

# Chapter 5

## Further information

### Legal requirements to control sagittaria

The table below provides an overview of the declaration status and management requirements of sagittaria throughout Australia (as at July 2023).

State/Territory	Legislation	Declaration	Actions
ACT	<i>Pest Plants and Animals Act 2005</i>	Declared Schedule 1	Notifiable, must be suppressed, prohibited.
NSW	<i>Biosecurity Act 2015</i>	Declared	All of NSW: Must not be imported into the state, sold, bartered, exchanged or offered for sale. General biosecurity duty to ensure a biosecurity risk is prevented, eliminated or minimised, so far as is reasonably practicable. Regional strategic weed management priority varies throughout the state. Refer to Weed Wise for further detail on regional requirements: <a href="https://weeds.dpi.nsw.gov.au/Weeds/Sagittaria#biosecurity">weeds.dpi.nsw.gov.au/Weeds/Sagittaria#biosecurity</a>
NT	<i>Weeds Management Act 2001</i>	Declared Class A, Class C	Sagittaria is declared a Class A (to be eradicated) and Class C (not to be introduced) weed in the Northern Territory.
Qld	<i>Biosecurity Act 2014</i>	Declared Category 3 – restricted	Sagittaria must not be given away, sold or released into the environment. The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants under their control. Local government biosecurity plans detail requirements at the local level.
SA	<i>Landscape South Australia Act 2019</i>	Declared Category 1	Sagittaria’s entry to the state, movement or transport on a public road by itself or as a contaminant, or sale by itself or as a contaminant are prohibited. Notification of the presence of plants is necessary to ensure any incursions are promptly destroyed. Landowners are required to destroy any sagittaria plants growing on their properties.
Tas	<i>Weed Management Act 1999</i>	Declared	The importation, sale and distribution of sagittaria are prohibited in Tasmania. The legal responsibilities of landholders and other stakeholders in dealing with sagittaria are laid out in the Sagittaria Weed Management Plan. Visit <a href="https://nre.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-index/sagittaria">nre.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-index/sagittaria</a> for more information.
Vic	<i>Catchment and Land Protections Act 1994</i>	Declared Schedule 2	Depending on region: regionally prohibited; regionally controlled. Refer to <a href="https://agriculture.vic.gov.au/___data/assets/pdf_file/0003/538149/Victorian-noxious-weeds-list-by-scientific-name-20-July-2017.pdf">agriculture.vic.gov.au/___data/assets/pdf_file/0003/538149/Victorian-noxious-weeds-list-by-scientific-name-20-July-2017.pdf</a> for more information.
WA	<i>Biosecurity and Agricultural Management Act 2007</i>	Declared C3 – Management Whole of state	Introduction of the plant or its seeds into this area is prohibited. Supply or advertising supply of this pest into this area is prohibited. The infested area must be managed in a way that alleviates the impact, reduces the number or distribution and prevents or contains the spread of the declared pest in this area.

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## Weed control contacts

	Department	Phone	Email	Website
<b>National</b>	Department of Agriculture, Fisheries and Forestry	1800 900 090	agriculture.gov.au/about/contact/online-enquiry	weeds.org.au/
<b>ACT</b>	Environment, Planning and Sustainable Development Directorate – Environment	13 22 81	ACTBiosecurity@act.gov.au	environment.act.gov.au/parks-conservation/plants-and-animals/biosecurity/invasive-plants
<b>NSW</b>	Department of Primary Industries	1800 680 244	weeds@dpi.nsw.gov.au	dpi.nsw.gov.au/biosecurity/weeds
<b>NT</b>	Department of Environment, Parks and Water Security	08 8999 4567	weedinfo@nt.gov.au	nt.gov.au/environment/weeds
<b>Qld</b>	Department of Agriculture and Fisheries	13 25 23	info@daf.qld.gov.au	daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/plants-weeds
<b>SA</b>	Department of Primary Industries and Regions	08 8303 9620	invasivespecies@sa.gov.au	pir.sa.gov.au/biosecurity/weeds
<b>Tas</b>	Department of Natural Resources and Environment Tasmania	1300 368 550	Biosecurity.Tasmania@nre.tas.gov.au	nre.tas.gov.au/invasive-species/weeds
<b>Vic</b>	Agriculture Victoria	136 186	Refer to: agriculture.vic.gov.au/about/contact-us	agriculture.vic.gov.au/biosecurity/weeds/weeds-information
<b>WA</b>	Department of Primary Industries and Regional Development	1300 374 731	enquiries@dpird.wa.gov.au	agric.wa.gov.au/pests-weeds-diseases/weeds

## Herbicides and the law

In addition to the regulatory role of the Australian Pesticides and Veterinary Medicines Authority, herbicide use is regulated by state and territory legislation; see below for contact details.

