



Department of  
Environment and  
Conservation (NSW)

Application for a

# Section 91 Licence

to harm or pick a threatened species, population or ecological community\*,  
or damage habitat under the *Threatened Species Conservation Act 1995*.

1. Applicant's Name: <i>(if additional persons require authorisation by this licence, please attach details of names and addresses)</i>	André Olson Project Manager	
2. Organisation name and position of Applicant: <i>(if applicable)</i>	Dragonfly Environmental Pty Ltd ABN 94 130 064 274	
3. Postal address:	1/ 33 Avalon Parade Avalon, NSW 2107	4. Telephone:  B.H. 02 9918 4486  A.H. 0425241761
5. Location of the action <i>(including grid reference and local government area and delineated on a map).</i>	A 100 x 100 m patch of Saltmarsh and mangroves located at LOT 456 (DP 1107359), Horning Street, Kurnell. (See Map 1 and Map 2 for location of proposed collection). The Land Owner is NSW Maritime, and the LGA is Sutherland Shire.  Dragonfly Environmental has written permission from NSW Maritime to enter this land for the purpose of collection of Saltmarsh seeds and pieces for growing Saltmarsh seedlings for planting at Penrhyn Estuary. Please see attached the agreed Permit to Enter with NSW Maritime.  The co-ordinates of the location are: -34.01417426 Latitude 151.19891703 Longitude	

\* A threatened species, population or ecological community means a species, population or ecological community identified in Schedule 1, 1A or Schedule 2 of the *Threatened Species Conservation Act 1995*.



NB: In this application, the term 'location' refers to the entire Horning Street Saltmarsh site (2 ha), and the term 'site' refers to the actual collection area specified on Map 2 (0.15 ha).

6. Full description of the action and its purpose (eg. scientific research, environmental assessment, regeneration activities, development etc.).

The proposed action is the collection of seed and stem pieces from selected species in the Saltmarsh community to be grown up for Saltmarsh enhancement works at Penrhyn Estuary. Further details of these enhancement works are contained in the *Penrhyn Estuary Habitat Enhancement Plan* by Sydney Ports Corporation (SPC). This plan was approved by the NSW Department of Planning in March 2007.

The collection of seeds and pieces at Horning Street as described in this application would make up less than 3% of the total Saltmarsh seeds and pieces being collected for the Penrhyn Estuary enhancement works. The remainder of seeds and pieces are being collected in Penrhyn Estuary in both 2008 and 2009.

The proposed action is focused on:

1. Collection of seed of *Samolus repens* to obtain 900 seeds ( $\leq 10\%$  of that present on site). *Samolus repens* is not currently present at Penrhyn Estuary, so therefore seeds need to be collected at another donor site.

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2. Collection of seed and stem pieces of *Sporobulus virginicus* to obtain up to 5,000 stem pieces and 1,000 seed heads. *Sporobulus virginicus* stem pieces and seed heads are being collected at Penrhyn Estuary, and would only be collected at the Horning Street location if it could not be fully collected at Penrhyn Estuary.

3. Collection of seed of *Sarcocornia quinqueflora*, to obtain up to 1,000 seeds from within the 0.15 ha Saltmarsh collection area. *Sarcocornia quinqueflora* seed are being collected at Penrhyn Estuary, and would only be collected at the Horning Street location if it could not be fully collected at Penrhyn Estuary.

Please note that there would be no collection of rhizomatous material or any underground material.

Only *Samolus repens* will be required in full numbers as there is none present within the Penrhyn Estuary site. For both *Sporobulus virginicus* and *Sarcocornia quinqueflora*, the Horning Street location is a back-up donor site to ensure that enough seed and stem pieces can be collected for the Penrhyn Estuary Saltmarsh enhancement works. To date sufficient seed has been collected from Penrhyn Estuary for these species, and it is likely that less than the proposed numbers for *Sporobulus virginicus* and *Sarcocornia quinqueflora* will be required from the site. This application assumes that the proposed number will be needed.

Trained Saltmarsh Ecologist, Andre Olson, from Dragonfly Environmental would be responsible for the seed and piece collection described in this application, and responsible to ensure that no Saltmarsh or surrounding native vegetation is damaged.

A team of two people (Andre Olson and a qualified Ecologist) would collect from Areas A – F (see Map 2) throughout the site. The number of collection events would be a balance between minimising site disturbance and maximising seed / piece collection during the prime collection times.

