



Sea sPurge Remote Area TeamS: summary of work performed 2006/07 to 2025/26

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SPRATS: aims and objectives

WildCare¹ SPRATS (Sea sPurge Remote Area TeamS), is a self-managing volunteer group working in partnership with the Parks and Wildlife Service (PWS) in coastal areas of Tasmania. Since 2007, SPRATS has functionally eradicated the ecosystem-transforming weeds sea spurge (*Euphorbia paralias*), marram grass (*Ammophila arenaria*) and blackberry (*Rubus fruticosus* aggregate) from the Tasmanian Wilderness World Heritage Area and the coastal parts of the adjacent Southwest Conservation Area (Figure 1). Over the past few years SPRATS has expanded its work area and objectives to include invasive weeds at Macquarie Heads and to assist the CSIRO and PWS with the testing and roll-out of the sea spurge biocontrol agent elsewhere in Tasmania.

The west and south coasts of Tasmania are one of the most important areas in Australia for conservation. Other than the target weeds, the region has a low weed incidence and is a major stronghold for a number of shore-nesting and feeding birds, including the hooded plover, pied oystercatcher and sooty oystercatcher along with the orange-bellied parrot during its migration. These bird species are at risk due to weeds transforming the coastline's geomorphic structure, making it less suitable for breeding and feeding.

At its inception, SPRATS detailed its aims and objectives in a ten-year plan² covering 2007/08 to 2016/17. The aims and objectives in this first plan were met and the group is working to complete its second ten-year plan³ covering the period 2017/18 to 2026/27. These plans detail SPRATS objectives, strategies and methods for weed control.

A feature of SPRATS' work is the analysis of geo-referenced data along with targeted research into the most effective treatment methods. This data is used to demonstrate work effectiveness, plan work programs and provide reports to the PWS, funding bodies and other volunteer groups. At the start of each weeding season, detailed maps and programmed GPS units are prepared showing weeding sites, campsites and walking routes, allowing groups to safely and efficiently perform their objectives. SPRATS teams also collect information for third parties including shore birds, kingfishers, Tasmanian devils, cultural heritage values, whale strandings and how this remote, high conservation significance region is accessed and used by other groups.

SPRATS' results have been recognised by:

- being selected in case study demonstrating the use of volunteers for environmental management⁴;
- highly commended, CoastCare Award, 2021 Tasmanian LandCare Awards;
- finalist in the 2017 Tasmanian Community Achievement Awards;
- winning the 2016 Invasive Species Council's Froggatt Award for control and eradication⁵;
- selected as a case study showing the effective use of volunteers for environmental work⁶;
- winning the community group category of the 2009 Tasmanian Environmental awards;
- finalist in the 2009 and 2010 Banksia Environmental awards - community group category.

SPRATS has been at the forefront of *adventure volunteering*, which links high value environmental work with wilderness recreation.

In November 2024, SPRATS ran its second successful coastal weed management workshop. The workshop covered the values at risk, current research and reviewed the work currently being performed by volunteer groups managing coastal weeds in Tasmania.

¹ WildCare Incorporated. Volunteer arm of the Tasmanian Parks and Wildlife Service. See: <http://wildcaretas.org.au/>.

² Controlling coastal weeds in Southwest Tasmania: a 10-year plan to protect coastal environments of Southwest Tasmania from ecosystem-threatening weeds. SPRATS 2007.

³ SPRATS: review of 2006/07 to 2016/17, plan for 2017/18 to 2026/27. SPRATS 2018.

⁴ Threatened Species Strategy for Tasmania. Consultation draft. March 2026. Department of Natural Resources and Environment, Tasmania.

⁵ See: <https://invasives.org.au/projects/froggatt-awards/>

⁶ A Collective Effort 2010–12: A report on progress of the Natural Resource Management Strategy for Southern Tasmania 2010–15. Natural Resource Management South, Hobart, Tasmania.

SPRATS main deployment: January 2026

Weeding location

In the 850 km of remote area coastline between Macquarie Harbour and Cockle Creek, ~425 km is susceptible to sea spurge and/or marram grass invasion. The coastline has been divided into eight sectors to organise the SPRATS' weeding program (Figure 1, Table 1).

Table 1. Weeding sectors between Macquarie Harbour and Cockle Creek.

