

TECHNICAL ADVISORY GROUP ASSESSMENT OF NATIONAL PEST PLANT ACCORD SPECIES

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Acanthus mollis

Common names

Bear's breeches, Oyster plants

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, DOC reports Northland, Waikato, Auckland, BOP, Taranaki, Wanganui, Nelson Marlborough, West Coast, Stewart Island

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Tall, swamping ground cover for most of year. Main effect likely to be on conservation, preventing reestablishment of native species.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

DOC weediness score 19, my WRA at 17 ('reject')

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Uncertain about some characteristics, like seed longevity, so score conservative.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Previously trendy as a 'landscape' plant in NZ gardens. Still promoted on gardening websites, and available for sale from NZ internet catalogues. Cultivar sold internationally as Feilding or NZ Gold. NGIA rep on Weedbusters committee recently described it as 'unattractive'. We've got it in our garden!

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

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NZ Nursery register 2004/05 genus level only

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NZ Nursery Register 1997/98 genus level only

—

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant
Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)
Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?
'scatterd localities near towns'

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)
Not shown in DOC's database. Untested, but physically hard to dig up. Suspect relatively easy to control with glyphosate or, better, with Tordon BK.

National eradication i.e. DOC, MAF
no

RPMS YES/NO refer to master document
no

NPPA YES/NO
No

Notifiable organism
No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.
Nil

Any known impact on human health?
Berries & roots appear to be toxic and included in the Washington State Dept of Health's list of toxic or poisonous plants not suitable for areas occupied by "dementia patients or children" (WA-DoH 2005)

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)
Somewhat invasive although not being widely dispersed. Tall-growing, smothering growth form and colonies presumably spread slowly over short distances. Present distribution suggests it could easily become more widespread, but it may take a while.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.
Flora says along roadsides near settlements, suggesting spread very slow. And it may not really be very invasive, nor have very much impact on natives..

Include in NPPA?
No

If answering D or E, please note the reason for the uncertainty here. Any other comments here.
Has weedy potential but not generally considered a problem. Hasn't spread much. No longer a trendy garden plant, but could return. Precautionary principle says add it to list.

Notes from TAG meeting
Not entirely unanimous decision

Acer pseudoplatanus

Common names

Sycamore maple, Great maple, Purple sycamore, Whistlewood, Box elder, Grief tree, Hanging tree, Dool tree, Joug tree.

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, DOC reports throughout NZ except Northland, Auckland. Few sites in Hawkes Bay, Canterbury.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Invasive in native woodlands, ability to displace natives and replace with sycamore-dominated woodland.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Doc weediness score 27, my wra 22 ('reject')

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Probably about right (equivalent to opuntia or alligator weed in Australia)

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Grown in lots of parks and gardens as specimen trees and as 'avenues'. Available from nursery websites in NZ.

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

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NZ Nursery register 2004/05 genus level only

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NZ Nursery Register 1997/98 genus level only

—

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)
Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Common throughout NZ and expanding its range, including invasion of forest

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Labour intensive - entails hand pulling seedlings, killing individual trees (frilling, boring holes and injecting herbicide, or treating cut stumps with vigilant).

National eradication i.e. DOC, MAF

no

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

yes

Notifiable organism

uo

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

DoC weed-led

Any known impact on human health?

No known harm.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

Can be very invasive in thin forest remnants and during regeneration. Inclusion discourages planting yet more trees in gardens and parks. Raises awareness as a problem in some areas.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

So much of it around banning its sale now won't make any difference.

Include in NPPA?

YES - low priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Acmena smithii

Common names

Monkey apple

Synonyms

Eugenia smithii

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

YES

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

YES: Flora IV: Nth Is - Bay of Islands, Whangarei, Auckland (occ. in the vicinity of planted trees, mainly in scrub or in waste ground). UO Declaration (DoC): Northland and Auckland. NB Also noted naturalised in the Wellington Region (KW pers obs). Kereru eat fruit and disperse seeds into intact forest areas etc. 27 voucher specimens of naturalised material in Auckland Herbarium - oldest 1967 (AK154312).

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

YES - CONSERVATION VALUES: *Grows rapidly into a long-lived canopy tree (to 20m), outgrowing other native canopy trees, e.g. puriri and taraire. Seedlings establish in dense swathes, with saplings forming thickets. Able to establish in native lowland primary and secondary forest and scrub, under low light conditions (seedlings are shade-tolerant), becoming a permanent and dominant component of the understorey and canopy - sometimes forming almost pure associations.*

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Reject (20) NB Self-compatibility indicated by Myerscough, P.J.
http://www.rbgsyd.gov.au/__data/page/3683/Myerscough787.pdf

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Native of Australia - good species info available. Personal experience of invasiveness of this species in northern NZ. Shade tolerance, prolific seed production with high viability, bird-dispersal of seeds, high numbers of mature individuals in urban and rural areas (ornamental/amenity and shelter trees), longevity, wide environmental tolerance = major potential to become an even worse weed.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Was sold in the garden industry - frequently cultivated and traded throughout NZ. Commonly planted as an ornamental/specimen and shelter tree. Overseas: cvs in Australia, e.g. 'Hot Flush'
<http://www.bullockcreeknursery.com.au/main-page.html>

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

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NZ Nursery register 2004/05 genus level only

116

NZ Nursery Register 1997/98 genus level only

83

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradients?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Widespread in cultivation in warmer regions of the NI (including inshore and offshore islands) and northern SI..