Collectors would always be mindful of the presence / location of migratory and shore birds, as well as other threatened fauna species and would work to avoid disturbing them. Saltmarsh collectors would attempt to stay at least 100m from areas where birds are feeding / roosting etc. If within 100m, collectors would stay in areas where they are screened from the bird's sight, such as behind dense mangroves. No migratory birds have been observed or known to have been recorded at the site.

Seed and piece collection can occur any time of day / week with optimum times relating to weather, tide conditions and not disturbing native fauna. Generally collection of pieces would occur outside of the mid day and at a time where pieces could be taken to the nursery in the shortest possible time.

Seed would be collected when it is dry – that is not directly after rain or in the early morning if dew is present. Avoiding moisture in the seed would assist with minimising fungi and moulds on seed.

As the seed / piece collection is of high importance, it would be conducted when conditions are right, and not dictated by working days or weekends.

***Samolus repens***

Grows readily from seed and a high success of germination is expected. As for other species, collection would be one seed head from around 20 heads. This spreads the collection over a number of plants.

Locations:

*Samolus repens* is growing in a few clumps throughout the site in Areas A and F (please see Map 2, Aerial photo for exact locations). Major clumps ~ 1m x 2m are growing in these areas.

Numbers:

Approximately 900 seeds would need to be collected from Areas A, and F (900 seeds ≤10 % of that present on site).

***Sporobulus virginicus***

Seed and stem pieces of up to 7 cm would be collected. Seed would be collected from February to May 2009 and stem pieces would be collected February to March 2009.

Locations:

Seed head and stem pieces would be collected from Areas A, D and F within the Saltmarsh area. With seeds the collection rate is one growing tip per ~20. This rate is in accordance with the conditions in the *Penrhyn Estuary Habitat Enhancement Plan* and the *Flora Bank Model Code of Practice*. Collection of pieces of *Sporobulus virginicus* is essential as seed germination and viability is unreliable.

Numbers:

Up to 1,000 seed heads or 10g of seed may be required of this species. Up to 5,000 stem pieces would be collected for propagation.

***Sarcocornia quinqueflora***

Grows readily from seed and will only be required in minimal quantities as there has been successful germination in nurseries of seed collected from Penrhyn Estuary. Collection would be one seed head from ~ 20 seed heads. This spreads the collection over a number of plants. In our proposed site of 0.15 ha, Areas A, B and E have large numbers of *S.quinqueflora* available on the outer edge of the vegetation patch. This would make collecting the minimal seed particularly easy only previously created paths would be used to collect seed.

Locations:

In the proposed site of 0.15 ha, Areas A, B and E have large numbers of *S.quinqueflora* available on the outer edge of the vegetation patch. This would make collecting the minimal seed particularly easy as only previously created paths would be used to collect seed.

Numbers:

Up to 1000 seed may be required of this species

7.Details of the area to	The entire Horning Street site approximately contains 2 ha of mixed
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be affected by the action ( <i>in hectares</i> ).	Saltmarsh habitat. The proposed area to collect from is approximately 0.15 ha of the 2 ha. Please refer to Map 2 for Areas A-F, which are the only areas proposed for collection of the seed and stem pieces.			
8. Duration and timing of the action ( <i>including staging, if any</i> ).	<p>February to June 2009. All collection would occur at low tide to minimise any damage to Saltmarsh.</p> <p>Collection Time of Saltmarsh species:</p> <ul style="list-style-type: none"> <li>- <i>Samolus repens</i> would be collected in February. Seed would be mature in the next 3 – 4 weeks and may be lost in heavy rains if not collected soon.</li> <li>- <i>Sporobolus virginicus</i> may be collected throughout the year with collection proposed for February through to June 2009. Seed would be collected from February to May 2009 and stem pieces would be collected February to March 2009. This collection time allows for it be grown for the Penrhyn Estuary project.</li> <li>- <i>Sarcocornia quinqueflora</i> is currently beginning to flower/fruit, thus it is in preparation for seed, which may be present in the next 5-9 weeks and should be collected in March-April.</li> </ul>			
9. Is the action to occur on land declared as critical habitat? ( <i>please tick appropriate box</i> )	<u>Yes</u>		<u>No</u>  <b>X</b>	
10. Threatened species, populations or ecological communities to be harmed or picked.	<u>Scientific Name</u>	<u>Common Name</u> <i>(if known)</i>	<u>Conservation Status</u> <i>(ie. endangered or vulnerable)</i>	<u>Details of no. of individual animals, or proportion and type of plant material</u>
<b>Saltmarsh</b>	<b><i>Sporobolus virginicus</i></b>	<b>Salt grass</b>	<b>EEC</b>	Up to 5,000 5-7cm lengths of stem pieces. Also seed. ~ up to 1,000 seed heads required from the site. ~10 g of seed required.
<b>Saltmarsh</b>	<b><i>Samolus repens</i></b>	<b>Creeping Brook Weed</b>	<b>EEC</b>	Seed only, ~900 plants required to be grown
<b>Saltmarsh</b>	<b><i>Sarcocornia</i></b>	<b>Samphire</b>	<b>EEC</b>	

