

## *Syngonium podophyllum*

**System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Arales	Araceae

**Common name** African evergreen (English), selkesingketieu (Pohnpeian), American evergreen (English), arrowhead vine (English), nephthytis (English), goose-foot plant (English)

**Synonym** *Syngonium podophyllum* , var. *albolineatum*  
*Syngonium angustatum*

**Similar species** *Syngonium angustatum*

**Summary** *Syngonium podophyllum* is an ornamental vine native to Central and parts of South America that has established invasive populations in the United States, South Africa, Singapore, the Caribbean, and on several Pacific islands. It may establish dense populations that displace native plants and grow over native trees.



[view this species on IUCN Red List](#)

## Species Description

*Syngonium podophyllum* has alternate, three-lobed, arrow-shaped leaves that vary in size, shape and color with age and cultivar variety. Juvenile leaves are simple, entire, and sagittate with silvery-white veins or centre, bounded by green. Mature leaves are compound, dark green, and segmented into three leaflets, developing with age to 5-9 leaflets. The central leaflet is the longest. Leaflets are generally dark green above and pale green below and leaves and stem contain a milky sap. It has four to eleven flower spikes (spadixes) which develop in leaf axils, each comprising 6-9 green tubular flowers, enclosed in a creamy-white to green modified leaf (a spathe), similar to that of an arum 'lily'. Its fruits are red to reddish-orange with many black or brown seeds within a soft, grayish pulp (DEEDI, 2010; Morgan *et al.*, 2004). However, *S. podophyllum* rarely fruits even within its native range (PIER, 2005).

## Lifecycle Stages

Seedlings have one to several simple, sagittate leaves while mature plants have compound leaves that are highly variable (Morgan *et al.*, 2004).

## Uses

*Syngonium podophyllum* is an ornamental vine that is cultivated in many tropical countries and widely exported (Brunel, 2009; PIER, 2009). As with many plants in the horticultural trade, *S. podophyllum* goes by numerous common names including American evergreen, fivefingers, and nephthitis. Commonly available cultivars include "white butterfly" and "pink allusion" Morgan *et al.*, 2004). At least 10 different cultivars of *S. podophyllum* have been developed by the nursery industry (DEEDI, 2010).

## Habitat Description

*Syngonium podophyllum* requires moist, well-drained, fertile soils and prefers shady conditions. Within its native range in Central America it is most frequent in tropical forests but also occurs in premontane wet forest. It ranges in elevations from sea level to 1000 m but is more abundant below 750 m and especially abundant between 100 and 500 m. *S. podophyllum* is known to grow in sandy and loam soils and within a pH range of 5.5-6.5 (PIER, 2005; DEEDI, 2010).

## Reproduction

*Syngonium podophyllum* reproduces almost entirely vegetatively. It is able to reproduce from a single node (Space & Flynn, 2002). It may rarely produce viable seeds in its native range. Many voucher specimens are "sterile" and lack flowers even from its native range (PIER, 2005). However in Singapore and probably in Peninsular Malaysia, many *S. podophyllum* have been found flowering and fruiting (Chong et al., 2010). This suggests that there is an effective pollinator present in Singapore.

## Nutrition

*Syngonium podophyllum* requires moist, well-drained, fertile soils and prefers shady conditions (PIER, 2009).

## General Impacts

*Syngonium podophyllum* can establish dense populations that displace surrounding vegetation (Ferriter et al., 2001; Morgan & Overholt, 2005). It has the ability to spread in the deep shade of intact forests, forming a dense mat on the forest floor as well as climbing trees (Space & Flynn, 2001). The stems by which it climbs are thick and fleshy giving them a weight much heavier than most native vines, thus potentially making trees top heavy and more susceptible to toppling in a strong wind (Morgan et al., 2004). It is an abundant FLEPPC category I invasive in Florida where it is known to displace native plants including rare ferns (Possley, 2004; FLEPPC, 2009). In several areas of St. Lucie and Indian River counties of Florida, *S. podophyllum* has created a thick ground cover that is largely impenetrable to other plants, and its extensive root system makes the plant extremely difficult to remove (Morgan et al., 2004). Similarly, it has completely dominated the groundcover layer along one area of the Mount 'Alava trail in the National Park of American Samoa, seemingly to the exclusion of all other species and has a tendency to climb and cover the trunks of most of the mature trees in the area (Space & Flynn, 2002). *S. podophyllum* may cause mild to severe poisoning if ingested (IFAS, 2009).

