# Port of Brisbane Weed Survey 2022

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# Document Control

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# Executive Summary

Weed monitoring has been conducted annually at the Port of Brisbane (the Port) since 2001. The monitoring program aims to:

- detect the introduction and spread of new weed species on Port lands
- monitor priority weed species within high value natural assets managed by the Port of Brisbane Pty Ltd (PBPL), especially habitat for migratory waders and locally significant wetlands, and sites considered to be at potential risk to new weed incursion from imported vehicles.

Priority weeds targeted in the survey include Weeds of National Significance (WoNS), Prohibited and Restricted Matters regulated under the Queensland *Biosecurity Act 2014*, environmental weeds listed by the Brisbane City Council and native species that have the potential to negatively impact on local habitat values.

This report presents the findings of the 2022 monitoring survey.

Weed composition and distribution at the Port has remained relatively stable over the monitoring period. No newly imported weeds were recorded at the Port. The sites considered most at risk to weed introductions are imported vehicle storage areas and downstream environments. These areas are maintained (mown) and/or are influenced by saline water, reducing the potential for new weeds to establish and spread.

All weed species recorded at the monitoring sites are common and widespread in degraded coastal habitats of south-east Queensland. New species detected during the survey were thatch grass (*Hyparrhenia rufa*) at the Lake and Port Drive South, and giant rat's tail grass (*Sporobolus* sp.) at Port West Drain and Port Gate Drain. Both species are widespread in coastal habitats of south-east Queensland.

Patches of native reed (*Phragmites australis*) and Sesbania pea (*Sesbania cannabina*) are common throughout the Port with both species having the potential to reduce saltmarsh habitat values. Ongoing monitoring will assess whether these species are contributing to altered hydrological conditions that may favour the establishment of terrestrial weeds which could reduce saltmarsh values for migratory waders, particularly in the bird hide.

Restoration works at Fort Lytton have resulted in an increase in saltmarsh in previously degraded habitats dominated by weed species. The restored site is currently dominated by salt couch grassland with succulent samphire and intertidal mudflat with sparse mangrove recruitment. Filled sites dominated by weeds within and directly adjacent to intertidal wetlands at Port Drive and Port West may have similar restoration potential.

Overall, the monitoring program has found that: (i) weeds at the Port are widespread in south-east Queensland, and (ii) saltmarsh communities are potentially vulnerable to native species encroachment and exotic weed invasion. Regular monitoring will continue to be essential to assess the potential for new weed imports into south-east Queensland via the Port. Monitoring will also be required to assess high value habitats to ensure weed control measures can be applied, if required, to protect habitat condition and resources particularly wader feeding grounds.

# Contents



## Figures

# 1 Introduction

The Port of Brisbane (the Port) supports high value natural assets at risk of weed invasion to new weed incursion from imported goods. These high value natural assets include habitat for migratory waders and locally significant freshwater and estuarine wetlands.

Weed monitoring surveys have been conducted annually at the Port of Brisbane since 2001. The aims of the weed monitoring program are to:

- characterise habitat conditions at each survey site
- monitor priority weed species within high value natural assets managed by the Port of Brisbane Pty Ltd (PBPL)
- detect the introduction and spread of new weed species at survey sites and the broader port area
- provide recommendations for strategic weed management at the Port based on a risk-based approach which considers feasibility, likelihood of success and impact.

# 2 Methodology

## 2.1 Priority Target species

Priority weeds targeted in the survey are plant species listed under one or more of the following categories:

- Weeds of National Significance (WoNS) (refer Annex A)
- Prohibited and Restricted Matters regulated under the Queensland *Biosecurity Act 2014* (refer Annex B)
- Environmental weeds listed by the Brisbane City Council (refer Annex C)

In addition to target weed species, the survey targeted native species that have the potential to negatively impact on local natural assets. In particular, the survey targeted Sesbania pea, which is a native woody species that is being monitored at the Port for its' potential to spread within and dominate local saltmarsh and wader habitat. As the species can form dense thickets and substantial seedbanks it may have the potential to displace low saltmarsh cover and provide conditions more suitable for exotic grasses.

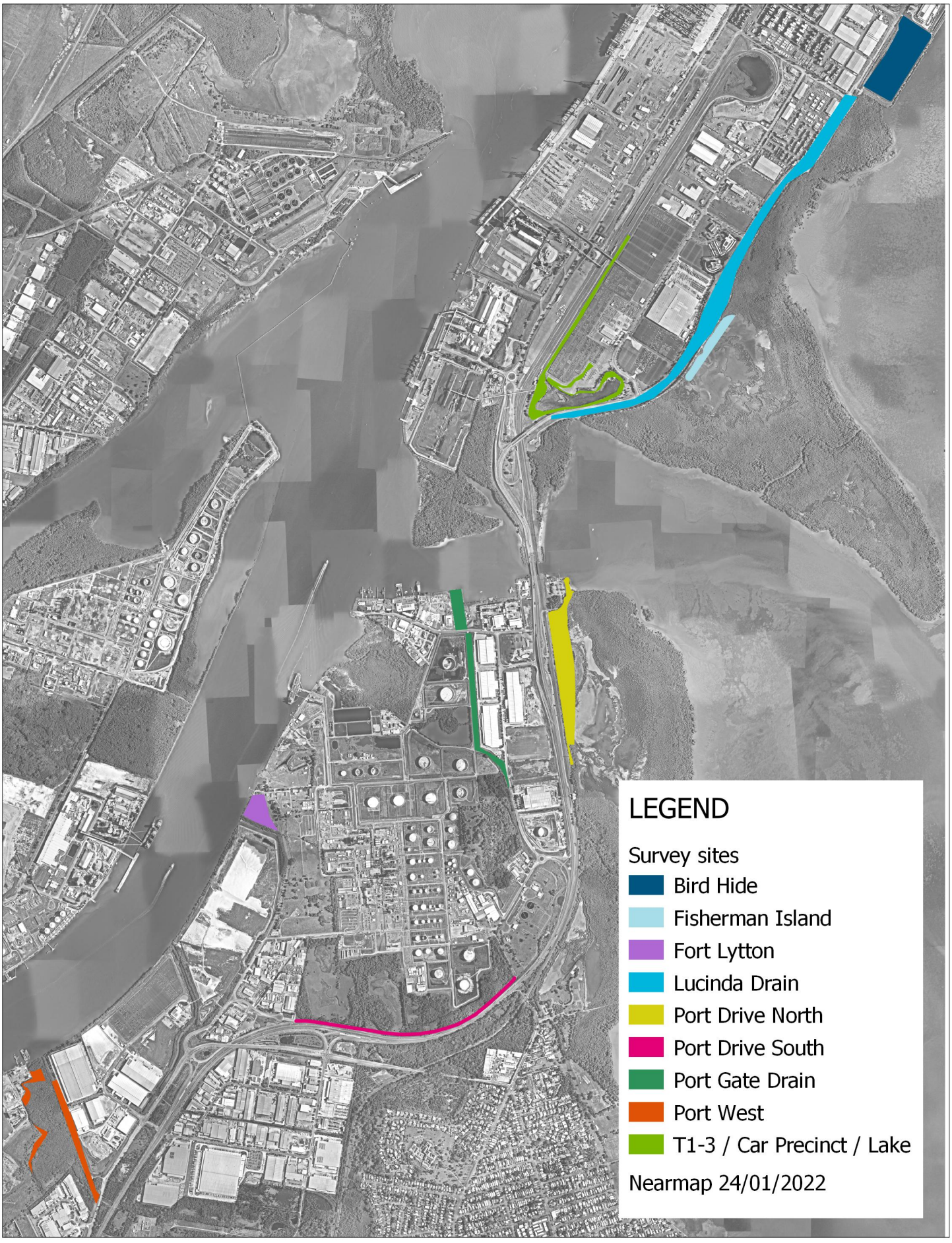
## 2.2 Survey Approach

In accordance with previous monitoring surveys, weed inspections in 2022 were undertaken in post-summer in April. The survey sites assessed in 2022 are shown in Figure 2.1, and were comprised of the following:

- Sites of locally significant natural asset value:
  - Bird Hide habitat for migratory waders
  - Local bird habitat at the Lake adjacent to the previous Visitors Centre
  - Locally significant wetlands at Lucinda Drain, Port Drive, Fort Lytton and Port West.
- Sites at risk to new weed imports:
  - Port West Drain
  - Port Gate Drain.

The survey was conducted by a qualified botanist (Suanne Richards) with over 20 years weed and native vegetation survey experience in coastal south-east Queensland habitats. All surveys were conducted on-foot at the survey sites. Incidental observations of target weed species outside the survey sites were also recorded. The locations of all notable weed observations were recorded on a handheld GPS. Weed identification was undertaken on site.

Whilst every effort has been made to identify targeted weed species in the Port survey sites, the detectability of plant species and the ability to accurately identify these in the field varies with seasonal and climatic conditions. Such conditions influence the presence of reproductive features (flowers, fruits and seeds) which are useful, and in some cases essential, for species identification. Consequently, the survey conducted should not be regarded as conclusive that targeted weeds do not occur at the Port.

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# Weed survey sites 2022

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# 3 Results

## 3.1 Locally Significant Natural Assets

### Lucinda Drain

**Site Description**
Lucinda Drain is a constructed channel located east of Lucinda Drive that provides drainage for stormwater run-off from hardstand areas at the Port to the north. The drain lies adjacent to locally significant estuarine wetlands and discharges through the Lucinda Weir into the Boat Passage.

The tidal channel does not contain extensive aquatic macrophyte cover but supported a low, discontinuous fringe of native grey mangrove (*Avicennia marina*). The drain is periodically maintained, with mangroves actively removed to ensure the drain fulfils its primary purpose for stormwater run-off.

The channel banks supported planted and naturally recruited shrubs and trees comprised of a mix of local native terrestrial species such as eucalypts (*Eucalyptus spp.*), she-oaks (*Casuarina* spp.), figs (*Ficus* spp.), cotton tree (*Hibiscus tiliaceus*), paperbark (*Melaleuca* spp.) and parasol leaf tree (*Macaranga tanarius)*. Introduced shrubs were sparse and the groundcover was dominated by exotic grasses.

The western bank of the drain adjacent to Lucinda Drive undergoes regular maintenance involving mowing and weed spraying. Poor access along the eastern bank of Lucinda Drain limits regular maintenance but weeds are reportedly removed on an annual basis.

**Weeds**
The weed species recorded at Lucinda drain were typical of past surveys and weed density remains low. An example of weeds in the drain are shown in Figure 3.1 and the distribution of major woody weeds and recorded along the drain in 2021 and 2022 are shown in Figure 3.2.

