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Pond apple



[<https://www.business.qld.gov.au/industry/agriculture/species/declared-pests/weeds/pond-apple/Pond-apple-flower.jpg>]

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Native to West Africa and tropical parts of the Americas, pond apple is a softwood tree that grows in fresh and brackish swamplands and other wet areas. In America, pond apple fruit is sometimes sold commercially and its wood and roots are used as a substitute for cork floats.

Pond apple was introduced to Australia in 1912 as grafting stock for commercial custard apple crops. It can invade wet areas, where it forms dense stands and may replace native ecosystems. It is prevalent in Queensland's Wet Tropics and has been found in smaller infestations elsewhere in Queensland and near Darwin in the Northern Territory.

Scientific name

Annona glabra

Other names

Cherimoya

Description

- Semi-deciduous tree generally 3-6m tall but can grow up to 15m.
- Stems are softwood with thin, grey bark bearing prominent lenticels (pores that allow gas exchange).
- Leaves are alternate, 7-12cm long, light to dark green, with prominent midrib. When crushed, emit smell similar to green apples.
- Flowers are cream to pale yellow, red inner-base, 3 leathery outer petals, 3 smaller inner petals, 2-3cm in diameter, short-lived.
- Fruit is green, spherical, about 5-15cm in diameter, similar to smooth-skinned custard apple.
- Each fruit contains 100-200 seeds similar to pumpkin seeds in size and shape.

Habitat

- Requires moist soil with regular inundations of fresh to brackish water.
- Prefers creeks, riverbanks, flood plains, wetlands, rainforest areas and agricultural drainage systems.

Distribution in Queensland

- Covers around 2,200ha of Queensland, with main infestation in Wet Tropics bioregion between Cardwell and Cooktown.
- Also found in small and/or isolated infestations in Brisbane, Nambour, Mackay, Townsville, Ingham, east coast of Cape York, Torres Strait Islands.

Life cycle

- Flowers and produces fruit when at least 2 years old.
- Main flowering period in Wet Tropics is December-February, with fruit formation January-March.
- Sporadic flowering and fruiting can also occur at other times of year.
- Fruit and seed can float and remain viable for many months in fresh to saline water; germination can occur in fresh or brackish situations.
- Seeds are relatively short-lived. In suitable conditions, seed banks can be rapidly depleted through mass germinations within 6 months of fruit fall.

Impacts

Environmental

- Invades fresh, brackish and saltwater areas.
- Forms dense stands in swamp areas; thickets capable of replacing ecosystems.
- Colonises undisturbed areas.
- Has greatest effect on melaleuca wetlands, *Heritiera littoralis* mangrove communities, riparian areas, drainage lines, coastal dunes and islands.

How it is spread

- Generally spread by water.
- Seed also spread by feral pigs, wallabies, cassowaries and other fruit-eating animals

Prevention

- Find out how farmers can prevent weed spread. [<https://www.business.qld.gov.au/industry/agriculture/land-management/health-pests-weeds-diseases/weeds-and-diseases/preventing-weed-spread-advice-for-farmers>]
- Find out how gardeners and outdoor enthusiasts can prevent weed spread [<https://www.qld.gov.au/environment/plants-animals/plants/weeds-prevention/>].

Control

Physical Control

- Hand-pull.
- Use fire if sufficient fuel is available. (Dense pond apple infestations often don't contain sufficient fuel). Burn entire circumference of plant to kill effectively. Depending on its intensity, fire can destroy seeds on ground but seeds in cracks or on moist soil can remain viable.
- Control seedlings that germinate following fire.

Mechanical Control

- Chain-pull or dozer-push but only on flat country in areas free of sensitive vegetation, where machines can manoeuvre easily, and where erosion risk is low.
- Ensure that roots of uprooted trees are not in contact with soil, or plants may resprout.

Herbicide Control

Stem injection method

- Recommended for aquatic areas as it minimises herbicide run-off and off-target impacts.
- However, stem injection is not generally suited to larger trees due to the number of cuts/holes required. It is also difficult to control in multi-stemmed trees where each separate stem requires treatment.

Axe cut method

- Make horizontal cuts into sapwood around circumference of stem, as low as possible.
- While still in the cut, lean the axe out to make a downward angled pocket in which herbicide is injected. Use a double row of cuts, with the second row under the spaces created by the first row, for maximum kill rate.

Drill and fill method

- Drill holes at downward angle, 5cm apart around circumference, with a power drill. Immediately inject herbicide into holes.

Cut stump treatment

- Suitable for use on large trees and multi-stemmed plants.
- Cut stem through horizontally, as close to ground as possible, and treat cut surface immediately with herbicide.

Basal bark treatment

- Spray or paint herbicide and diesel mix around stem circumference, from ground level up to 50cm.
- Do not use in aquatic situations for both environmental and effectiveness reasons.

Foliar spray

- Foliar herbicides are useful for dense monocultures of young plants up to 1m tall where there is no risk of damaging native vegetation.

See the Pond apple fact sheet (PDF, 699KB) [https://www.daf.qld.gov.au/__data/assets/pdf_file/0015/76002/IPA-Pond-Apple-PP58.pdf] for herbicide control and application rates.

Biological Control

- No known biological control agents.

Declaration details

- This is a declared Class 2 species under the *Land Protection (Pest and Stock Route Management) Act 2002*.
- Taking for commercial use, introduction, keeping, releasing or supplying (including supplying things containing reproductive material of this pest) is prohibited without a permit issued by Biosecurity Queensland.
- Landholders are required to control declared pests on their properties.

More information

- Contact the Customer Service Centre [<http://www.daf.qld.gov.au/about-us/contact-us>]
- Pond apple fact sheet (PDF, 699KB) [https://www.daf.qld.gov.au/__data/assets/pdf_file/0015/76002/IPA-Pond-Apple-PP58.pdf]
- Pond apple National Strategic Plan (PDF, 382KB) [https://www.daf.qld.gov.au/__data/assets/pdf_file/0004/56812/IPA-Pond-Apple-Nspl-an.pdf]
- Weeds of National Significance management guide on pond apple [<http://www.environment.gov.au/biodiversity/invasive/weeds/publications/guidelines/wons/a-glabra.html>]
- Weeds Australia [<http://www.weeds.org.au>]

Contact us

Call your local government office, or Biosecurity Queensland on 13 25 23.

Contact: General enquiries 13 QGOV (13 74 68)

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