## Management Info

**Preventative measures:** A [Risk assessment of \*Syngonium podophyllum\*](#) by the Pacific Island Ecosystems at Risk (PIER) yielded a high risk score of 15 'reject the plant for import (Australia) or species likely to be of high risk (Pacific)'. (PIER, 2005). It is considered a potential invasive and sleeper weed by the World Wildlife Federation (WWF, 2006).

**Physical:** *S. podophyllum* may be removed by hand pulling or mechanical removal. It is difficult to eradicate and may reproduce from small root and plant fragments. All vegetation must be removed to achieve eradication and multiple treatments are usually required (Space & Flynn, 2002; Space & Flynn 2001). Hand pulling is typically only effective on isolated plants and small infestations. Discarded plant materials should be bagged and properly disposed (DEEDI, 2010). Gloves should be worn when removing *S. podophyllum*, as sap can be irritating to sensitive individuals (Morgan et al., 2004).

**Chemical:** Several herbicides are known to control *Syngonium podophyllum* including glyphosate, 2,4-D, fluroxypyr, and Metsulfuron-methyl. Glyphosate should be mixed at 360 g/L and diluted 1 L/100 L of water. 2,4-D should be 500 g/L and 4 mL/ 1L of water. Fluroxypyr should be 200 g/L and 0.5-1 L/ 100 L of water. Metsulfuron-methyl should be 600 g/kg and 10 g / 100 L of water plus a wetting agent. All may be applied by a spot spray (DEEDI, 2010).

**Integrated management:** PIER recommends hand pulling combined with spraying resprouts with 3% Roundup (glyphosate) or applying 10% Garlon 4 (triclopyr) to stems. Foliar application of 3% Garlon 4 in water with a surfactant is also effective. Multiple treatments are required (PIER, 2009).

## Pathway

*Syngonium podophyllum* is cultivated in tropical countries and widely exported (Brunel, 2009). Most of its introductions are believed the result of its planting as an ornamental or escape from cultivation.

**Principal source:** [Pacific Islands Ecosystems at Risk \(PIER\), 2005. Risk Assessment \*Syngonium podophyllum\*. Schott, Araceae.](#)

[Morgan, E. C.; Overholt, W.A. and Langeland, K.A. 2004. Wildland Weeds: Arrowhead Vine, \*Syngonium podophyllum\*. Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida.](#)  
[Center for Aquatic and Invasive Plants, University of Florida \(IFAS\), 2009. Nephthytis, arrowhead vine \*Syngonium podophyllum\*.](#)

**Compiler:** National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

**Review:** Hugh T.W. Tan, Department of Biological Sciences, National University of Singapore.

**Publication date:** 2010-08-10

## ALIEN RANGE

- |  |                                     |
|--|-------------------------------------|
| <b>[1]</b> AMERICAN SAMOA                  | <b>[2]</b> AUSTRALIA                |
| <b>[1]</b> BAHAMAS                         | <b>[1]</b> CHRISTMAS ISLAND         |
| <b>[1]</b> ECUADOR                         | <b>[1]</b> FRENCH POLYNESIA         |
| <b>[1]</b> MICRONESIA, FEDERATED STATES OF | <b>[1]</b> NEW CALEDONIA            |
| <b>[1]</b> NIUE                            | <b>[1]</b> NORTHERN MARIANA ISLANDS |
| <b>[1]</b> PUERTO RICO                     | <b>[1]</b> SAINT LUCIA              |
| <b>[1]</b> SINGAPORE                       | <b>[1]</b> SOLOMON ISLANDS          |
| <b>[1]</b> SOUTH AFRICA                    | <b>[1]</b> TONGA                    |
| <b>[2]</b> UNITED STATES                   | <b>[1]</b> VIRGIN ISLANDS, U.S.     |

## BIBLIOGRAPHY

28 references found for *Syngonium podophyllum*

### Management information

Brunel, Sarah, 2009. OEPP/EPPO, Bulletin OEPP/EPPO Bulletin 39, 201♦213

[Center for Aquatic and Invasive Plants, University of Florida \(IFAS\), 2009. Nephthytis, arrowhead vine \*Syngonium podophyllum\*](#)

**Summary:** Available from: <http://plants.ifas.ufl.edu/node/440> [Accessed 2 December 2009]

[Department of Employment, Economic Development and Innovation \(DEEDI\) State of Queensland, 2010. PR10♦4750 Fact Sheet Pest Plant \*Arrowhead vine Syngonium podophyllum\*](#)

**Summary:** Available from: [http://www.dpi.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Arrowhead-Vine-PP135.pdf](http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Arrowhead-Vine-PP135.pdf) [Accessed 2 December 2009]