Currently at far less than its potential naturalised distribution - frost tolerant.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

CONTROL DIFFICULT - for infestations with abundant trees and seedlings amongst native vegetation - ongoing follow-up control required. Physical control (pull/dig out seedlings, fell larger trees & treat stump with herbicide). Chemical Control (spray foliage with metsulfuron & penetrant, paint cut stumps and stems or drill & inject mixture into stumps - metsulfuron-based herbicides or Vigilant gel recommended). EBoP. Biological Control: None available.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

Yes

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

NZ: DoC weed-led control on Great Barrier Island, Mokohinau Islands and Burgess Islands - to eradicate all adults to help protect the unique shrubland and dune communities on these islands (UO Declaration, DoC). ARC undertaking control on Regional Parkland. Was a National Surveillance Plant Pest and included on the current NPPA list. NB Rated as highly flammable in Tasmania <http://www.apstas.com/sgaptas-fire.htm>

Any known impact on human health?

No known harm.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

High WRA (20). Significant potential for this species to become a major and permanent component of many habitats in northern NZ. Naturalised distribution still well short of potential. Important to limit any further sale/deliberate spread. Already recognised now as a serious environmental weed, and on NPPA. Status should remain.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

none

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Agapanthus praecox

Common names

Agapanthus

Synonyms

Agapanthus orientalis

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

YES

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

YES: Flora III: Nth Is - Auck City, BoP Whakatane - Opotiki, Sth Is - Nelson-near Westport, Canterbury near Chch, Otago - inc Dunedin. ARC Report (Craw, 2005): *Agapanthus praecox* subsp. *orientalis* well established in Auckland Region, including in coastal dune areas, coastal and inland cliffs, regenerating bush and forest margins, roadside drains and berms. NB 6 species in genus of which 5 are known to be present in NZ. (<http://www.plantzafrika.com/plantab/agapanpraecox.htm>). 18 voucher specimens of naturalised material in Auckland Herbarium - oldest 1977 (AK141282).

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

YES - CONSERVATION VALUES: *Forms very dense clumps. Establishes in coastal dunelands, coastal and inland cliff/bluff areas, riparian areas (with seed transported by waterways), forest margins, and regenerating native vegetation, competing with and displacing native communities in these areas. Monocultures can completely exclude native plants and animals in habitats at risk, e.g. *Arthropodium cirratum*. ECONOMIC: Also spreads along roadsides, clogging drains and causing flooding - which can damage road surfaces. Requires control to mitigate impacts.*

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Reject (30) NB Allelopathic? Reproductive failure in native habitat (Sth Africa)?

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Profile as an environmental weed in NZ growing - with impacts in coastal areas in particular now well documented. Also recognised as a invasive overseas (e.g. Australia). Other cvs also known to be weedy - e.g. in Australia - miniature or dwarf variety, also rather weedy - <http://www.weedsbluemountains.org.au/agapanthus.asp>

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.
Very widely sold by the garden industry - very popular garden/amenity plant - currently widely available including via the internet and mailorder. Numerous cultivars. Desirable for their year round lush foliage, long flowering time and hardiness. Used as a garden or container plant, and for mass planting along driveways and on banks.

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

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NZ Nursery register 2004/05 genus level only

116

NZ Nursery Register 1997/98 genus level only

83

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

NZ: Garden dumping, e.g. Waitakere Ranges, coastal forest in Northland (Sullivan et al. 2005). Also often divided and given away by gardeners. Very desirable as they thrive in harsh/difficult sites and provide an attractive show of white-purple-blue flowers

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Grading?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Has been and is sold and planted widely in NZ - likely to be present in most NI and SI Regions. (very wide environmental tolerance including frost, drought and coastal conditions). Naturalised in a number of coastal and lowland areas. Has not reached its potential naturalised distribution - either in terms of habitats or geographically.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

DIFFICULT TO CONTROL - does not respond well to herbicide

(<http://www.weedsbluemountains.org.au/agapanthus.asp>) - Physical control (remove flower heads before seeds mature. Dig out clumps ensuring all root material is removed - burn or deep dig). Chemical Control (cut leaves and spray close to ground or overall spray with triclopyr or Escort/glyphosate mix; paint stumps with Vigilant gel - 3-4 follow-ups of either method/chemical application required). Biological Control: None available.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

Yes

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

NZ: ARC include species as a 'Research Organism' in their RPMS and are undertaking weed-led control of it on Regional Parks. Landcare Groups controlling *Agapanthus* in west Auckland coastal areas. Greater Wellington - site-led control in Wellington Region. Overseas: Recognised as an environmental weed in parts of Australia, e.g. Melbourne, Blue Mountains.

Any known impact on human health?

Agapanthus spp. are suspected of causing haemolytic poisoning in humans, and the sap causes severe ulceration of the mouth. Sap and leaves are considered to have low to medium harm potential, and are also irritant to the skin [WADAg 2005].

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

WRA score very high (30). Weed potential of this species now becoming well recognised - serious impacts on native ecosystems, particularly in coastal areas. Inclusion of on the NPPA will help to further raise the plants profile as an environmental weed. Had this species not already been present in NZ, it would not be allowed to be imported given the WRA score and its invasive nature in other countries with similar climates to NZ. NB: Recommendation would be at the species level - including all cultivars. Cultivars are known to naturalise and enforcing bans on some and not others would not be technically feasible.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

Is already widespread in cultivation.

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Inclusion on the NPPA as an as UO will have significant economic consequences for the large number of growers that sell this species and associated cvs. Will require an amnesty period, e.g. 1 year as ARC did for *Aristea*. The ARC NPPA nomination for this species also indicated that a number of growers in NZ export large quantities and would seek an exemption to allow them to continue this trade should the species be included on the NPPA. Implications then for our requirements under the CBD - re notifying trading countries that the species is classes as a pest in NZ. Publicity will be required to change people's attitude to this very popular garden and amenity plant.

Notes from TAG meeting

Needs work on cultivar distinguishability, breeding system

Agave americana

Common names

Century plant

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Frequent on cliffs and some beaches but only in localized areas from Bay of Plenty northwards. Only few scattered localities in the South Island. Seeds infrequently.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Environmental; potential to smother smaller plants on coastal cliffs and beaches. Although not mentioned in the Flora, it spreads by runners and juveniles appear some distance from the adult. Their armed points are a real hazard to summer beach dwellers and poisoning can result.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

reject (18)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Score reflects its mildly invasive nature and toxicity

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Widely sold.