\* Critical habitat means habitat declared as critical habitat under Part 3 of the *Threatened Species Conservation Act 1995*.

<p><b>*Note: All seed and piece collection would be in accordance with <i>Flora Bank Guidelines and Saltmarsh Seed Collection Methods Statement</i> – attached.</b></p>	<p><i>quinqueflora</i></p>			<p><b>Seed only, ~1000.</b></p>
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<p>11. Species impact: (please tick appropriate box)</p> <p>a) For action proposed on land declared as critical habitat; or</p> <p>b) For action proposed on land <u>not</u> declared as critical habitat.</p>	<p><b>X</b> Items 12 to 25 have been addressed</p>
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*N.B: Provision of a species impact statement is a statutory requirement of a licence application, if the action is proposed on critical habitat.*

*The provision of information addressing items 12 to 17 is a statutory requirement of a licence application if the action proposed is not on land that is critical habitat. Information addressing any of the questions below must be attached to the application.*

<p>12. Describe the type and condition of habitats in and adjacent to the land to be affected by the action.</p>	<p>Saltmarsh habitat, with the following native species present: <i>Sarcocornia quinqueflora, Sporobulus virginicus, Suaeda australis, Samolus repens, Juncus kraussii, Isolepis nodosa, Avicennia marina, Apium prostratum, Baumea juncea.</i></p> <p>Saltmarsh is largely degraded, however good quality Saltmarsh is present on edges. The area is/ was used as a car tip and driving circuit. Other rubbish and debris are also present. Bike tracks and bike jumps occur on the site. Weed infestation within the Saltmarsh is approximately 1%, being salt tolerant exotics. Note that no <i>Juncus acutus</i> has been observed at the location.</p> <p>Weed infestation within the terrestrial area surrounding the Saltmarsh is approximately 85% with majority being <i>Lantana camara</i> and <i>Ipomoea purpurea</i> and <i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i> (Bitou Bush).</p> <p>Swamp Oak Floodplain Forest species (EEC) grow adjoining the site. See Aerial Photo (Map 2) for location in respect to Saltmarsh. Introduced flora species present within the Swamp Oak Floodplain Forest are: <i>Hydrocotyle bonariensis, Stenotaphrum secundatum, Cestrum parqui, Ehrharta erecta, Asparagus aethiopicus, Lantana camara, Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>. Weed infestation is approximately 80 %.</p> <p>Grey Mangroves (<i>Avicennia marina</i>) are abundant adjoining the Saltmarsh Site and in some areas Mangroves area growing within</p>
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	the Saltmarsh. (Area's A, B and E on Aerial Photo Map 2).
<p>13. Provide details of any known records of a threatened species in the same or similar known habitats in the locality (<i>include reference sources</i>).</p>	<p>This Saltmarsh habitat is less than 5 km (directly across Botany Bay) from Penrhyn Estuary where Migratory birds (Wader's) occur. For a list of Migratory Wader's please see the attached DECC threatened species profile on Taren Point Shorebirds. The Migratory Waders at Penrhyn Estuary are threatened locally and listed on JAMBA, CAMBA and KAMBA (in prep.). There have been no Migratory Waders observed in the proposed Saltmarsh location.</p> <p>Using National Parks Wildlife Atlas database a list of records for flora and fauna threatened species was generated for Sutherland LGA. Unfortunately at the time of this application the Wildlife Atlas was not able to generate a more specific list using Latitude and Longitude co-ordinates for the 100 x 100m Saltmarsh Location at Horning Street. However, all species that may be present or likely to occur at the location have been highlighted on the Wildlife Atlas records from Sutherland LGA (attached).</p> <p>From the Wildlife Atlas Search for flora, <i>Wilsonia rotundifolia</i> has been recorded in the Sutherland LGA. However upon site inspection, this Threatened species was not observed at the site. The nearest location for <i>Wilsonia rotundifolia</i> in Sutherland shire LGA is at Mill Creek, West Menai. Approximately 21 km West from the site at Kurnell.</p> <p>From the Wildlife Atlas Search for fauna the following threatened species have the potential to frequent the site. However none have been observed and seed collection activities would not disturb these species. (Refer to Q.6 for seed collection actions to minimise disturbance to avifauna.)</p> <ul style="list-style-type: none"> <li>• Bush Stone-Curlew</li> <li>• Glossy Black-Cockatoo</li> <li>• Sooty/Pied Oystercatcher</li> <li>• White Tern</li> <li>• Little Tern</li> <li>• Sooty Tern</li> </ul> <p>For a more comprehensive list of Avifauna refer to the attached Wildlife Atlas search results.</p>
<p>14. Provide details of any known or potential habitat for a threatened species on the land to be affected by the action (<i>include reference sources</i>).</p>	<p>Please refer to details discussed in Question 12 in regards to known threatened habitat, such as Swamp Oak Floodplains EEC. As discussed in Question 6, a trained Saltmarsh Ecologist would be conducting the collection and all timing has been carefully considered with respect to the specific species seeding times and best practice for collection with none-to-minimal intrusive actions.</p> <p>The 0.15 ha collection site would be monitored closely as described in attached <i>Appendix 5 - Saltmarsh Monitoring 2008</i>. This document is a monitoring method statement and outlines parameters for monitoring. This method statement is used for monitoring at Penrhyn Estuary, and would also be used to monitor any impacts of seed collection at this proposed site.</p>

