



Port of Brisbane Corporation

Final Report

Plant Survey - T1-3 Overflow & Car Precinct Port of Brisbane (December 2008)

January 2009

"IMPORTANT NOTE"

Apart from fair dealing for the purposes of private study, research, criticism, or review as permitted under the Copyright Act, no part of this report, its attachments or appendices may be reproduced by any process without the written consent of Natural Solutions Environmental Consultants Pty Ltd ("Natural Solutions"). All enquiries should be directed to Natural Solutions.

We have prepared this report for the sole purposes of Port of Brisbane Corporation ("Client") for the specific purpose only for which it is supplied. This report is strictly limited to the Purpose and the facts and matters stated in it and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter.



In preparing this report we have made certain assumptions. We have assumed that all information and documents provided to us by the Client or as a result of a specific request or enquiry were complete, accurate and up-to-date. Where we have obtained information from a government register or database, we have assumed that the information is accurate. Where an assumption has been made, we have not made any independent investigations with respect to the matters the subject of that assumption. We are not aware of any reason why any of the assumptions are incorrect.

This report is presented without the assumption of a duty of care to any other person (other than the Client) ("Third Party"). The report may not contain sufficient information for the purposes of a Third Party or for other uses. Without the prior written consent of Natural Solutions:

- a) this report may not be relied on by a Third Party; and
- b) Natural Solutions will not be liable to a Third Party for any loss, damage, liability or claim arising out of or incidental to a Third Party publishing, using or relying on the facts, content, opinions or subject matter contained in this report.

If a Third Party uses or relies on the facts, content, opinions or subject matter contained in this report with or without the consent of Natural Solutions, Natural Solutions disclaims all risk and the Third Party assumes all risk and releases and indemnifies and agrees to keep indemnified Natural Solutions from any loss, damage, claim or liability arising directly or indirectly from the use of or reliance on this report.

In this note, a reference to loss and damage includes past and prospective economic loss, loss of profits, damage to property, injury to any person (including death) costs and expenses incurred in taking measures to prevent, mitigate or rectify any harm, loss of opportunity, legal costs, compensation, interest and any other direct, indirect, consequential or financial or other loss.

Quality Assurance Statement				
Revision No.	Author	Reviewer	Approved for Issue	
			Signature	Date
0	Liz Fisher	Nicole Lechner		16 Jan 2009
1	Liz Fisher	Nicole Lechner		27 Jan 2009

NATURAL SOLUTIONS ENVIRONMENTAL CONSULTANTS PTY LTD**Brisbane Office**

Suite 16, Level 2 Central Brunswick,
Cnr Brunswick & Martin Streets
FORTITUDE VALLEY QLD 4006
PO Box 1156, Fortitude Valley Qld 4006
Tel (07) 3124 9400
Fax (07) 3124 9499

Cairns Office

Level 2, 26 Florence Street
CAIRNS QLD 4870
PO Box 6935, Cairns Qld 4870
Tel (07) 4041 3522
Fax (07) 4051 4141

Sunshine Coast Office

Suite 13, the Atrium
91 Poinciana Street
TEWANTIN QLD 4565
PO Box 1171, Tewantin Qld 4565
Ph (07) 5442 4494
Fax (07) 5442 4474

Toowoomba Office

Suite 10, Park View Chambers
123 Margaret Street
TOOWOOMBA QLD 4350
PO Box 1185, Toowoomba BC Qld 4350
Ph (07) 4632 2511
Fax (07) 4632 2599

Townsville Office

Suite 1, Ground Floor, Central Plaza
370 Flinders Street
TOWNSVILLE QLD 4810
PO Box 279, Townsville Qld 4810
Tel (07) 4772 5033
Fax (07) 4772 5044

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	3
1.1 Site Description	3
2.0 METHODOLOGY	6
2.1 AQIS Target Weeds List	6
3.0 FINDINGS	7
3.1 T1-3 Overflow Area	7
3.2 Car Precinct Area	7
4.0 DISCUSSION.....	9
4.1 T1-3 Overflow Area	9
4.1.1 Weed Species Observed at T1-3 Overflow Area	9
4.1.2 Comparisons between T1-3 Overflow Surveys	9
4.2 Car Precinct Area	12
4.2.1 Weed Species Observed at the Car Precinct Area	12
4.2.2 Comparisons between Car Precinct Area Surveys	13
4.3 Weather Conditions	16
5.0 RECOMMENDATIONS	19
6.0 REFERENCES	21

FIGURES / GRAPHS

Figure 1	Site Map – T1-3 Overflow & Car Precinct Survey Areas, Port of Brisbane	5
Graph 1	Number of Exotic Species Recorded per Survey along the T1-3 Overflow Area.....	10
Graph 2	Number of Exotic Species Recorded per Survey along the Car Precinct Area	14
Graph 3	Long-term Climatic Averages (50yrs data) compared with the Port of Brisbane Rainfall Data (2003-2008)	17

TABLES

Table 1	Number of Exotic Species Recorded Per Survey for the T1-3 Overflow Area.....	10
Table 2	Number of Exotic Species by Family for the T1-3 Overflow Area	11
Table 3	The Class and Abundance of the LPR Declared Species Recorded During the Car Precinct Area Survey September 2008	13
Table 4	Number of Exotic Species Recorded Per Survey for the Car Precinct Area.....	14
Table 5	Number of Exotic Species by Family for the Car Precinct Area	15

APPENDICES

APPENDIX A	Survey Results of T1-3 Overflow Area	A
APPENDIX B	Car Precinct Survey Results.....	B
APPENDIX C	Weed Target List (AQIS)	C
APPENDIX D	Plant Survey Data Sheet	D

EXECUTIVE SUMMARY

Natural Solutions Environmental Consultants Pty Ltd have been commissioned by the Port of Brisbane Corporation (PBC) to undertake a plant survey along the T1-3 Overflow and Car Precinct areas located within the Port of Brisbane and to produce associated reporting. This is the fourth monitoring report and details the results from the December 2008 survey.

The primary purpose for the on-going quarterly surveys is to monitor for any previously unrecorded incursions of weed species listed by the Australian Quarantine and Inspection Services (AQIS) that may arise on the sites (as listed in Appendix C). The secondary objective of the on-going quarterly surveys is to address the long-term management of these areas through continual monitoring of the occurrence and abundance of species considered to be exotic, including species declared under the *Land Protection (Stock Route Management) Regulations 2003* (LPR) and locally occurring weeds. Recommendations with respect to the ongoing management of plants within the T1-3 Overflow and Car Precinct areas are also provided.

Summary of Findings from the December 2008 Survey for the T1-3 Overflow Area

The following points summarise the findings of the December 2008 plant survey for the T1-3 Overflow area:

1. Sixty-two plant species were recorded. This consisted of seven native species, three AQIS listed weed species and 52 exotic species;
2. The AQIS listed weed species recorded were Red Natal Grass (*Melinis repens*), Flax-leaf Fleabane (*Conyza bonariensis*) and Common Reed (*Phragmites australis*). Only one of these species, Flax-leaf Fleabane, was not recorded during the previous September 2008 plant survey in this area (i.e. the remaining two species were previously recorded) but has been recorded in previous surveys;
3. The recorded AQIS listed weed species occurred along the majority of the eastern side of the T1-3 Overflow area and within the constructed northern drain;
4. No individuals of the AQIS listed Siam Weed (*Chromolaena odorata*) were located during the plant survey;
5. Broad-leaved Peppertree (*Schinus terebinthfolia*), which is an LPR declared species was recorded in the December 2008 plant survey;
6. Locally occurring exotic grasses such as Couch Grass (*Cynodon dactylon*) and Rhodes Grass (*Chloris gayana*) as well as exotic herbaceous and vine species such as Cut-leaf Evening Primrose (*Oenothera lacinata*), Verano Stylo (*Stylosanthes hamata*) and Siratro (*Macroptilium atropurpureum*) were the dominant groups of exotic species observed throughout the majority of the T1-3 Overflow area;
7. Species diversity of AQIS listed weed species has remained consistent in comparison to the previous September 2008 survey results whilst abundance and coverage have slightly increased; and
8. Species diversity, abundance and coverage of exotic species has increased in comparison to the previous September 2008 survey results.

Summary of Findings from the December 2008 Survey for the Car Precinct Area

The following points summarise the findings of the December 2008 plant survey for the Car Precinct area:

1. Seventy-two plant species were recorded. This consisted of 13 native species, three AQIS listed weed species and 56 exotic species;
2. The AQIS listed weed species recorded were Common Reed (*Phragmites australis*), Red Natal Grass (*Melinis repens*) and Flax-leaf Fleabane (*Conyza bonariensis*). These species were recorded during the previous September 2008 plant survey in this area;
3. No individuals of the AQIS listed Siam Weed (*Chromolaena odorata*) were located during the plant survey;
4. Individuals of Groundsel (*Baccharis halimifolia*), Fireweed (*Senecio madagascariensis*), Broad-leaved Peppertree (*Schinus terebinthifolia*) and Giant Parramatta Grass (*Sporobolus fertilis*), which are LPR declared species were recorded in the December 2008 plant survey;
5. Locally occurring exotic grass species such as Rhodes Grass (*Chloris gayana*), Paspalum (*Paspalum dilatatum*) and Green Panic (*Megathyrsus maximus* var. *maximus*) as well as exotic herbaceous species such as Cut-leaf Evening Primrose (*Oenothera laciniata*) were the dominant exotic species observed throughout the majority of the Car Precinct area. Common Reed (*Phragmites australis*) as well as exotic sedge species were the dominant species in the wetter portions of the Car Precinct area such as within the trench and around the Visitor Lake;
6. Species diversity of AQIS listed weed species has remained relatively consistent in comparison to the September 2008 plant survey results, whereas abundance and coverage has slightly increased; and
7. Exotic species diversity, abundance and coverage has increased in comparison to the September 2008 plant survey results.

Summary of Recommendations

Recommendations regarding the long-term management of exotic species within the T1-3 Overflow and Car Precinct area are provided in this report. No specific recommendations are provided for the AQIS listed weed species that occur within the T1-3 Overflow and Car Precinct areas as current maintenance activities, such as slashing and spot spraying, are adequate measures to control such weeds. It is recommended that maintenance activities should include the removal of the LPR declared species. In addition, all areas within the T1-3 Overflow and Car Precinct area should be maintained as often as the more visible sections of the survey area, such as the roadside verge of Port Drive, are maintained (where practical and when necessary). It is also recommended that a more integrated and long term management of the weed species within the T1-3 Overflow and Car Precinct area is implemented through increasing the native plant cover.

1.0 INTRODUCTION

Natural Solutions Environmental Consultants Pty Ltd have been commissioned by the Port of Brisbane Corporation (PBC) to undertake regular surveys for weed species listed by Australian Quarantine and Inspection Service (AQIS) along the T1-3 Overflow and Car Precinct areas, Port of Brisbane¹ and to produce associated reporting detailing the findings from such surveys. In addition, plant species considered to be exotic/invasive including species declared under the *Land Protection (Stock Route Management) Regulations 2003* (LPR) and locally occurring weeds (hereafter collectively referred to as exotic species), and invasive natives are also included in the surveys and reporting.