The following observations were made in the 2022 survey:

- No new weed species were recorded within or directly adjacent to Lucinda Drain.
- Woody weed cover remains sparse due to active weed management.
- **Restricted Matters** recorded included: widespread but sparse broad-leaved pepper tree (*Schinus terebinthifolius*), lantana (*Lantana camara*) and groundsel (*Baccharis halimifolia*).
- Exotic species recorded were dominated by **environmental weeds** well established across Brisbane including: mile a minute (*Ipomoea cairica*), broad-leaved pepper tree, siratro (*Macroptilium atropurpureum*), Rhode's grass (*Chloris gayana*), green panic (*Megathyrsus maximus* var. *maximus*), Brazilian nightshade (*Solanum seaforthianum*), blackberry nightshade (*Solanum nigrum*) and rattlepod (*Crotalaria pallida*).
- **Woody weeds**: consistent with previous surveys, the dominant woody weed recorded at Lucinda Drain was broad-leaved pepper tree. Other woody weeds included lantana, Leucaena (*Leucaena leucocephala*) and Easter cassia (*Senna pendula* var. *glabrata*).
- **Vine species**: siratro, mile a minute, glycine (*Neonotonia wightii*), passionflower (*Passiflora* spp.) and Brazilian nightshade, were the most abundant exotic vine species.

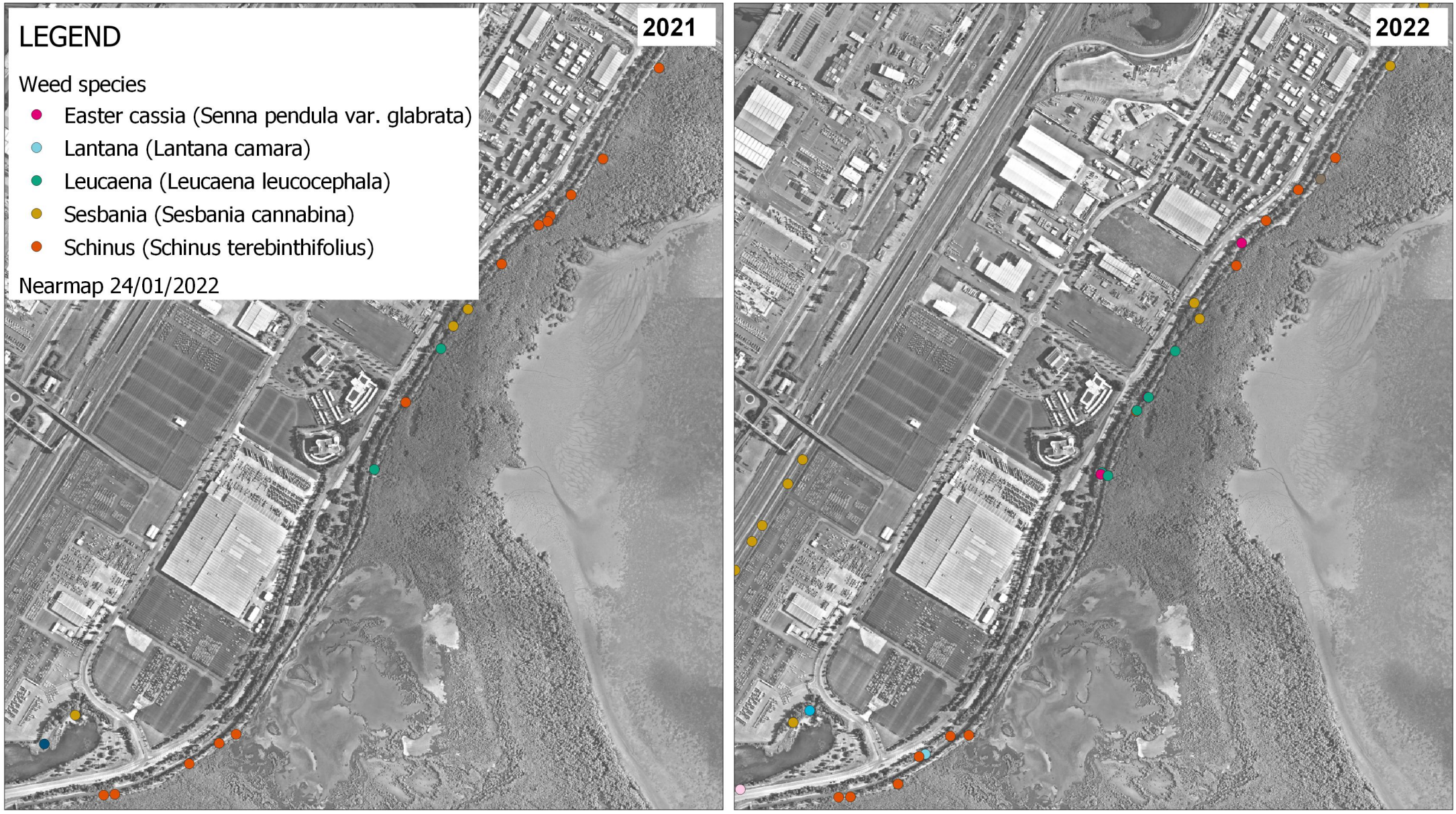
- **Groundcovers**: The groundcover was dominated by mown exotic grasses including Rhodes grass, green panic, red natal grass (*Melinis repens*). Very sparse Mossman river grass (*Cenchrus echinatus*) was also recorded.

- **Other exotic groundcovers, forbs and herbs** included: shrubby stylo (*Stylosanthes scabra*), hairy wandering Jew (*Commelina benghalensis*), tridax daisy (*Tridax procumbens*), creeping cinderella weed (*Calyptocarpus vialis*), gomphrena weed (*Gomphrena celosioides*), Bermuda grass (*Cynodon dactylon*), flannel weed (*Sida cordifolia*), shepherd's purse (*Capsella bursa-pastoris*), clasping heliotrope (*Heliotropium amplexicaule*), hairy fleabane (*Erigeron bonariensis*), redflower ragleaf (*Crassocephalum crepidioides*), beggar's tick (*Bidens pilosa*), purslane (*Portulaca oleracea*), blue billygoat weed (*Ageratum houstonianum*), beach evening primrose (*Oenothera drummondii*), common plantain (*Plantago major*), common sowthistle (*Sonchus oleraceus*), wiry spurge (*Phyllanthus virgatus*) and threelobe false mallow (*Malvastrum coromandelianum*).

- No **aquatic macrophyte** weed species were recorded. The brackish to saline conditions of the channel limits the establishment of exotic aquatic macrophytes known from the region.

- Sparse sesbania pea was also observed on the banks of the drain.

Figure 3.1 North-eastern end of Lucinda Drain with exotic grass groundcover and dense vine infestation

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# Dominant Woody Weed Species. Note: Sesbania is a native species monitored for environmental purposes

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## Bird Hide

### Site Description

PBPL has constructed an artificial wetland near the future port expansion (FPE) on Fisherman Island to provide high-tide roosts for migratory shore birds and waders. This site is referred to as the 'bird hide' and consists of open saline water, seagrass, saltmarsh, intertidal mudflats and sparse mangroves, and is bounded by exotic maintained grasslands. Culverts in the eastern bund wall provide tidal connection between the bird hide wetlands and Moreton Bay.

### Weeds

The filled surrounds above tidal influence supported terrestrial grasslands which are regularly mown and comprised a range of exotic grasses and herbaceous environmental weeds widespread throughout the region.

The following observations were made in the 2022 survey:

- No new weed species were recorded within the site.
- Woody weed cover remains sparse due to lawn maintenance.
- **Restricted Matters** recorded included: sparse lantana and groundsel.
- **Exotic grasses**: Rhode's grass, green panic, Mossman river grass, red natal grass, Johnson grass (*Sorghum halepense*), Bermuda grass and South African pigeon grass (*Setaria sphacelata*).
- **Vines**: siratro and glycine.
- **Herbs**: shrubby stylo, tridax daisy, gomphrena weed, hairy fleabane, redflower ragleaf, common sowthistle, beggar's tick, dirty Dora (*Cyperus difformis*), shepherd's purse, purslane, blue billygoat weed, beach evening primrose, American sea rocket (*Cakile edentula*) and phasey bean (*Macroptilium lathyroides*).

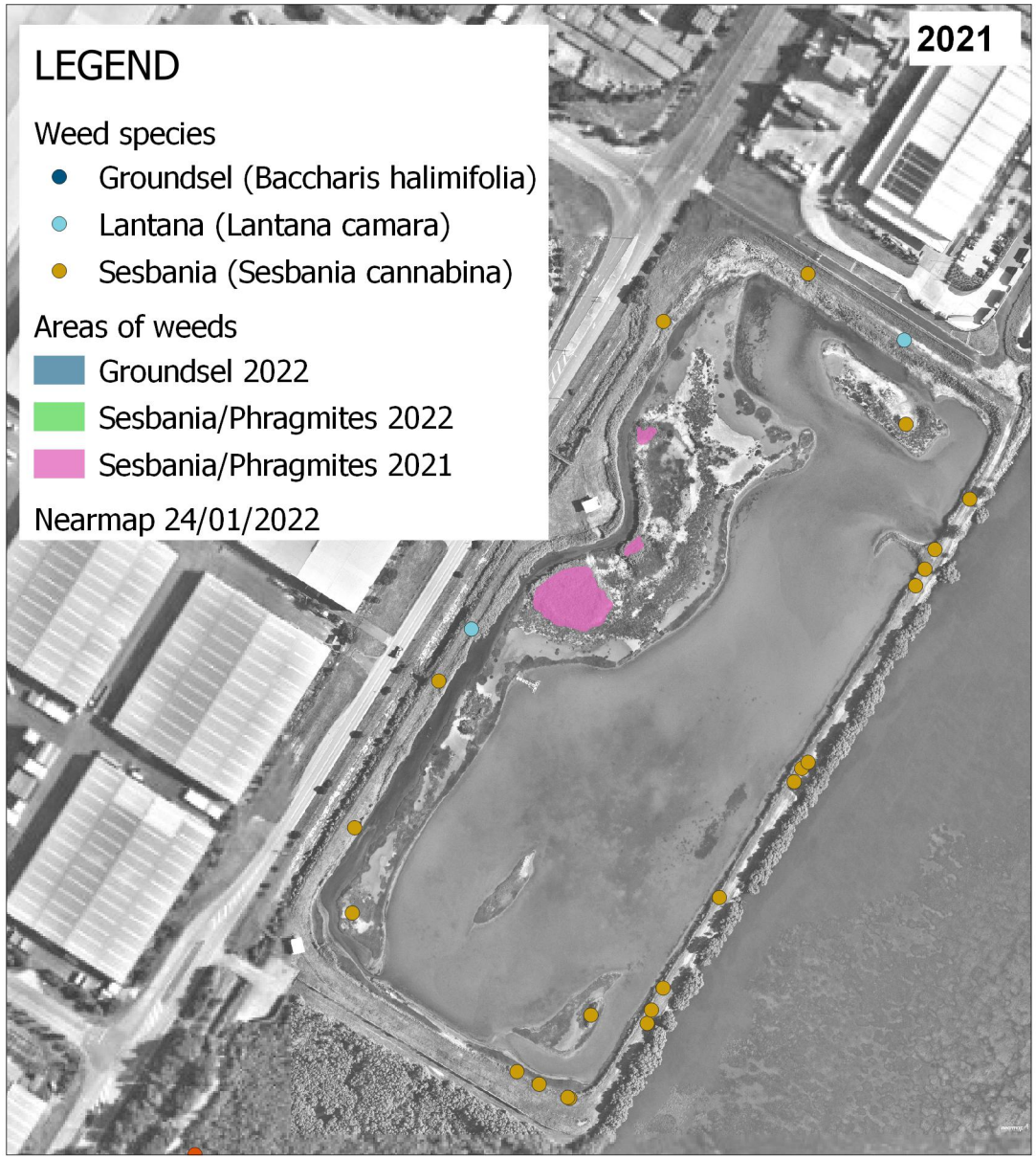
An example of the weeds observed in 2022 are shown in Figure 3.3 and the distribution of major woody weeds (including potentially invasive native species) are shown in Figure 3.4.