<p>15. Provide details of the amount of such habitat to be affected by the action proposed in relation to the known distribution of the species and its habitat in the locality.</p>	<p>The entire Horning Street location contains around 2 ha of Saltmarsh. The proposed collection Areas A – F is approximately 0.15 ha in total. Therefore the seed/piece collection would only occur on less than 10% of the Saltmarsh area.</p> <p>This collection site is mapped with respect to Saltmarsh areas and Saltmarsh species, See Aerial Photo Map 2.</p>
<p>16. Provide an assessment of the likely nature and intensity of the effect of the action on the lifecycle and habitat of the species.</p>	<p>There would be no effect on the lifecycle or habitat of the Saltmarsh species listed in Question 10. Very minor pruning would occur to obtain stem pieces and would be done in accordance with Flora Bank guidelines and following the methods and timing outlined in Questions 6, 7 and 8. Examples of such are; collection would be done at low light intensity, low tide, and all collection would be done by an experienced Saltmarsh Ecologist (A.Olson).</p> <p>Saltmarsh Ecologists would only walk on existing degraded paths and collection need only to occur along the edges of Areas A - F listed in the Map 2 Aerial Photo and in the Legend. As collection would be done in accordance with Flora Bank guidelines, no more than 10% of plant material from any one plant would be removed.</p>
<p>17. Provide details of possible measures to avoid or ameliorate the effect of the action.</p>	<p>Possible measures to avoid any negative effects that may be caused by the collection of stem pieces and seed head are:</p> <ol style="list-style-type: none"> <li>1 A qualified Saltmarsh Ecologist who can identify the three species for collection would be present at all times of collection to avoid any mistaken identity of Saltmarsh plants.</li> <li>2 Saltmarsh Ecologist would ensure seed is labelled effectively as per attached Nursery Quality Assurance Process. This would ensure the material propagated from the site is differentiated from material collected at Penrhyn Estuary.</li> <li>3 Saltmarsh Ecologist Collector would only walk on previous degraded, muddy paths to avoid trampling.</li> <li>4 Collection of seed and stem pieces would occur on edges of Mixed Areas (A-F) to avoid trampling.</li> <li>5 No more than the seed/stem pieces numbers given in this application (refer to Question 10) would be removed from the site.</li> <li>6 Equipment (secateurs) would be sharp and all equipment sterilised to avoid contamination.</li> <li>7 Saltmarsh Ecologist Collector would always be mindful of the presence / location of native fauna, especially shore birds. They would work to avoid disturbing them. Saltmarsh collectors would</li> </ol>

attempt to stay at least 100 m from areas where birds are feeding / roosting etc. If within 100m, collectors would stay in areas where they are screened from the birds sight, such as behind dense mangroves.