These plant surveys have been implemented in response to a request from AQIS to increase surveillance for potential incursions of AQIS listed weed species that may be transported to the Port of Brisbane via newly arrived vehicles imported from overseas (as listed in **Appendix C**). Currently, vehicles imported to the Port of Brisbane facility are transported from the wharf areas via a road overpass and stored within the open hardstand areas of the T1-3 Overflow and Car Precinct areas. The potential therefore exists for the exotic seeds to spread and propagate in adjacent landscaped or grassy areas.

The surveys represent not only an immediate response to a potential weed incursion but are also part of a long-term monitoring program at the Port to survey for and identify weed species which may enter the country on containers or other materials shipped to and unloaded at the Port of Brisbane facility.

The plant surveys for T1-3 Overflow and Car Precinct Areas are currently planned to be undertaken on a three monthly interval over an initial 12 month monitoring period. This is the fourth report detailing the results from the December 2008 plant survey with previous reports prepared from surveys undertaken in:

- February 2008 Baseline Study;
- March 2008;
- June 2008; and
- September 2008.

1.1 SITE DESCRIPTION

The plant surveys focus on the T1-3 Overflow and Car Precinct areas at the Port of Brisbane. The T1-3 Overflow and Car Precinct areas lie parallel to one another, with the Queensland Rail freight line separating these two areas, in the south-western portion of the Port of Brisbane (**Figure 1**).

The T1-3 Overflow area is situated along Port Drive and extends around a large hardstand car parking area, towards and pass the overpass and including a constructed drain located at the very northern end of the area (**Figure 1**). The T1-3 Overflow area consists of landscaped gardens and lawn on its western side and a sandy / gravel area on its eastern side. The primary purpose of the Overflow is to facilitate in absorbing and filtering excess stormwater that may potentially flow from surrounding hardstand areas. The constructed drain in the northern section consists of a concrete channel surrounded by lawn designed to pipe stormwater runoff that has entered nearby stormwater drains out into the Brisbane River.

¹ The Port of Brisbane was originally called Fisherman Islands. Fisherman Islands however no longer exists as a location and is now known officially as Port of Brisbane.

The Car Precinct area is directly to the west of a large vehicle storage area (**Figure 1**). It takes in an area extending from the road overpass, situated at the northern end of the site, to around the entire edge of the Visitors Centre Lake (**Figure 1**). The Car Precinct area is a constructed drainage channel that comprises of a grass-lined trench with a series of concreted chutes that channel stormwater runoff from the hardstand vehicle storage facility to the east of the drain and into the trench. The trench provides drainage for excess water that may overflow from nearby areas, which is distributed either south through a stormwater outlet that flows into the Lake or north via a series of underground pipes and open drains and into the mouth of the Brisbane River.

Both of these areas currently have a regular maintenance schedule (including mowing and spraying for exotic species) facilitated by the Port of Brisbane Corporation.

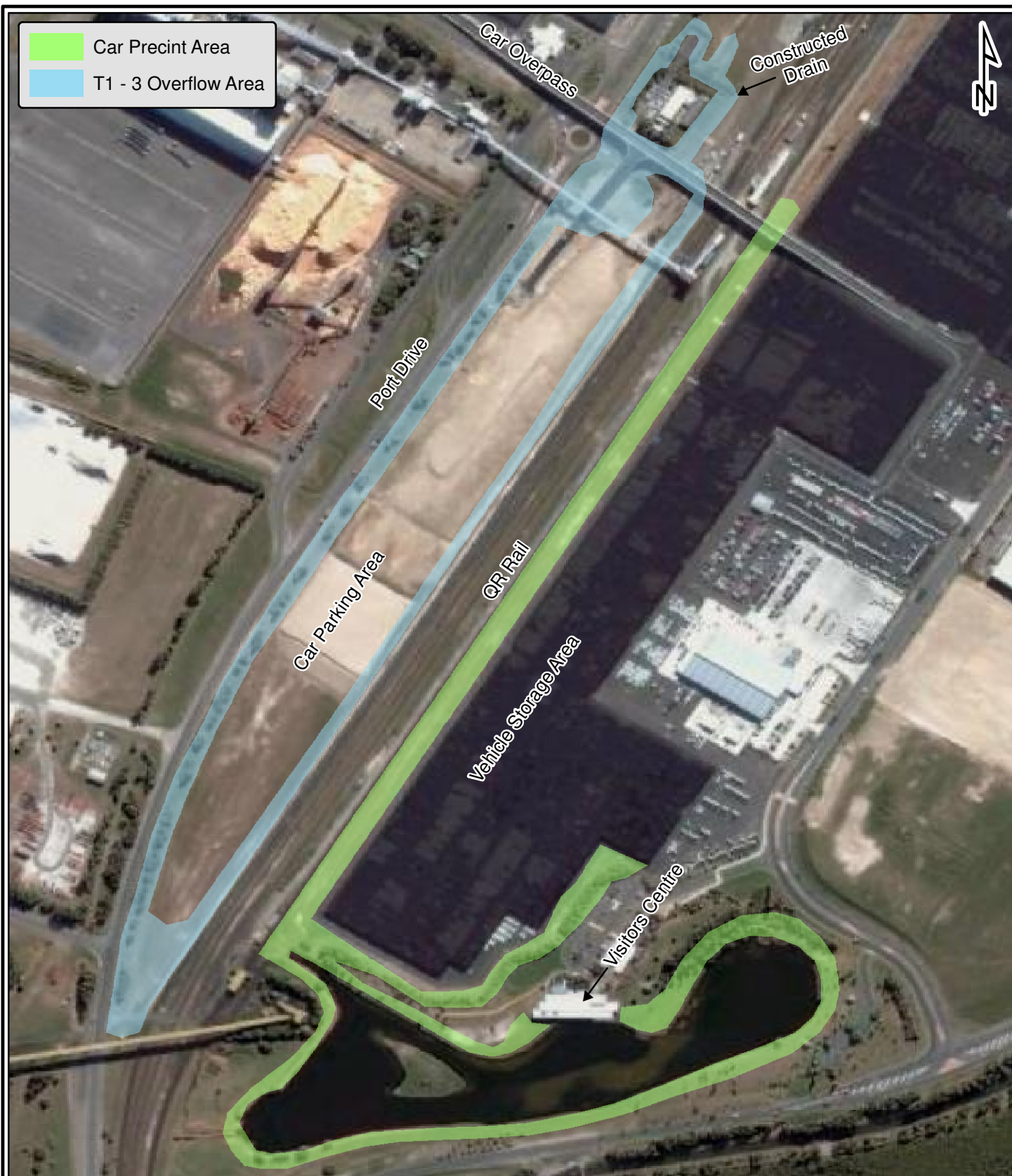


Figure 1 - T1-3 Overflow & Car Precinct Survey Areas

Port of Brisbane Corporation

Compiled 19-06-2008	Compiled By AC	Project Manager NL	Reference J08031_Figure1_overflow	Datum GDA94	Scale @ A4 1:5,000	0 75 150 Meters
-------------------------------	--------------------------	------------------------------	---	-----------------------	------------------------------	--------------------

natural solutions
environmental consultants
NATURAL SOLUTIONS ENVIRONMENTAL CONSULTANTS
BRISBANE - CAIRNS - TOOWOOMBA - SUNSHINE COAST
ABN 38 103 132 716
Ph: 07 3124 9400
Fax: 07 3124 9499
www.naturalsolutions.com.au

IMPORTANT NOTE

Natural Solutions accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this plan in contravention of the terms of this clause or clauses (i) of (vi) hereof.

(i) This plan has been produced for exclusive use of the client and Natural Solutions.

(ii) Aerial photography and mapping has been overlaid as a best fit on the boundaries shown and position is approximate only.

(iii) The dimensions, area, size and location of improvements shown on this plan are approximate only and may vary.

(iv) Scale shown is correct for the original plan and any copies of this plan should be verified by checking against the bar scale.

(v) This plan may not be photocopied unless this note is included.

DIGITAL CADASTRAL DATA BASE

© The State of Queensland (Department of Natural Resources) [2006] Based on Cadastal Data provided with the permission of the Department of Natural Resources (Current as at Aug/2006). While every care is taken to ensure the accuracy of this data, the Department of Natural Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including, without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

2.0 METHODOLOGY

The fourth quarterly plant survey was undertaken on the 12 December 2008 (hereafter referred to as the December 2008 plant survey). The December 2008 plant survey for the T1-3 Overflow area consisted of four transects running the entire length of the eastern, northern, western and southern boundaries of the hardstand area and measuring approximately 2m wide. Another transect with the same width dimensions ran along both banks of the constructed drain just north of the hardstand area. Transects were undertaken on foot using the random meander technique to ensure the majority of the overflow area was surveyed. The presence and abundance of any AQIS listed weeds as well as exotic (i.e. species declared under the LPR and locally occurring weeds) or invasive species that occurred along the transects were recorded on data sheets (**Appendix D**).

The December 2008 plant survey for Car Precinct area consisted of two transects, which ran along the western and southern boundary of the vehicle storage area and one non-linear transect that ran around the entire edge of the Visitors Centre Lake. Transects were undertaken on foot using the random meander technique to ensure the majority of the drain (including the bed, bank and top of bank areas) and lake banks were surveyed. The presence and abundance of any AQIS listed weeds as well as exotic or invasive species that occurred along the transects were recorded on data sheets (**Appendix D**).

Any plant species from both survey areas that were unable to be immediately identified on the site, were collected and appropriately labelled for further detailed analysis. Plant identifications were carried out by experienced ecologists/botanists using available flora and botanical reference material, where necessary.

It is currently planned for the plant surveys of both the T1-3 Overflow and Car Precinct areas to be undertaken on a quarterly basis over an initial 12 month period and then on a six monthly interval, during autumn (around March) and spring (around October) of each year.

2.1 AQIS TARGET WEEDS LIST

AQIS has prepared a list of weed species identified as weeds of interest within the Port of Brisbane area. This list is contained in **Appendix C**.

3.0 FINDINGS

3.1 T1-3 OVERFLOW AREA

Appendix A contains a list of plant species recorded during the December 2008 plant survey. The following points summarise the findings of the December 2008 plant survey for the T1-3 Overflow area:

1. Sixty-two plant species were recorded. This consisted of seven native species, three AQIS listed weed species and 52 exotic species;
2. The AQIS listed weed species recorded were Red Natal Grass (*Melinis repens*), Flax-leaf Fleabane (*Conyza bonariensis*) and Common Reed (*Phragmites australis*). Only one of these species, Flax-leaf Fleabane, was not recorded during the previous September 2008 plant survey in this area (i.e. the remaining two species were previously recorded) but has been recorded in previous surveys;
3. The recorded AQIS listed weed species occurred along the majority of the eastern side of the T1-3 Overflow area and within the constructed northern drain;
4. No individuals of the AQIS listed Siam Weed (*Chromolaena odorata*) were located during the plant survey;
5. Broad-leaved Peppertree (*Schinus terebinthfolia*), which is an LPR declared species was recorded in the December 2008 plant survey;
6. Locally occurring exotic grasses such as Couch Grass (*Cynodon dactylon*) and Rhodes Grass (*Chloris gayana*) as well as exotic herbaceous and vine species such as Cut-leaf Evening Primrose (*Oenothera laciniata*), Verano Stylo (*Stylosanthes hamata*) and Siratro (*Macroptilium atropurpureum*) were the dominant groups of exotic species observed throughout the majority of the T1-3 Overflow area;
7. Species diversity of AQIS listed weed species has remained consistent in comparison to the previous September 2008 survey results whilst abundance and coverage have slightly increased; and
8. Species diversity, abundance and coverage of exotic species has increased in comparison to the previous September 2008 survey results.

