Australia Pacific LNG Project
Supplemental information to the EIS
Terrestrial Ecology, High Pressure Pipeline Assessment – Gas Fields

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SITE-SPECIFIC ASSESSMENT OF EXISTING TERRESTRIAL ECOLOGICAL VALUES WITHIN THE PROPOSED HIGH PRESSURE GAS PIPELINE NETWORK

AUSTRALIA PACIFIC LNG PROJECT

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1.0 INTRODUCTION

1.1 BACKGROUND

This report has been prepared for WorleyParsons on behalf of Australia Pacific LNG for the purpose of documenting the existing terrestrial ecological values of sites accessed within the proposed High Pressure Gas Pipeline Network (HP Network) as part of the Australia Pacific Liquefied Natural Gas (LNG) Project.

It is understood that installation of the HP Network requires an initial clearing width of 25-50m and the ongoing maintenance of an access track adjacent to the pipelines, with rehabilitation of areas not necessary for operation to be undertaken following construction.

1.2 APPROACH TO THE ASSESSMENT

Approximately 70 properties were able to be accessed in the field during May 2010 for the purposes of the HP Network assessment. Within each of these properties, a botanist and fauna ecologist systematically recorded diagnostic botanical and fauna habitat features at representative sampling sites within accessible, major stands of remnant and regrowth habitat located within the nominal 200m wide HP Network assessment corridor in order to verify and, where required, modify project-scale mapping of existing terrestrial ecological values provided in the Australia Pacific LNG Project draft EIS.

As discussed in BAAM's *Terrestrial Ecology and Impact Assessment Report (2009)* for the Gas Fields component of the draft EIS, Project-scale 'sensitivity' mapping has been prepared (on the basis of refined vegetation mapping) as a means of presenting the extensive terrestrial ecology information collected for the draft EIS in a format that could be used by Australia Pacific LNG project planners to inform ecologically sensitive infrastructure layout, which subsequently forms the basis of the impact assessment. Similarly, the site-specific investigations undertaken for the current assessment allow this mapping to be refined at the property scale, thereby allowing relative terrestrial ecological values to be identified and considered with regard to other potential development constraints.

The fundamental assessment criteria that contribute to the sensitivity of the mapped habitat include:

- The conservation status of remnant vegetation communities (Regional Ecosystems or 'REs') under the Queensland *Vegetation Management Act 1999* (VM Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- The suitability of each RE as habitat for significant terrestrial flora and fauna;
- The conservation status of significant terrestrial flora and fauna species (known or considered likely to occur within the mapped REs within the draft EIS study area) under the EPBC Act and/or Queensland *Nature Conservation Act 1992* (NC Act);
- The importance of the draft EIS study area to the significant terrestrial flora and fauna species (that is, in terms of known distributions and patterns of abundance);
- Contribution of habitat (both remnant and regrowth) to significant corridors, as identified under the Biodiversity Planning Assessment (BPA) undertaken by the Queensland Environmental Protection Agency (now the Department of Environment and Resource Management) for the Brigalow Belt Bioregion; and
- The tract size of each habitat polygon, as identified under the BPA; and
- Occurrence of habitat within areas protected under the NC Act (e.g. National Parks).

Table 1 provides a description of the sensitivity categories indicated on the mapping and associated management intentions presented in the draft EIS.

Additional layers of sensitivity are also applied to the mapping, regardless of the sensitivity category of any relevant polygons, as follows:

- Areas known, or having high potential, to support any of two flora species, *Micromyrtus carinata* and *Calytrix gurulmundensis*, and an undescribed snail species, Brigalow Woodland Snail. These species are of major conservation significance, with very restricted distributions.
- Areas within the Talinga tenement known to support populations of conservation significant

species or which contain habitat features such as caves and overhangs that are important to a number of conservation significant species.

- Waterbodies, due to their very high resource value, and certain areas of cleared land within floodplains that are subject to inundation during or subsequent to rainfall events and may provide valuable resources for conservation significant fauna species when flooded.
- An area of RE 11.3.16, confirmed by the Queensland Herbarium as the northernmost known population of this community in Australia.

Management of individual significant communities, ecosystems and/or species that are or may be present is subject to a scouting process that defines the ecological values and determines subsequent management and buffer distances to the specific infrastructure.

It should be noted that the recent field assessments found the 'predictive' mapping for another undescribed snail species (Dulacca Woodland Snail) presented in the draft EIS to be inappropriate as it is strongly dependent on micro-habitat conditions within any vegetation type and on any soil type within its limited distribution, and too little is known of the species at present to define its core habitat in this fragmented landscape. As such, the predictive layer has been removed from the sensitivity mapping, other than for those patches of vegetation from which specimens have been detected (i.e. 'known' habitat). It is recommended that identification of habitat for the snail be undertaken as part of the scouting process within the Corinya and Condabri tenements, where ecologists on the ground will be able to identify suitable micro-habitats for searching.