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

9

NZ Nursery register 2004/05 genus level only

109

NZ Nursery Register 1997/98 genus level only

37

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Most plants in existence have been purposely planted or resulted from dumping.

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Relatively limited distribution in the north and largely confined to sandy beaches. Has the potential to be much more common adjacent to coastal settlements.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Difficult to control with sprays. Injection required. Most control efforts directed to digging up whole plants and runners.

National eradication i.e. DOC, MAF

No

RPMS YES/NO refer to master document

—

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

DOC has controlled it in small areas at Matapouri in Northland

Any known impact on human health?

The sap of *A. americana* is considered to have medium to high harm potential, and it is also an irritant to the skin [WADAg 2005]. The medical literature describes numerous cases of severe contact dermatitis provoked by *A. americana* leading to skin eruptions, and many with systemic signs and symptoms.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

Because the plant seeds infrequently (c.once every 50 years followed by death), humans are the main dispersal agency. It is not highly invasive, i.e. not rapidly spreading, but its impact is visually dramatic in natural landscapes. Very dangerous on public beaches because of spines

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

People like it for its dramatic foliage and flowering, and also as a herbal.

Include in NPPA?

YES - medium priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Ageratina altissima

Common names

white snakeroot

Synonyms

Eupatorium rugosum

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

No, not in Vol IV

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Not naturalised.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Nil

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Reject (12)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Nil

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Nil

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

one listing for Eupatorium ruginosa - appears to be an invalid name but might be an error for E.rugosum

NZ Nursery register 2004/05 genus level only

—

NZ Nursery Register 1997/98 genus level only

—

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

92 suppliers (under Eupatorium rugosum) in RHS Plant Finder (13 x E.r, 1 x E.r 'Brunette' and 78 x E.r. 'chocolate'

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

n/a

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

—

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

—

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

Nil

Any known impact on human health?

White snakeroot is a highly toxic species responsible for livestock poisoning and also human poisoning in individuals that drink milk from animals that have fed on the plant. In the native range of the plant the relationship between the plant and poisoning is well understood and agricultural practices mean that poisoning is now rare. However the poisoning caused by this plant is serious and it would be a highly undesirable species

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

None

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

Not in NZ

Include in NPPA?

No - needs more information. Will be considered for next review round of Accord

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Further research, whether or not present in NZ, whether invasive.

Ailanthus altissima

Common names

Tree of heaven, Tree from hell, Lacquer tree, Copal tree, Varnish tree, Ailanthus, Rotting carion tree, Baked sewage tree, Kerosene tree

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, Widely naturalised in the North Island; Auckland, Masterton, western King Country to New Plymouth. Grows from both seed and cuttings.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Smothers native vegetation. Forms dense thickets, especially when cut or damaged. Roots can block drains. Main potential weed problem is on regenerating sites.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

reject (12)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

On the face of it, this tree might appear innocuous but still sufficient to be well within the reject category.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Sold in many nurseries

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

7

NZ Nursery register 2004/05 genus level only

6

NZ Nursery Register 1997/98 genus level only

8

NZ Nursery register 1991/92 genus level only

12

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Wide appeal as a cultivated tree because relatively easy to grow in a range of soils/climates.

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Its scattered naturalized distribution through a range of climate zones indicates potential to be very much more common.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Trees need to be treated individually with chemical so control highly intensive. Regrowth needs treatment too.

National eradication i.e. DOC, MAF

No

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

Nil

Any known impact on human health?

Sap is considered to have low to medium harm potential, and is also irritant to the skin [WA-DAg 2005]. Sap causes dermatitis in some people (Derrick & Darley 1994), as the substance aianthone inside the bark is a potential irritant.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

A potentially bad weed on regenerating forest that is nowhere near its potential distribution and so all new founder populations should be prevented.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

An attractive ornamental tree

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Akebia quinata

Common names

Akebia, chocolate vine, five-leaved akebia

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

YES

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

YES: *Flora IV: Nth Is - Whangaparapara (GBI), Te Araroa E Cape, near Dannevirke, Sth Is - near Havelock, Tai Tapu (Chch). Limited vegetative spread from original plantings. 10 voucher specimens of naturalised material in Auckland Herbarium - oldest 1972 (AK130593).*

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

Overseas: Naturalises easily in favourable climates. Naturalised in at least 19 US states, and has invaded SW England (GISD)

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

YES - **CONSERVATION VALUES:** *vigorous vine that can cover, outcompete and kill ground cover plants, seedlings and young trees. Growth prevents regeneration. Tolerant of a wide range of climatic and edaphic conditions (GISD). Shade tolerant.*

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

*Reject (14) NB Limited self-compatibility (hand-crossing or planting more than one vine recommended re cultivation). Deer resistant - not sure about palability to other mammals. Assume not toxic as fruit eaten - not sure about foliage. Other species in same genus (*A. trifoliata*) but didn't find any reference to it being invasive.*

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Score reduced because of low seed set without cross-pollination and long generative time (5 years). However, easily establishes vegetatively.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Sold in the garden industry. Flora IV: 'a rather uncommon plant in cultivation'

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

—

NZ Nursery register 2004/05 genus level only

68

NZ Nursery Register 1997/98 genus level only

64

NZ Nursery register 1991/92 genus level only

69

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)
Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Uncommon as an ornamental plant - and still reasonably limited in its naturalised distribution. Potential to far more widely naturalised - including colder parts of NZ (Dormant plants hardy to -20 degrees C - GISD Database).

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Physical Control (small infestations: cut vines repeatedly, dig up vines removing all roots); Chemical Control (apply herbicide, e.g. glyphosate or triclopyr). Biological Control: None available.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

NZ: DoC weed-led Overseas: naturalised in at least 16 states in the eastern US - from Michigan to Connecticut, south to Georgia.