	Department	Phone	Email	Website
<b>National</b>	Australian Pesticides and Veterinary Medicines Authority (APVMA)	02 6770 2300	enquiries@apvma.gov.au	apvma.gov.au/
<b>ACT</b>	Environment, Planning and Sustainable Development Directorate – Environment	13 22 81	environment.protection@act.gov.au	ablis.business.gov.au
<b>NSW</b>	NSW Environment Protection Authority (EPA)	131 555	info@epa.nsw.gov.au	epa.nsw.gov.au/your-environment/pesticides/pesticides-nsw-overview/regulating-pesticides-nsw
<b>NT</b>	Department of Industry, Tourism and Trade	08 8999 2344	chemicals@nt.gov.au	nt.gov.au/industry/agriculture/farm-management/using-chemicals-responsibly
<b>Qld</b>	Business Queensland	13 74 68	qld.gov.au/contact-us	business.qld.gov.au/industries/farms-fishing-forestry/agriculture/sustainable/chemical
<b>SA</b>	Department of Primary Industries and Regions	1300 799 684	PIRSA.RuralChemicals@sa.gov.au	pir.sa.gov.au/biosecurity/rural_chemicals
<b>Tas</b>	Department of Natural Resources and Environment Tasmania	03 6777 2133	Stuart.Bowman@nre.tas.gov.au	nre.tas.gov.au/agriculture/agvet-chemicals
<b>Vic</b>	Department of Energy, Environment and Climate Action	136 186	agriculture.vic.gov.au/about/contact-us	agriculture.vic.gov.au/farm-management/chemicals
<b>WA</b>	Department of Primary Industries and Regional Development	1300 374 731	enquiries@dpird.wa.gov.au	agric.wa.gov.au/pests-weeds-diseases/control-methods/chemicals

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## Safety and welfare

### Chemical training

A number of providers offer accredited training in the use of chemicals for weed control. To find a provider near you visit the following website and search for the code AHCPMG301 under the 'Nationally recognised training components' search function. Follow the link to find Registered Training Organisations (RTOs) approved to deliver this training package – [training.gov.au/Search](http://training.gov.au/Search).

Further information on safety and welfare policy, standards, guidelines and legislation can be accessed by contacting the following government departments and volunteer organisations.

Agency	Website	Contact
National	<a href="http://safeworkaustralia.gov.au/">safeworkaustralia.gov.au/</a>	<a href="mailto:info@swa.gov.au">info@swa.gov.au</a>
Volunteering Australia	<a href="http://volunteeringaustralia.org/wp-content/files_mf/1377053059VAManagersrunningtherisk.pdf">volunteeringaustralia.org/wp-content/files_mf/1377053059VAManagersrunningtherisk.pdf</a>	03 9820 4100 <a href="mailto:volaus@volunteeringaustralia.org">volaus@volunteeringaustralia.org</a>
ACT	<a href="http://worksafe.act.gov.au/Home">worksafe.act.gov.au/Home</a>	13 22 81 <a href="mailto:worksafe@worksafe.act.gov.au">worksafe@worksafe.act.gov.au</a>
NSW	<a href="http://safework.nsw.gov.au/">safework.nsw.gov.au/</a>	13 10 50
NT	<a href="http://worksafe.nt.gov.au/home">worksafe.nt.gov.au/home</a>	1800 019 111 <a href="mailto:ntworksafe@nt.gov.au">ntworksafe@nt.gov.au</a>
Qld	<a href="http://worksafe.qld.gov.au/">worksafe.qld.gov.au/</a>	1300 362 128 <a href="http://worksafe.qld.gov.au/contact/general-enquiries">worksafe.qld.gov.au/contact/general-enquiries</a>
SA	<a href="http://safework.sa.gov.au/">safework.sa.gov.au/</a>	1300 365 255 <a href="mailto:help.safework@sa.gov.au">help.safework@sa.gov.au</a>
TAS	<a href="http://worksafe.tas.gov.au/">worksafe.tas.gov.au/</a>	1300 366 322 <a href="mailto:wstinfo@justice.tas.gov.au">wstinfo@justice.tas.gov.au</a>
VIC	<a href="http://worksafe.vic.gov.au/">worksafe.vic.gov.au/</a>	1800 136 089 <a href="http://myworksafe.vic.gov.au/s/customer-enquiry">myworksafe.vic.gov.au/s/customer-enquiry</a>
WA	<a href="http://commerce.wa.gov.au/WorkSafe/">commerce.wa.gov.au/WorkSafe/</a>	1300 307 877 <a href="mailto:wscallcentre@dmirs.wa.gov.au">wscallcentre@dmirs.wa.gov.au</a>

## Risk assessment of herbicide use around water

The table below details key messages and considerations for understanding and assessing the risk of herbicide use around water (adapted from Ainsworth and Bowcher, 2005).