Table 1. Terrestrial ecology sensitivity categories and associated management intentions for clearing and infrastructure

Category	Sensitivity	Management Intentions
1	**Extremely sensitive** Habitat patches within this category possess biodiversity characteristics that are unique and threatened at a National and a State level. These patches contain very high habitat values for threatened flora and fauna of the region and are likely to be in good condition due to minimal impacts of edge effects and located where they enhance ecological functions at a landscape level.	Siting of infrastructure within these areas will be avoided where possible. Where significant ecological values are identified through the scouting process, Special Area Plans will be prepared that are location/issue specific and detail issues and construction control (e.g. time of year, requirements for narrow Right of Way), and include particular restoration and monitoring requirements. The Special Area Plans will include the key elements from Guideline 4 of the Habitat Management Guidelines (Significant Ecological Values Management). The Special Area Plans will be incorporated within the construction and operation Environmental Management Plans (EMPs).
2	**Highly Sensitive** The majority of habitat patches within this category possess biodiversity characteristics that are unique and threatened at a National and a State level. These patches contain very high habitat values for threatened flora and fauna of the region. In comparison to those patches in Category 1, these patches have a reduced chance of being in good condition due to increased impacts of edge effects and are less likely to be located where they enhance ecological functions at a landscape level. Those patches that are of less importance at a National and State level or that possess lower habitat values are more likely to be in good condition and located where they enhance ecological functions at a landscape level.	Infrastructure will only be located within or in proximity to existing cleared and disturbed areas as a rule to reduce fragmentation. Limited clearing (if necessary for incremental expansion of existing disturbance) for construction to be rehabilitated prior to operation. Where significant ecological values are identified through the scouting process, Special Area Plans will be prepared and implemented though the EMP.

Category	Sensitivity	Management Intentions
3	**Sensitive** Biodiversity characteristics of these habitat patches are mostly unique at a sub-regional level. These patches are more likely to be in good condition due to their size and located where they enhance ecological functions at a landscape level.	Clearing only for linear infrastructure and well leases. Non-linear infrastructure to be located within or in proximity to existing cleared and disturbed areas. Disturbed areas not required for ongoing operation to be rehabilitated prior to operation. Where significant ecological values are identified through the scouting process, Special Area Plans will be prepared and implemented though the EMP.
4	**Neutral** Habitat patches within this category have a low chance of possessing biodiversity characteristics unique and threatened at a National or State level. These patches contribute little to ecological functions at a landscape scale and are likely to be in poor condition due to edge effects. Also includes patches that are either large in size or within recognised corridors and possess biodiversity values that are common within the bioregion.	Clearing for linear and non-linear infrastructure is to minimise edge effects where possible. Where significant ecological values are identified through the scouting process, Special Area Plans will be prepared and implemented though the EMP.
5	**Robust** Biodiversity values within this category are generally common within the bioregion; patches are isolated from other remnant vegetation or likely to be in poor condition due to edge effects. The majority of species within these patches are either increaser species that proliferate in agro-ecosystems or species that are unlikely to persist in the long-term as resources in the patch degrade.	Clearing for infrastructure, although hollow-bearing trees and habitat connectivity, particularly along watercourses, to be retained. Where significant ecological values are identified through the scouting process, Special Area Plans will be prepared and implemented though the EMP.
6 and 7	**Cleared** These areas are currently devoid of vegetation or other habitat features and do not provide important habitat for many native species. Where such areas occur within a recognised corridor, they are afforded a higher category (6) due to the opportunity for enhancing landscape connectivity through rehabilitation of the preclearing vegetation community.	Siting of infrastructure within 200m of significant ecological values may require the preparation of Special Area Plans to be implemented though the EMP.

2.0 RESULTS

For those properties and sections of the proposed assessment corridor able to be accessed for the HP Network assessment, **Appendix A** provides revised terrestrial ecology sensitivity maps based on the current site-specific observations. A full set of mapping of the entire HP Network (for which more detailed assessment was intended) has also been provided at this scale, separate to this report. The numbering of the maps in **Appendix A** identifies their place within the full map set, and this numbering also forms the basis of the following sections. Maps 1a and 1b represent sites occurring outside of the draft EIS study area and all data collected is additional to that provided within the draft EIS.

A description of the relative value of terrestrial vegetation and associated habitat as indicated by the revised mapping is provided in the following sections, specific to those areas accessed within the proposed assessment corridor. Also included are a brief interpretation of the underlying basis for the revised sensitivity mapping and a description of any additional, significant values detected during the field assessments that were not accounted for as part of the draft EIS, including significant species records and the confirmed presence of Matters of National Environmental Significance (MNES) under the EPBC Act.

Map 1a

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: n/a (new mapping prepared post draft EIS - no mapping undertaken for this area as part of the draft EIS).