Any known impact on human health?

No known harm.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

WRA score Reject (14). Not that commonly grown, which has probably contributed to its low level of naturalisation of to its potential distribution. Would recommend including this species on the NPPA - to increase its profile as a pest plant and prevent further deliberate sale and spread.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

none

Include in NPPA?

YES - medium priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Reasonable number of nurseries appear to offer this plant for sale. Scale of this industry would need to be determined - and an amnesty offered if substantial economic impact on particular growers.

Notes from TAG meeting

Nil

Albizia julibrissin

Common names

Silky acacia, silk tree, powderpuff tree, mimosa

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

YES

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

YES - Flora IV: collected as naturalised from the wild only once, from a flax swamp in SW Nelson, 1939. A number of more recent records of naturalisation now - with 10 voucher specimens of naturalised material in Auckland Herbarium - oldest 1998 (AK235045).

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

YES - CONSERVATION VALUES: A fast growing tree that establishes in open and disturbed sites, riparian areas, forest margins. Intolerant of shade, but tolerant of wind, salt and drought..

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Reject (22) NB Although A. julibrissin grows rapidly it is short lived because of its weak brittle wood and susceptibility to fusarium wilt (ISSG database). This is compensated for however, but its abundant seed production and long-lived soil seed bank.90% of seed potentially viable after 5 years (ISSG database).

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Quite a lot of information available about this species, as it is recognised as invasive in a number of countries. Did not find info re allelopathy, palatability or toxicity to humans or animals - both of which could effect score.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Sold in the garden industry. Flora IV: often cultivated. Desired for its appealing fragrance, showy flowers and low maintenance requirement. Common Auckland street tree (Auckland Herbarium records for AK 221773)

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

10

NZ Nursery register 2004/05 genus level only

16

NZ Nursery Register 1997/98 genus level only

—

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradients?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Common tree in cultivation. Naturalised spread still limited - however significant potential to increase its range considerably and become far more of an environmental weed.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Physical Control (hand pull young seedlings, ensuring entire root is removed); Chemical Control (cut stumps and paint with herbicide or drill and inject larger trees using glyphosate or triclopyr). Biological Control: None available.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

—

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

Overseas: *In the US naturalised from New Jersey to Louisiana and in California. Potentially able to naturalise across much of the temperate US - <http://hort.ifas.ufl.edu/trees/ALBJULA.pdf>*

Any known impact on human health?

Considered to be non-toxic to humans, but an alkaloid in the legumes may be toxic to livestock.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

WRA score high Reject (22). Widely distributed already as an ornamental species - but not widely recognised as invasive. Naturalisation seems to have increased over the last 15 years (greater numbers of herbarium records). High WRA score (reject (22)) - if species was not already present in NZ, would not be permitted entry as a new organism.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

none

Include in NPPA?

YES - medium priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Widely cultivated - both as an ornamental and street tree.

Notes from TAG meeting

Nil

Alocasia brisbanensis

Common names

elephant's ear, cunjevoi

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, Flora III. herbarium records since 1980 indicate it is now more common but it does not seem to be forming large populations.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Yes, if it becomes more widespread and with larger populations.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

reject 19

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)
a potential threat so it should be rejected.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.
Nil

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level
2 listings for A.macrorrhiza, a name sometimes used for this species

NZ Nursery register 2004/05 genus level only
41

NZ Nursery Register 1997/98 genus level only
12

NZ Nursery register 1991/92 genus level only
8

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant
Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)
Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?
could become more common and problematic environmental weed.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)
—

National eradication i.e. DOC, MAF
—

RPMS YES/NO refer to master document
—

NPPA YES/NO
No

Notifiable organism
No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.
Nil

Any known impact on human health?
Members of this genus are irritant on account of their content of needle-like calcium oxalate crystals (Burkill 1935). The leaves and uncooked roots are also irritant to bare skin and especially to the eyes.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)
seems to be little evidence for inclusion

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.
threats not shown in NZ

Include in NPPA?

No - needs more information. Will be considered for next review round of Accord

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Lack of information on distribution/abundance and threats. Threat on mainland NZ uncertain, previously formed large populations on Raoul Island when goats were present (unpalatable and forest canopy damaged and more open). Not considered as bad as other weeds on Raoul (based on a report from Carol West, I've never been to Raoul Island)

Notes from TAG meeting

More info required from proposer

Alternanthera philoxeroides

Common names

Alligator weed, alligatorweed, pigweed

Synonyms

Achyranthes philoxeroides, Alternanthera paludosa, Alternanthera philoxerina, Bucholzia philoxeroides, Telanthera philoxeroides

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

Yes, currently established in northern North Island, scattered south of Auckland, locally abundant in Auckland and Northland. Two South Island sites

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, well established and invasive throughout New Zealand range

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Weed of drains, fertile wetlands and natural water body margins, invading pasture and cropping land, urban areas. No seed set, but stem/root fragments dispersed by water movement, contaminated machinery, contaminated wetland plants and deliberate spread

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

18 (22 P&C) (Reject) AWRAM (63)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Recognised as a major weed through much of its introduced range.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.
Mostly spread by contaminated machinery/produce. However, deliberately spread by some ethnic communities as a vegetable, also seen in a South Island nursery (Christchurch). Distributed with wetland plants for effluent treatment (several regions)

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

—
NZ Nursery register 2004/05 genus level only

8

NZ Nursery Register 1997/98 genus level only

3

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradients?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Abundant from Auckland north, rapidly spreading in Waikato, establishing in Bay of Plenty. Potential habitat in lowland areas of both islands.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Difficult to control, both through lack of effective methods and its often aquatic habitat. Three biological control agents released, two established, but fail in terrestrial habitats and limited impact in aquatic habitats.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

Yes

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

Targeted for eradication at all sites south of Auckland.