3.2 CAR PRECINCT AREA

Appendix B contains a list of plant species recorded during the December 2008 plant survey for the Car Precinct area. The following points summarises the findings of the December 2008 plant survey for the Car Precinct:

1. Seventy-two plant species were recorded. This consisted of 13 native species, three AQIS listed weed species and 56 exotic species;
2. The AQIS listed weed species recorded were Common Reed (*Phragmites australis*), Red Natal Grass (*Melinis repens*) and Flax-leaf Fleabane (*Conyza bonariensis*). These species were recorded during the previous September 2008 plant survey in this area;
3. No individuals of the AQIS listed Siam Weed (*Chromolaena odorata*) were located during the plant survey;
4. Individuals of Groundsel (*Baccharis halimifolia*), Fireweed (*Senecio madagascariensis*), Broad-leaved Peppertree (*Schinus terebinthfolia*) and Giant Parramatta Grass (*Sporobolus fertilis*), which are LPR declared species were recorded in the December 2008 plant survey;
5. Locally occurring exotic grass species such as Rhodes Grass (*Chloris gayana*), Paspalum (*Paspalum dilatatum*) and Green Panic (*Megathyrsus maximus* var. *maximus*) as well as exotic herbaceous species such as Cut-leaf Evening Primrose (*Oenothera laciniata*) were the dominant exotic species observed throughout the majority of the Car Precinct area. Common Reed (*Phragmites australis*) as well as exotic

sedge species were the dominant species in the wetter portions of the Car Precinct area such as within the trench and around the Visitor Lake;

6. Species diversity of AQIS listed weed species has remained relatively consistent in comparison to the September 2008 plant survey results, whereas abundance and coverage has slightly increased; and
7. Exotic species diversity, abundance and coverage has increased in comparison to the September 2008 plant survey results.

4.0 DISCUSSION

4.1 T1-3 OVERFLOW AREA

4.1.1 Weed Species Observed at T1-3 Overflow Area

The December 2008 plant survey along the T1-3 Overflow area has identified a total number of 62 plant species. Of these, three are AQIS listed weed species and 52 are considered exotic.

The three AQIS listed weed species located within the T1-3 Overflow area during the December 2008 plant survey were Red Natal Grass (*Melinis repens*), Flax-leaf Fleabane (*Conyza bonariensis*) and Common Reed (*Phragmites australis*). These AQIS listed weed species generally occur throughout the Port of Brisbane area and are common weeds that are found in most disturbed areas within the Brisbane region. Nonetheless, the removal of these species and gradual replacement with native species is still recommended.

One Class 3 LPR declared species, Broad-leaved Peppertree, was recorded during the December 2008 plant survey. This was not recorded in the previous September 2008 plant survey. The lack of detection of this species could be attributed to general survey limitations that may have produced a false-absence record during the previous survey (i.e. the species is present, but is not detected). The lack of detection could also be a result of the recent establishment of this exotic species within the T1-3 area. Under the LPR landholders are obliged to attempt to remove Class 2 species and encouraged to remove Class 3 species. Therefore consideration should be given to remove this declared species and control further establishment.

Unlike the previous September 2008 plant survey, species listed as either a noxious or environmental weeds by Brisbane City Council (BCC) were detected in the December 2008 plant survey. These include Khaki Weed (*Alternanthera pungens*) and Johnsons Grass (*Sorghum halepense*).

4.1.2 Comparisons between T1-3 Overflow Surveys

Three AQIS listed species were recorded during the December 2008 plant survey of the T1-3 Overflow area. All three species have been recorded at some stage of the T1-3 Overflow monitoring surveys (i.e. either from the September, June, March 2008 plant survey and/or the February 2008 baseline survey). Canadian Fleabane (*Conyza canadensis*), which was recorded in all the previous surveys, was not recorded in the current December 2008 plant survey. Although a slight variation in the type of AQIS species recorded is evident between the current survey (i.e. December 2008 plant survey) and all previous survey results, the diversity of AQIS listed species have remained consistent between the surveys. However, the current (December 2008) abundance and coverage of AQIS listed species within the T1-3 Overflow area has slightly increased since the previous plant survey (September 2008).

An analysis of the numbers and species of exotic vegetation recorded during this survey compared to the previous surveys indicates that there is a variation between the number and type of exotic species recorded. **Table 1** and **Graph 1** highlight and compares the number of exotic species identified in each plant survey as well as the February 2008 Baseline Survey of the T1-3 Overflow area.

TABLE 1 **NUMBER OF EXOTIC SPECIES RECORDED PER SURVEY FOR THE T1-3 OVERFLOW AREA**

SURVEY	NUMBER OF EXOTIC SPECIES RECORDED
Baseline Survey (Feb 08)	48
March 2008 Plant Survey	37
June 2008 Plant Survey	39
September 2008 Plant Survey	42
December 2008 Plant Survey	55

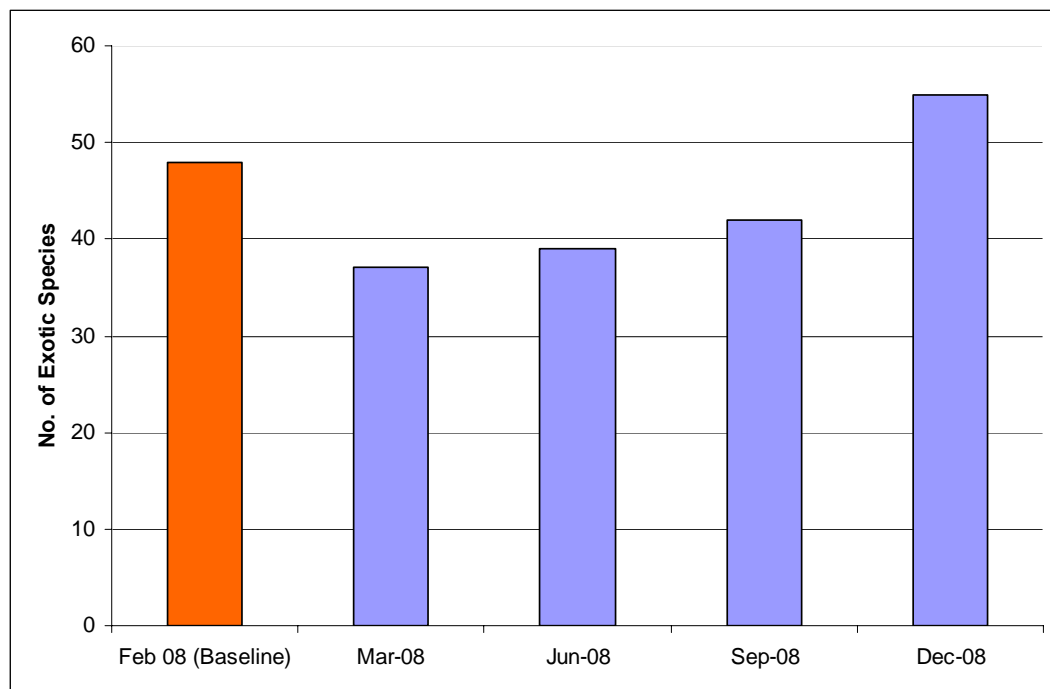
**Graph 1** *Number of Exotic Species Recorded per Survey along the T1-3 Overflow Area*

Table 2 outlines the numbers of exotic species within each family that were recorded in the February 2008 baseline survey and the March, June, September and December 2008 plant surveys.

TABLE 2 NUMBER OF EXOTIC SPECIES BY FAMILY FOR THE T1-3 OVERFLOW AREA

FAMILY	NUMBER OF EXOTIC SPECIES				
	FEB 08 BASELINE SURVEY	MAR 08	JUNE 08	SEP 08	DEC 08
FABACEAE	11	8	5	5	10
ASTERACEAE	6	8	9	12	9
POACEAE	8	6	7	8	8
ONAGRACEAE	1	1	2	2	3
AMARANTHACEAE	2	2	2	2	2
BRASSICACEAE	1	1	2	2	2
CHENOPODIACEAE	1	0	1	0	2
APIACEAE	1	1	1	1	2
PORTULACACEAE	2	2	1	1	2
VERBENACEAE	1	1	1	1	2
CYPERACEAE	3	0	1	1	1
MALVACEAE	2	1	1	1	1
EUPHORBIACEAE	2	1	1	0	1
PLANTAGINACEAE	1	1	1	1	1
PRIMULACEAE	1	1	1	1	1
RUBIACEAE	1	1	1	1	1
SOLANACEAE	2	1	1	1	1
BORAGINACEAE	1	0	0	0	1
CARYOPHYLLACEAE	0	0	0	1	1
COMMELINACEAE	0	1	1	1	0
PAPAVERACEAE	1	0	0	0	0
TYPHACEAE	0	0	0	0	0

*Shading indicates dominant family groups

From the data contained in Tables 1 and 2 as well as in Graph 1 the following can be deduced:

1. There has been a gradual increase in the number of exotic species recorded within the T1-3 Overflow area since the March 2008 plant survey. However the number of exotic species recorded during the December 2008 plant survey is not only higher than the previous September 2008 plant survey but is also higher than the number of exotic species recorded during the baseline survey (February 2008) and all other plant surveys (March, June, September 2008);
2. Alterations in the timing of maintenance activities prior to surveys across the T1-3 Overflow area as well as changes in weather conditions (i.e. from conditions that are generally considered to favour plant growth to conditions that hinder plant growth), were considered to be the contributing factors for the variation in

abundance and coverage between the February 2008 baseline survey and the March, June and September 2008 plant surveys;

3. For the December 2008 plant survey maintenance activities occurred only a few weeks prior to the survey, which was similar to the timing of maintenance activities prior to the September 2008 plant survey maintenance activities. However, for December 2008 coverage and abundance levels are slightly higher compared to the levels recorded during the September 2008 plant survey. Furthermore, regardless of the greater amount of coverage (and therefore greater species competition and growing space limitations) diversity was also much higher in the current December 2008 survey than the September 2008 plant survey;
4. The month of November received very high rainfall totals that were more than double the longer term average for that month (see **Section 4.3**). Such weather is considered favourable to plant growth and is most likely the main contributing factor to the higher abundance, coverage and diversity of exotic species for the December 2008 plant survey in comparison to the September 2008 plant survey; and
5. The Fabaceae was the dominant family in the December 2008 plant survey. This family was previously dominant in the February 2008 baseline survey, when conditions were fairly similar to the current December 2008 plant survey. These weather conditions may have favoured the growth of species from the Fabaceae family.

4.2 CAR PRECINCT AREA

4.2.1 Weed Species Observed at the Car Precinct Area

The December 2008 plant survey along the Car Precinct area identified a total number of 72 plant species. Of these, three are AQIS listed weed species and 56 are considered exotic.