Sector	Location	Weeding methodology	Length of susceptible coast (km)
1	Macquarie Harbour	kayak	160
2	Cape Sorell to Gorge Beach	walking	30
3	Gorge Beach to Birthday Bay	walking	15
4	Birthday Bay to Endeavour Beach	walking	35
5	Endeavour Beach to the Mainwaring River	walking	20
6	Mainwaring River to Bramble Cove, including Port Davey	walking	105
7	SW Cape circuit, including Hannant Inlet	walking	25
8	South Coast between Cox Bight and Cockle Creek	walking	35
Approximate length of coastline surveyed and weeded by SPRATS each season			425

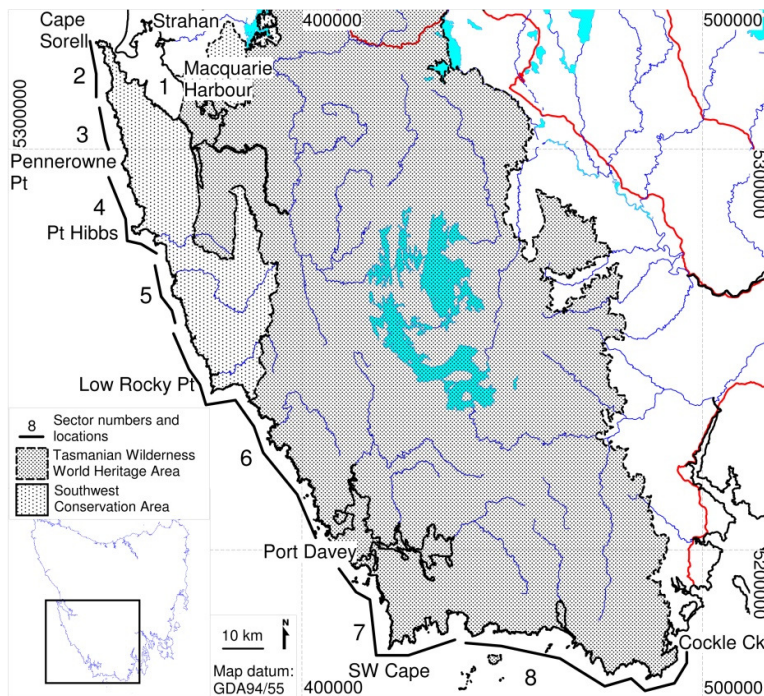


Figure 1. Weeding sectors between Macquarie Harbour and Cockle Creek.

Prior to SPRATS commencing its official weeding program, the region was surveyed and estimated to contain 11.1 million sea spurge plants and 124 000 marram grass clumps. By 2025/26 these weeds had been removed from 875 sites, made up of 693 sea spurge, 139 marram grass, four blackberry, three Great Mullein and two slender thistle⁷.

The SPRATS' strategy in the first three years was to concentrate weeding in the ~220 km of susceptible coastline between Pennerowne Point and Cockle Creek. Once the sea spurge infestations in this area had been knocked-down, SPRATS weeding expanded northwards to include the very large infestations in the 45 km of coast between Pennerowne Point and Cape Sorell. SPRATS then expanded its work area to include ~160 km of coastline in Macquarie Harbour and ~50 km of shoreline in Bathurst Harbour.

In the 2025/26 season, SPRATS surveyed and weeded sectors 2, 3, 4, 5 (part), 6, 7 and 8.

⁷ Note that the number of recorded sites has been rationalised to combine sites which were within 25 m of each other and had not had recorded weeds in the past five years.

SPRATS budget and people involved

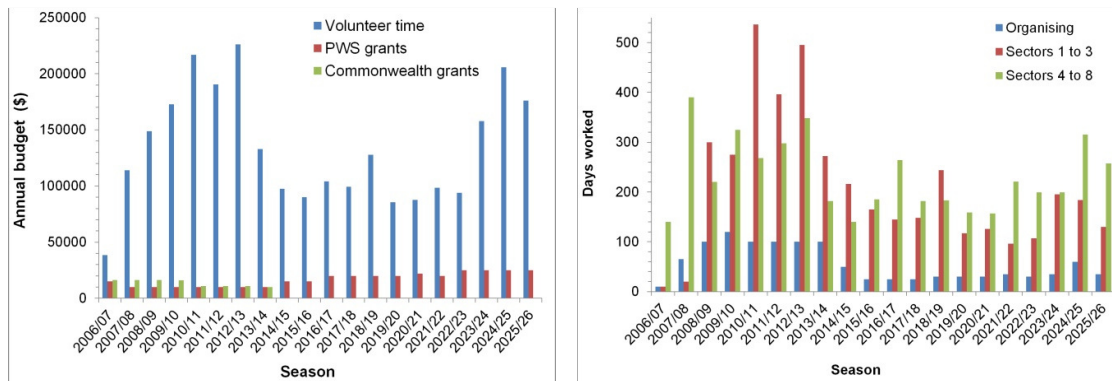
The work done by SPRATS requires high level skills in remote-area weed management. This work has been performed by SPRATS volunteers, resulting in highly positive land management outcomes and significant cost savings for the management of the TWWHA. For an input of ~\$445 000 of grant money (>75% provided by the PWS), ~\$2 665 500 of volunteer labour has been performed, a return of ~6:1 (Figure 2a)⁸.