Any known impact on human health?

This plant accumulates heavy metals and calcium oxalate which may be toxic to humans at certain levels

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

Some deliberate dispersal of this plant, also distribution as a contaminant of wetland plants. Difficult to control once established, prevention of deliberate movement and raise public awareness is key to preventing further spread.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

None

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Ammophila arenaria

Common names

marram grass

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, planted or self-established on dune areas in many parts of NZ. Also occasionally found inland.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Has replaced spinifex and pingao in many dune areas, but destruction not yet complete: there is still time!

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Doc weediness score 32, my wra 21 ('reject')

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Pretty well right.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.
Being promoted on website: <http://www.awhitu.org.nz/sandblow/sb1.html>. Plenty of comments on websites about how effective it can be as a sand binder. Readily available if anyone wants to spread it.

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

—

NZ Nursery register 2004/05 genus level only

—

NZ Nursery Register 1997/98 genus level only

—

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Plenty of information about its deliberate planting in the past to bind sand dunes. ARC says being distributed by forestry companies to stabilise dunes.

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Widespread but not quite everywhere, nor are all sites fully occupied.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Physical or biological control next to impossible. Selective or non-selective chemical feasible but requires ongoing effort.

National eradication i.e. DOC, MAF

no

RPMS YES/NO refer to master document

yes, Wellington only

NPPA YES/NO

yes

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

DoC weed-led in places, some site-led

Any known impact on human health?

No known harm.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

Displaces desirable natives like spinifex and pingao. Extremely invasive in sand dunes. Although very widely distributed, has not completely taken over all dunes and there is still hope. It would be silly if people were allowed to use it as a sand binder on blow-outs, new dunes, etc.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

It's so widespread and it is a brilliant sand binder. It's too late, and including it in the NPPA will have very little effect.

Include in NPPA?

YES - low priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Significant "value conflict" over this species eg debates over the appropriateness of sand dune stabilisation.

Notes from TAG meeting

Nil

Anredera cordifolia

Common names

Madeira vine, Mignonette vine

Synonyms

Boussingaultia cordifolia

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes. Herbarium specimens from wild plants at Allan Herbarium (CHR) and possibly other herbaria. Flora of NZ vol IV. Note that the populations are only spread vegetatively (via tubers that form on the roots and stem), there is no seed production reported from NZ (probably not seeding in Australia and possibly other countries where it is invasive). Tubers are an effective means of spread and tolerate drying, salt and burial (info reported from Australia that buried tubers survive up to 5 years).

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Primarily considered to be conservation weed, for example smothering forest edges and gaps. etc. yes - awaiting original declaration

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

reject (8)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

non-seeding weeds typically score low in models as there are often several characters listed in relation to seed production.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report. *no listings for sale in catalogues checked, search on Google showed no websites from NZ referring to this species as a desirable plant*

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

—

NZ Nursery register 2004/05 genus level only

—

NZ Nursery Register 1997/98 genus level only

—

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

I have never seen this species offered for sale or heard anyone talk about having planted it deliberately. It was considered a desirable ornamental in the past, but little evidence for it now. Possibly edible.

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Widespread although not a particularly common species. Common in Auckland and Northland. Present but uncommon in Wellington, Nelson, Marlborough and Canterbury

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Considered to be a particularly difficult to control species in both NZ and Australia because the tubers are not killed by herbicide even if the foliage is. Tubers fragment easily making hand removal difficult. Even in small accessible sites this species is hard to control. (comments based on first-hand experience with this species and working with people who have experience trying to control it). physical control is of little help because tubers break off and grow new plants so easily.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

Yes

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

Listed in 10 RPMSs, including 4 (Tasman, Marlborough, Wellington and Taranaki) with control/ eradication objectives (the remainder are surveillance etc). DoC weed-led in Nelson/ Marlborough Conservancy.

Any known impact on human health?

No known harm.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

Troublesome species with very limited ability to spread unless spread by people. Controlled with the aim of eradication in some regions. Its failure to produce seed limits its spread currently, uncertain why this is but it would be unwise to allow material of this species to be imported unless it was determined that a narrow genetic base was not the reason for the lack of seed production. While likelihood of sale is low, consequences are high as this species is still quite restricted and has limited means of spread without human dispersal.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

Not a priority species compared to some others since there is no evidence for this species being deliberately cultivated and spread at present.

Include in NPPA?

YES - medium priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Tubers are heavy and cause canopy collapse. The leaves and roots can be eaten.

Notes from TAG meeting

Nil

Araujia sericifera

Common names

Moth Plant, cruel plant, white bladder flower

Synonyms

Araujia hortorum

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

YES

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

YES - Flora IV: Nth Is - occasional throughout, esp Auckland area and coastal BoP, Sth Is, Blenheim (around gardens and waste places, plantations and other modified habitats). UO Declaration (DoC): Primarily in northern areas - naturalised Northland to Nelson/Marlborough. Able to invade almost any frost-free habitat - very wide environmental

tolerance (drought, damp, wind, salt, range of soils etc) - with frost the only limiting factor. 25 voucher specimens of naturalised material in Auckland Herbarium - oldest 1952 (AK28956).

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

YES - CONSERVATION VALUES: fast growing shade-tolerant vine that rapidly smothers and replaces native vegetation, invading intact or disturbed forest, forest margins, shrublands, mangroves, inshore and offshore islands and open habitats e.g. coastal areas. Can cause physical harm to trees through weight of vine or strangulation of stems. Can kill insects by trapping them within the flower - e.g. butterflies, moths - giving rise to one of its common names - 'cruel vine'. **NUISANCE:** Can also be a nuisance in gardens and amenity areas. **HEALTH:** Moth plant seeds are poisonous and the sap is a skin irritant.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Reject (27) NB: No info on possibility of allelopathic effects found. Also did not find any other species in this genus listed as invasive.