[Early Detection and Distribution Mapping System \(EDDMapS\), 2009. American evergreen \*Syngonium podophyllum\* Schott](#)

**Summary:** Available from: <http://www.eddmaps.org/southeast/distribution/uscounty.cfm?sub=6503> [Accessed 2 December 2009]

[Ferriter, Amy; Mike Bodle; Carole Goodyear; Dan Thayer; David Jones; Ken Langeland and Bob Doren, 2001. Chapter 14: Exotic Species in the Everglades. 2001 Everglades Consolidated Report Chapter 14: Exotic Species](#)

**Summary:** Available from:

[https://my.sfwmd.gov/portal/page/portal/pg\\_grp\\_sfwmd\\_sfer/portlet\\_prevreport/consolidated\\_01/chapter%2014/ch14.pdf](https://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/consolidated_01/chapter%2014/ch14.pdf) [Accessed 2 December 2009]

[Florida s Exotic Pest Plant Council \(EPPC\), 1993. Florida s Most Invasive Species: Page 6, The PALMETTO, Fall 1993](#)

**Summary:** Available from:

[http://www.fnps.org/palmetto/floridas\\_most\\_invasive\\_species\\_vol\\_13\\_no\\_3\\_fall\\_1993.pdf?PHPSESSID=8bd93e565c406d3bdc14b9cddb2b3e6](http://www.fnps.org/palmetto/floridas_most_invasive_species_vol_13_no_3_fall_1993.pdf?PHPSESSID=8bd93e565c406d3bdc14b9cddb2b3e6) [Accessed 2 December 2009]

[Florida s Exotic Pest Plant Council \(FLEPPC\), 2009. Florida s Exotic Pest Plant Council s 2009 List of Invasive Plant Species](#)

**Summary:** Available from: [http://www.brevardcounty.us/environmental\\_management/documents/InvasiveSpeciesPlants.pdf](http://www.brevardcounty.us/environmental_management/documents/InvasiveSpeciesPlants.pdf) [Accessed 2 December 2009]

Foxcroft, L., 2002. Kruger National Park Invasive Alien Species Section, Policy Document Proposed Amendments to the Policy: The control of alien plants within personnel villages, other staff residences and restcamps of the Kruger National Park. First draft policy: September 1999, approved KNP management committee November 1999 Amended version: Submitted July 2002

**Summary:** Available from:

[http://www.parks-sa.co.za/parks/kruger/conservation/scientific/ff/alien\\_biota/policies/KNP%20village%20policy%20draft\\_2\\_July%202002.pdf](http://www.parks-sa.co.za/parks/kruger/conservation/scientific/ff/alien_biota/policies/KNP%20village%20policy%20draft_2_July%202002.pdf) [Accessed 2 December 2009]

Foxcroft, Llewellyn C.; David M. Richardson & John R. U. Wilson, 2008. Ornamental Plants as Invasive Aliens: Problems and Solutions in Kruger National Park, South Africa. *Environmental Management* (2008) 41:32-51

*Pacific Islands Ecosystems at Risk (PIER), 2005. Risk Assessment Syngonium podophyllum Schott, Araceae*

**Summary:** Available from: [http://www.hear.org/Pier/wra/pacific/syngonium\\_podophyllum\\_htmlwra.htm](http://www.hear.org/Pier/wra/pacific/syngonium_podophyllum_htmlwra.htm) [Accessed 2 December 2009]

*Pacific Islands Ecosystems at Risk (PIER), 2009. Syngonium podophyllum Schott, Araceae*

**Summary:** Available from: [http://www.hear.org/Pier/species/syngonium\\_podophyllum.htm](http://www.hear.org/Pier/species/syngonium_podophyllum.htm) [Accessed 2 December 2009]

The Bahamas Environment, Science and Technology (BEST) Commission, 2003. The National Invasive Species Strategy for The Bahamas. BEST, Nassau, The Bahamas, 34 pp.