The number of people and work days performed is summarised in Table 2 and Figure 2b.

Table 2. Number of people involved and work days performed between 2006/07 and 2025/26.

Season	Planning		Sectors 1 to 3		Sectors 4 to 8		Totals	
	Days	People	Days	People	Days	People	Days	
2006/07	10	2	10	10	10	140	12	160
2007/08	65	10	20	18	18	390	27	475
2008/09	100	29	300	17	220	45	620	
2009/10	120	23	275	21	325	43	720	
2010/11	100	42	536	18	268	59	904	
2011/12	100	33	396	25	298	55	794	
2012/13	100	45	495	29	348	72	943	
2013/14	100	22	272	12	182	34	554	
2014/15	50	23	216	12	140	35	406	
2015/16	25	15	165	15	185	32	375	
2016/17	25	15	145	15	264	32	436	
2017/18	25	14	164	12	168	26	357	
2018/19	30	21	244	10	183	32	457	
2019/20	30	9	117	9	159	19	306	
2020/21	30	14	126	9	157	23	313	
2021/22	35	8	96	16	221	26	352	
2022/23	30	11	107	14	199	26	336	
2023/24	35	15	195	15	199	31	429	
2024/25	60	16	184	19	315	39	559	
2025/26	35	10	130	19	257	37	422	
Totals	1105		4177		4632		9914	

Note: some participants did multiple sectors, communication was provided by off-site personnel.



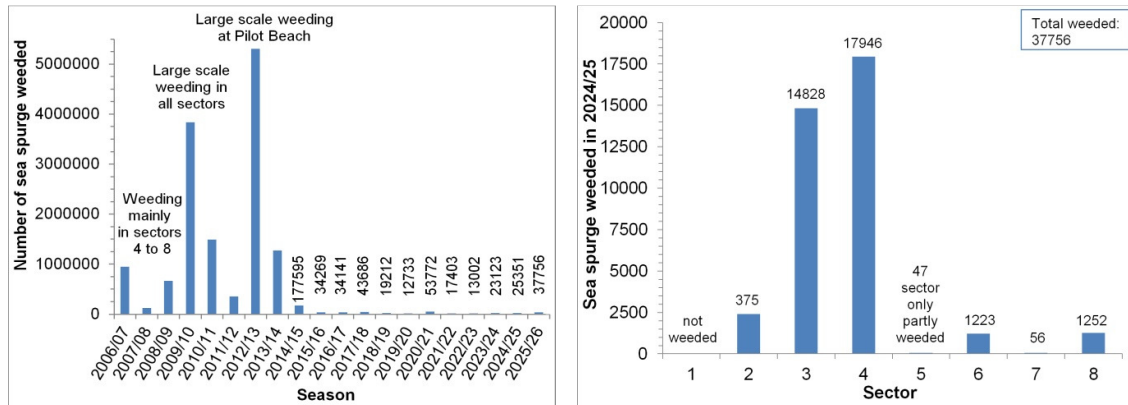
a) budget
b) days worked
Figure 2. SPRATS annual budget and days worked: 2006/07 to 2025/26.

Sea spurge weeding

During the 2025/26 season, a total of ~37 750 sea spurge were hand weeded (Figure 3a and 3b), representing a ~99.7% reduction on the pre-SPRATS number of plants. Eight new sea spurge sites recorded. Since starting the SPRATS program, ~14 485 052 sea spurge have been weeded (Table 3). This means that SPRATS has reduced the number of sea

⁸ Between 2006/07 and 2016/17 volunteer labour was costed at \$30 per hour, which increased to \$35 per hour in 2017/18, \$46 in 2023/24 and \$52.19 in 2025/26. Each day's work is assumed to be 8 hours. Note that Volunteering Tasmania recommends that when volunteering involves overnight stays, work days should be costed on a 24-hour basis, which would increase volunteer input to about \$7 996 492 and the ratio of volunteer to grant money to ~18.0:1.

surge to non-critical ecological and geomorphological levels, but annual weeding is required to maintain this situation. If the program were to stop for just three or four years, the weed numbers would exponentially escalate at much greater control cost.



a) Sea spurge weeded 2006/07 to 2025/26

b) Sea spurge weeded in 2025/26

Figure 3. Sea spurge weeding.

