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| Matted Flax-lily Nursery Audit - 2024 |
|  |
| 09-May-2024 |



Prepared for

Department of Transport

ABN: 69981208782

Matted Flax-lily Nursery Audit - 2024

Client: Department of Transport

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Prepared by

**AECOM Australia Pty Ltd**

Wurundjeri and Bunurong Country, Tower 2, Level 10, 727 Collins Street, Melbourne VIC 3008, Australia

T +61 1800 868 654 www.aecom.com

ABN 20 093 846 925

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# Introduction

The AECOM-GHD Joint Venture (JV) were previously engaged by the Level Crossing Removal Project (LXRP) to undertake regular audits of a population of Matted Flax-lily *Dianella amoena* salvaged from the construction footprint of the Mernda Rail Extension Project (the Project) in April 2017. Since October 2020 the Project has formally transferred from LXRP to the Department of Transport (DoT). DoT are now the agency responsible for undertaking reporting and monitoring events as required by the EPBC 2016/27674 Matted Flax-lily Translocation Plan.

The plants subject to this audit are managed at ABZECO nursery as ‘insurance stock’ to ensure that plants translocated in July/August 2019 can be supplemented if necessary to achieve an overall survival rate of at least 85%. This ‘insurance stock’ is in the care of ABZECO consultants, who will manage and maintain the plants until the maintenance period is over (between two and 10 years) at which time any remaining plants will be provided to Parks Victoria and/or other local agencies for revegetation projects within the region. It should be noted that plants already translocated are subject to a separate audit and are not within the scope of this memo. The salvage, maintenance and final translocation of the Matted Flax-lily to their recipient sites are guided by the EPBC 2016/27674 Matted Flax-lily Translocation Plan (LXRA-MNDA-00-PA-RPT-004 Revision: 9) released on 9 March 2020.

This nursery audit forms part of the Year 5 2024-2025 Matted Flax-lily Annual Summary Report.

## Purpose

This memorandum provides a summary of the current status of the Matted Flax-lily ‘insurance stock’ as a result of the most recent audit. Specifically, the memorandum will detail:

* The current management and number of transplants available as ‘insurance stock’
* Evidence of correct labelling and documentation maintained throughout the propagation and management period
* Evidence of the appropriate sized pot usage
* Evidence of the health, growth and survivorship of clones created from parent plants
* Evidence of weed and pest control
* Evidence of ‘hardening’ off if required for future translocations.

# Results of April 2024 audit

On the 19th April 2024, two AECOM ecologists met with Jack Latti, the nursery manager of ABZECO consulting and Richard Francis, Director at ABZECO consulting. The nursery is located at 105 Gumtree Road, Research.

The audit found that all criteria documented within the translocation plan were being met and the ‘insurance stock’ Matted Flax-lilies were observed to be in a healthy condition and well managed. Specifically;

* pots of live, healthy Matted Flax-lily representing at least the required number of clones were observed,
* individuals were labelled and potted in appropriate pots and potting medium, and
* no diseased individuals were observed.

Results are described in greater detail in **Table 1** and supported by **Plate 1** to **Plate 4**.

Table 1 Results of 2023 audit

| Item | Details |
| --- | --- |
| The required number of clones are available:  6 clones to be created per salvaged plant where possible  4 clones per salvaged plant available for translocation  2 clones per salvaged plant maintained in nursery conditions | Pots containing clones of the original salvaged plants were observed at the nursery. At least 2 clones per salvaged individual were present, more in many cases and there is potential to further divide the ‘insurance stock’ if growing conditions permit. Further back up stock is stored in rectangular trays alongside the main ‘insurance stock’. |
| Labelling of clones with staked metal nursery tags in addition to labelling of pot with permanent marker in the format of 001 (patch number) – 001 (clone number) | The ‘insurance stock’ clones were labelled with a metal tag and permanent marker on the outside of the pot. Some tags were buried under recently replenished topsoil and were not disturbed to be checked further. Labels represented the patch and clone number as required. |
| Clones to be in good health with minimal individuals showing signs of stress or having senesced, evidence of growth | Clones were observed to be in good health, and thatching (last year’s growth which had dried off and been left in place during summer as a form of mulch and to assist with water retention) had been removed from the pots. The plants have had their soil replenished recently and so have effectively been re-potted and showed no signs of stress when observed. |
| Evidence of disease | No evidence of disease was observed. |
| Pest control actively managed (e.g. thrips, rabbits, deer) | The pots were surrounded by deer proof fencing and their location on the property had been selected to ensure deer could not jump into the exclusion area.  The nursery manger reported that there has not been any deer or rabbit pest issues.  The presence of a dog which patrolled the nursery and surrounds is also likely to keep animal pests at bay. |
| Weed control actively managed (e.g. hand weeded during winter months or as needed) | No weeds were observed within the pots. The nursery manager confirmed that hand weeding occurred on a regular basis, especially during winter months. There were several geranium individuals present alongside the MFL individuals in 6-7 of the pots, however these are native. Plants were also trimmed to help new growth as there is no natural predation given the predator proof fencing surrounding the plants. |
| Propagation material appropriate (e.g. sandy loam etc.) | The nursery manager identified that the potting material originally used for the clones had been changed from typical potting mix used for native vegetation to a sandy-loam mix which had resulted in less drying out of pots and better water retention. The nursery manager also mentioned encountering challenges with the latest soil delivery, prompting them to take action by replacing the topsoil and administering fertilizer to the plants in response. |
| Pot size appropriate (e.g. minimum of 14 cm diameter pot) | Pot sizes were observed to be within the recommended range. Three sizes were currently in use for plants of varying sizes as appropriate allowing for repotting as required. The nursery manager also suggested that the pot size could be reduced to assist with planting if required. |
| Watering and fertilizer regime appropriate (e.g. reflective of climatic conditions where appropriate, fertilisation in advance of translocation) | The nursery manager stated that the plants had received one dose of a 12-month controlled release fertiliser approximately 8 weeks before the audit. Supplementary hand watering occurred during summer if the temperature was above 35 degrees and cracking soils were observed. There had been no need for supplementary watering in the months outside of summer. As the nursery is located outdoors, watering by hand is considered supplementary to rainfall. |
| Evidence of ‘hardening off’ of plants prior to translocation | Plants occur outdoors and are exposed to climatic conditions. The nursery manager also stated that due to the health of the plants, they were now allowing them to experience drought conditions over the summer months to prepare them for translocation if required. |
| Additional observations (e.g. thatch kept/removed to assist with water retention etc.) | Thatch had been removed, give the end of the summer season. The nursery manager suggested that further division of the individuals would be beneficial as the smaller size would lend itself to planting. He stated that it would have a high probability of success if conducted after the winter months when they have grown out and would also provide further insurance stock. |