The three AQIS listed weed species that were located within the Car Precinct area during the December 2008 plant survey were Common Reed (*Phragmites australis*), Red Natal Grass (*Melinis repens*) and Flax-leaf Fleabane (*Conyza bonariensis*). These species were also recorded in all the previous surveys and generally occur throughout the Port of Brisbane area. These species are common weeds that are found in most disturbed areas within the Brisbane region. Nonetheless, the removal of these weeds and the gradual replacement with native species is still recommended.

Four declared weeds listed under the LPR were recorded within the Car Precinct area during the December 2008 plant survey. The species, their Class under the LPR and abundance / indicative locations are outlined in **Table 3**. Under the LPR landholders are obliged to attempt to remove Class 2 species and encouraged to remove Class 3 species. Therefore consideration should be given to remove these declared species and control further establishment.

TABLE 3 THE CLASS AND ABUNDANCE OF THE LPR DECLARED SPECIES RECORDED DURING THE CAR PRECINCT AREA SURVEY SEPTEMBER 2008

CLASS	SPECIES	ABUNDANCE/LOCATION
Class 2 pest	Groundsel Bush (<i>Baccaris halimifolia</i>)	Few individuals along the western portion of the drain
	Giant Parramatta Grass (<i>Sporobolus fertilis</i>)	Clump found along the western portion of the drain near the train tracks
	Fireweed (<i>Senecio madagascariensis</i>)	Numerous individuals found along the western portion of the drain
Class 3 pests	Broad-leafed Peppertree (<i>Schinus terebinthifolia</i>)	Numerous individuals along the banks of the Visitor Centre Lake.

All four species have been detected at some stage during the previous surveys of the Car Precinct area. Furthermore, the abundance of these species has remained relatively consistent since the previous plant surveys.

Lantana, which was recorded in the previous September 2008 plant survey, was not detected in the current December 2008 plant survey. The decline or lack of detection of Lantana during the current survey could be a result of recent maintenance activities, which may have controlled the growth and spread of the exotic species. On the other hand, the lack of detection of this species could also be attributed to general survey limitations that may have produced a false-absence record during the current survey (i.e. the species is present, but is not detected). For example, immature individuals of this species may have been present but were not recorded due to the difficulty in detecting their presence at an immature stage.

Whilst not listed under LPR, Caster Oil Plant (*Ricinus communis*), Johnson Grass (*Sorghum halepense*), Wild Aster (*Aster subulatus*), Purple Morning Glory (*Ipomoea indica*) and Mile-a-Minute (*Ipomoea cairica*) are listed as environmental / noxious weeds by the BCC and were detected in the December 2008 plant survey. All of these species were also detected in the September 2008 plant survey.

4.2.2 Comparisons between Car Precinct Area Surveys

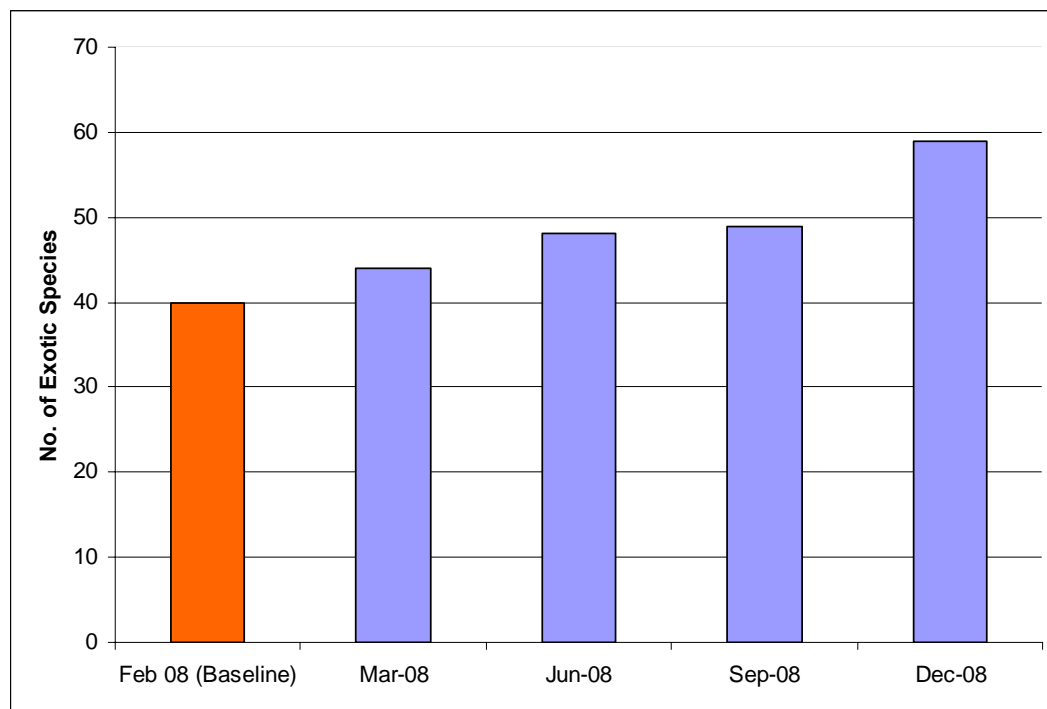
Three AQIS listed species were recorded during the December 2008 plant surveys of the Car Precinct area and these same species have been recorded in previous surveys of the area. Species diversity of AQIS listed species recorded during the current survey (December 2008) has remained consistent since the previous survey results (i.e. September 2008), whereas abundance and coverage has slightly increased.

Furthermore, an analysis of the numbers and species of exotic vegetation recorded during this survey (December 2008) and compared to the previous surveys indicates that there is a variation between the number of exotic species recorded whereas exotic species type has remained consistent.

Table 4 and **Graph 2** highlights and compares the number of exotic species identified in each plant surveys as well as the February 2008 Baseline Survey of the Car Precinct area.

TABLE 4 NUMBER OF EXOTIC SPECIES RECORDED PER SURVEY FOR THE CAR PRECINCT AREA

SURVEY	NUMBER OF EXOTIC SPECIES RECORDED
Baseline Survey (Feb 08)	40
March 2008 Plant Survey	44
June 2008 Plant Survey	48
September 2008 Plant Survey	49
December 2008 Plant Survey	59



Graph 2 Number of Exotic Species Recorded per Survey along the Car Precinct Area

Table 5 outlines the number of exotic species within each family that were recorded in the February 2008 baseline, March 2008, June 2008, September 2008 and December 2008 plant surveys.

TABLE 5 NUMBER OF EXOTIC SPECIES BY FAMILY FOR THE CAR PRECINCT AREA

FAMILY	NUMBER OF EXOTIC SPECIES				
	FEB 08 BASELINE SURVEY	MAR 08	JUNE 08	SEP 08	DEC 08
ASTERACEAE	8	11	13	14	12
POACEAE	6	9	9	10	10
FABACEAE	5	7	5	5	9
CYPERACEAE	2	2	2	1	4
ONAGRACEAE	1	1	1	2	3
VERBENACEAE	0	2	2	3	2
BRASSICACEAE	1	0	2	2	2
SOLANACEAE	1	1	1	1	2
CONVOLVULACEAE	2	2	2	2	2
AMARANTHACEAE	3	2	1	1	2
CHENOPODIACEAE	0	0	0	0	2
ANACARDIACEAE	1	1	1	1	1
BORAGINACEAE	0	0	0	1	1
EUPHORBIACEAE	3	0	3	2	1
COMMELINACEAE	0	1	1	1	1
PORTULACACEAE	2	1	1	0	1
PLANTAGINACEAE	0	1	1	1	1
PRIMULACEAE	1	1	1	1	1
POLYGONACEAE	0	1	1	0	1
MALVACEAE	1	1	1	1	0
TYPHACEAE	0	0	0	0	0
APOCYNACEAE	1	0	0	0	0
OXALIDACEAE	1	0	0	0	0
RUBIACEAE	1	0	0	0	0

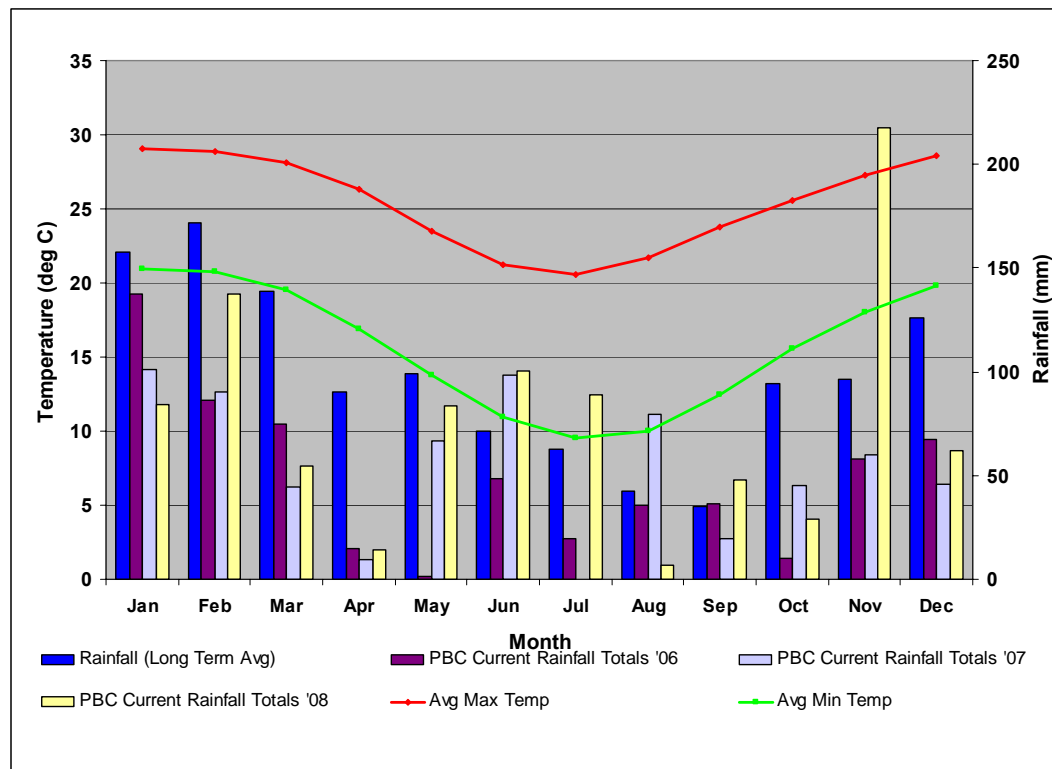
*Shading indicates dominant family group

The above **Tables 4** and **5** as well as **Graph 2** indicate:

1. The number of exotic species within the Car Precinct area gradually increased between the February 2008 baseline survey and the June 2008 plant survey. From June 2008 to September 2008 a plateau in the number of exotic species was apparent. However results from the current December 2008 plant survey indicate that exotic species numbers have again increased within the Car Precinct area. The December 2008 plant survey recorded the highest number of exotic species for 2008;
2. Alterations in the timing of maintenance activities prior to surveys across the Car Precinct area as well as changes in weather conditions (i.e. from conditions that are generally considered to favour plant growth to conditions that hinder plant growth), were considered to be the contributing factors for the variation in diversity, abundance and coverage between the February 2008 baseline survey, March, June and September 2008 plant survey;
3. Maintenance activities occurred only two weeks prior to the December 2008 plant survey whereas for the September 2008 plant survey maintenance was undertaken two months prior to the survey. Nonetheless abundance and coverage of exotic species for the December 2008 plant survey was higher than the September 2008 plant survey. Furthermore, regardless of the greater amount of coverage (and therefore species competition and growing space limitations) diversity was also much higher in the current survey than the September 2008 plant survey;
4. The month of November received very high rainfall totals that were more than double the longer term average for that month (see **Section 4.3**). Such weather is considered favourable to plant growth and is most likely the main contributing factor to the higher abundance, coverage and diversity of exotic species for the December 2008 plant survey in comparison to the September 2008 plant survey; and
5. Dominance in the Asteraceae family has remained consistent for all surveys.