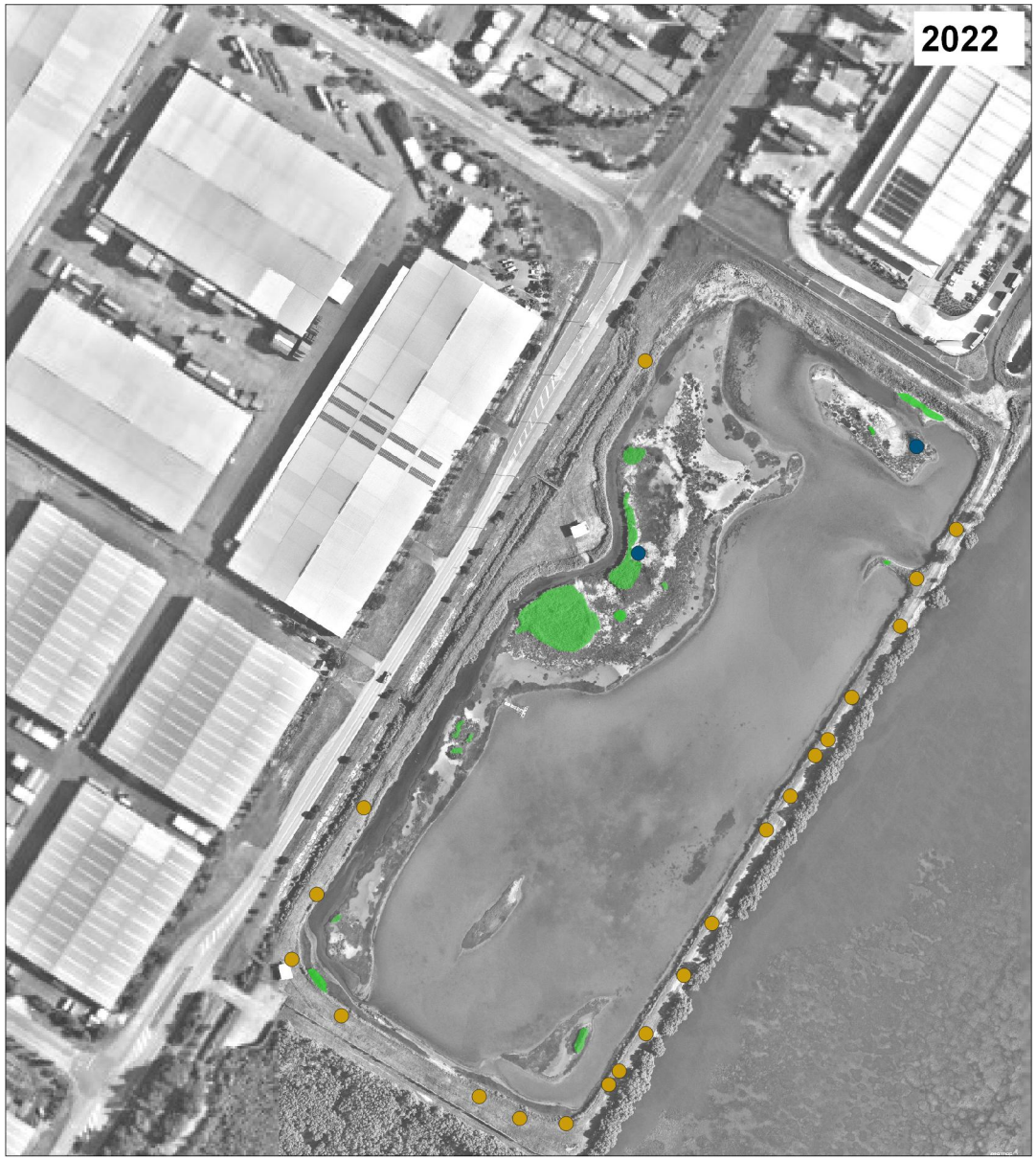
Weed composition on the fill surrounding the wetlands has not greatly changed between survey episodes. The saline conditions of the intertidal wetlands prevent the establishment of most introduced species, except for minor patches of groundsel. Siratro was also observed in samphire zones at the upper tidal limit.

Figure 3.4 compares Phragmites and Sesbania extent across the samphire and saltmarsh between 2021 and 2022. The native reed and sesbania pea have expanded within the samphire and saltmarsh communities of the wetlands, and a corresponding decline in succulent saltmarsh species. Ongoing monitoring will assess whether these changes favour the establishment of terrestrial weeds, particularly exotic grasses and broad-leaved pepper, could reduce saltmarsh values for migratory waders.

Mixed exotic grasslands on the northern bank of the Bird Hide were removed and replaced with rock during the early months of 2022.

Figure 3.3 Sesbania and exotic vines on the banks of the Bird Hide on the southern end (top); Phragmites on the banks of the Bird Hide and groundsel within saltmarsh communities on the northern end (middle); Sesbania and Phragmites in saltmarsh

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# Weed Survey Results 2021 and 2022
# Bird Hide

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## The Lake

### Site Description

The Lake is located at Port of Brisbane Park at the southern end of Fisherman Islands. The Lake is a highly modified, constructed wetland that provides habitat values for local wetland bird species.

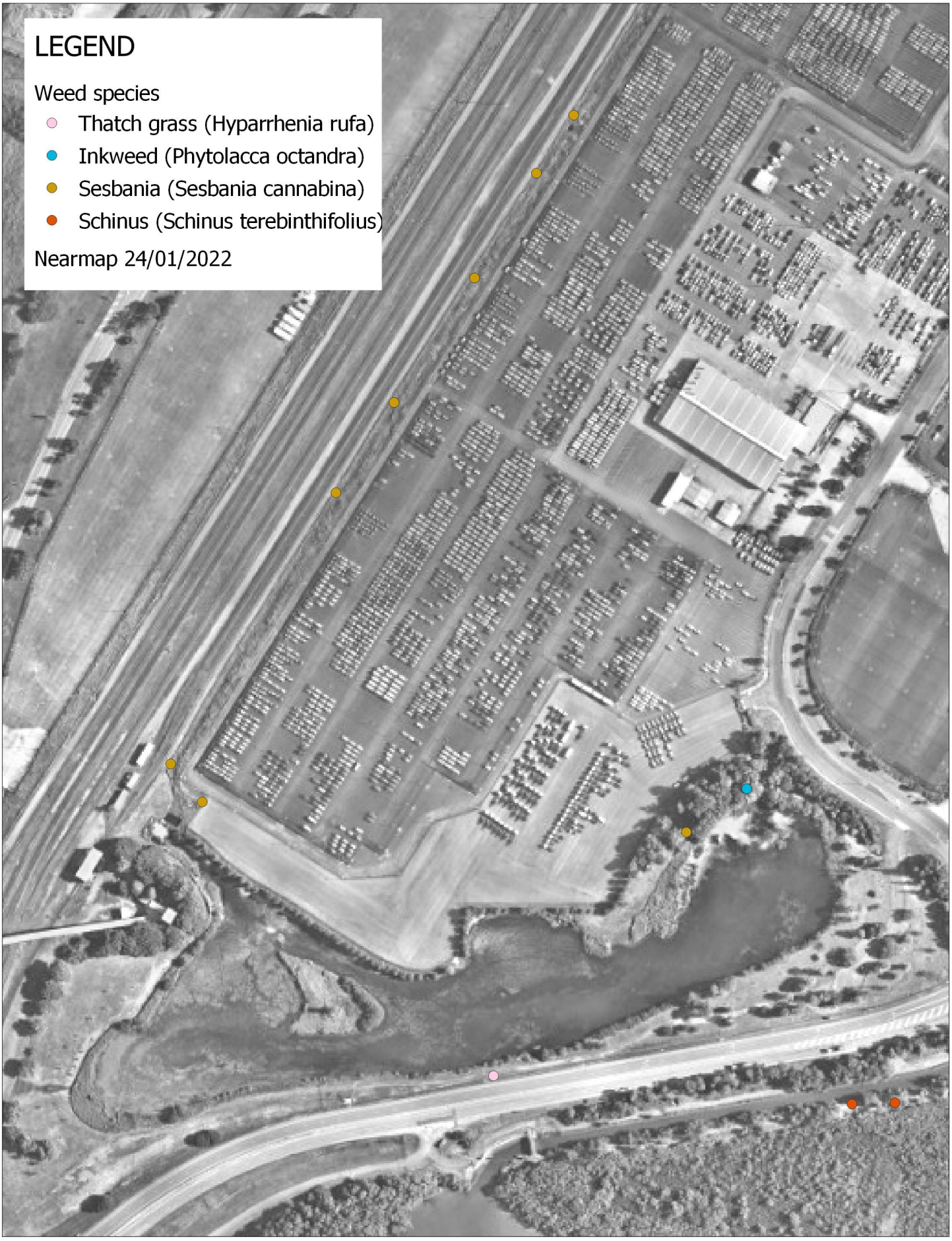
### Weeds

There has been no major changes in weed species composition at the Lake, 2022 results were consistent with the previous survey as follows:

- Apart from isolated thatch grass, no new weed species were recorded at the Lake
- **Restricted Plants** recorded included groundsel, broad-leaved pepper tree and lantana
- Exotic species recorded were dominated by environmental weeds well established across Brisbane including: broad-leaved pepper tree, lantana, mile a minute, castor oil plant (*Ricinus communis*), Siratro, Mossman river grass, green panic, and blackberry nightshade
- Dominant **woody weeds** included broad-leaved pepper tree, groundsel, and lantana
- Dominant exotic **vines** recorded included mile a minute, passionflower, siratro, glycine and cowpea (*Vigna* sp.)
- The sparse **groundcover** was regularly mowed. The most widespread exotic groundcovers were thatch grass, green panic, Mossman river grass, red natal grass, Rhode's grass, crabgrass (*Digitaria ciliaris*), Bermuda grass, Dallas grass (*Paspalum* spp.), South African pigeon grass and pampas grass (*Cortaderia selloana*)
- Common exotic **herbs and forbs** included blue billygoat weed, ribwort plantain (*Plantago lanceolata*), tall flatsedge (*Cyperus eragrostis*), beggar's tick, coral berry (*Rivina humilis*), reflower ragleaf, false daisy *(Eclipta prostrata*), inkweed *(Phytolacca octandra*), shepherd's purse, gomphrena weed, clasping heliotrope (*Heliotropium amplexicaule*), creeping lantana (*Lantana montevidensis*), fleabane (*Conyza bonariensis*), flatweed (*Hypochaeris radicata*), beach evening primrose, tridax daisy, verbana (*Verbena bonariensis*), purslane and threelobe false mallow
- Exotic **aquatic macrophytes** recorded in the shallow waters on the Lakes edge included umbrella sedge (*Cyperus involucratus*) and long-leaved willow primrose (*Ludwigia longifolia*)
- No fireweed (*Senecio madagascariensis*) was recorded.