Key message	Considerations	Check
It is the user's responsibility to read the herbicide label and comply with all of it	<ul style="list-style-type: none"> <li>▪ The rate and application methods that are listed</li> <li>▪ Most labels have prohibitions and restrictions (e.g. 'Do Not' statements)</li> </ul>	Does the proposed use comply with the label?
Seek additional information before commencing use	<ul style="list-style-type: none"> <li>▪ Is use restricted or prohibited by applicable regulations?</li> <li>▪ Assess the risk of adverse herbicide effects on the local environment</li> <li>▪ Obtain one or more expert opinions about the likely outcomes of use (e.g. weeds officer, agronomist, herbicide manufacturers, or Landcare, Bushcare or natural resource management staff)</li> </ul>	Have you obtained advice on regulations, risk of adverse impacts and likely outcomes?
Understand the possible effects of the herbicide on waterways and how the herbicide may make its way into the specific waterway(s) associated with the proposed use	<ul style="list-style-type: none"> <li>▪ Amount of herbicide applied</li> <li>▪ Application method and equipment</li> <li>▪ Mobility of the herbicide in soil and water</li> <li>▪ Persistence of the herbicide</li> <li>▪ Toxicity of the herbicide to flora and fauna</li> </ul>	Have you worked through the procedure outlined in the guidelines?
Formally consider the risk of the herbicide to the non-target organisms at the site	<ul style="list-style-type: none"> <li>▪ Undertake a risk assessment for each non-target organism at the site against each herbicide under consideration; OR</li> <li>▪ Estimate the likely herbicide concentration in the water if it were to be used at the site and compare this to Toxicant Default Guideline Value (formerly Trigger Value) for the herbicide under consideration               <ul style="list-style-type: none"> <li>• In 2021 glyphosate's guideline value for use in freshwater was revised down from 0.37 mg/L to 0.18 mg/L</li> <li>• The latest values, along with guidance on using the guideline values for aquatic ecosystems, can be found here: <a href="http://www.waterquality.gov.au/anz-guidelines/guideline-values/default/water-quality-toxicants/search">www.waterquality.gov.au/anz-guidelines/guideline-values/default/water-quality-toxicants/search</a></li> </ul> </li> </ul>	Is there a low risk of non-target damage according to the procedures outlined in the guidelines?

## Sagittaria Fruit-feeding Weevil Biocontrol Release Form

### Landowner/Manager Details

Name: .....

Organisation: .....

Postal address: .....

Phone/mobile: .....

Email: .....

**Release Site Details**      **Site Code** (if applicable): .....

Target weed (circle):    *Sagittaria platyphylla* (sagittaria)    *S. montevidensis* ssp. *calycina* (arrowhead)

Infestation size (hectares or length × width [m]): .....

Location address: .....

Waterbody type (i.e., irrigation channel, creek, drain): .....

Approximate water depth (m): .....

Latitude (South): ..... Longitude (East): .....

### Biocontrol Agent Details

Stage released (tick):    Adults                       Eggs                       Larvae

Number released: .....

Date released: .....

Released by (if not landowner/manager): .....

**Please record your biocontrol agent release on the Australian Biocontrol Hub:**

<https://biocollect.ala.org.au/biocontrolhub>

**Or download the Biocontrol Hub app to your smart phone**

**Or post/email your form to:**

Raelene Kwong, Senior Research Scientist

Agriculture Victoria

AgriBio, 5 Ring Road, Bundoora, VIC 3083

Email: [rae.kwong@agriculture.vic.gov.au](mailto:rae.kwong@agriculture.vic.gov.au)



## Sagittaria Fruit-feeding Weevil Biocontrol Monitoring Form

### Landowner/Manager Details

Name: ..... Organisation: .....

Contact: ..... Date/time: .....

### Release Site Details

Site code (from Agent Release Form): .....

Target weed (circle): *Sagittaria platyphylla* (sagittaria) *S. montevidensis* ssp. *calycina* (arrowhead)

Infestation size (hectares or length × width [m]): .....

Approximate water depth (m): .....

Location address: .....

Waterbody type: .....

Latitude: ..... Longitude: .....

Weather conditions: .....

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## Monitoring methodology

1. Locate the original release site, which will be marked by a stake or 'release sign'.
2. Place a 0.5 × 0.5 m quadrat at the marked point. Within each quadrat, take the following measurements:
  - a. Presence of adults on flowers (yes/no).
  - b. Count the total number of emergent plants.
  - c. Count the total number of flowering stems bearing fruit.
  - d. For each fruiting stem, count the total number of fruits.
  - e. For each stem, record the number of these fruits attacked by weevil larvae.
  - f. Only do up to 10 stems per quadrat.
3. Repeat this process with the next quadrat thrown roughly 2 m away.
4. Repeat until you have assessed eight quadrats for the site. If possible, do four quadrats downstream and four upstream from the release point.

If you find evidence of weevils beyond the final quadrats, look further away and note the approximate distance from the release point that the weevils have been found.



Raelene Kwong

*Sagittaria* fruit damaged by weevil larvae.



Raelene Kwong

Monitoring *sagittaria* biocontrol release site using a PVC quadrat.

## Example of how to fill out the monitoring data sheet

Quadrat number (1–8)	Total number of plants per quadrat	Total number of flowering stems per quadrat	Stem number (1–10)	Number of fruit per stem	Number of damaged fruit per stem	Adults present in quadrat Y/N
1	15	3	1	9	3	Y
1			2	6	5	
2	19	7	1	9	9	Y
2			2	6	6	



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## References

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