- 8 All collection would be done in accordance with the Flora Bank Guidelines to ensure all populations of species collected remain viable.

*N.B: The Director-General must determine whether the action proposed is likely to significantly affect threatened species, populations or ecological communities, or their habitats. To enable this assessment the Applicant is required to address items 18 to 25. Information addressing any of the questions below must be attached to the application.*

18. In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

No known threatened species are present with a viable population placed at risk of extinction.

Please see attached Wildlife Atlas search results for all flora and fauna records from the Sutherland Shire LGA.

There are no threatened Migratory Waders present on the proposed collection site and no known observation of threatened reptiles, amphibians, or mammals have been recorded.

The proposed collection methods would not cause any disturbance to any of the threatened species listed for Sutherland LGA. Trampling would not occur as only existing paths which are previously degraded by bicycle tracks and cars would be used.

19. In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

No known endangered populations existing at this site.

20. In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to

Saltmarsh in NSW is classified as an Endangered Ecological Community (EEC).

There would be no adverse effect on any of the species existing in this EEC. The seed collection and stem pieces would be grown in a nominated, reputable and experienced nursery (selected and audited by SPC) and then replanted in the same catchment area to assist in the natural regeneration and restoration of Penrhyn Estuary.

When determining if translocation has been successful, criteria from the *Guidelines for the Translocation of Threatened Plants in*

<p>be placed at risk of extinction, or</p> <p>(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.</p>	<p><i>Australia, 2<sup>nd</sup> ed.</i> would be used. For this work, success is where there is no damage incurred to donor site and seed/pieces collected are successfully propagated and planted at Penrhyn Estuary.</p> <p>All associated risks and threats as described in the <i>Guidelines for the Translocation of Threatened Plants in Australia</i>, such as out breeding, introduced disease or pathogens, displacement of other sp etc. have been considered. The actions proposed would not result in the negative outcomes listed in <i>the Translocation of Threatened Plants in Australia</i>. The entire location is approximately 2 ha, and the proposed collection area is 0.15 ha. Of this area, less than &lt;10 % of the Saltmarsh population would be collected from. With the minimal quantity and following flora bank guidelines of collection there should be no adverse effect on any of the Saltmarsh species populations.</p> <p>Collection of the proposed numbers of seeds and pieces would not impact on the Saltmarsh species composition at the Horning Street location.</p> <p>Upon project completion there would be an increased number of healthy native plants to support and benefit the entire Saltmarsh Endangered Ecological Community.</p>
<p>21. In relation to the habitat of a threatened species, population or ecological community:</p> <p>(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and</p> <p>(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and</p> <p>(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.</p>	<p>(i) Less than 10% is likely to be affected by the proposed activity.</p> <p>(ii) No area would become fragmented or isolated, as seed/piece collection would only occur along open edges of existing tracks, thus no trampling would be necessary to obtain the required plants (see attached photos). Also, only a small area (&lt;10%) of the habitat would be affected by collection activities which would be spread out among the edges of existing areas to be sure not to cause fragmentation. Existing disturbed areas would not be enlarged by the proposed collection activities.</p> <p>(iii) There would be no habitat removal, only harvesting of stem pieces and seeds. As these seed and pieces would be grown up and planted back in the same catchment area it would assist the survival of the EEC in the Botany Bay area.</p>

<p>22. Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).</p>	<p>No critical habitat present.</p>
<p>23. Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.</p>	<p>There is no existing recovery plan for Coastal Saltmarsh in NSW – however the action proposed of seed/piece collection and the methods outlined in the Saltmarsh Seed Collection Methods Statement are consistent with the Guidelines for the Translocation of Threatened Plants in Australia set out by the Australian Network for Plant Conservation.</p> <p>Dragonfly Environmental would contribute to the priority action for Coastal Saltmarsh by donating a portion of the collected seed to the NSW Seedbank as part of the Captive Husbandry or ex-situ collection/propagation recovery strategy identified in the NSW Priorities Action Statement (DECC), please see <a href="http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/home_recovery_new.aspx">http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/home_recovery_new.aspx</a></p> <p>Leahwyn Seed, Seed Technology Officer from SeedQuest NSW was contacted in regards to receiving Saltmarsh seed and is forwarding details on to Peter Cuneo, Manager – Natural Heritage Project leader for SeedQuest NSW (on six weeks leave).</p>
<p>24. Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.</p>	<p>No, the proposed actions are not part of the key threatening process for Saltmarsh areas. It is hoped that the proposed actions would ultimately be beneficial to the Saltmarsh habitat and help to ensure its survival.</p>

