?	Frugivorous birds (Smith, 1985).	**H**	**MH**

Invasiveness Assessment Record

Scientific name: *Rubus argutus* Link

Common Name: Florida blackberry

QUESTION	COMMENTS	RATING	CONFIDENCE
15. How far do they disperse?	Bird dispersal (Smith, 1985) makes it very likely that some propagules will disperse greater than 1km.	**H**	**MH**

References cited:

National Plant Data Centre (NPDC) 2006, Plants Database, United States Department of Agriculture, Wahington DC, USA, viewed: 30/01/2006, http://plants.nrcs.usda.gov/cgi_bin/topics.cgi?earl=plant_attribute.cgi&symbol=RUAR2.

Smith CW 1985, 'Impact of alien plants on Hawai`i's native biota,' pp. 180-250 In Stone CP & Scott JM (eds.) *Hawai`i's Terrestrial Ecosystems: preservation and Management*, University of Hawaii Coop. Natural Resources Studies Unit.

Tunison T 1991, *Element stewardship abstract for* Rubus argutus, the Nature Conservancy, Virginia, USA.

Revisions

Date Revised by Revision

Present distribution of *Rubus argutus* in Victoria

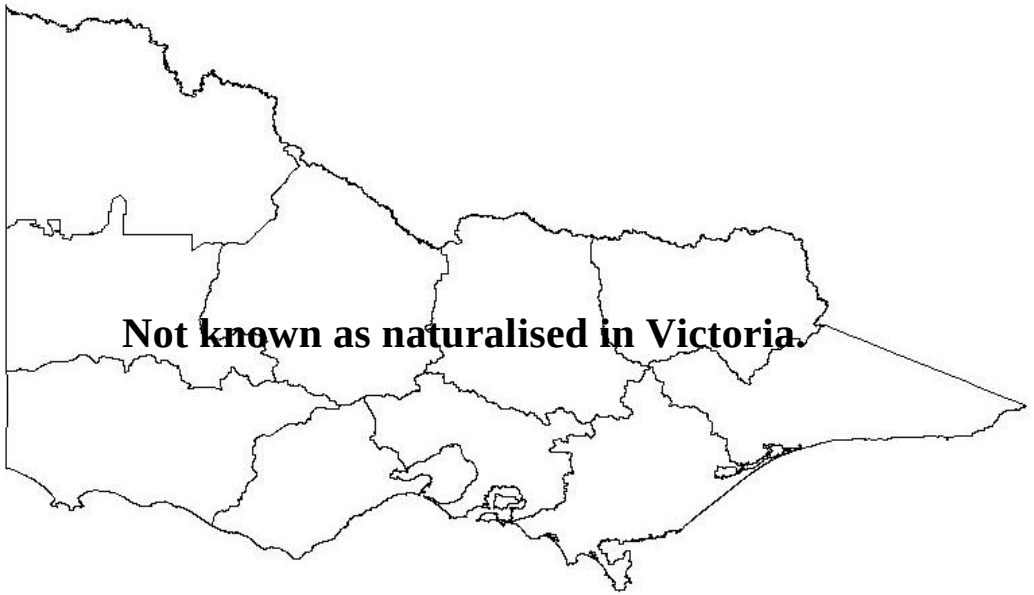
Scientific name: *Rubus argutus* Link

Common name(s): Florida blackberry, sawtooth blackberry

Status:

Habitat:

Requires moist soil. Grows in dry or moist thickets and woodland margins. In Hawaii, best developed from 1000 – 2000 m elevation in mesic to moderately wet, relatively open and disturbed habitats. (NPDC 2006) Grows in disturbed habitats, including mesic to wet forest and subalpine grassland. (GISI 2005)



Potential distribution of *Rubus argutus* in Victoria

Scientific name: *Rubus argutus* Link

Common name(s): Florida blackberry, sawtooth blackberry

Status:

Habitat:

Requires moist soil. Grows in dry or moist thickets and woodland margins. In Hawaii, best developed from 1000 – 2000 m elevation in mesic to moderately wet, relatively open and disturbed habitats. (NPDC 2006) Grows in disturbed habitats, including mesic to wet forest and subalpine grassland. (GISI 2005)

Potential distribution produced from CLIMATE modelling refined by applying suitable landuse and vegetation type overlays with CMA boundaries

MAP OVERLAYS USED.

Land Use:

Forest private plantation
Forest public plantation

Broad vegetation types

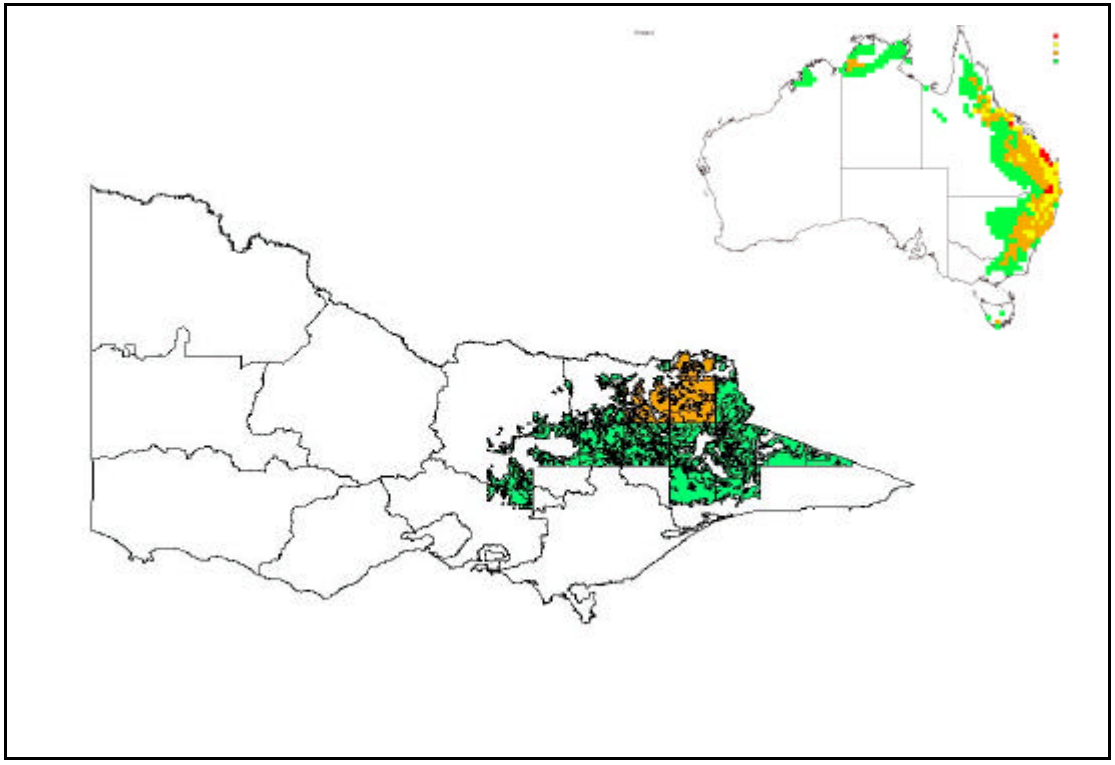
Inland slopes woodland; dry foothill forest; moist foothill forest; montane dry woodland; montane moist forest; sub-alpine woodland; sub-alpine grassy woodland; montane grassy woodland; riverine grassy woodland; riparian forest.

Colours indicate possibility of *Rubus argutus* infesting these areas.

Red = Very high Yellow = High

Orange = Medium Green = Likely

In the non-coloured areas the plant is unlikely to establish as the climate, soil or landuse is not presently suitable.



Impact Assessment Record

Scientific Name: *Rubus argutus* Link

Common name: Florida blackberry

QUESTION	COMMENTS	RATING	CONFIDENCE
Social			
1. Restrict human access?	Prickly shrub to 2.5m tall (NPDC, 2006) that forms impenetrable thickets (Smith, 1985), see also photo from ISI (2005), a major impediment to human access.	**H**	**MH**
2. Reduce tourism?	The ability of this tall, prickly shrub (NPDC, 2006) to grow in boggy soil (Tunison, 1991) and form impenetrable thickets (Smith, 1985) may have a major impact on recreation around waterways, restricting access and being obvious to most visitors.	**H**	**MH**
3. Injurious to people?	Prickles up to 8mm long on stems (always present) and also prickles on leaf margins most of the year (deciduous) (Tunison, 1991).	**MH**	**MH**
4. Damage to cultural sites?	Moderate visual effect caused by large, prickly shrub (NPDC, 1991).	**ML**	**MH**
Abiotic			
5. Impact flow?	Able to grow in boggy soil (Tunison, 1991) but not recorded in permanent water. Terrestrial species.	**L**	**MH**
6. Impact water quality?	Able to grow in boggy soil (Tunison, 1991) but not recorded in permanent water. Terrestrial species.	**L**	**MH**
7. Increase soil erosion?	Forms thickets (Smith, 1985) and able to grow in boggy soil (Tunison, 1991) which may enable it to bind soil otherwise prone to soil erosion.	**L**	**MH**
8. Reduce biomass?	"Habitat-disruptive when dense clonal thickets form…Most other native plants are excluded from these thickets when fully developed" (Tunison, 1991). Where this plant replaces taller species it will reduce biomass slightly.	**MH**	**MH**
9. Change fire regime?	"Habitat-disruptive when dense clonal thickets form…Most other native plants are excluded from these thickets when fully developed" (Tunison, 1991). Although this plant does burn (Smith, 1985) it does not provide a dried fuel source like the grasses that it replaces so it would cause a minor decrease in fire intensity.	**ML**	**MH**
Community Habitat			
10. Impact on composition (a) high value EVC	EVC= Montane riparian woodland (V); CMA=North East; Bioreg=Highlands-Northern Fall; CLIMATE potential=M. Displaces all species within the ground and/or shrub layers.	**H**	**MH**
(b) medium value EVC	EVC= Montane grassy woodland (D); CMA=North East; Bioreg=Highlands-Northern Fall; CLIMATE potential=M. "Smother[s] vegetation, displacing the native species or preventing their reestablishment" (Smith, 1985). Grows to 2.5m tall (NPDC, 2006). Displaces all species within the ground and/or shrub layers.	**H**	**MH**
(c) low value EVC	EVC= Riparian forest (LC); CMA=North East; Bioreg=Highlands-Northern Fall; CLIMATE potential=M. "Smother[s] vegetation, displacing the native species or preventing their reestablishment" (Smith, 1985). Grows to 2.5m tall (NPDC, 2006). Displaces all species within the ground and/or shrub layers.	**H**	**MH**