4.3 WEATHER CONDITIONS

The following graph (**Graph 3**) illustrates the broad climatic conditions from 2006 – 2008 including the rainfall recorded at the Port of Brisbane as well as the long term rainfall and temperature averages (taken from the Brisbane Airport).



Graph 3 Long-term Climatic Averages (50yrs data) compared with the Port of Brisbane Rainfall Data (2003-2008)

The following can be derived from this data with respect to the plant growth around T1-3 Overflow and Car Precinct areas:

- The end of 2007 comprised of a significant period of rainfall, which broke an extended dry period that the South East Queensland region was experiencing (**Graph 3**). This reprieve in harsh climatic conditions would have allowed a greater amount of exotic species to regerminate and grow extensively throughout both areas. This is indicated by the fairly high exotic species diversity and coverage recorded in the February 2008 baseline survey;
- Rainfall rates and totals as well as temperatures generally decline during the season of autumn. Particularly for the months of April and May in 2008, rainfall totals were well below long term averages (**Graph 3**). Such weather conditions reduce or halt the growth rate of plants and could have contributed to the decline in abundance and coverage of both exotic and AQIS listed species, which was observed within most areas of the Car Precinct and T1-3 Overflow area during the June 2008 plant survey;
- Lower coverage and abundance leads to a decrease in species competition and allows a greater number of exotic species to occur in an area and may allow the species that are usually out-competed by more aggressive and dominant exotic species to be recorded / occur. This situation would have contributed to the general higher diversity levels recorded during the June 2008 plant survey;
- Although temperatures have continued to be low over the months preceding the September 2008 plant survey, rainfall totals have been well above average for the June and July months before the survey (**Graph 3**). An increase in the availability of water in the soil profile produces favourable conditions for plants and can result in an increase in growth rates. This increase may have contributed to the increase in exotic

species numbers and consistent abundance and coverage levels that were recorded during the September 2008 plant survey along the T1-3 Overflow area;

- The timing of maintenance during the September 2008 plant survey as opposed to weather conditions was considered to be the main influencing factor that caused a slight decrease in abundance and coverage as well as relatively consistent diversity recordings for the Car Precinct area during the September 2008 plant survey; and
- The month of November received very high rainfall totals that were more than double the longer term average for that month (**Graph 3**). Such weather conditions are considered to be the main contributing factor to the higher abundance, coverage and diversity of exotic species for the December 2008 in both the T1-3 and Car Precinct areas.

5.0 RECOMMENDATIONS

The current weed management program of the T1-3 Overflow and Car Precinct areas consists of general landscaping maintenance activities such as spot spraying / hand pulling of exotic species, tending to garden beds and mowing of the lawns. This approach appears to be successful in reducing weed coverage and amount of exotic species in some locations of the survey areas, particularly along roadsides. Maintenance of these areas receives the greatest attention as these areas are more visible to the public and there is a maintenance contract in place, which ensures that these areas are maintained on a regular basis. However, other less visible areas, such as along the eastern side of the T1-3 Overflow area as well as the western side of the Car Precinct, are not maintained as often as the more visible areas.

This has previously been observed particularly in the summer months (i.e. during the February 2008 baseline survey and March 2008 plant survey) to allow exotic species abundance and coverage to increase to substantial levels in these portions of the survey area. Even during the end of the winter months when plant growth generally declines (i.e. September 2008 plant survey) exotic species within areas that receive less frequent maintenance are able to grow to a point where they can produce seeds or propagules and thus spread further across the survey area and Port of Brisbane. This therefore highlights the need to implement greater measures in these sections to ensure exotic species coverage is kept to a minimum in all areas of the survey at all times / seasons.

There appears to be a slight change in the number of LPR declared species that were recorded in the previous September 2008 plant survey. In particular Lantana, which was recorded during the previous September 2008 plant survey along the Car Precinct area, was not observed during the current plant survey. Nonetheless the abundance of coverage of the other LPR declared species recorded during the current survey of the Car Precinct Area is fairly consistent with previous recorded levels. Furthermore, Broad-leaved Peppertree was observed in the current survey along the T1-3 Overflow area and had not yet been recorded in this area. It is recommended that the identification and removal of LPR declared species should be included as part of the routine maintenance and management of the T1-3 Overflow area.

The AQIS listed weed species that were located within both the T1-3 Overflow and Car Precinct area are common weeds found throughout the Brisbane region. Current maintenance activities such as slashing and spot spraying are adequate measures to control AQIS listed weeds as demonstrated by the observed decline in abundance and coverage or diversity of AQIS listed species across the T1-3 Overflow and Car Precinct areas.

Planting native vegetation is a technique often employed in weed management. Increasing the native understorey diversity increases competition for resources and assists in exotic species suppression. Such measures for the long-term management of exotic species occurring within the survey areas should be integrated into the current weed management programs for both the T1-3 Overflow and Car Precinct Areas.

The following recommendations are therefore made for the T1-3 Overflow and Car Precinct areas:

- All survey areas are to be regularly maintained. Areas less visible i.e. the eastern side of the T1-3 Overflow area and the western side of the Car Precinct should be maintained as often (where practicable) as the other sections of the survey area, when required;
- An attempt should be made to remove all LPR declared species and their specific identification and removal should be included as part of routine maintenance and management of the areas, particularly for the Visitor Centre Lake;
- A recommended planting schedule of native species and appropriate densities should be prepared for the western and southern trench of the Car Precinct area and the northern drain in the T1-3 Overflow area; and
- Continue programmed monitoring of the diversity and abundance levels of exotic species within the T1-3 Overflow and Car Precinct area through bi-annual surveys.

6.0 REFERENCES

- Auld, B.A. & Medd, R.W. (1999) *Weeds an illustrated botanical guide to the Weeds of Australia*. Inkata Press, Sydney.
- AQIS (2008) *Northern Australia Quarantine Strategy Target List for Weeds*. [website] Accessed 26 March 2008.
URL <http://www.daff.gov.au/aqis/quarantine/naqs/target-lists#weeds>
- Blood, K., et al. (2001) *Environmental Weeds – A Field Guide for SE Australia*. C H Jewrram, Victoria.
- Department of Natural Resources (DNR)(2000). *Weed Pocket Guide*. DNR. Brisbane.
- Johns, L. (2006) *Field Guide to Common Saltmarsh Plants of Queensland*. DPI&F, Brisbane.
- Kleinschmidt H., Holland, A. & Simpson, P. (1996) *Suburban Weeds* 3rd ed. DPI. Brisbane.
- Lamp, L. & Collet, C. (1999) *Field Guide to Weeds in Australia*. Inkata Press, Sydney.
- Navie, S., Markwell, B. Playford, J. & Adkins, S. (2002) *Suburban and Environmental Weeds – An Identification and Information – South-east Queensland CD*. University of Queensland.
- Richardson, F.J., Richardson, R.G., Shepherd, R.C.H. (2007) *Weeds of the South-East: An identification guide for Australia*. R.G and F.J Richardson, Australia.
- Sainty, G.R. & Jacobs, S.W.L. (1994) *Water plants in Australia – A Field Guide*. Sainty & Assoc, Darlinghurst.
- Tothill, J.C. & Hacker, J.B. (1996) *The Grasses of Southern Queensland, Queensland*. Tropical Grassland Society of Aust Inc.

APPENDIX A Survey Results of T1-3 Overflow Area

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
AIZOACEAE								
<i>Carpobrotus glaucescens</i> *	Pigface*	-	-		X		X	X
<i>Sesuvium portulacastrum</i> *	Sea Purslane*	-	-					X
AMARANTHACEAE								
<i>Alternanthera pungens</i>	Khaki Weed	-	-	X				
<i>Amaranthus viridis</i>	Green Amaranths	-	-	X	X	X	X	X
<i>Gomphrena celosioides</i>	Gomphrena Weed	-	-		X	X	X	X
ANACARDIACEAE								
<i>Schinus terebinthifolius</i>	Broad-leaved Peppertree	-	3	X				
APIACEAE								
<i>Cyclospermum leptophyllum</i>	Slender Celery	-	-	X				
<i>Hydrocotyle ranunculoides</i>	Pennywort	-	-	X	X	X	X	X
ASCLEPIADACEAE								
<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush	-	-					
ASPARAGACEAE								
<i>Asparagus aethiopicus</i> cv. Sprengeri	Asparagus Fern	-	3					
ASTERACEAE								
<i>Ageratum houstonianum</i>	Blue Billy-Goat	-	-	X	X			
<i>Aster subulatus</i>	Wild Aster	-	-			X		
<i>Baccharis halimifolia</i>	Groundsel Bush	-	2				X	
<i>Bidens pilosa</i>	Cobblers Pegs	-	-	X	X	X		X
<i>Calyptocarpus vialis</i>	Creeping Cinderella Weed	-	-	X	X	X		
<i>Cirsium vulgare</i>	Spear Thistle		-	X				
<i>Conyza bonariensis</i>	Faxleaf Fleabane	✓	-	X		X	X	X
<i>Conyza canadensis</i>	Canadian Fleabane	✓	-		X		X	X
<i>Conyza sumatrensis</i>	Tall Fleabane	-	-		X			
<i>Crassocephalum crepidioides</i>	Thickhead	-	-		X	X	X	
<i>Emilia sonchifolia</i>	Emilia	-	-	X	X	X		
<i>Gamochaeta</i> sp.	A Cudweed	-	-		X			
<i>Hypochaeris radicata</i>	Flatweed	-	-	X	X		X	X
<i>Senecio madagascariensis</i>	Fireweed	-	2		X	X	X	X
<i>Sonchus oleraceus</i>	Rough Sow Thistle	-	-	X	X	X	X	X
<i>Tagetes minuta</i>	Stinking Roger	-	-				X	