Table 3. Number of sea spurge plants weeded between 2006/07 and 2025/26.

	Sector								
	1	2	3	4	5	6	7	8	total
2006/07	*	*	32460	852122	56	61151	8	710	946507
2007/08	*	*	*** 100	96693	53	21335	3559	1502	123242
2008/09	*	11494	330141	319294	40	1579	371	7	662926
2009/10	*	626432	2271611	937773	27	156	97	125	3836221
2010/11	*	137508	1297281	53107	13	1421	312	11	1489653
2011/12	*	84294	242920	18180	2	644	9510	17	355567
2012/13	*	5197777	95076	6584	84	761	4645	12	5304939
2013/14	*	1232604	34452	4997	*	1223	509	** 0	1273785
2014/15	*	153777	20637	2788	*	293	97	3	177595
2015/16	*	24106	8380	1500	** 0	276	7	** 0	34269
2016/17	11	28160	4220	1256	9	485	*	*	34141
2017/18	38	37148	3830	2292	*	283	17	78	43686
2018/19	12	7386	9082	1444	**0	1253	*	32	19209
2019/20	*	1094	8370	2787	*	641	*	13	12905
2020/21	28	4406	12809	11740	45	117	24621	6	53772
2021/22	*	1164	4656	6816	*	168	4385	214	17403
2022/23	4	3470	2737	3781	** 24	2001	876	109	13002
2023/24	*	3479	11134	651	*** 3782	3758	319	*	23123
2024/25	0	12346	3053	1263	523	5529	119	2518	25351
2025/26	*	2404	14828	17946	*** 47	1223	56	1252	37756
Total	93	7569049	4407677	2343014	899	104297	49508	6609	14485052

Note: * = sector not weeded; ** = only previously recorded sites weeded; *** = sector partly weeded.

With the generally warmer and drier weather that has prevailed since weeding started in 2006/07, sea spurge growth rates have increased in western and southwestern Tasmania. This has resulted in decreased times for plants to reach maturity and set seed. In the first decade of SPRATS weeding, very few sea spurge plants reached maturity within their first year which is in contrast to the east and north coasts of Tasmania where it is common for sea spurge to reach maturity in four to six months and produce large seed crops by nine to 12 months of age. Over the past five years it has become common to find sea spurge plants that are about one year old, fully mature, multi-stemmed and are carrying large amounts of seed. Provided SPRATS removes these plants in January, it is probable that these plants will not have dropped seed. However, if these plants are missed for just one season, then the large amount of seed produced will replenish soil seed banks, requiring follow up control over several seasons.

Overall, more than 90% of weeded sea spurge occurred in eight sites where maturing or mature plants had been missed in the previous and/or recent seasons. In these sites, ~84%

of the sea spurge weeded were seedlings. In response, the way sites are mapped has been upgraded with site grid references being adjusted to reflect the current active weed location and a greater emphasis being placed on teams searching out of the way places.

It is also highly probable that there are increasing numbers of new sea spurge seeds washing in from large infestations to the north of the SPRATS work area. This trend is not restricted to the SPRATS work area, and is particularly apparent on the east coast of Tasmania. It is a major driver of the accelerated release of the sea spurge biocontrol in northern Tasmania and mainland of Australia (see below).



Figure 4. Mikayla weeding sea spurge in Sector 3, January 2026. Photo credit: Andy Macqueen.

Marram grass weeding

During the 2025/26 season, a total of ~760 marram grass clumps were weeded, mostly by spraying with monocot-specific herbicide. This represents a >99% reduction on the pre-SPRATS number of plants. In total, over 19 seasons, SPRATS has weeded about 151 250 marram grass clumps, with one new marram grass site being recorded in 2025/26. Over 95% of the remaining marram grass is in sectors 2 and 3. All of the remaining marram grass sites are very low density requiring more time to be spent searching than treating the remaining plants at Endeavour Beach, Discovery Beach, Dunes Beach and Pilot Beach for the next few years.

Other weeds

No blackberries have been recorded at any of the four mapped sites over the past ten years, indicating that these infestations have been eradicated.

The Great Mullein infestation near the Shank in Sector 6 was intensely searched and weeded with about 147 plants removed from four sites.

Two thistle infestations (either Slender thistle or Winged slender thistle, *Carduus* sp.) were weeded in Sector 8 with about 1500 plants removed. These sites will require follow-up.