## Important information for the Applicant

### Processing times and fees

The *Threatened Species Conservation Act 1995* provides that the Director-General must make a decision on the licence application within 120 days where a species impact statement (SIS) has been received. No timeframes have been set for those applications which do not require a SIS. The Director-General will assess your application as soon as possible. You can assist this process by providing clear and concise information in your application.

Applicants may be charged a processing fee. The Director-General is required to advise prospective applicants of the maximum fee payable before the licence application is lodged. Therefore, prospective applicants should contact the DEC prior to submitting a licence application .

A \$30 licence application fee must accompany a licence application.

### **Protected fauna and protected native plants\***

Licensing provisions for protected fauna and protected native plants are contained within the *National Parks and Wildlife Act 1974*. However, a Section 91 Licence may be extended to include protected fauna and protected native plants when these will be affected by the action.

If you are applying for a licence to cover both threatened and protected species please provide the information requested in Item 10 and a list of protected species and details of the number of individuals animals or proportion and type of plant material which are likely to be harmed or picked.

### **Request for additional information**

The Director-General may, after receiving the application, request additional information necessary for the determination of the licence application.

### **Species impact statement**

Where the application is not accompanied by a SIS, the Director-General may decide, following an initial assessment of your application, that the action proposed is likely to have a significant effect on threatened species, populations or ecological communities, or their habitats. In such cases, the *Threatened Species Conservation Act 1995* requires that the applicant submit a SIS. Following initial review of the application, the Director-General will advise the applicant of the need to prepare a SIS.

### **Director-General's requirements for a SIS**

Prior to the preparation of a SIS, a request for Director-General's requirements must be forwarded to the relevant DEC Office. The SIS must be prepared in accordance with section 109 and 110 of the TSC Act and must comply with any requirements notified by the Director-General of the Department of Environment and Conservation (NSW).

### **Certificates**

If the Director-General decides, following an assessment of your application, that the proposed action is not likely to significantly affect threatened species, populations or ecological communities, or their habitats, a Section 91 Licence is not required and the Director-General must, as soon as practicable after making the determination, issue the applicant with a certificate to that effect.

*N.B: An action that is not required to be licensed under the Threatened Species Conservation Act 1995, may require licensing under the National Parks and Wildlife Act 1974, if it is likely to affect protected fauna or protected native plants.*

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\* Protected fauna means fauna of a species not named in Schedule 11 of the *National Parks and Wildlife Act 1974*.

Protected native plant means a native plant of a species named in Schedule 13 of the *National Parks and Wildlife Service 1974*.

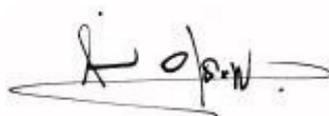
I confirm that the information contained in this application is correct. I hereby apply for a licence under the provisions of Section 91 of the *Threatened Species Conservation Act 1995*.

Applicant's name,  
organisation and position  
*(Please print)*

Applicant's signature

Date:

André Olson  
Dragonfly Environmental  
Pty Ltd  
Project Manager



06.03.09

For more information or to lodge this form, contact the Environment Protection and Regulation Division in your nearest office:

<u>Sydney Metro Branch</u>	<u>Southern Branch</u>	<u>Northern Branch</u>	<u>Western Branch</u>
P: 02 9995 5000	P: 02 6122 3100	P: 02 6640 2500	P: 02 6841 9800
F: 02 9995 6900	F: 02 6299 3525	F: 02 6642 7743	F: 02 6882 9217
PO Box 668	PO Box 622	PO Box 498	PO Box 1020
Parramatta	Queanbeyan	Grafton	Dubbo
NSW 2124	NSW 2620	NSW 2460	NSW 2830

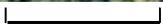
Department of Environment and Conservation  
Head Office, PO Box A290, Sydney South NSW 1232  
Phone: 2 9995 5000 (switch) Fax: 9995 5999 Email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)