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
<i>Tridax procumbens</i>	Tridax Daisy	-	-	X	X	X	X	X
BRASSICACEAE								
<i>Brassica tournefortii</i>	Wild Turnip	-	-		X	X		
<i>Cakile maritime</i>	-	-	-	X				
<i>Lepidium africanum</i>	Common Peppergrass	-	-	X	X	X	X	X
BORAGINACEAE								
<i>Heliotropium amplexicaule</i>	Blue Heliotrope	-	-	X				X
CACTACEAE								
<i>Opuntia</i> sp.	Prickly Pear	-	2					
CARYOPHYLLACEAE								
<i>Cerastium glomeratum</i>	Sticky Mouse-ear Chickweed	-	-		X			
<i>Polycarpon tetraphyllum</i>	Four-leaved Allseed	-	-	X				
CASUARINACEAE								
<i>Casuarina littoralis</i> *	Black Sheoak*	-	-					X
CHENOPODIACEAE								
<i>Chenopodium ambrosioides</i>	Mexican Tea	-	-	X				X
<i>Chenopodium</i> sp.	-	-	-	X				
<i>Einadia</i> sp.	-	-	-			X		
COMMELINACEAE								
<i>Commelina benghalensis</i>	-	-	-				X	
<i>Commelina diffusa</i> (<i>C. cyanea</i>)	Wandering Jew	-	-		X	X		
CONVOLVULACEAE								
<i>Ipomoea cairica</i>	Mile-a-Minute	-	-					
<i>Ipomoea pes-caprae</i> *	Goats Foot Convolvus*	-	-	X	X	X	X	X
CYPERACEAE								
<i>Bolboschoenus caldwellii</i> *	-	-	-	X				
<i>Cyperus difformis</i>	Rice Sedge	-	-					X
<i>Cyperus eragrostis</i>	Umbrella Sedge	-	-		X			X
<i>Cyperus exaltatus</i> *	Giant Sedge*	-	-					
<i>Cyperus involucratus</i>	-	-	-	X		X		X
<i>Cyperus polystachyos</i>	-	-	-					
<i>Isolepis cernua</i> *	Nodding Club Rush*	-	-			X		
EUPHORBIACEAE								

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
<i>Chamaesyce maculata</i>	Caustic Weed	-	-					
<i>Euphorbia hirta</i>	Asthma Plant	-	-					
<i>Chamaesyce prostrata</i>	Red Caustic Creeper	-	-	X		X	X	X
<i>Euphorbia</i> sp.	Spurge	-	-					
<i>Phyllanthus virgatus</i>	Creeping Phyllanthus	-	-					
<i>Ricinus communis</i>	Castor Oil Bush	-	-					X
FABACEAE								
<i>Crotalaria incana</i>	Woolly Rattle Pod	-	-	X			X	
<i>Crotalaria lanceolata</i> subsp. <i>lanceolata</i>	Lance-leaf Rattle Pod	-	-	X		X	X	X
<i>Crotalaria pallida</i>	Rattle Pod	-	-					
<i>Cullen tenax</i> *	Emu Foot*	-	-	X	X			
<i>Desmodium uncinatum</i>	Silver Leafed Desmodium	-	-					
<i>Indigofera hirsuta</i>	Hairy Indigo	-	-	X			X	X
<i>Indigofera linifolia</i> *	-*	-	-	X				
<i>Indigofera spicata</i>	-	-	-	X				
<i>Lotus cruentus</i> *	Redflower Lotus*	-	-		X			
<i>Macroptilium atropurpureum</i>	Siratro	-	-	X	X	X	X	X
<i>Macroptilium lathyroides</i>	Phasey Bean	-	-	X			X	X
<i>Medicago lupulina</i>	Black Medic	-	-	X	X		X	X
<i>Medicago polymorpha</i>	Burr Medic	-	-					
<i>Medicago sativa</i>	Lucerne	-	-					
<i>Melilotus albus</i>	Bokhara	-	-	X				X
<i>Melilotus indicus</i>	Sweet Melilotus	-	-		X	X		X
<i>Neonotonia wightii</i>	Glycine	-	-					X
<i>Swainsona galegifolia</i>	Smooth Darling Pea	-	-					X
<i>Sesbania cannabina</i> *	Sesbania Pea*	-	-	X	X	X	X	X
<i>Stylosanthes hamata</i>	Verano Stylo	-	-	X	X	X	X	X
<i>Trifolium repens</i>	White Clover	-	-	X	X	X	X	X
<i>Vigna marina</i> *	Yellow Beach Bean*	-	-					
MALVACEAE								
<i>Sida cornifolia</i>	Flannel Weed	-	-					X
<i>Sida rhombifolia</i>	Common Sida	-	-	X	X	X	X	X
ONAGRACEAE								
<i>Ludwigia peruviana</i>	-	-	-	X				
<i>Oenothera drummondii</i> subsp. <i>drummondii</i>	Beach Primrose	-	-	X	X	X	X	X

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
<i>Oenothera lacinata</i>	Cut-leaf Evening Primrose	-	-	X	X	X		
OXALIDACEAE								
<i>Oxalis corniculata</i>	Creeping Oxalis	-	-	X				
PAPAVERACEAE								
<i>Argemone ochroleuca</i> var. <i>ochroleuca</i>	Mexican Poppy	-	-					X
PASSIFLORACEAE								
<i>Passiflora cairica</i>	Stinking Passion Vine	-	-					
<i>Passiflora subpeltata</i>	White Passion Flower	-	-					
PLANTAGINACEAE								
<i>Plantago lanceolata</i>	Lamb's Tongue	-	-	X	X	X	X	X
POACEAE								
<i>Brachiaria decumbens</i>	Signal Grass	-	-		X		X	
<i>Brachiaria mutica</i>	Para Grass	-	-					
<i>Cenchrus ciliaris</i>	Buffel Grass	-	-					
<i>Cenchrus echinatus</i>	Mossman River Grass	-	-	X	X	X	X	X
<i>Chloris gayana</i>	Rhodes Grass	-	-	X	X	X	X	X
<i>Chloris truncata</i>	Windmill Grass	-	-			X		X
<i>Chloris virgata</i>	Feather-top Rhodes Grass	-	-			X	X	X
<i>Cynodon dactylon</i>	Couch Grass	-	-	X	X		X	X
<i>Dichanthium aristatum</i>	Angleton Grass	-	-					
<i>Digitaria ciliaris</i>	Summer Grass	-	-					
<i>Eleusine indica</i>	Crowsfoot Grass	-	-					
<i>Eragrostis tenuifolia</i>	Elastic Grass	-	-		X			
<i>Hemarthria uncinata</i>	Mat Grass	-	-					
<i>Imperata cylindrical*</i>	Blady Grass*	-	-				X	X
<i>Lolium x hybridum</i>	A Ryegrass	-	-		X			
<i>Melinis repens</i>	Red Natal Grass	✓	-	X	X	X	X	X
<i>Melinis minutiflora</i>	Molasses Grass	-	-					
<i>Poa annua</i>	Winter Grass	-	-					
<i>Panicum effusum</i>	Hairy Panic	-	-					
<i>Panicum maximum</i>	Green Panic	-	-	X	X	X		X
<i>Paspalum dilatatum</i>	Paspalum	-	-	X		X		
<i>Phragmites australis*</i>	Common Reed*	✓	-	X	X	X		
<i>Setaria</i> sp.	Pigeon Grasses	-	-					X
<i>Sorghum halepense</i>	Johnson Grass	-	-	X				

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
<i>Urochloa mosambicensis</i>	Sabi Grass	-	-					
POLYGONACEAE								
<i>Persicaria</i> sp.*	-	-	-	X				
PORTULACACEAE								
<i>Portulaca pilosa</i>	Hairy Pigweed	-	-	X	X	X	X	X
<i>Portulaca oleracea</i>	Pigweed	-	-	X			X	X
PRIMULACEAE								
<i>Anagallis arvensis</i>	Scarlet Pimpernel	-	-	X	X	X	X	X
RUBIACEAE								
<i>Richardia brasiliensis</i>	Mexican Clover	-	-	X	X	X	X	X
SAPINDACEAE								
<i>Cardiospermum halicacabum</i>	Balloon Vine	-	-					
<i>Dodonaea triquetra</i>	Hop Bush	-	-					
SCROPHULARIACEAE								
<i>Misopates orontium</i>	Lesser Snapdragon	-	-	X				
SOLANACEAE								
<i>Physalis ixocarpa</i>	Ground Cherry	-	-					X
<i>Solanum seaforthianum</i>	Brazilian Nightshade	-	-			X		
<i>Solanum nigrum</i>	Blackberry Nightshade	-	-	X	X		X	X
TAMARICACEAE								
<i>Tamarix ramosissima</i>	Tamarisk	-	-	X				
TYPHACEAE								
<i>Typha orientalis</i>	Cumbungi / Typha*	-	-	X	X	X		X
ULMACEAE								
<i>Celtis sinensis</i>	Chinese Celtis	-	3					
VERBENACEAE								
<i>Lantana camara</i>	Lantana	-	3					
<i>Lantana montevidensis</i>	Creeping Lantana	-	3					
<i>Verbena bonariensis</i>	Purple Top	-	-	X				
<i>Verbena aristigera</i>	Mayne's Pest	-	-	X	X	X	X	X
<i>Vitex trifolia</i> var <i>trifolia</i> *	Coastal Vitex*	-	-					

Notes: -

- * designates indigenous species
- LPR – *Land Protection (Pest and Stock Route Management) Regulations 2003, Schedule 2.*

APPENDIX B Car Precinct Survey Results

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
AIZOACEAE								
<i>Carpobrotus glaucescens*</i>	Pigface*	-	-				X	X
<i>Sesuvium portulacastrum*</i>	Sea Purslane*	-	-	X	X	X	X	X
<i>Tetragonia tetragonoides*</i>	New Zealand Spinach*	-	-			X		
AMARANTHACEAE								
<i>Alternanthera pungens</i>	Khaki Weed	-	-					X
<i>Amaranthus viridis</i>	Green Amaranths	-	-	X	X	X	X	X
<i>Gomphrena celosioides</i>	Gomphrena Weed	-	-	X			X	X
ANACARDIACEAE								
<i>Schinus terebinthifolius</i>	Broad-leaved Peppertree	-	3	X	X	X	X	X
APOCYNACEAE								
<i>Catharanthus roseus</i>	Pink Periwinkle	-	-					X
ASCLEPIADACEAE								
<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush	-	-					
ASPARAGACEAE								
<i>Asparagus aethiopicus</i> cv. Sprengeri	Asparagus Fern	-	3					
ASTERACEAE								
<i>Ageratum houstonianum</i>	Blue Billy-Goat	-	-	X	X	X	X	X
<i>Aster subulatus</i>	Wild Aster	-	-	X	X	X	X	
<i>Baccharis halimifolia</i>	Groundsel Bush	-	2	X	X	X	X	X
<i>Bidens pilosa</i>	Cobblers Pegs	-	-	X	X	X	X	X
<i>Conyza bonariensis</i>	Flaxleaf Fleabane	✓	-	X	X	X	X	
<i>Conyza canadensis</i>	Canadian Fleabane	✓	-				X	X
<i>Conyza sumatrensis</i>	Tall Fleabane	-	-	X	X			

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
<i>Crassocephalum crepidioides</i>	Thickhead	-	-	X	X	X	X	
<i>Emilia sonchifolia</i>	Emilia	-	-	X	X	X		
<i>Hypochaeris radicata</i>	Flatweed	-	-	X	X	X	X	X
<i>Onopordum acanthium</i>	Scotch Thistle	-	-		X	X		
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	-	-	X	X	X		
<i>Senecio madagascariensis</i>	Fireweed	-	2	X	X	X	X	X
<i>Sonchus oleraceus</i>	Rough Sow Thistle	-	-		X	X		X
<i>Sphagneticola trilobata</i>	Singapore Daisy	-	3					
<i>Tridax procumbens</i>	Tridax Daisy	-	-	X	X	X	X	X
<i>Tagetes minuta</i>	Stinking Roger	-	-				X	
BRASSICACEAE								
<i>Brassica tournefortii</i>	Wild Turnip	-	-	X	X	X		
<i>Lepidium africanum</i>	Common Peppergrass	-	-	X	X	X		X
BORAGINACEAE								
<i>Heliotropium amplexicaule</i>	Blue Heliotrope	-	-	X	X			
CACTACEAE								
<i>Opuntia</i> sp.	Prickly Pear	-	2					
CAMPANULACEAE								
<i>Wahlenbergia graniticola</i> *	Granite Bluebell*	-	-	X				
CHENOPODIACEAE								
<i>Chenopodium ambrosioides</i>	Mexican Tea	-	-	X				
<i>Chenopodium</i> sp.	-	-	-	X				
COMMELINACEAE								
<i>Commelina diffusa</i> (C. cyanea)	Wandering Jew	-	-	X	X	X	X	
<i>Commelina benghalensis</i>	-	-	-					
CONVOLVULACEAE								
<i>Cuscuta campestris</i>	Dodder	-	-					
<i>Convolvulus arvensis</i>	European Bindweed	-	-					
<i>Ipomoea indica</i>	Purple Morning	-	-	X	X	X	X	X