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Impacts and rapid spread of *Araujia sericifera* well documented - both here and overseas (e.g. Queensland). Fairly confident of robustness of assessment - apart from missing info as noted.

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report. Was sold in the garden industry. Brought to NZ as an ornamental plant in the 1880s (GW). Sold as an alternative food source for monarch butterflies (DoC UO declaration).

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

2

NZ Nursery register 2004/05 genus level only

—

NZ Nursery Register 1997/98 genus level only

14

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Has been promoted as an alternative food for monarch butterfly caterpillars - with people cultivating it for this purpose.

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Rapidly spreading in warm and coastal northern regions and northern SI. In the 20 years since Rhys Gardner et al. undertook Reserve Surveys of the Auckland Region (and warned of the potential of this plant) the spread has been significant and alarming. However, this invasive vine has reached nowhere near its potential distribution.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

CONTROL DIFFICULT - vines can resprout from stumps and bared areas reseed profusely. Very high seed production and seed viability. Seedlings shade tolerant. Physical Control (Pull out seedlings, dig out vines and leave in situ to die, remove any seed pods); Chemical Control (cut vines and coat stems with herbicide, or overall spray the plant).

Biological Control: None available at present although Landcare Research undertaking research to find one.

National eradication i.e. DOC, MAF

—
RPMS YES/NO refer to master document

—
NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

NZ: Auckland City Council controlling species on Waiheke Island. ARC controlling species on regional parkland, with a Waitakere Control Zone included in their RPMS to try and halt the spread of this species into the ranges. DoC controlling species in site-led programmes, e.g. on Hauraki Gulf Islands. NB Its wind borne seeds are able to spread long distances from infestations, e.g. 1.5km (Sullivan et al., 2005). Was a National Surveillance Plant Pest and included on the current NPPA list. Overseas: Also introduced to Australia, Israel, Sth Africa, United States - and recognised as a pest in some parts of these countries, e.g. noxious weed in California. Weed in Australia: Melbourne, Victoria, eastern states particularly SE Queensland and along the coast of NSW. (PIER database)

Any known impact on human health?

Sap can be irritant to humans, and medical literature reports cases of skin allergy following contact with latex.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

WRA score high Reject (27) . Potential still exists for people to want to propagate or retain this species as monarch butterfly food. Important to prevent its sale and spread to suitable regions it has not yet reached, and to maintain its profile as a highly invasive vine in areas where it has.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

none

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Already an NPPA species so no implications for nursery industry. Enforcement - Creates issues for nursery inspections and enforcement of NPPA where moth plant grows near wholesale and retain nursery outlets - as abundant wind-borne seed contaminates plant pots.

Notes from TAG meeting

Nil

Aristea ecklonii

Common names

Aristea

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

YES

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

YES - Flora III: Nth Is - North Auckland, Auckland City (Roadsides). First collection 1933 Helensville (CHR9064). ARC: spreading into forest areas via tracks and roadways in the Waitakere Ranges and Rodney District - forming dense monocultures. Thick swards have been noted under kauri forest. 25 voucher specimens of naturalised material in Auckland Herbarium - oldest 1959 (AK 71251).

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)
n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

Yes - CONSERVATION VALUES: invades forest margins, dunes and open areas (esp noted on clay banks), creating thick monocultures that outcompete ground cover/low growing species and reduce/halt regeneration. Very tolerant of semi-shade, low fertility environments. Spread via seed and vegetatively.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

Reject (17) NB: Unsure of whether it forms a soil seed bank. Also waiting on information re its 'Ease of Control'

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

*Previous WRA (Accept -3) did not recognise *Aristea* as an environmental weed.*

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.
Sold in the garden industry

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level
8

NZ Nursery register 2004/05 genus level only
7

NZ Nursery Register 1997/98 genus level only
7

NZ Nursery register 1991/92 genus level only
1

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Still available as a garden plant in all areas but the Auckland Region - desirable hardy perennial with bright blue flowers - that spreads to fill difficult sites.

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Ornamental use over a long period of time - only just beginning to be recognised as a serious weed of some natural areas. Potential for far greater spread in NZ.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Waiting on Control information - emailed ARC staff who undertake control in the Waitakere Ranges.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document
Yes

NPPA YES/NO
No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

NZ: ARC weed-led control in the Waitakere Ranges - also a Surveillance Plant in their RPMS. DoC site-led control on Great Barrier Island. Overseas: Invasive in Sri Lanka - introduced 1889
<http://www.biodiversityasia.org/books/alien/Chapter%205.pdf>

Any known impact on human health?

No known harm.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

WRA score Reject (17). This species is only beginning to be recognised as an environmental weed - with naturalisation into a range of primary and secondary communities. Currently included only in the ARC's RPMS (as a Surveillance Pest Plant) - so sale still permitted through the rest of NZ.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

none

Include in NPPA?

YES - medium priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Not huge implications for nursery industry - as plant not that widely sold or promoted. NB At the least should be an Unwanted Organism.

Notes from TAG meeting

Nil

Arum italicum

Common names

Italian arum

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Flora of NZ vol III

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

From ARC - may take over pasture in some agricultural situations, can displace natives and form large populations in shaded areas such as forest understorey, poisonous.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

reject (16)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Nil

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.
3 nurseries in Gaddum listed as selling this

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

3

NZ Nursery register 2004/05 genus level only

—

NZ Nursery Register 1997/98 genus level only

—

NZ Nursery register 1991/92 genus level only

—

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Referred to as a desirable species for the garden on the following website.

<http://www.bestgardening.com/bgc/plant/winter02.htm>

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Widespread and relatively common species in the North and South Islands. Certainly not yet everywhere it could be.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Considered difficult to control with herbicides (ARC, personal information)

National eradication i.e. DOC, MAF

No

RPMS YES/NO refer to master document

—

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

not widely controlled in my experience as it is mostly in areas that are not a priority for weed control, or there are worse weeds present. I used to receive public enquiries about controlling this species in garden situations.