An example of exotic grass long the Lake's edge is shown in Figure 3.5 and the distribution of weeds at the Lake is shown in Figure 3.6.

Figure 3.5 Thatch grass along the Lake

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# Weed Survey Results 2022
# The Lake

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## Port Drive North

### Site Description

This site is located on Whyte Island south of Boat Passage on the eastern side of Port Drive and south of the Port of Brisbane boat ramp. Whyte Island supports extensive intertidal wetlands comprising mangroves and saltmarsh of high ecological value.

### Weeds

All weed species recorded at this site are widespread across the Port and are well-established in the Brisbane region and throughout coastal south-east Queensland. No new weed species were recorded.

The following observations were made in the 2022 survey:

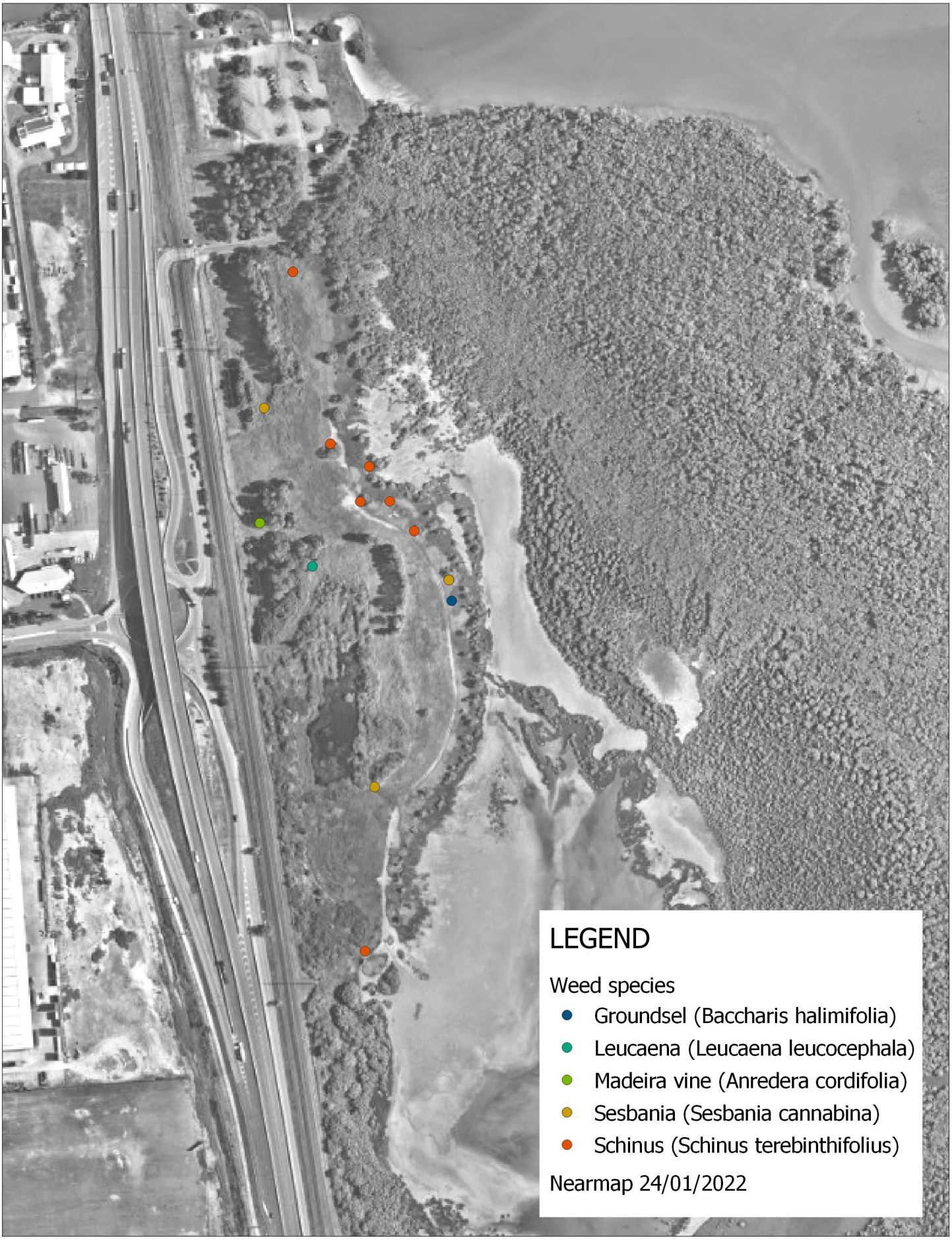
- **Restricted Matters** recorded included: widespread but sparse broad-leaved pepper tree and groundsel. Madeira vine (*Anredera cordifolia*) was noted in terrestrial vegetation in the west of the site.

The eastern edge of Port Drive North is dominated by mangroves, saltmarsh and saltpans. These habitats are not typically prone to weed invasion due to regular saline water inundation, slightly elevated areas within these habitats supported patches of broad-leaved pepper and groundsel with a groundcover of Rhodes grass, Guinea grass and siratro. Isolated sesbania pea was also recorded within the saltmarsh.

Previous surveys have noted that slashing of saltmarsh for ground maintenance reduces the habitat value of these local communities and can promote exotic grass species (Figure 3.7). Native reed continues to form sparse localised patches at the upper tidal limit of the saltmarsh.

The distribution of weeds recorded at Port Drive North in 2022 is shown in Figure 3.8.

Figure 3.7 Mowed salt couch (top) and area of higher elevation within saltmarsh with broad-leaved pepper and Rhode's grass (bottom)

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# Weed Survey Results 2022
# Port Drive North

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## Port Drive South

### Description

The western road corridor off Port Drive supports remnant *Melaleuca quinquenervia* wetlands in relatively good condition.

### Weeds

The following observations were made in the 2022 survey:

- Apart from isolated thatch grass, no new weed species were recorded
- **Restricted Matters** recorded included: widespread but sparse broad-leaved pepper tree and groundsel. Dominant woody weeds were broad-leaved pepper tree, groundsel bush, Easter cassia and lantana. Other species included Leucaena, Chinese elm (*Celtis sinense*), guava (*Psidium guajava*), wild tobacco (*Solanum mauritianum*), umbrella tree (*Schefflera actinophylla*) and camphor laurel (*Cinnamomum camphora*)
- Exotic **vines** included: siratro, glycine, silver leaf desmodium *(Desmodium uncinatum*)
- Other weeds included: verbena, signal grass (*Brachiaria* spp.), red natal grass, sensitive plant (*Mimosa pudica*), whiskey grass (*Andropogon virginicus*), Johnson grass, pampas grass and pink snakeweed (*Stachytarpheta mutabilis*).

All weeds recorded are widespread in coastal wetlands of south-east Queensland, are restricted to the edge of the wetlands (typically within 10-20 m of the road reserve) and are not compromising the condition or value of these local high value Melaleuca habitats. An example of the weeds adjacent to the Port Drive is shown in Figure 3.9 and notable weed records are shown in Figure 3.10.

Figure 3.9 Northern end of Port Drive South

**LEGEND**

Weed species

- Chinese elm (Celtis sinensis)
- Easter cassia (Senna pendula var. glabrata)
- Groundsel (Baccharis halimifolia)
- Schinus (Schinus terebinthifolius)

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# Weed survey results 2022
# Port Drive South



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## Fort Lytton

### Description

Port lands at Fort Lytton adjacent to the Brisbane River support intertidal wetlands comprising mangroves and saltmarsh of high ecological value, including one of the largest remaining patches of saltmarsh near the mouth of the Brisbane River.

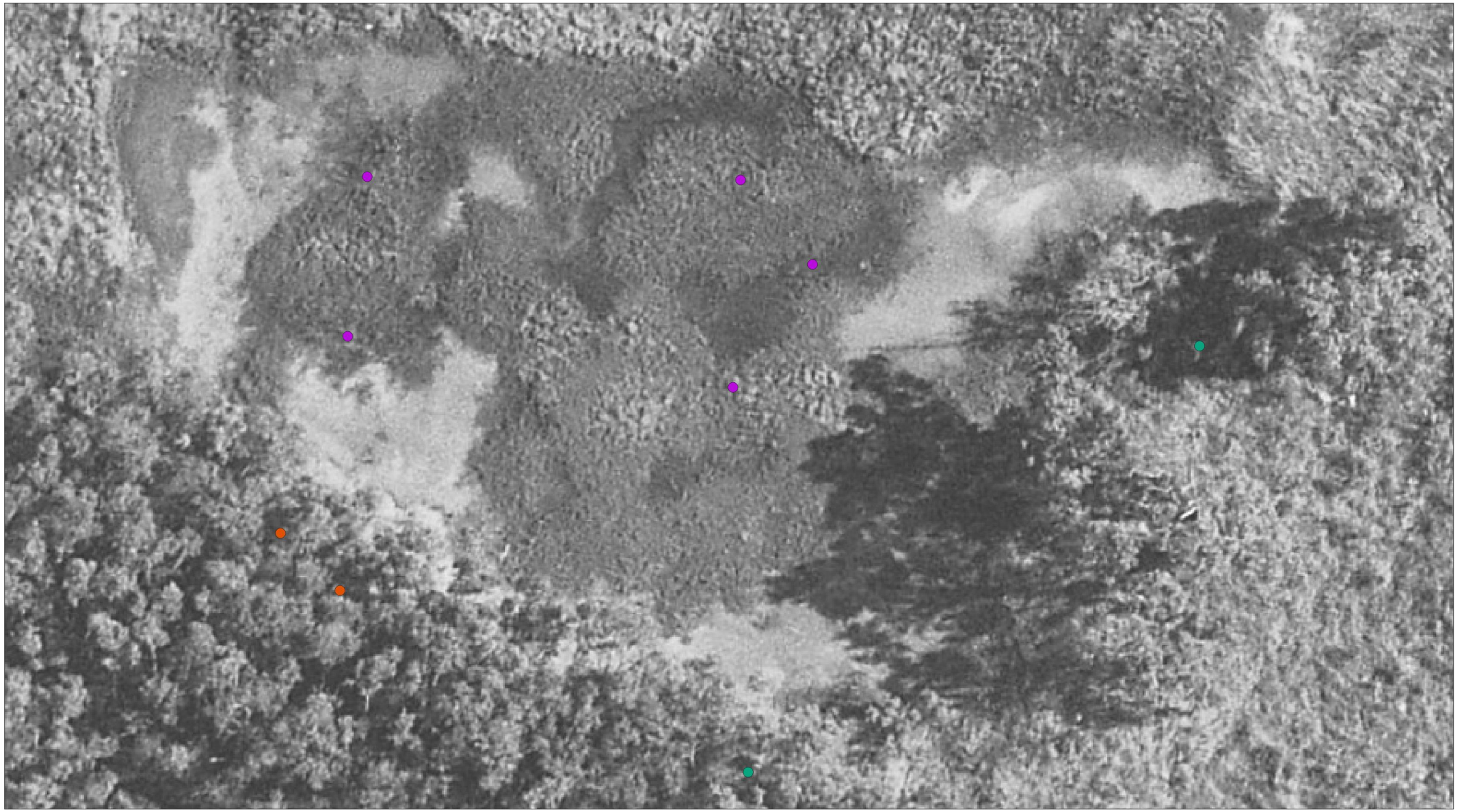
Less than 0.5 ha of filled land within the site previously supported dense weeds before it was cleared and reprofiled in late 2019. Bollards were also installed to protect saltmarsh from vehicle disturbance. Within the restoration area there is regenerating saltcouch (*Sporobolus virginicus*), shoreline seapurslane (*Sesuvium portulacastrum*) and native reed (Figure 3.11). The cover of these three saltmarsh species, particularly saltcouch, has increased since the restoration works in 2019.