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
	Glory							
<i>Ipomoea cairica</i>	Mile-a-Minute	-	-	X	X	X	X	X
<i>Ipomoea pes-caprae</i> *	Goats Foot Convolves*	-	-					X
CYPERACEAE								
<i>Bolboschoenus caldwellii</i> *	-	-	-		X			
<i>Carex appressa</i> *	Tall Sedge*	-	-					
<i>Cyperus difformis</i>	Rice Sedge	-	-					X
<i>Cyperus congestus</i>	Clustered Flatsedge	-	-					
<i>Cyperus eragrostis</i>	Umbrella Sedge	-	-	X	X		X	X
<i>Cyperus involucratus</i>	-	-	-	X		X	X	
<i>Cyperus rotundus</i>	Nut Grass	-	-	X				
<i>Cyperus polystachyos</i>	Bunchy Sedge	-	-	X		X		
<i>Fimbristylis ferruginea</i> *	Rusty Sedge*	-	-	X	X	X	X	
<i>Isolepis cernua</i> *	Nodding Club Rush*	-	-	X	X	X	X	
<i>Isolepis nodosa</i> *	Knobby Club Rush*	-	-	X	X	X	X	
<i>Schoenoplectus mucronatus</i> *	-	-	-		X	X		
EUPHORBIACEAE								
<i>Chamaesyce drummondii</i>	Caustic Creeper	-	-		X			X
<i>Chamaesyce maculata</i>	Eyebane	-	-			X		X
<i>Chamaesyce prostrata</i>	Red Caustic Creeper	-	-			X		X
<i>Euphorbia hirta</i>	Asthma Plant	-	-					
<i>Euphorbia</i> sp.	Spurge	-	-					
<i>Macaranga tanarius</i> *	Macaranga*	-	-			X	X	
<i>Phyllanthus virgatus</i>	Creeping Phyllanthus	-	-					
<i>Ricinus communis</i>	Castor Oil Plant	-	-	X	X	X		
FABACEAE								
<i>Crotalaria incana</i>	Woolly Rattle Pod	-	-	X			X	
<i>Crotalaria lanceolata</i> subsp. <i>lanceolata</i>	Lance-leaf	-	-	X		X	X	X

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
	Rattle Pod							
<i>Cullen tenax</i> *	Emu Foot*	-	-	X				
<i>Desmodium uncinatum</i>	Silver Leafed Desmodium	-	-					
<i>Indigofera hirsuta</i>	Hairy Indigo	-	-					X
<i>Macroptilium atropurpureum</i>	Siratro	-	-	X	X	X	X	X
<i>Macroptilium lathyroides</i>	Phasey Bean	-	-	X	X	X	X	
<i>Medicago lupulina</i>	Black Medic	-	-	X	X			
<i>Medicago polymorpha</i>	Burr Medic	-	-					
<i>Medicago sativa</i>	Lucerne	-	-					
<i>Melilotus albus</i>	Bokhara	-	-	X				
<i>Melilotus indicus</i>	Sweet Melilotus	-	-	X	X	X		
<i>Neonotonia wightii</i>	Glycine	-	-				X	X
<i>Sesbania cannabina</i> *	Sesbania Pea*	-	-	X	X	X	X	X
<i>Stylosanthes hamata</i>	Verano Stylo	-	-	X	X	X	X	X
<i>Trifolium repens</i>	Clover	-	-	X			X	
<i>Vigna marina</i> *	Yellow Beach Bean*		-	X	X		X	
GRAMINEA								
<i>Paspalum distichum</i> *	Water Couch*	-	-	X	X	X	X	
JUNCACEAE								
<i>Juncus kraussii</i> *	Jointed Rush*	-	-	X	X	X	X	
MALVACEAE								
<i>Sida cornifolia</i>	Flannel Weed	-	-					
<i>Sida rhombifolia</i>	Common Sida	-	-		X	X	X	X
ONAGRACEAE								
<i>Ludwigia peruviana</i>	-	-	-	X				
<i>Oenothera drummondii</i> subsp. <i>drummondii</i>	Beach Primrose	-	-	X	X	X	X	X
<i>Oenothera laciniata</i>	Cut-leaf Evening Primrose	-	-	X	X			

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
OXALIDACEAE								
<i>Oxalis corniculata</i>	Creeping Oxalis	-	-					X
PASSIFLORACEAE								
<i>Passiflora cairica</i>	Stinking Passion Vine	-	-					
<i>Passiflora subpeltata</i>	White Passion Flower		-					
PLANTAGINACEAE								
<i>Plantago lanceolata</i>	Lamb's Tongue	-	-	X	X	X	X	
POACEAE								
<i>Arundo donax</i>	Giant Reed	-	-			X	X	X
<i>Brachiaria decumbens</i>	Signal Grass	-	-	X		X	X	
<i>Brachiaria mutica</i>	Para Grass	-	-					
<i>Cenchrus ciliaris</i>	Buffel Grass	-	-					
<i>Cenchrus echinatus</i>	Mossman River Grass	-	-	X	X	X	X	X
<i>Chloris gayana</i>	Rhodes Grass	-	-	X	X	X	X	X
<i>Chloris truncata</i>	Windmill Grass	-	-			X		
<i>Chloris virgata</i>	Feather-top Rhodes Grass	-	-	X	X	X		
<i>Cymbopogon refractus</i> *	Barbed Wire Grass*	-	-	X	X	X	X	
<i>Cynodon dactylon</i>	Couch Grass	-	-		X	X	X	X
<i>Dichanthium aristatum</i>	Angleton Grass	-	-					
<i>Dichanthium sericeum</i> *	Queensland Bluegrass*	-	-	X				
<i>Digitaria ciliaris</i>	Summer Grass	-	-					
<i>Eleusine indica</i>	Crowsfoot Grass	-	-					
<i>Eragrostis tenuifolia</i>	Elastic Grass	-	-	X	X			
<i>Hemarthria uncinata</i>	Mat Grass	-	-					
<i>Imperata cylindrical</i> *	Blady	-	-				X	X

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
	Grass*							
<i>Melinis repens</i>	Red Natal Grass	✓	-	X	X	X	X	X
<i>Melinis minutiflora</i>	Molasses Grass	-	-					
<i>Poa annua</i>	Winter Grass	-	-					
<i>Panicum effusum</i>	Hairy Panic	-	-					
<i>Panicum maximum</i>	Green Panic	-	-	X	X	X	X	X
<i>Paspalum dilatatum</i>	Paspalum	-	-	X	X		X	
<i>Phragmites australis</i> *	Common Reed*	✓	-	X	X	X	X	X
<i>Setaria</i> sp.	Pigeon Grasses	-	-	X			X	
<i>Sorghum halepense</i>	Johnson Grass	-	-		X			
<i>Sporobolus fertilis</i>	Giant Parramatta Grass	-	2	X	X			
<i>Urochloa mosambicensis</i>	Sabi Grass	-	-					
POLYGONACEAE								
<i>Rumex brownii</i>	Swamp Dock	-	-				X	
<i>Rumex crispus</i>	Curled Dock	-	-	X		X		
PORTULACACEAE								
<i>Portulaca pilosa</i>	Hairy Pigweed	-	-	X		X	X	X
<i>Portulaca oleracea</i>	Pigweed	-	-					X
PRIMULACEAE								
<i>Anagallis arvensis</i>	Scarlet Pimpernel	-	-	X	X	X	X	X
RUBIACEAE								
<i>Richardia brasiliensis</i>	Mexican Clover	-	-					X
SAPINDACEAE								
<i>Cardiospermum halicacabum</i>	Balloon Vine	-	-					
<i>Dodonaea triquetra</i> *	Hop Bush*	-	-					
SOLANACEAE								
<i>Solanum mauritianum</i>	Wild Tobacco Bush	-	-	X				
<i>Solanum seaforthianum</i>	Brazilian	-	-					

SPECIES	COMMON NAME	AQIS LISTED	LPR CLASS	DEC 08 PLANT SURVEY	SEP 08 PLANT SURVEY	JUNE 08 PLANT SURVEY	MAR 08 PLANT SURVEY	FEB 08 BASELINE SURVEY
	Nightshade							
<i>Solanum nigrum</i>	Blackberry Nightshade	-	-	X	X	X	X	X
TYPHACEAE								
<i>Typha orientalis</i>	Cumbungi / Typha*	-	-	X		X	X	X
ULMACEAE								
<i>Celtis sinensis</i>	Chinese Celtis	-	3					
VERBENACEAE								
<i>Lantana camara</i>	Lantana	-	3		X	X		
<i>Lantana montevidensis</i>	Creeping Lantana	-	3					
<i>Verbena bonariensis</i>	Purple Top	-	-	X	X		X	
<i>Verbena aristigera</i>	Mayne's Pest	-	-	X	X		X	
<i>Verbena officinalis</i>	Common Verbena	-	-			X		
<i>Vitex trifolia</i> var <i>trifolia</i> *	Coastal Vitex*	-	-					

Notes: -* designates indigenous species

- LPR – Land Protection (Pest and Stock Route Management) Regulations 2003, Schedule 2.

APPENDIX C Weed Target List (AQIS)

FAMILY	GENUS SPECIES	SOURCE	COMMON NAME	COMMENTS
ASTERACEAE	<i>Chromolaena odorata</i>	(L.) King & Robinson	Siam Weed, Christmas Bush	Pastures, oil palm, rubber, coffee, cashew, fruit, maize, forestry. Toxic to livestock. Major environmental weed: secondary forests, roadsides, disturbed sites.
ASTERACEAE	<i>Conyza bonariensis</i>	Lamp & Collet Richardson <i>et al.</i>	Flax-leaf Fleabane	Common weed of waste places, particularly in suburban areas
ASTERACEAE	<i>Conyza canadensis</i>	Lamp & Collet Richardson <i>et al.</i>	Canadian Fleabane	Closely related to <i>Conyza bonariensis</i> that has become prolific in urban areas, roadsides, disturbed sites and waterways
POACEAE	<i>Andropogon virginicus</i>	Richardson <i>et al.</i>	Whisky Grass	A weed of roadsides and disturbed sites
POACEAE	<i>Danthonia</i> sp.	Richardson <i>et al.</i>	Heath Grass	Found on damp soils, usually with native species in bushland and grassland
POACEAE	<i>Imperata conferta</i>	AQIS	Cogongrass	Coconut, roadsides, hillsides, streams and trails in dense or open forest.
POACEAE	<i>Melinis repens</i> (previously known as <i>Rhynchelytrum repens</i>)	Lamp & Collet Richardson <i>et al.</i>	Red Natal Grass	A weed of roadsides, railway lines and wastelands. May also invade rundown, abandoned cultivated paddocks.
POACEAE	<i>Miscanthus sinensis</i>	Richardson <i>et al.</i>	Eulalia	Commonly cultivated and now escaping along roadsides and railway lines. Does not usually occur in Queensland.
POACEAE	<i>Phragmites australis</i>	Lamp & Collet Richardson <i>et al.</i>	Common Reed	Most widespread of all grasses
POACEAE	<i>Saccharum spontaneum</i>	AQIS	Wild Sugarcane	Waste areas, fallow fields, marshes, banks of streams and ponds, sand dunes, along railways or highways, and in or around fields.
ULMACEAE	<i>Ulmus</i> sp.	Richardson <i>et al.</i>	Elms	Widely grown as street trees and in parks. Can form dense stands

Source: Lamp & Collet, 1999; Richardson *et al.*, 2007; AQIS, 2008.