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| Fenced nursery area with rows of trays holding small plants, surrounded by mature trees and leaf litter. Larger pots are placed at the back.  Plate 1 Deer proof fencing remains from last year. | Upside-down plant removed from its flower pot, showing intact soil plug with dense root growth. The plug is held by a person and framed by a wire fence in the background.  Plate 2 Roots are healthy and filling out pots. |
| Groups of small black pots arranged closely together on bare ground, each containing young green seedlings. The area is surrounded by mature trees and is part of a native plant nursery.  Plate 3 Thatching recently removed within pots. | Six black plastic pots placed on a green mat outdoors, each containing different small plants - some with grass-like leaves, others with broader foliage. White labels are inserted into several pots for identification.  Plate 4 Native Geranium sp. has been retained in pots. |

# Next Steps

The ‘insurance stock’ Matted Flax-lilies should continue to be monitored on an annual basis as per the schedule in Table 2. An auditor’s checklist is provided below in Table 3 to provide consistency and assist with future audits. Results of the nursery audits should be included in the translocation program’s annual report. The nursery audits were conducted for two years prior to translocation. Thus, the timeline below is independent of the reporting timeline.

Table 2 Audit schedule

| Year | Audit 1 | Audit 2 |
| --- | --- | --- |
| **Salvage** | April 2017 |  |
| Year 1 |  |  |
| 6 monthly audit | September 2017 | April 2018 |
| Year 2 |  |  |
| 6 monthly audit | September 2018 | April 2019 |
| Year 3 | April 2020 |  |
| Year 4 | April 2021 |  |
| Year 5 | April 2022 |  |
| Year 6 | April 2023 |  |
| Year 7 | April 2024 |  |
| Year 8 | April 2025 |  |
| Year 9 | April 2026 |  |
| Year 10 | April 2027 |  |

Table 3 Auditor's checklist

| Item | Details |
| --- | --- |
| The required number of clones are available for translocation  6 clones to be created per salvaged plant where possible |  |
| Labelling of clones with staked metal nursery tags in addition to labelling of pot with permanent marker in the format of 0001 (patch number) – 001 (clone number) |  |
| Clones to be in good health with minimal individuals showing signs of stress or having senesced, evidence of growth |  |
| Evidence of disease |  |
| Pest control actively managed (e.g. thrips, rabbits, deer) |  |
| Weed control actively managed (e.g. hand weeded during winter months or as needed) |  |
| Propagation material appropriate (e.g. sandy loam etc.) |  |
| Pot size appropriate (e.g. minimum of 14 cm diameter pot) |  |
| Watering and fertilizer regime appropriate (e.g. reflective of climatic conditions where appropriate, fertilisation in advance of translocation) |  |
| Evidence of ‘hardening off’ of plants prior to translocation |  |
| Additional observations (e.g. thatch kept/removed to assist with water retention etc.) |  |

# References

AECOM-GHD Joint Venture. 2018. Mernda Rail Extension Project – EPBC 2016/7674 Matted Flax-lily Translocation Plan (LXRA-MNDA-00-PA-RPT-0004) Revision 8.

AECOM-GHD Joint Venture. 2020b. Mernda Rail Extension Project: EPBC 2016/7674 Matted Flax-lily Translocation Plan. Report prepared for the Level Crossing Removal Authority, Revision 9, March 2020.