Any known impact on human health?

All parts of the plant are poisonous. The sap of Arum spp. contains oxalate crystals, which can irritate the skin, mouth, tongue, and throat, resulting in throat swelling, breathing difficulties, burning pain, and stomach upset. Sap of these plants can cause a skin rash or irritation.

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

Weedy species, not easy to control, deliberate spread by people probably main source of longer distance dispersal

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

Not a priority species because it is relatively common and not particularly invasive, no evidence for this species being a particular priority for control (eg no RMPSs). Sale probably occurring but impact of deliberate sale probably relatively low because it is well established.

Include in NPPA?

No

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Arundo donax

Common names

Giant reed, arundo grass

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

Yes, currently established in northern North Island, scattered south of Auckland (Waikato, Bay of Plenty, Hawkes Bay, Manawatu), locally abundant in Auckland and Northland. Few sites in northern South Island and Westland (down to Haast)

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, well established in waste areas and riparian sites in northern areas

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

A riparian weed overseas, but mostly in waste areas in New Zealand. Potential displacement of native riparian vegetation, obstruction to access. No seed set, limited ability to spread outside of clonal stand expansion.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

2 (4 M. Mulvaney) (Further evaluate)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

Nil

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Variegated plants present and still distributed. Not commonly sold (only one nursery listed - specialist bamboo nursery)

Gardum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

1

NZ Nursery register 2004/05 genus level only

1

NZ Nursery Register 1997/98 genus level only

2

NZ Nursery register 1991/92 genus level only

1

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant
Very tall (to 10 m), arching stems, limited appeal.

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)
Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?
Abundant from Auckland north. Potential distribution probably limited to warm temperate areas of New Zealand.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)
Difficult to control, either physical removal or foliar/cut-stump treatment with herbicide.

National eradication i.e. DOC, MAF

—

RPMS YES/NO refer to master document

—

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

ARC RPMS listed as Surveillance (banned from sale and distribution) and Community Initiative (local control)

Any known impact on human health?

It can cause contact dermatitis, and the medical literature reports for instance serious of cases in a number of musicians caused by the use of musical instruments made of this plant .

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)
Some deliberate dispersal, potential threat to riparian zones in warmer areas. Many wasteland sites possibly originate from garden dumpings. NPPA status could raise profile of this with public.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.
Used to produce musical reeds, also used for industrial cellulose production elsewhere. Variegated plant apparently does set seed, noted in gardens around Auckland

Include in NPPA?

YES - low priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

This includes the variegated form with similar properties

Asparagus asparagoides

Common names

Smilax, Bridal creeper

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, widely established, particularly in northern forested parts of North Island. Scattered elsewhere in the North Island. Present in Nelson Marlborough region but not present further south.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

A smothering vine capable of dominating scrub, open clearings, and forest understories of native vegetation

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

reject (17)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

High score reflects wide environmental tolerances, prolific seed production, smothering growth habit

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

On NPPA so not so widely sold as previously

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

—

NZ Nursery register 2004/05 genus level only

20

NZ Nursery Register 1997/98 genus level only

28

NZ Nursery register 1991/92 genus level only

35

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradients?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Scattered at a provincial scale. Within provinces, common locally. Much wider potential particularly in Northern NZ.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Relatively easily controlled with chemicals but often difficult to detect outlying plants before they have fruited. Grows amongst native species. Has large underground tubers difficult to kill.

National eradication i.e. DOC, MAF

No

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

Yes

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

Controlled by DOC in some regions

Any known impact on human health?

There are numerous reports of allergy to Asparagus plants in the medical literature. Some authors consider these plants as relevant sources of occupational allergy, where severe disease (anaphylaxis or asthma) is common. The berries and uncooked shoots in particular can be toxic. Contact dermatitis is often described

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

A very troublesome weed with the potential for much further spread that is often grown as an ornamental

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

No strong reasons, for there are plenty of substitutes for horticulture.

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Asparagus densiflorus

Common names

bushy asparagus, fern asparagus, emerald feather, Sprengeri fern, Sprenger's asparagus, foxtail fern, possum tail

Synonyms

A.aethiopicus

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

First wild collection in 1981. Uncommon, but established in Auckland and offshore islands, Coromandel, Wellington. Very occasional in Nelson and West coast.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)
n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.
A smothering vine capable of dominating scrub, open clearings, and forest understories of native vegetation

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.
reject (17)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)
High score reflects wide environmental tolerances, prolific seed production, smothering growth habit

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.
Still widely sold

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level
3

NZ Nursery register 2004/05 genus level only
20

NZ Nursery Register 1997/98 genus level only
28

NZ Nursery register 1991/92 genus level only
35

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant
feathery foliage has appeal in cultivation

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)
Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?
Only at the very start of its invasion in N.Z., but range of sites indicate fairly wide environmental tolerances and wide potential spread, especially coastal.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)
Unknown. But it has a large tuber which would suggest control may be difficult.

National eradication i.e. DOC, MAF
—

RPMS YES/NO refer to master document
Yes (ARA)

NPPA YES/NO
No

Notifiable organism
No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.
Nil

Any known impact on human health?

There are numerous reports of allergy to Asparagus plants in the medical literature. Some authors consider these plants as relevant sources of occupational allergy, where severe disease (anaphylaxis or asthma) is common. The berries and uncooked shoots in particular can be toxic. Contact dermatitis is often described

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

A relatively new weed that shows all the characteristics of others in the genus and opportunity should be taken to control it now.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

Only that folks like it.

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Cultivars present - uncertain of the stability and invasiveness (eg cv "Meyeri")

Notes from TAG meeting

Check info - exclude meyeri.