Impact Assessment Record

Scientific Name: *Rubus argutus* Link

Common name: Florida blackberry

QUESTION	COMMENTS	RATING	CONFIDENCE
11. Impact on structure?	"Habitat-disruptive when dense clonal thickets form…Most other native plants are excluded from these thickets when fully developed, although some [vigorous, shade-tolerant species] tolerate or even penetrate a blackberry canopy…Forms large thickets in upper elevation forests" (Tunison, 1991). "Smother[s] vegetation, displacing the native species or preventing their reestablishment" (Smith, 1985). Grows to 2.5m tall (NPDC, 2006). Able to have a major effect on the ground and shrub layers, displacing most or all of the species, but unlikely to outcompete the trees.	**MH**	**MH**
12. Effect on threatened flora?	No information found.	**MH**	**L**
Fauna			
13. Effect on threatened fauna?	No information found.	**MH**	**L**
14. Effect on non-threatened fauna?	One of 12 of the most significant environmental weeds on the Hawaiian Islands…serious threat to native ecosystems (Smith, 1985). "Smother[s] vegetation, displacing the native species or preventing their reestablishment" (Smith, 1985). Large infestations could reduce habitat and food sources for native fauna, leading to a local reduction in numbers.	**MH**	**MH**
15. Benefits fauna?	Palatable to grazing animals (Caldwell et. al, 2001). May provide an alternative food source for grazing animals and some bird species that might eat the berries (Parsons & Cuthbertson, 1992) and shelter for small vertebrates due to its thorny nature (Tunison, 1991).	**MH**	**MH**
16. Injurious to fauna?	Prickles up to 8mm long on stems (always present) and also prickles on leaf margins most of the year (deciduous) (Tunison, 1991). Sheep can become entangled in the canes of the related and similar *R. fruticosus* (Parsons & Cuthbertson, 1992). Dangerous to fauna.	**H**	**MH**
Pest Animal			
17. Food source to pests?	Birds and foxes eat the fruit of the related *R. fruticosus* (Parsons & Cuthbertson, 1992). Provides	**MH**	**MH**
18. Provides harbor?	The related, and similar *R. fruticosus* harbors foxes and rabbits (Parsons & Cuthbertson, 1992), although Florida blackberry is deciduous (Tunison, 1991) so wouldn't provide harbour for the whole year.	**MH**	**MH**
Agriculture			
19. Impact yield?	Grows in plantations (Tunison, 1991), but no evidence found of this plant as an agricultural weed (in Smith, 1985 or Tunison, 1991), probably because they are palatable to grazing animals (Caldwell et. al, 2001). Unlikely to impact yeild.	**L**	**H**
20. Impact quality?	See Q 19. Not a weed of agriculture.	**L**	**H**
21. Affect land value?	See Q 19. Not a weed of agriculture.	**L**	**H**
22. Change land use?	See Q 19. Not a weed of agriculture.	**L**	**H**

Impact Assessment Record

Scientific Name: *Rubus argutus* Link Common name: Florida blackberry

QUESTION	COMMENTS	RATING	CONFIDENCE
23. Increase harvest costs?	See Q 19. Not a weed of agriculture.	**L**	**H**
24. Disease host/vector?	Not noted as a disease host/vector (in Smith, 1985 or Tunison, 1991).	**L**	**MH**

References cited:

Caldwell H, Bradford L, Leigh C, Pirdle J & Davis M 2001, 'The effects of herbivory on mechanical defense in blackberries, *Rubus argutus,*' Georgia Journal of Science, vol. 59(1).

Global Invasive Species Initiative (ISI) 2005, Nature Conservancy, Arlington, VA, USA, http://tncweeds.ucdavis.edu/photos/rubar01.jpg.

National Plant Data Centre (NPDC) 2006, Plants Database, United States Department of Agriculture, Wahington DC, USA, viewed: 30/01/2006, http://plants.nrcs.usda.gov/cgi_bin/topics.cgi?earl=plant_attribute.cgi&symbol=RUAR2.

Parsons WT & Cuthbertson EG 1992, *Noxiouis Weeds of Australia*, Inkata Press, Melbourne and Sydney.

Smith CW 1985, 'Impact of alien plants on Hawai`i's native biota,' pp. 180-250 In Stone CP & Scott JM (eds.) *Hawai`i's Terrestrial Ecosystems: preservation and Management*,

University of Hawaii Coop. Natural Resources Studies Unit.

Tunison T 1991, *Element stewardship abstract for* Rubus argutus, the Nature Conservancy, Virginia, USA.

Revisions

Date	Revised by	Revision