### Weeds

There were sparse woody weeds surrounding the restoration area including broad-leaved pepper tree and Leucaena (Figure 3.12). Sparse exotic grasses such as green panic were present.

Disturbed terrestrial lands remain to the east of the restoration site comprising Leucaena, broad-leaved pepper tree, Chinese elm, groundsel, Indian date palm (*Phoenix* sp.), lantana, inkweed, blackberry nightshade, balloon cotton (*Gomphocarpus physocarpus*), prickly pear (*Opuntia stricta*), castor oil plant and wild tobacco. Exotic groundcovers included Rhode's grass, green panic, South African pigeon grass and Johnson grass. Other weeds recorded included madeira vine, blue billygoat weed, passionflower, hair fleabane, shepherd's purse, beggar's tick, Bermuda grass, gomphrena weed, mile a minute, Vasey's grass (*Paspalum urvillei*), ribwort plantain and flannel weed.

Figure 3.11 Saltmarsh restoration area (top) and weeds to the east of the restoration area (bottom)



**LEGEND**

Weed species

- Phragmites (Phragmites australis)
- Leucaena (Leucaena leucocephala)
- Schinus (Schinus terebinthifolius)

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# Weed survey results 2022
# Fort Lytton



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## Port West Wetlands

### Site Description

Port West, located west of Lytton Road approximately 4 km south-west of the Port, supports a mosaic of mangroves and saltmarsh wetlands directly connected to the Brisbane River. Like other sites at the Port, the saltmarsh-mangrove ecotone and upper tidal limits adjacent to industrial land uses are susceptible to disturbance and weed invasion.

### Weeds

Weed composition was similar to previous monitoring surveys. Observations from the survey included:

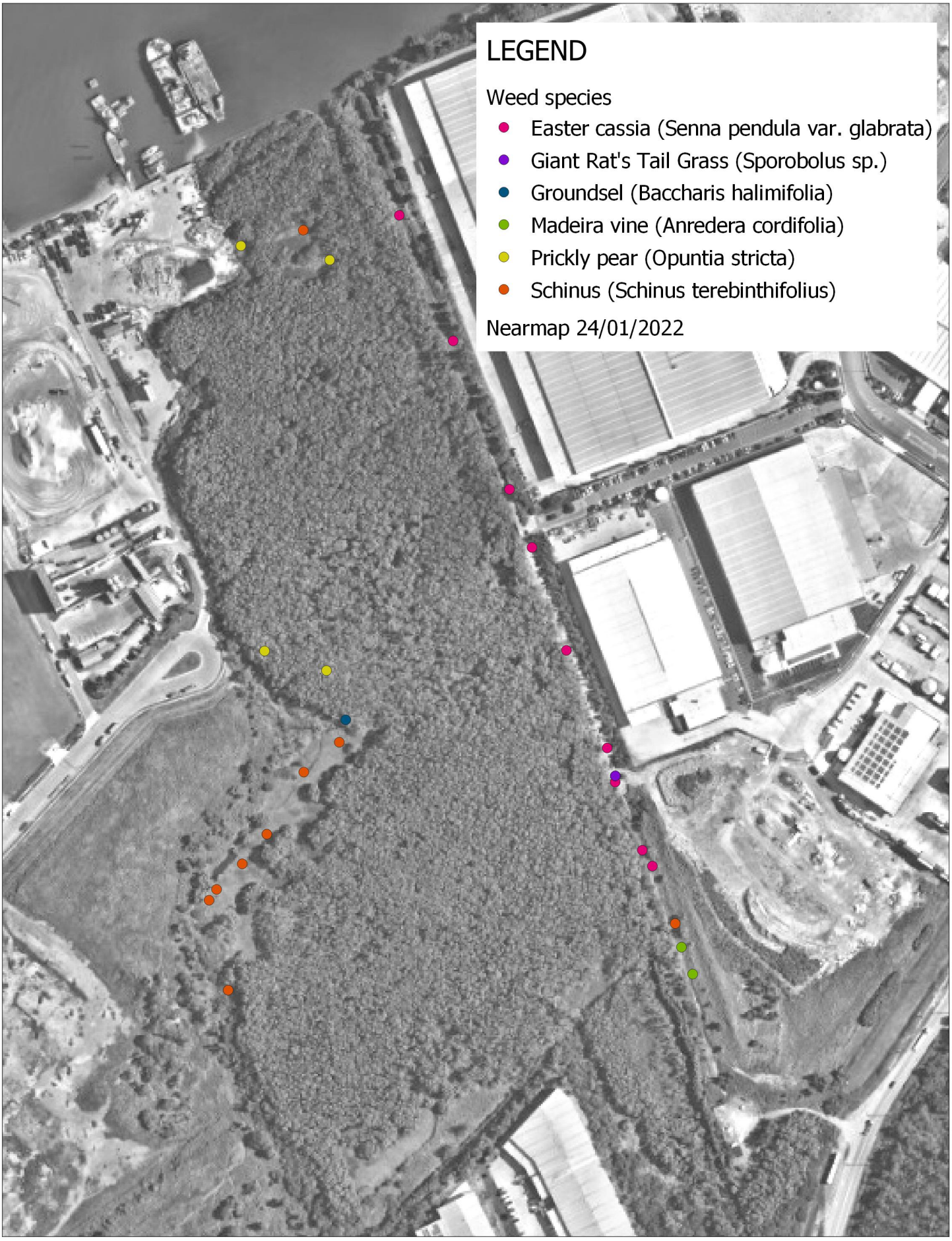
- **Restricted species** recorded in the survey included: prickly pear, broad-leaved pepper tree, groundsel, asparagus fern (*Asparagus aethiopicus*) and lantana.

Very sparse weed cover was recorded under the dense mangrove canopy comprising isolated prickly pear.

The western landward edge of the wetlands supported weeds dominated by broad-leaved pepper tree. Other weeds in this fringe included groundsel, asparagus fern, Brazilian nightshade, Rhode's grass, lantana, coral berry, prickly pear, broad-leaved pepper tree, castor oil plant, Leucaena, Easter cassia, umbrella tree and green panic on elevated sites.

An example of weed species are shown in Figure 3.13 and their distribution in Figure 3.14.

Figure 3.13 Weeds observed at Port West: prickly pear (left), groundsel with dead broad leaved-pepper (right)

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# Port West

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## 3.2 Sites at Risk to New Weed Imports

The following sites considered to be at potential risk to new weed incursion from imported vehicles.

### Port West Drain

**Description**
Port West Drain is a narrow intertidal channel fringed by remnant mangroves comprised of native grey mangrove. The channel is bounded to the west by extensive mangrove forest (described above) and to the east by cleared land for industrial purposes.

**Weeds**
The drain on the eastern side of Port West had a dense fringe of weeds on either side of the access track and in some areas across the track. The following observations were made of this area in 2022:

- Except for isolated giant rat's tail grass, no new weed species were recorded.
- **Restricted species** recorded: broad-leaved pepper tree, lantana, madeira vine and giant rat's tail grass.
- Dominant species:
  - **Woody weeds**: broad-leaved pepper tree, lantana, Easter cassia and castor oil plant
  - **Shrubs**: balloon cotton, red balloon cotton (Asclepias curassavica), blackberry nightshade, phasey bean
  - **Vines**: mile a minute, madeira vine
  - **Groundcover/grass**: Rhodes grass, beggar's tick, green panic, African Pidgeon grass, wandering Jew (*Tradescantia* spp.), Mossman river grass.

An example of weed species are shown in Figure 3.15 and survey records are shown in Figure 3.14.

All weed species recorded within the site are widespread across the Port and are well-established in the Brisbane region and throughout coastal south-east Queensland.

Figure 3.15 Dense weeds at Port West Drain

## Port Gate Drain

### Site Description

Port Gate Drain lies to the south of Boat Passage and collects stormwater run-off from the adjacent hardstand areas and drains into, and partially receives, the tidal waters in Boat Passage. The banks of the drain are constructed of concrete, gravel and/or compacted earth, which limits extensive vegetation growth. The instream channel and banks in the south of the drain were cleared of vegetation prior to the 2022 weed survey.