Map 2 of Saltmarsh Donor Site, Kurnell NSW, LOT 456 (DP 1107359)



Entrance from  
Horning Street

N  
↑

Scale   
15 m

Aerial Photograph courtesy of Google Earth©2008



Map 2 of Saltmarsh Donor Site, Kurnell NSW, LOT 456 (DP 1107359)

Legend

	<i>Samolus repens</i>		Bitou Bush
	<i>Sarcocornia quinqueflora</i>		Swamp Oak Forest (EEC)
	<i>Cynodon dactylon</i>		<i>Juncus kraussii</i>
	Area A (~ 85m <sup>2</sup> )		Area B (~ 290m <sup>2</sup> )
	45% <i>Sarcocornia quinqueflora</i> 30% <i>Sporobolus virginicus</i> 15% <i>Juncus kraussii</i> 1% <i>Samolus repens</i> 4% <i>Suaeda australis</i> 3% <i>Apium prostratum</i> 2% <i>Avicennia marina</i> (Grey Mangrove)/ Pneumataphores		50% <i>Sarcocornia quinqueflora</i> 50% <i>Avicennia marina</i> (Grey Mangrove)/ Pneumataphores
	Area C (~ 130m <sup>2</sup> )		Area D (~ 160m <sup>2</sup> )
	49% <i>Baumea juncea</i> 30% <i>Stenotaphrum secundatum</i> * 5% <i>Isolepis nodosa</i> 13% <i>Cynodon dactylon</i> 1% <i>Hydrocotyle bonariensis</i> * 1% <i>Apium prostratum</i> 1% <i>Sarcocornia quinqueflora</i>		70% <i>Juncus kraussii</i> 15% <i>Sarcocornia quinqueflora</i> 5% <i>Sporobolus virginicus</i> 5% <i>Stenotaphrum secundatum</i> * 4% <i>Cynodon dactylon</i> 1% <i>Apium prostratum</i>
	Area E (~ 740m <sup>2</sup> )		Area F (~ 85m <sup>2</sup> )
	95% <i>Sarcocornia quinqueflora</i> 5% <i>Avicennia marina</i> (Grey Mangrove)/ Pneumataphores		30% <i>Sarcocornia quinqueflora</i> 25% <i>Sporobolus virginicus</i> 20% <i>Juncus kraussii</i> 10% <i>Baumea juncea</i> 7% <i>Stenotaphrum secundatum</i> * 2% <i>Samolus repens</i> 2% <i>Suaeda australis</i> 2% <i>Apium prostratum</i> 2% <i>Carpobrotus glaucescens</i>

\* Denotes introduced species.



# PERMIT TO ENTER

Between

Maritime Authority of NSW  
(as Land Owner)

And

Dragonfly Environmental ABN: 72875068377  
(Entrants)

Over land at Lot 456 (DPI 1107359), Horning  
Street, KURNELL

## CONDITIONS

**PURPOSE :** Proposed collection of saltmarsh seeds and pieces for growing saltmarsh seedlings for planting at Penrhyn Estuary on the northern side of Botany Bay

**LAND OWNER:** N.S.W. Maritime  
Level 6, 207 Kent Street Sydney NSW 2000  
Locked Bag 5100 Camperdown NSW 1450  
Ph: 02 9364 2111  
Fx: 02 9364 2444

**ENTRANTS:** Dragonfly Environmental (ABN: 72 875 068 377)  
Ecological Restoration Specialists  
Unit 2 / 33 Avalon Parade  
AVALON NSW AUSTRALIA 2107  
CONTACT: André Olson  
Phone: 0425 241 761  
Fax: 02 9918 4487  
E-mail: [andre@dragonflyenvironmental.com.au](mailto:andre@dragonflyenvironmental.com.au)

**LAND LOCATION:** Lot LOT 456 (DP1107359), Horning Street, Kurnell

**LAND DESCRIPTION:** Lot LOT 456 (DP1107359), Horning Street, Kurnell

**ENTRY:** **From 1 May 2008 to December 2008.**

This agreement is given on the basis that it does not convey any permanent right of entry to the subject land.