APPENDIX D Plant Survey Data Sheet

FAMILY / SPECIES	COMMON NAME	FORM	DECLARATION CATEGORY (LPR)	PRESENCE	ABUNDANCE
AIZOACEAE					
<i>Carpobrotus glaucescens</i> ⁿ	Pigface	v	-		
<i>Sesuvium portulacastrum</i> ⁿ	Sea Purslane	h	-		
AMARANTHACEAE					
<i>Alternanthera pungens</i>	Khaki Weed	h,w	-		
<i>Amaranthus quitensis</i>	South American Amaranthus	h,w	-		
<i>Amaranthus viridis</i>	Green Amaranthus	h,w	-		
<i>Gomphrena celosioides</i>	Gomphrena Weed	h,w	-		
ANACARDIACEAE					
<i>Schinus terebinthifolia</i>	Broad-leaved Peppertree	s,w	3		
ASCLEPIADACEAE					
<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush	s,w	-		
ASPARAGACEAE					
<i>Asparagus aethiopicus</i> cv. Sprengeri	Asparagus Fern	v,w	3		
ASTERACEAE					
<i>Ageratum houstonianum</i>	Blue Billy-Goat	h,w	-		
<i>Ambrosia artemisiifolia</i>	Annual Ragweed	h,w	2		
<i>Baccharis halimifolia</i>	Groundsel Bush	s,w	2		
<i>Bidens pilosa</i>	Cobblers Pegs	h,w	-		
<i>Calyptracarpus vialis</i>	Creeping Cinderella Weed	h,w	-		
<i>Cirsium vulgare</i>	Spear Thistle	h,w	-		
<i>Conyza bonariensis</i>	Flaxleaf Fleabane	h,w	-		
<i>Conyza pusilla</i>	Canadian Fleabane	h,w	-		
<i>Crassocephalum crepidioides</i>	Thickhead	h,w	-		
<i>Emilia sonchifolia</i>	Emilia	h,w	-		
<i>Hypochaeris radicata</i>	Flatweed	h,w	-		
<i>Parthenium hysterophorus</i>	Parthenium Weed	h,w	2		
<i>Senecio</i> sp. (<i>lautus</i>)	Fireweed	h	-		
<i>Sonchus oleraceus</i>	Rough Sow Thistle	h,w	-		
<i>Sphagneticola trilobata</i>	Singapore Daisy	h,w	3		
<i>Tagetes minuta</i>	Stinking Roger	h,w	-		
AGAVACEAE					
<i>Agave</i> sp.	Agave	w,p	-		

FAMILY / SPECIES	COMMON NAME	FORM	DECLARATION CATEGORY (LPR)	PRESENCE	ABUNDANCE
AVICENNIACEAE					
<i>Avicennia marina</i> ⁿ	Grey Mangrove	t	-		
BORAGINACEAE					
<i>Heliotropium amplexicaule</i>	Blue Heliotrope	h,w	-		
CACTACEAE					
<i>Opuntia</i> sp.	Prickly Pear	s,w	2		
CASUARINACEAE					
<i>Casuarina equisetifolia</i> *	Coastal Sheoak	t	-		
<i>Allocasuarina littoralis</i> *	Black Sheoak	t	-		
CAESALPINIACEAE					
<i>Crotalaria paniculata</i>	Poor Mans Gold	h	-		
<i>Senna pendula</i> var <i>glabrifolia</i>	Easter Cassia	s,w	-		
CONVOLVULACEAE					
<i>Cuscuta campestris</i>	Dodder	v,w	-		
<i>Convolvulus arvensis</i>	European Bindweed	h,w	-		
<i>Ipomoea cairica</i>	Mile-a-Minute	v,w	-		
<i>Ipomoea pes-caprae</i> ⁿ	Goats Foot Convolves	v	-		
CYPERACEAE					
<i>Cyperus congestus</i>	Clustered Flatsedge	a,w	-		
<i>Cyperus eragrostis</i>	Umbrella Sedge	a,w	-		
EUPHORBIACEAE					
<i>Chamaesyce maculata</i>	Caustic Weed	h,w	-		
<i>Euphorbia hirta</i>	Asthma Plant	h,w	-		
<i>Euphorbia prostrata</i>	Caustic Creeper	h,w			
<i>Euphorbia</i> sp.	Spurge	h,w	-		
<i>Macaranga tanarius</i> ⁿ	Macaranga	t (p)	-		
<i>Phyllanthus virgatus</i>	Creeping Phyllanthus	h,w	-		
FABACEAE					
<i>Crotalaria pallida</i>	Rattle Pod	h,w	-		
<i>Desmodium uncinatum</i>	Silver-leafed Desmodium	v,w	-		
<i>Macroptilium atropurpureum</i>	Siratro	v,w	-		
<i>Macroptilium lathyroides</i>	Phasey Bean	v,w	-		
<i>Medicago polymorpha</i>	Burr Medic	h,w			
<i>Medicago sativa</i>	Lucerne	h,w	-		
<i>Melilotus indicus</i>	Sweet Melilotus	h,w	-		
<i>Neonotonia wightii</i>	Glycine	v,w	-		
<i>Sesbania cannabina</i>	Sesbania Pea	h,w	-		

FAMILY / SPECIES	COMMON NAME	FORM	DECLARATION CATEGORY (LPR)	PRESENCE	ABUNDANCE
<i>Trifolium repens</i>	White Clover	h,w	-		
LAURACEAE					
<i>Cinnamomum camphora</i>	Camphor Laurel	t,w	3		
MALVACEAE					
<i>Hibiscus tiliaceus</i> ⁿ	Cotton Tree	t	-		
<i>Modiola caroliniana</i> ⁿ	Red Flower Mallow	h,w	-		
<i>Sida cornifolia</i>	Flannel Weed	h,w	-		
<i>Sida rhombifolia</i>	Common Sida	h,w	-		
MIMOSACEAE					
<i>Acacia aulacocarpa</i> ⁿ	Hickory Wattle	t	-		
MYRTACEAE					
<i>Eucalyptus robusta</i> ⁿ	Swamp Mahogany	T,(p)	-		
<i>Lophostemon confertus</i> ⁿ	Brush Box	T,(p)	-		
<i>Melaleuca linariifolia</i> ⁿ	Flax-leafed Paperbark	t,(p)	-		
<i>Melaleuca quinquenervia</i> ⁿ	Paperbark Teatree	T,(p)	-		
ONAGRACEAE					
<i>Oenothera drummondii</i> ⁿ	Beach Evening Primrose	s	-		
OXALIDACEAE					
<i>Oxalis corniculata</i>	Creeping Oxalis	h,w	-		
PANDANACEAE					
<i>Pandanus tectorius</i> ⁿ	Screw Pine	t,(p)	-		
PASSIFLORACEAE					
<i>Passiflora cairica</i>	Stinking Passion Vine	v,w	-		
<i>Passiflora subpeltata</i>	White Passion Vine	v,w	-		
PLANTAGINACEAE					
<i>Plantago lanceolata</i>	Lamb's Tongue	h,w	-		
<i>Plantago major</i>	Great Plantain	h,w	-		
POACEAE					
<i>Brachiaria decumbens</i>	Signal Grass	g,w	-		
<i>Brachiaria mutica</i>	Para Grass	g,w	-		
<i>Cenchrus ciliaris</i>	Buffel Grass	g,w	-		
<i>Cenchrus echinatus</i>	Mossman River Grass	g,w	-		
<i>Chloris gayana</i>	Rhodes Grass	g,w	-		
<i>Chloris truncata</i>	Windmill Grass	g,w	-		
<i>Chloris virgata</i>	Feather-top Rhodes Grass	g,w	-		
<i>Cynodon dactylon</i>	Couch Grass	g,w	-		

FAMILY / SPECIES	COMMON NAME	FORM	DECLARATION CATEGORY (LPR)	PRESENCE	ABUNDANCE
<i>Dichanthium aristatum</i>	Angleton Grass	h,w	-		
<i>Digitaria ciliaris</i>	Summer Grass	g,w	-		
<i>Eleusine indica</i>	Crowsfoot Grass	g,w	-		
<i>Hemarthria uncinata</i>	Mat Grass	g,w	-		
<i>Imperata cylindrica</i> ⁿ	Blady Grass	g	-		
<i>Melinis repens</i>	Red Natal Grass	g,w	-		
<i>Melinis minutifolium</i>	Molasses Grass	g,w	-		
<i>Poa annua</i>	Winter Grass	g,w	-		
<i>Panicum effusum</i>	Hairy Panic	g	-		
<i>Panicum maximum</i>	Green Panic	g,w	-		
<i>Paspalum dilatatum</i>	Paspalum	g,w	-		
<i>Phragmites australis</i> ⁿ	Common reed	g	-		
<i>Sorghum halepense</i> ⁿ	Johnson grass	g,w	-		
<i>Typha orientalis</i> ⁿ	Typha	g	-		
<i>Urochloa mosambicensis</i>	Sabi Grass	g,w	-		
PORTULACACEAE					
<i>Portulaca pilosa</i>	Hairy pigweed	h,w	-		
PRIMULACEAE					
<i>Anagallis arvensis</i>	Scarlet Pimpernel	h,w	-		
PROTEACEAE					
<i>Banksia integrifolia</i> ⁿ	Coastal Banksia	t (p)	-		
SAPINDACEAE					
<i>Cardiospermum halicacabum</i>	Balloon Vine	v,w	-		
<i>Cupaniopsis anacardioides</i> ⁿ	Tuckeroo	T	-		
<i>Dodonaea triquetra</i>	Hop Bush	s	-		
SOLANACEAE					
<i>Solanum nigrum</i>	Brazilian Nightshade	s,w	-		
VERBENACEAE					
<i>Lantana camara</i>	Lantana	s,w	3		
<i>Lantana montevidensis</i>	Creeping Lantana	w	3		
<i>Verbena bonariensis</i>	Purple Top	h,w	-		
<i>Verbena aristigera</i>		h,w	-		
<i>Vitex trifolia</i> var <i>trifolia</i> ⁿ		s	-		

- LPR – Land Protection (Pest and Stock Route Management) Regulations 2003, Schedule 2.