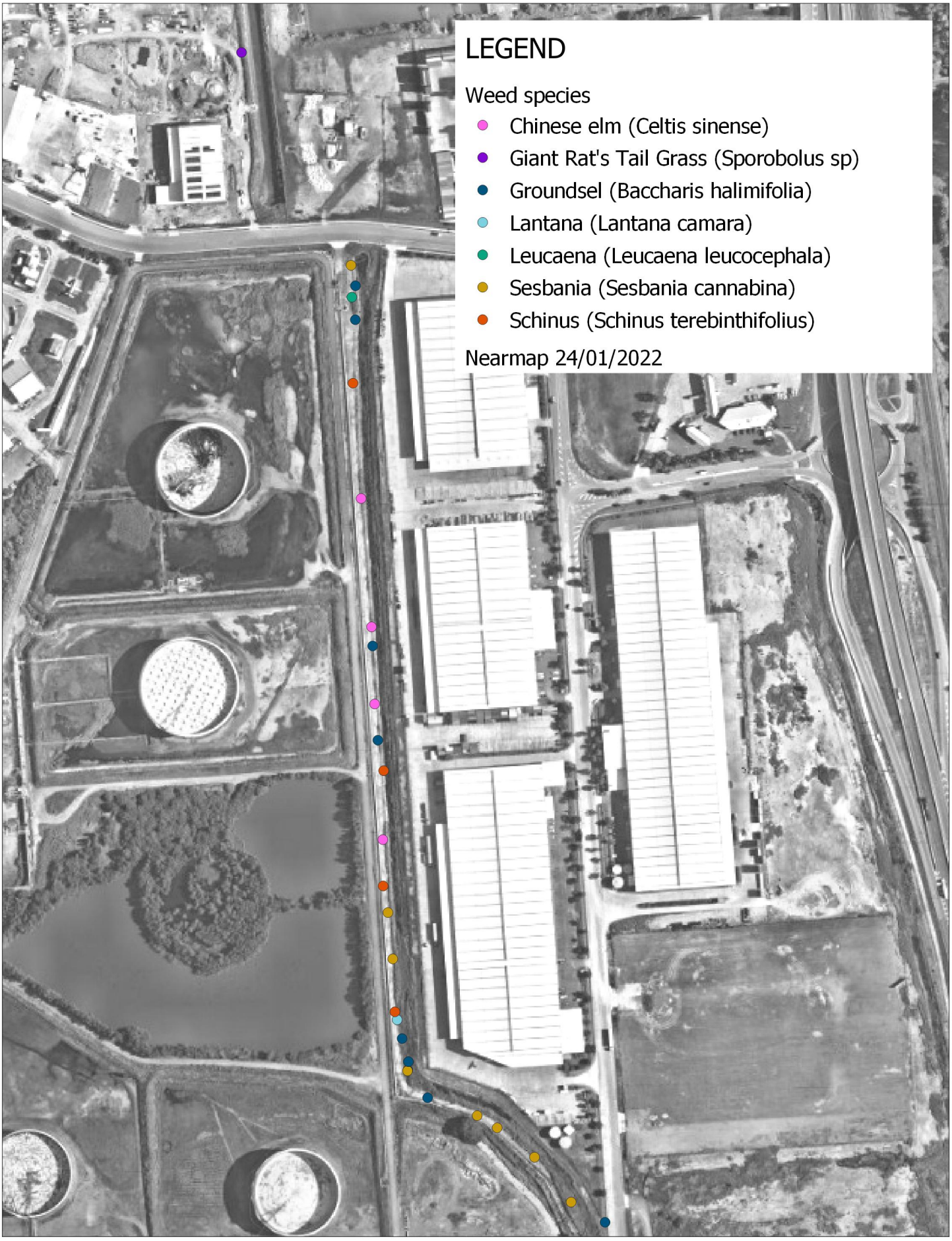
### Weeds

The following observations were made in the 2022 survey:

- Except for isolated giant rat's tail grass, no new weed species were recorded.
- **Restricted Matters** recorded included: groundsel, broad-leaved pepper tree, lantana and Chinese elm
- Exotic species recorded were dominated by **environmental weeds** well established across Brisbane including: mile a minute, siratro, Rhode's grass, green panic, beggar's tick, balloon cotton, red natal grass, blackberry nightshade, fleabane, Leucaena, passionflower, phasey bean and giant rat's tail grass
- The dominant **woody weeds** recorded included broad-leaved pepper tree, groundsel and lantana. Other woody weeds included Chinese elm, balloon cotton and Leucaena
- The **groundcover** was numerically dominated by exotic grasses including green panic, Rhode's grass, red natal grass, Johnson grass, Mossman river grass and Dallas grass. Other introduced grasses included giant reed (*Arundo donax*), Bermuda grass and whiskey grass
- Dominant exotic **vines** included mile a minute, siratro, cowpea and passionflower
- Common exotic **herbs and forbs** included beggar's tick, shepherd's purse, cupid's shaving brush (*Emilia sonchifolia*), fleabane, hairy wandering Jew, gomphrena weed, flannel weed and tridax daisy.

Weed observations recorded in 2022 are shown in Figure 3.17.

Figure 3.16 Port gate drain: Sesbania removal in southern drain (left) and dense weeds further north (right)




Title:

# Weed Survey Results 2022
# Port Gate Drain

Figure: 3.17

Rev: A

BMT endeavours to ensure that the information provided in this map is correct at the time of publication. BMT does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.

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### T1-3 Overflow Area and Car Precinct

The T1-3 and Car Precinct areas at the Port store imported vehicles and are potential vectors for newly introduced weed species entering the country via container ships. The survey site includes constructed concrete drains, regularly maintained roadside lawn, landscaped garden beds and the maintained Queensland Rail freight line easement.

The survey site is heavily modified and cleared and undergoes regular maintenance including mowing and spraying for weeds. Exotic species recorded were dominated by environmental weeds well established across Brisbane such as mile a minute, siratro, green panic, red natal grass, Rhode's grass and South African Pigeon grass. No new weed species were recorded and there has been no major change in weed species composition in the survey site.

# 4 Discussion

The PBPL weed monitoring program aims to detect the introduction and spread of new weed species imported to the Port and to monitor priority weed species within high value natural assets, including habitat for migratory waders and locally significant wetlands. In summary:

- Weed composition and distribution at the Port remained relatively stable over the monitoring period and no newly imported weeds were recorded in 2022.
- All the weed species recorded in the survey sites are widespread in degraded coastal habitats of south-east Queensland.
- New species detected during the survey included thatch grass at the Lake and Port Drive South and giant rat's tail grass at Port West Drain and Port Gate Drain. Both species are widespread in coastal habitats of south-east Queensland.
- The sites considered most at risk to weed imports are the imported vehicle storage areas and downstream environments. However, these sites provide poor habitat conditions for weeds as they area well maintained and/or subject to saline inundation.
- Localised patches of native reed and sesbania pea may cause impacts to saltmarsh habitat values, particularly at the bird hide. Ongoing monitoring will assess whether these species are contributing to altered hydrological conditions that may favour the establishment of terrestrial weeds which could reduce saltmarsh values for migratory waders.
- Regular monitoring will continue to be essential to assess the potential for new weed imports to southeast Queensland via the Port.

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# Annex A Weeds of National Significance (Department of Agriculture Water and the Environment)

| Common Name | Scientific Name |
|---|---|
| African boxthorn | *Lycium ferocissimum* |
| Alligator weed | *Alternanthera philoxeroides* |
| Asparagus fern | *Asparagus aethiopicus* |
| Asparagus fern | *Asparagus scandens* |
| Athel pine | *Tamarix aphylla* |
| Bitou bush, boneseed | *Chrysanthemoides monilifera* *subsp. monilifera and rotundata* |
| Blackberry | *Rubus fruticosus* *agg.* |
| Bridal creeper | *Asparagus asparagoides* |
| Bridal veil creeper | *Asparagus declinatus* |
| Broom | *Cytisus scoparius* |
| Cabomba | *Cabomba caroliniana* |
| Cats claw vine | *Dolichandra unguis-cati* |
| Chilean needle grass | *Nassella neesiana* |
| Climbing asparagus | *Asparagus africanus* |
| Climbing asparagus fern | *Asparagus plumosus* |
| Cotton-leaved physic-nut | *Jatropha gossypifolia* |
| Delta arrowhead | *Sagittaria platyphylla* |
| Fireweed | *Senecio madagascariensis* |
| Flax-leaved broom | *Genista linifolia* |
| Gamba grass | *Andropogon gayanus* |
| Gorse | *Ulex europaeus* |
| Hymenachne | *Hymenachne amplexicaulis* |
| Lantana | *Lantana camara* |
| Mesquite | *Prosopis* *spp.* |
| Maderia vine | *Anredera cordifolia* |
| Mimosa | *Mimosa pigra* |
| Montpellier broom | *Genista monspessulana* |
| Parkinsonia | *Parkinsonia aculeata* |
| Parthenium weed | *Parthenium hysterophorus* |

| Common Name | Scientific Name |
|---|---|
| Pond apple | *Annona glabra* |
| Prickly acacia | *Vachellia nilotica* *ssp. indica* |
| Prickly pear | *Austrocylindropuntia* *spp.* |
| Prickly pear | *Cylindropuntia* *spp.* |
| Prickly pear | *Opuntia* *spp.* |
| Rubber vine | *Cryptostegia grandiflora* |
| Salvinia | *Salvinia molesta* |
| Serrated tussock | *Nassella trichotoma* |
| Silver nightshade | *Solanum elaeagnifolium* |
| Water hyacinth | *Eichhornia crassipes* |
| Willows except weeping willows, pussy willow and sterile pussy willow | *Salix* *spp. except S. babylonica, S. X calodendron and S. X reichardtiji* |

# Annex B Restricted Invasive Plants under the Queensland Biosecurity Act (Department of Agriculture and Fisheries)

| Restricted Matter | Category |
|---|---|
| African boxthorn (*Lycium ferocissimum*) | 3 |
| African fountain grass (*Cenchrus setaceum*) | 3 |
| African tulip tree (*Spathodea campanulata*) | 3 |
| alligator weed (*Alternanthera philoxeroides*) | 3 |
| annual ragweed (*Ambrosia artemisiifolia*) | 3 |
| asparagus fern (*Asparagus aethiopicus, A. africanus* and *A. plumosus*) | 3 |
| asparagus fern (*Asparagus scandens*) | 3 |
| athel pine (*Tamarix aphylla*) | 3 |
| badhara bush (*Gmelina elliptica*) | 3 |
| balloon vine (*Cardiospermum grandiflorum*) | 3 |
| belly-ache bush (*Jatropha gossypiifolia* and hybrids) | 3 |
| bitou bush (*Chrysanthemoides monilifera* ssp. *rotundifolia*) | 2,3,4,5 |
| blackberry (*Rubus anglocandicans*, *Rubus fruticosus* aggregate) | 3 |
| boneseed (*Chrysanthemoides monilifera* ssp. *monilifera*) | 2,3,4,5 |
| bridal creeper (*Asparagus asparagoides*) | 2,3,4,5 |
| bridal veil (*Asparagus declinatus*) | 3 |
| broad-leaved pepper tree (*Schinus terebinthifolius*) | 3 |
| cabomba (*Cabomba caroliniana*) | 3 |
| camphor laurel (*Cinnamomum camphora*) | 3 |
| candyleaf (*Stevia ovata*) | 3 |
| cane cactus (*Austrocylindropuntia cylindrica*) | 3 |
| cat's claw creeper (*Dolichandra unguis-cati*) | 3 |
| Chilean needle grass (*Nassella neesiana*) | 3 |
| chinee apple (*Ziziphus mauritiana*) | 3 |
| Chinese celtis (*Celtis sinensis*) | 3 |
| cholla cacti with the following names— | |
| • coral cactus (*Cylindropuntia fulgida*) | 3 |