Asparagus scandens

Common names

Climbing asparagus

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Yes, widely established, particularly in northern forested parts of North Island. Present in Nelson Marlborough region but not common further south.

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

A smothering vine capable of dominating scrub, open clearings, and forest understories of native vegetation. Strangles native plant stems.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

reject (17)

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

High score reflects wide environmental tolerances, prolific seed production, smothering growth habit

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

On NPPA so not so widely sold as previously

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

–

NZ Nursery register 2004/05 genus level only

20

NZ Nursery Register 1997/98 genus level only

28

NZ Nursery register 1991/92 genus level only

35

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

Scattered at a provincial scale. Within provinces, common locally. Much wider potential particularly in Northern NZ.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Relatively easily controlled with chemicals but often difficult to detect outlying plants before they have fruited. Grows amongst native species. Has large underground tubers difficult to kill.

National eradication i.e. DOC, MAF

–

RPMS YES/NO refer to master document

Yes

NPPA YES/NO

Yes

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

DoC weed-led

Any known impact on human health?

There are numerous reports of allergy to Asparagus plants in the medical literature. Some authors consider these plants as relevant sources of occupational allergy, where severe disease (anaphylaxis or asthma) is common. The berries and uncooked shoots in particular can be toxic. Contact dermatitis is often described

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

A very troublesome weed with the potential for much further spread that is often grown as an ornamental

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

Quite a popular species because of its feathery foliage. But no strong reasons, for there are plenty of substitutes for horticulture.

Include in NPPA?

YES - high priority

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

Nil

Notes from TAG meeting

Nil

Asparagus spp. (excluding officinalis)

Common names

Wild asparagus

Synonyms

Nil

Is the plant species present in NZ? (if no, species will not be included in NPPA, however it can be recommended for UO status if technically justified)

yes

Has the plant species formed self-sustaining populations in New Zealand? (Discussed in section 2.1 of the evaluation criteria report. State where/ evidence).

Some have, others not

If no to previous question, what potential does the species have to establish self sustaining populations in NZ? (i.e. overseas range, eg species is currently established in similar climates to NZ eg SE Australia, Hawaii uplands)

n/a

Does the plant have the potential to cause adverse impacts? (Discussed in section 2.2 of the evaluation criteria report. Brief comments on the types of impacts, noting what is affected (eg conservation values, human health). Brief comment on degree of impact. Summarise information provided with species proposals.

The genus as whole can be considered to have weed potential even if they have not naturalised here yet. Smothering vines capable of dominating scrub, open clearings, and forest understories of native vegetation. Strangles native plant stems.

WRA result and score, for example "reject (18)". NOTE - "reject" means that the model result is a recommendation to not allow the importation of this species if it was not present in NZ. "Accept" means that the model result is a recommendation to allow the importation of this species if it was not present in NZ.

n/a because of genus level

Comments on WRA score (Discussed in section 3.1 of the evaluation criteria report. Note that there is no system developed specifically for the purpose of evaluating NPPA species. A high ranking as a weed in the WRA system used is indicative only)

*All species except the edible *A. officinalis* would receive a reject score because of their weedy relatives and features in common.*

Objective evidence it has been or is deliberately distributed in NZ. Discussed in section 3.2.1 of the evaluation criteria report.

Several are widely sold

Gaddum "The Plant Finder" (trade version 2001) - listing to species and cultivar level

12

NZ Nursery register 2004/05 genus level only

20

NZ Nursery Register 1997/98 genus level only

28

NZ Nursery register 1991/92 genus level only

35

Other supporting information on its deliberate distribution or potential for deliberate distribution in NZ (i.e. garage sale, overseas, personal observations). Include comments on appeal as a cultivated plant

Nil

Known vs potential distribution in NZ (abundance in New Zealand) (Discussed in section 3.2.2 of the evaluation criteria report.)

Gradings?: Widespread, common, Nth Island, Sth Island, Regions? Habitats?

All species still only in cultivation or at their very early stage of naturalisation have potential to be widely distributed in at least northern New Zealand.

Ease of control of the plant as a species (Discussed in section 3.2.3 of the evaluation criteria report. What physical/ chemical/ biological methods are available for killing the plant? How susceptible is it to control methods? How practical are the control methods in the environments the plant occurs or could occur in?)

Relatively easily controlled with chemicals but often difficult to detect outlying plants before they have fruited. Grows amongst native species. Has large underground tubers difficult to kill.

National eradication i.e. DOC, MAF

No

RPMS YES/NO refer to master document

—

NPPA YES/NO

No

Notifiable organism

No

Other supporting information, for example DOC weed-led, control in parks and reserves etc, can be included if available.

Nil

Any known impact on human health?

There are numerous reports of allergy to Asparagus plants in the medical literature. Some authors consider these plants as relevant sources of occupational allergy, where severe disease (anaphylaxis or asthma) is common. The berries and uncooked shoots in particular can be toxic. Contact dermatitis is often described

Reasons for inclusion in NPPA. A summary of how inclusion in the NPPA supports management objectives for the species (see section 3.2 of the evaluation criteria report)

The history of the genus in N.Z. suggests they are all potentially very troublesome weeds and as several are often grown as an ornamentals there is the opportunity to prevent them establishing.

Reasons against inclusion in NPPA. Reasons why this species might be excluded from the NPPA. If there are regulatory impacts the TAG members are aware of then these can be noted here, but TAG members are not required to include these in their decision as these will be addressed by the steering group.

Several are used in florist displays but there are substitutes.

Include in NPPA?

No

If answering D or E, please note the reason for the uncertainty here. Any other comments here.

A.setaceus (commonly cultivated here) is recorded as invasive in Australia. I know little about other species in cultivation (apart from officinalis) here so uncertain what effect it would have banning the whole genus (excluding A.officinalis)

Notes from TAG meeting

Do not include spp.

Bartlettina sordida

Common names

Bartlettina