The number of spear thistles in the SPRATS work area is of concern. Over the past couple of decades these thistles have been observed to go through a boom-bust cycle and are at moderate numbers in some locations. This weed will be monitored in future seasons.

However, other than in small areas, comprehensive weeding of spear thistles is beyond the capacity of SPRATS teams.

Pilot Beach weeding

At the northern end of Sector 2, there are invasive weed infestations at Macquarie Heads, Pilot Beach and Cape Sorell which were on the verge of becoming too difficult to control. While invasive weeds have been known in the area for decades, their recent rapid spread has probably been facilitated by longer growing seasons and the advent of bumble bee pollinators. These concerns, plus the listing of foxglove as a declared weed under Tasmania's Biosecurity Act 2019 and Biosecurity Regulations 2022, which require landowners and managers to take action to eradicate foxglove, prompted SPRATS to develop a new project to eradicate invasive weeds in the vicinity of Pilot Beach.

A project plan for this weeding has been developed, *Weed eradication at Pilot Beach 2025-29*, which outlines the requirement for two weeding trips per year (November and January). In order to assist planning and weed removal, the locality has been divided into four zones. The main weeds targeted are:

Foxglove (*Digitalis purpurea*), Spear thistle (*Cirsium vulgare*), Hebe (*Veronica elliptica*), Arum (*Zantedeschia aethiopica*), Agapanthus (*Agapanthus praecox*), Radiata pine (*Pinus radiata*), Blue butterfly bush/African rosemary (*Psoralea pinnata*), Canary broom (*Genista monspesulana*), Montbretia (*Crocsmiix crocosmiiflora*) and Ox-eye/Shasta daisy (*Leucantherum* spp.).

Significant progress has been made. All invasive weed infestations have been mapped and all seed producing Foxglove, Blue butterfly bush and Canary broom plants knocked down. Control work has commenced on all other species. Intensive weeding will be required for many years to remove all invasive weeds and their seed banks.



Figure 5. Foxglove, Arum lily and Agapanthus prior to weeding at Macquarie Heads.

Sea spurge biocontrol

A sea spurge biocontrol was approved for use in 2021⁹. The fungus, *Venturia paralias* is highly specific to sea spurge and weakly infective to one other introduced weedy spurge. All native Australian *Euphorbia* spp. are in a different sub-genus to sea spurge, meaning that the biocontrol agent is very low risk of infecting native species.

The biocontrol infects sea spurge through leaf lesions which then spread to the stem, girdling it and causing stem collapse. The lesions typically form 11 or 12 days after infection¹⁰ and then kill the stem over the following weeks to months.

The biocontrol was isolated from sea spurge's native range on the Atlantic coast of France, where sea spurge has been observed to be highly unhealthy and sparse (Figure 6b). In contrast, sea spurge in Tasmania typically grows as very dense, healthy infestations with very large seed crops (Figure 6a) which take over and transform sites.



6a. Typical Tasmanian growth form, Bullock Hill track, Arthur River.
Photo credit: Jon Marsden-Smedley



6b. Typical growth form in its native range, Nazare, Portugal
Photo credit: Jon Marsden-Smedley

Figure 6. Contrast between Tasmanian and European sea spurge infestations.

While it is highly probable that the biocontrol will result in reductions to sea spurge vigour, it is highly unlikely that the biocontrol by itself will result in sea spurge eradication. It does, however, have the potential to greatly reduce environmental impacts, with sea spurge becoming just another coastal weed. Sea spurge's impact could become similar to the weed Sea rocket (*Cakile* spp.) which, although widespread, has been observed to go through boom-bust cycles, and does transform ecosystems.

Working in cooperation with CSIRO and PWS since 2021, SPRATS has previously released the biocontrol agent at 18 test locations to assess its effectiveness under Tasmanian conditions

In spring 2026, SPRATS proposes to establish and monitor about 100 new biocontrol sites along with the monitoring of previously established biocontrol sites. The plans for doing this work will be developed in the first half of 2026.

⁹ Final risk analysis report for the release of *Venturia paralias* for the biological control of *Euphorbia paralias*. See: <https://www.agriculture.gov.au/biosecurity/risk-analysis/biological-control-agents/risk-analyses/completed-risk-analyses/ra-release-venturia-paralias>.

¹⁰ Hunter GC, Zeil-Rolfe I, Jourdan M, Morin L 2019. Information package to support application to release the fungus *Venturia paralias* for the biological control of sea spurge (*Euphorbia paralias*) in Australia. CSIRO.