| Restricted Matter | Category |
|---|---|
| • devil's rope pear (*C. imbricata*) | 3 |
| • Hudson pear (*Cylindropuntia rosea* and *C. tunicata*) | 2,3,4,5 |
| • jumping cholla (*C. prolifera*) | 2,3,4,5 |
| • snake cactus (*C. spinosior*) | 3 |
| Dutchman's pipe (*Aristolochia* spp. other than native species) | 3 |
| elephant ear vine (*Argyreia nervosa*) | 3 |
| Eve's pin cactus (*Austrocylindropuntia subulata*) | 3 |
| fireweed (*Senecio madagascariensis*) | 3 |
| flax-leaf broom (*Genista linifolia*) | 3 |
| gamba grass (*Andropogon gayanus*) | 3 |
| giant sensitive plant (*Mimosa diplotricha* var. *diplotricha*) | 3 |
| gorse (*Ulex europaeus*) | 3 |
| groundsel bush (*Baccharis halimifolia*) | 3 |
| harrisia cactus (*Harrisia martinii*, *H. tortuosa* and *H. pomanensis* syn. *Cereus pomanensis*) | 3 |
| harungana (*Harungana madagascariensis*) | 3 |
| honey locust (*Gleditsia triacanthos* including cultivars and varieties) | 3 |
| hygrophila (*Hygrophila costata*) | 3 |
| hymenachne or olive hymenachne (*Hymenachne amplexicaulis* and hybrids) | 3 |
| Koster's curse (*Clidemia hirta*) | 2,3,4,5 |
| kudzu (*Pueraria montana* var. *lobata* syn. *P. lobata*, *P. triloba* other than in the Torres Strait Islands) | 3 |
| lantanas— | |
| • creeping lantana (*Lantana montevidensis*) | 3 |
| • lantana, common lantana (*Lantana camara*) | 3 |
| limnocharis, yellow burrhead (*Limnocharis flava*) | 2,3,4,5 |
| Madeira vine (*Anredera cordifolia*) | 3 |
| Madras thorn (*Pithecellobium dulce*) | 2,3,4,5 |
| mesquites— | |
| • honey mesquite (*Prosopis glandulosa*) | 3 |
| • mesquite or algarroba (*Prosopis pallida*) | 3 |
| • Quilpie mesquite (*Prosopis velutina*) | 3 |

| Restricted Matter | Category |
|---|---|
| Mexican bean tree (*Cecropia pachystachya*, *C. palmata* and *C. peltata*) | 2,3,4,5 |
| Mexican feather grass (*Nassella tenuissima*) | 2,3,4,5 |
| miconia with the following names— | |
| • *Miconia calvescens* | 2,3,4,5 |
| • *M. cionotricha* | 2,3,4,5 |
| • *M. nervosa* | 2,3,4,5 |
| • *M. racemosa* | 2,3,4,5 |
| mikania vine (*Mikania micrantha*) | 2,3,4,5 |
| mimosa pigra (*Mimosa pigra*) | 2,3,4,5 |
| Montpellier broom (*Genista monspessulana*) | 3 |
| mother of millions (*Bryophyllum delagoense* syn. *B. tubiflorum*, *Kalanchoe delagoensis*) | 3 |
| mother of millions hybrid (*Bryophyllum* x *houghtonii*) | 3 |
| ornamental gingers— | |
| • Kahili ginger (*Hedychium gardnerianum*) | 3 |
| • white ginger (*H. coronarium*) | 3 |
| • yellow ginger (*H. flavescens*) | 3 |
| parkinsonia (*Parkinsonia aculeata*) | 3 |
| parthenium (*Parthenium hysterophorus*) | 3 |
| pond apple (*Annona glabra*) | 3 |
| prickly acacia (*Vachellia nilotica*) | 3 |
| prickly pears— | |
| • bunny ears (*Opuntia microdasys*) | 2,3,4,5 |
| • common pest pear, spiny pest pear (*O. stricta* syn. *O. inermis*) | 3 |
| • drooping tree pear (*O. monacantha* syn. *O. vulgaris*) | 3 |
| • prickly pear (*O. elata*) | 2,3,4,5 |
| • tiger pear (*O. aurantiaca*) | 3 |
| • velvety tree pear (*O. tomentosa*) | 3 |
| • Westwood pear (*O. streptacantha*) | 3 |
| privets— | |
| • broad-leaf privet, tree privet (*Ligustrum lucidum*) | 3 |
| • small-leaf privet, Chinese privet (*L. sinense*) | 3 |

| Restricted Matter | Category |
|---|---|
| rat's tail grasses— | |
| • American rat's tail grass (*Sporobolus jacquemontii*) | 3 |
| • giant Parramatta grass (*S. fertilis*) | 3 |
| • giant rat's tail grass (*S. pyramidalis* and *S. natalensis*) | 3 |
| rubber vines— | |
| • ornamental rubber vine (*Cryptostegia madagascariensis*) | 3 |
| • rubber vine (*C. grandiflora*) | 3 |
| sagittaria (*Sagittaria platyphylla*) | 3 |
| salvinia (*Salvinia molesta*) | 3 |
| Scotch broom (*Cytisus scoparius*) | 3 |
| Senegal tea (*Gymnocoronis spilanthoides*) | 3 |
| Siam weed with the following names— | |
| • *Chromolaena odorata* | 3 |
| • *C. squalida* | 3 |
| sicklepods— | |
| • foetid cassia (*Senna tora*) | 3 |
| • hairy cassia (*S. hirsuta*) | 3 |
| • sicklepod (*S. obtusifolia*) | 3 |
| silver-leaf nightshade (*Solanum elaeagnifolium*) | 3 |
| Singapore daisy (*Sphagneticola trilobata* syn. *Wedelia trilobata*) | 3 |
| telegraph weed (*Heterotheca grandiflora*) | 3 |
| thunbergia (*Thunbergia grandiflora* syn. *T. laurifolia*) | 3 |
| tobacco weed (*Elephantopus mollis*) | 3 |
| water hyacinth (*Eichhornia crassipes*) | 3 |
| water lettuce (*Pistia stratiotes*) | 3 |
| water mimosa (*Neptunia oleracea* and *N. Plena*) | 2,3,4,5 |
| willows (all *Salix* spp. other than *S. babylonica*, *S.* x *calodendron* and *S.* x *reichardtii*) | 3 |
| yellow bells (*Tecoma stans*) | 3 |
| yellow oleander, Captain Cook tree (*Cascabela thevetia* syn. *Thevetia peruviana*) | 3 |

# Annex C Brisbane City Council Environmental Weeds (Brisbane City Council)

C.1.1 Species included in the Biosecurity Act – prioritised for the Brisbane LGA

| Risk | Common Name | Scientific Name |
|---|---|---|
| Significant | Alligator weed | *Altemanthera philoxeroides* |
| | Cabomba | *Cabomba caroliniana* |
| | Horsetails | *Equisetum spp.* |
| High | Broad-leaved pepper tree | *Schinus terebinthifolius* |
| | Cat's claw creeper | *Dolichandra unguis-cati* |
| | Hymenachne | *Hymenachne amplexicaulis* |
| | Kudzu | *Pueraria lobate* |
| | Parthenium | *Parthenium hysterophorus* |
| | Rat's tail grass/giant rat's tail grass | *Sporobolus pyramidalis* and *S.natalensis* |
| | Salvinia | *Salvinia molesta* |
| | Senegal tea | *Gymnocoronis spilanthoides* |
| | Water hyacinth | *Eichhornia crassipes* |
| | Water lettuce | *Pistia stratiotes* |
| | Water mimosa | *Neptunia oleracea (*and *N. plena)* |
| Moderate | Asparagus ferns | *Asparagus aethiopicus 'Sprengeri' A. africanus* |
| | Balloon vine | *Cardiospermum grandiflorum* |
| | Bridal creeper | *Asparagus asparagoides* |
| | Broadleaf privet | *Ligustrum lucidum* |
| | Giant Parramatta grass/rat's tail grasses/Parramatta grass | *Sporobolus fertilis, S. africanus, S. jacquemontii* |
| | Groundsel bush | *Baccharis halimifolia* |
| | Hygrophila/glush weed | *Hygrophila costata* |
| | Kahili ginger | *Hedychium gardnerianum* |
| | Madeira vine | *Anredera cordifolia* |
| | Willows | *Salix spp*. other than *S. babylonica, S. x calodendron, S. xreichardtii* and *S. chilensis; syn. S. humboldtiana* = pencil willow (Chilean willow*)* |
| Low | Annual ragweed | *Ambrosia artemisiifolia* |

| Risk | Common Name | Scientific Name |
|---|---|---|
| | Bitou bush | *Chrysanthemoides monilifera subsp. rotundata* |
| | Boneseed | *Chrysanthemoides monilifera ssp. monilifera* |
| | Camphor laurel | *Cinnamomum camphora* |
| | Chinese celtis | *Celtis sinensis* |
| | Dutchman's pipe | *Aristolochia elegans* |
| | Fireweed | *Senecio madagascariensis* |
| | Honey locust | *Gleditsia triacanthos* including cultivars and varieties |
| | Mexican feather grass | *Nassella tenuissima* |
| | Rubber vine | *Cryptostegia grandiflora* |
| | Tropical soda apple | *Solanum viarum* |
| | Yellow ginger | *Hedychium flavescens* |
| Very low | African fountain grass | *Pennisetum setaceum (Cenchrus setaceus)* |
| | African tulip tree | *Spathodea campanulata* |
| | Athel pine | *Tamarix aphylla* |
| | Belly-ache bush/cotton leaf/physic nut | *Jatropha gossypiifolia* |
| | Bitterweed | *Helenium amarum* |
| | Blackberry | *Rubus anglocandicans, Rubus fruticosus agg.* |
| | Chilean needle grass | *Nasella neesiana* |
| | Elephant ear vine | *Philodendron spp. Argyreia nervosa* |
| | Harrisia cactus | *Harrisia martinii* |
| | Lantana (all species) | *Lantana spp.* |
| | Mexican bean tree | *Cecropia. palmata* and *C. peltata* |
| | Miconia | *Miconia calvescens, M. racemosa* and *M. nervosa* |
| | Mother of millions hybrid | *Bryophyllum × houghtonii* |
| | Pond apple | *Annona glabra* |
| | Prickly pear/ tiger pear/ drooping tree pear/westwood pear/velvety tree pear | *Opuntia spp. (O. elata* and *O. microdasys* – cat.2,3,4,5*)* |
| | Sagittaria | *Sagittaria platyphylla* |
| | Singapore daisy | *Sphagneticola trilobata* |
| | Small-leaved privet/ Chinese privet | *Ligustrum sinense* |

| Risk | Common Name | Scientific Name |
|---|---|---|
| | Telegraph weed | *Heterotheca grandiflora* |
| | Yellow bells | *Tecoma stans* |
| | Yellow oleander/Captain Cook tree | *Cascabela thevetia syn. Thevetia peruviana* |