**Summary:** Available from: <http://www.bahamaschm.org/Webdocs/Invasive%20Species%20Document%20for%20CHM.pdf> [Accessed 2 December 2009]

Werren, Garry, 2001. Environmental Weeds of the Wet Tropics Bioregion: Risk Assessment and Priority Ranking. Report prepared for the Wet Tropics Management Authority, Cairns. Rainforest CRC January 2001

**Summary:** Available from: <http://www.wet Tropics.gov.au/res/downloads/Weeds.pdf> [Accessed 2 December 2009]

WWF, 2006. National list of naturalised invasive and potentially invasive garden plants Last Update: 05/04/2006, Version: 1.2

**Summary:** Available from: <http://www.wwf.org.au/publications/ListInvasivePlants/> [Accessed 2 December 2009]

## General information

Acevedo-Rodriguez, Pedro & Franklin Axelrod, 1999. Annotated Checklist for the Tracheophytes of Río Abajo Forest Reserve, Puerto Rico. *Caribbean Journal of Science*, Vol. 35, No. 3-4, 265-285, 1999

**Summary:** Available from: [http://academic.uprm.edu/publications/cjs/Vol35b/35\\_265-285.pdf](http://academic.uprm.edu/publications/cjs/Vol35b/35_265-285.pdf) [Accessed 2 December 2009]

Chong, K. Y.; P. T. Ang and H. T. W. Tan, 2010. Identity and Spread of an Exotic *Syngonium* Species in Singapore. *Nature in Singapore* 2010 3: 1-5

**Summary:** Available from: <http://rmbn.nus.edu.sg/nis/bulletin2010/2010nis1-5.pdf> [Accessed 2 December 2009]

*Global Compendium of Weeds (GCW), 2007. Syngonium podophyllum (Araceae)*

**Summary:** Available from: [http://www.hear.org/gcw/species/syngonium\\_podophyllum/](http://www.hear.org/gcw/species/syngonium_podophyllum/) [Accessed 2 December 2009]

*Integrated Taxonomic Information System (ITIS), 2010. Syngonium podophyllum Schott*

**Summary:** Available from: [http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=42553](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=42553) [Accessed 2 December 2009]

Kairo, Moses; Bibi Ali; Oliver Cheesman; Karen Haysom and Sean Murphy, 2003. Invasive Species Threats in the Caribbean Region. Report to The Nature Conservancy.

Morgan, E. C.; Overholt, W.A. and Langeland, K.A. 2004. Wildland Weeds: Arrowhead Vince, *Syngonium podophyllum*. *Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida*. <http://edis.ifas.ufl.edu>

**Summary:** Available from: <http://edis.ifas.ufl.edu/pdf/IN/IN53000.pdf> [Accessed 24 May 2010]

Morgan, Eric C. and William A. Overholt, 2005. New Records of Invasive Exotic Plant Species in St. Lucie County, Florida. *Castanea*, Vol. 70, No. 1 (Mar., 2005), pp. 59-62

**Summary:** Available from: [Accessed 2 December 2009]

Possley, Jennifer., 2004. Exotic Species Threaten Rare Ferns in Miami-Dade County. *Wildland Weeds*

**Summary:** Available from: <http://www.se-eppc.org/wildlandweeds/pdf/Summer2004-Possley-pp12-15.pdf> [Accessed 2 December 2009]

Space, James C and Tim Flynn, 2001. Report to the Kingdom of Tonga on Invasive Plant Species of Environmental Concern U.S.D.A. Forest Service Pacific Southwest Research Station Institute of Pacific Islands Forestry Honolulu, Hawaii, USA 18 October 2001

**Summary:** Available from: <http://lyris.sprep.org/att/IRC/eCOPIES/Countries/Tonga/12.pdf> [Accessed 2 December 2009]

Space, James C and Tim Flynn, 2002. Observations on invasive plant species in American Samoa

Space, James C.; Barbara Waterhouse; Julie S. Denslow and Duane Nelson, 2000. Invasive Plant Species on Rota, Commonwealth of the Northern Mariana Islands. U.S.D.A. Forest Service Pacific Southwest Research Station Institute of Pacific Islands Forestry Honolulu, Hawaii, USA

**Summary:** Available from: [http://sprep.org/att/IRC/eCOPIES/INVASIVE%20SPECIES/CMI\\_rota.pdf](http://sprep.org/att/IRC/eCOPIES/INVASIVE%20SPECIES/CMI_rota.pdf) [Accessed 2 December 2009]

Starr, Kim and Forest Starr, 2008. Plants of Hawaii. *Araceae Syngonium podophyllum Nephthytis Images*

**Summary:** Images

Available from: <http://www.hear.org/starr/plants/images/species/?q=syngonium+podophyllum> [Accessed 2 December 2009]

USDA, ARS, 2006. Taxon: *Syngonium podophyllum* Schott. National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland.

**Summary:** Available from: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?36053> [Accessed 2 December 2009]

USDA, NRCS. 2010. *Syngonium podophyllum* Schott American evergreen The PLANTS Database (<http://plants.usda.gov>, 3 March 2010). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

**Summary:** Available from: <http://www.plants.usda.gov/java/profile?symbol=SYPO> [Accessed 2 December 2009]