**DISTURBANCE :** During the period of this agreement the Entrant is to control erosion and restore the ground surface affected by works, structures or access ways (including areas adjacent to works) in an appropriate manner to the satisfaction of N.S.W Maritime

**VEGETATION :** The Entrant is allowed to remove any vegetation within that Area identified as required for the harvest of Saltmarsh.

**SITE CLEANLINESS :** At the expiration of this agreement the site is to be restored to the satisfaction of N.S.W. Maritime

**ENTRY FEE :** Nil

**ADMIN FEE :** Nil

**INDEMNITY :** The Entrants are to fully and without reservation of any kind indemnify and save harmless both the Corporation as defined in the Environmental Planning and Assessment Act, 1979 as well as the Department, its officers, servants, contractors and agents from and against all or any actions, suits, claims and demands by or on behalf of any person or corporation whatsoever in respect of any accidental death or accidental bodily injury or accidental damage to property, which may arise directly or indirectly out of Entrants business or out of the occupation of use by Entrants, their servants or agents of the land.

**PUBLIC RISK :** A public risk policy of not less than **\$20 million dollars** is to be taken out by the Entrants.

**COSTS :** All costs directly or indirectly incurred by the Entrants in complying with this Permit to Enter is to be the sole responsibility of the Entrants.

**EXECUTION:**

Signed  .....

**Bruce Green A/General Manager  
Maritime Property Division  
The Maritime Authority of NSW**

Dated 8 MAY 2008 .....

**Witnessed by: Simon Lawton  
Commercial Property & Assets  
The Maritime Authority of NSW**

Signed  .....

Dated 8/5/08 .....

Signed  .....

**André Olson  
Project Director  
Dragonfly Environmental**

Dated 13.5.08 .....

**Witnessed by** Aleisa Lamanna .....

Signed Aleisa .....

Dated 13/05/08 .....

# Nursery Quality Assurance Process

## SALTMARSH Seed collection and propagation checklist

- Seed collecting is in accordance with Flora Bank Guidelines
- Seed has been dried, processed, and stored if seeding is not commenced immediately
- Seed has been sown
- Nursery to record botanical name, date of sowing, , date of seed collection and seed lot location in their nursery data base. This information is to be given a corresponding code to be used for labeling.
- Each seedling container to be labeled with botanical name of plant and data base code.
- Nursery inspection by ESD to verify sowing has occurred and correct labeling of Terrestrial plants
- Nursery inspections by Saltmarsh Ecologist to verify sowing has occurred and correct labeling of Saltmarsh plants. Nursery to provide a current copy of database.
- Monthly inspections to occur by ESD to monitor germination of Terrestrial Plants. Report to BH with accompanying pictures
- Monthly inspections to occur by Saltmarsh Ecologist to monitor germination of Saltmarsh Plants Report to BH with accompanying pictures
- Tracking to occur for numbers of seedling germinating in trays
- Tracking to occur for numbers of seedling potted up into containers
- Compare number of plants potted up with plant schedule
- Are there enough plants to fulfill order or is more seed sowing required
- Are plants healthy, weed free, free of pests and disease. If not, are measures being undertaken to remedy the problem.

## Cutting/Piece Propagation

- Piece/Cutting collection in accordance with Boulderstone Hornibrook ITP Saltmarsh and Seed Collection
- Cuttings have been prepared and dipped in root hormone gel
- Cuttings have been placed in a suitable propagating medium
- Cuttings have been planted within 30 hours of translocation from Port Botany
- Cuttings are in a hothouse situation or equivalent to retain moisture
- Nursery to record botanical name, date of cutting propagation, date of cutting collection and seed lot location in their nursery data base. This information is to be given a corresponding code to be used for labeling.
- Each cutting tray to be labeled with botanical name of plant and data base code.
- Nursery inspections by Saltmarsh Ecologist to verify cuttings have been propagated as required and correct labeling of Saltmarsh cuttings. Nursery to provide a current copy of database.
- Monthly inspections to occur by Saltmarsh Ecologist to monitor propagation of Saltmarsh cuttings. Report to BH with accompanying pictures
- Tracking to occur for numbers of cuttings potted up into containers
- Are plants healthy, weed free, free of pests and disease. If not, are measures being undertaken to remedy the problem.
- Compare cutting numbers to total Saltmarsh plant schedule
- Sum total plants numbers for each species (potted up seedlings and/or potted up cuttings). Compare with plant schedule. If there is a shortfall more seed collection and cuttings may be required for certain species in 2009.