C.1.2 Species in the Biosecurity Act – but assessed as having little impact in the Brisbane LGA

| Common Name | Scientific Name |
|---|---|
| Acacias non-indigenous to Australia | *Acacia spp.* other than *Acacia nilotica* and *Acacia farnesiana* |
| African boxthorn | *Lycium ferocissimum* |
| Anchored water hyacinth | *Eichhornia azurea* |
| Annual thunbergia | *Thunbergia annua* |
| Badhara bush | *Gmelina elliptica* |
| Candleberry myrtle/candleberry myrth | *Myrica faya* |
| Candyleaf | *Stevia ovata* |
| Chinee apple | *Ziziphus mauritiana* |
| Cholla cactus/coral cactus/devil's rope pear/snake cactus/Hudson pear | *Cylindropuntia spp.* and their hybrids, other than *C. spinosior, C. fulgida* and *C. imbricata* |
| Christ's thorn | *Ziziphus spina-christi* |
| Eurasian water milfoil | *Myriophyllum spicatum* |
| Floating water chestnuts | *Trapa spp.* |
| Gamba grass | *Andropogon gayanus* |
| Giant sensitive plant | *Mimosa diplotricha* (prev. *Mimosa invisa)* |
| Giant sensitive tree | *Mimosa pigra* |
| Gorse | *Ulex europaeus* |
| Harungana | *Harungana madagascariensis* |
| Kochia | *Kochia scoparia syn Bassia scoparia* |
| Koster's curse | *Clidemia hirta* |
| Lagarosiphon | *Lagarosiphon major* |
| Laurel clock vine, fragrant thunbergia | *Thunbergia laurifolia, (syn grandiflora)* |
| Limnocharis/yellow burrhead | *Limnocharis flava* |
| Madras thorn | *Pithecellobium dulce* |
| Mesquites | All *Prosopis spp*. and hybrids other than *Prosopis glandulosa, P. pallida* and *P. velutina* |

| Common Name | Scientific Name |
|---|---|
| Mikania vine | *Mikania spp.* |
| Parkinsonia | *Parkinsonia aculeata* |
| Peruvian primrose | *Ludwigia peruviana* |
| Prickly acacia | *Acacia nilotica syn(Vachellia nilotica)* |
| Red sesbania | *Sesbania punicea* |
| Serrated tussock | *Nassella trichotoma* |
| Sicklepod/hairy cassia/foetid cassia | *Senna obtusifolia, S. hirsuta* and *S. tora* and *obtusifolia* |
| Spiked pepper | *Piper aduncum* |
| Tobacco weed | *Elephantopus mollis* |
| Water soldiers | *Stratiotes aloides* |
| White ginger | *Hedychium coronarium* |
| Witch weeds | *Striga spp.* other than native species |

C.1.3 Species NOT in the Biosecurity Act but that are regulated under the Natural Assets Local Law

| Common Name | Scientific Name |
|---|---|
| Agave | *Agave spp.* |
| Amazon frogbit | *Limnobium laevigatum* |
| Anzac tree daisy | *Montanoa hibiscifolia* |
| Arrowhead vine | *Syngonium spp.* |
| Arsenic bush | *Senna septemtrionalis* |
| Arum lily | *Zantedeschia aethiopica* |
| Bahia grass | *Paspalum notatum* |
| Balsam (busy Lizzie) | *Impatiens spp.* |
| Bamboos | *Phyllostachys aurea* and *nigra* |
| Black eyed Susan | *Thunbergia alata* |
| Blackberry nightshade | *Solanum nigrum* |
| Blade apple, lemon vine, Barbados gooseberry | *Pereskia aculeata* |
| Blue trumpet vine | *Thunbergia grandiflora* |
| Brazilian nightshade | *Solanum seaforthianum* |
| Cadaga or cadaghi | *Corymbia torelliana* |
| Cape ivy | *Senecio angulatus* |
| Cape spinach | *Emex australis* |

| Common Name | Scientific Name |
|---|---|
| Capeweed | *Arctotheca calendula* |
| Castor oil plant | *Ricinus communis* |
| Chinese tallow | *Triadica sebifera* |
| Cockspur coral tree | *Erythrina crista-galli* |
| Cocos palm or Queen palm | *Syagrus romanzoffiana* |
| Common Indian hawthorn | *Rhaphiolepis indica* |
| Condamine couch/lippia | *Phyla canescens* |
| Coral berry or Indian currant | *Ardisia crenata, Rivina humilis* or *Symphoricarpos orbiculatus* |
| Coral creeper | *Barleria repens* |
| Corky passion vine | *Passiflora suberosa* |
| Cotoneaster | *Cotoneaster lacteus* |
| Creeping lantana | *Lantana montevidensis* |
| Crofton weed | *Eupatorium adenophorum* |
| Dense water weed | *Egeria densa* |
| Devil's fig | *Solanum torvum* |
| Duranta | *Duranta erecta syn. D. repens* and *D. plumieri* |
| Dyschoriste | *Dyschoriste depressa* |
| Easter cassia | *Senna pendula var. glabrata* |
| Elephant grass | *Pennisetum purpureum* |
| Feathertop Rhodes grass | *Chloris virgata* |
| Fire flag | *Thalia geniculata* |
| Fishbone fern | *Nephrolepis cordifolia* |
| Foxglove | *Digitalis purpurea* |
| Giant devil's fig | *Solanum hispidum* |
| Giant reed | *Arundo donax* |
| Glory lily | *Gloriosa superba* |
| Glycine | *Neonotonia wightii* |
| Golden chain tree | *Laburnum anagyroides* |
| Golden rain tree | *Koelreuteria elegans ssp. formosana* |
| Golden rod | *Solidago altissima* |
| Green cestrum | *Cestrum parqui* |
| Guinea grass | *Megathyrsus maximus* |

| Common Name | Scientific Name |
|---|---|
| Hemlock | *Conium maculatum* |
| Himalayan ash | *Fraxinus griffithii* |
| Hiptage | *Hiptage benghalensis* |
| Indian rubber tree | *Ficus elastica* |
| Ivy gourd | *Coccinia grandis* |
| Jacaranda | *Jacaranda mimosifolia* |
| Japanese/Mexican sunflower | *Tithonia diversifolia, T.sp* |
| Japanese honeysuckle | *Lonicera japonica* |
| Johnson grass | *Sorghum halepense* |
| Khaki weed | *Alternanthera pungens* |
| Kidney leaf mud plantain | *Heteranthera reniformis* |
| Leucaena | *Leucaena leucocephala (all spp.)* |
| Little bluestem | *Schizachyrium microstachyum* |
| Live plant, Resurrection plant | *Bryophyllum pinnatum* |
| Mile a minute | *Ipomoea cairica* |
| Mist flower | *Ageratina riparia* |
| Mock orange | *Murraya paniculata* |
| Molasses grass | *Melinis minutiflora* |
| Monkey's comb | *Pithecoctenium crucigerum* |
| Morning glory | *Ipomoea indica* |
| Mossman river grass | *Cenchrus echinatus* |
| Mother-in-law's tongue | *Sansevieria trifasciata* |
| Needle burr or spiny amaranth | *Amaranthus spinosus* |
| Ochna | *Ochna serrulata* |
| Oleander | *Nerium oleander* |
| Pampas grass | *Cortaderia selloana* |
| Paper mulberry | *Broussonetia papyrifera* |
| Para grass | *Urochloa mutica* |
| Parrot feather | *Myriophyllum aquaticum* |
| Perennial horse gram | *Macrotyloma axillare* |
| Perennial ragweed | *Ambrosia psilostachya* |
| Pongamia tree | *Millettia pinnata* |
| Praxelis | *Praxelis clematidea* |

| Common Name | Scientific Name |
|---|---|
| Prickly poppy or Mexican poppy | *Argemone ochroleuca* |
| Purple succulent | *Callisia fragrans* |
| Red-head cotton bush | *Asclepias curassavica* |
| Rhodes grass | *Chloris gayana* |
| Rhus | *Toxicodendron succedaneum* |
| Ruellia | *Ruellia tweediana* |
| Shoebutton ardisia | *Ardisia elliptica* |
| Sicklebush | *Dichrostachys cinerea* |
| Signal grass | *Urochloa decumbens* |
| Silver leaf desmodium or velcro plant | *Desmodium uncinatum* |
| Siratro | *Macroptilium atropurpureum* |
| Slash pine | *Pinus elliotii* |
| South African pigeon grass | *Setaria sphacelata* |
| Stinking roger | *Tagetes minuta* |
| Taro | *Colocasia esculenta* |
| Thorn apples | *Datura spp* |
| Tipuana | *Tipuana tipu* |
| Tropical pickeral weed | *Pontederia rotundifolia* |
| Umbrella tree | *Schefflera actinophylla* |
| Wandering Jew | *Tradescantia fluminensis, T. pallida and T. spathacea* |
| Water lily | *Nymphaea caerulea ssp. zanzibarensis* |
| Whiskey grass | *Andropogon virginicus* |
| White moth plant | *Araujia sericifera and A. hortorum* |
| White mulberry | *Morus alba* |
| Wait-a while | *Caesalpinia decapetala* |
| Wild aster | *Aster subulatus* |
| Wild tobacco tree | *Solanum mauritianum* |
| Zebrina | *Tradescantia zebrina* |

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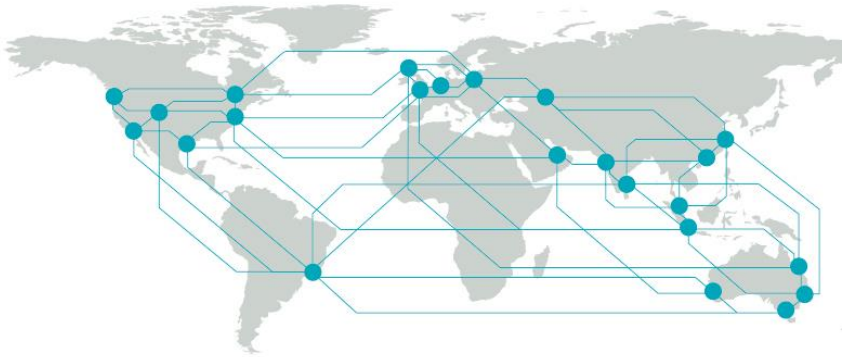

BMT is a leading design, engineering, science and management consultancy with a reputation for engineering excellence. We are driven by a belief that things can always be better, safer, faster and more efficient. BMT is an independent organisation held in trust for its employees.

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