Underlying Vegetation Mapping: REs 11.10.9 and 11.10.11 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Assessment corridor traverses a large tract of remnant habitat occurring within Hallett State Forest, although the centreline appears to follow an existing easement for much of this section. *The field team noted that the vegetation appears much younger on the eastern side of the existing easement, and therefore the western side should be avoided if possible.*

Golden-tailed Gecko *Strophurus taenicauda* (Near Threatened under the NC Act), Grey-crowned Babbler *Pomatostomus temporalis* (regionally significant in the bioregion) and Speckled Warbler *Chthonicola sagittata* (regionally significant in the bioregion) detected during the field assessment.

Map 1b

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: n/a (new mapping prepared post draft EIS - no mapping undertaken for this area as part of the draft EIS).

Underlying Vegetation Mapping: RE 11.10.9 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Assessment corridor traverses a large tract of remnant habitat occurring within Hallett State Forest.

Map 1

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Confirmed as RE 11.10.11 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Assessment corridor traverses a large tract of remnant habitat occurring within Hallett State Forest.

Grey-crowned Babbler *Pomatostomus temporalis* (regionally significant in the bioregion) detected during the field assessment.

Map 3

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Confirmed as REs 11.10.11, 11.10.1 and 11.3.39 (all Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Assessment corridor runs along cleared edge of private property within Hallett State Forest in north-western section (Lot 3 on WT313).

Large Spotted Gums and some rock crevices/caves within Lot 4 on SP204532.

Map 5

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Confirmed as RE 11.10.1 (Least Concern).

Confirmed MNES: Squatter Pigeon *Geophaps scripta scripta* (Vulnerable under the EPBC Act and NC Act) detected during the field assessment.

Also very good potential habitat for Large-eared Pied Bat *Chalinolobus dwyeri* (Vulnerable under the EPBC Act and NC Act) within this section.

Other Notable Features: Northern part of this section encounters the base of a very steep, rocky hill (S25.880, E149.038) that may cause construction issues and disturbance to very good potential habitat for significant species such as Large-eared Pied Bat. *The field team recommended selection of an alternative route in this area.*

Map 6

Sensitive Areas: Highly sensitive habitat (sensitivity category 2) occurs across the assessment corridor in the centre of this section.

Extremely sensitive habitat (sensitivity category 1) occurs within the north-eastern edge of the assessment corridor, although this was not accessed for verification.

Sensitivity Mapping Revisions: A new polygon of robust habitat (sensitivity category 5) has been added in the northern-most part of this section in place of a formerly mapped cleared area.

Underlying Vegetation Mapping: Highly sensitive habitat confirmed as RE 11.9.5a (Endangered), although only due to the absence of a more appropriate RE that is consistent with the substrate observed[1].

New polygon verified as RE 11.3.4 (Of Concern), while other remnant habitat confirmed as REs 11.3.25/11.3.39/11.3.2 (sub-dominant Of Concern) and 11.10.1 (Least Concern).

Confirmed MNES: Habitat verified as Endangered RE 11.9.5a is analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Also very good potential habitat for Large-eared Pied Bat *Chalinolobus dwyeri* (Vulnerable under the EPBC Act and NC Act) within this section.

Map 30

Sensitive Areas: Vegetated waterways across northern portion of Lot 72 on WV619.

Sensitivity Mapping Revisions: Habitat associated with waterway upgraded to sensitivity category 4.

Underlying Vegetation Mapping: Upgraded habitat formerly mapped as RE 11.3.25/11.3.2 (sub-dominant Of Concern) but verified as RE 11.3.17 (Of Concern).

Confirmed MNES: Nil.

Other Notable Features: Riparian habitat provides a linkage for terrestrial fauna between good quality riparian habitat to the east and large habitat patches to the west.

Map 36

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Formerly mapped as RE 11.5.1/11.10.9 (Least Concern) and RE 11.3.25/11.3.2 (sub-dominant Of Concern) but verified as RE 11.10.7 (Least Concern).

Confirmed MNES: Nil.

Map 59

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Formerly mapped as RE 11.7.4/11.7.7/11.7.5/11.7.2 (Least Concern) and associated regrowth but verified as RE 11.7.2/11.7.7 (Least Concern) and associated regrowth.

Confirmed MNES: Nil.

Other Notable Features: Remnant and regrowth habitat within the property is contiguous with large tract of remnant habitat (to the east), although assessment corridor traverses cleared areas for much of its length in this section.

Map 67

Sensitive Areas: Assessment corridor traverses edge of highly sensitive habitat (sensitivity category 2) in centre of this section.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Highly sensitive habitat confirmed as RE 11.4.3 (Endangered).

Neutral habitat (sensitivity category 4) formerly mapped as RE 11.5.1/11.7.5/11.7.2 but verified as RE 11.5.1.

Robust habitat (sensitivity category 5) verified as regrowth 11.4.7/11.4.12.

Confirmed MNES: Habitat confirmed as Endangered RE 11.4.3 is analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Although classified as 'non-remnant' (as defined under the VM Act), regrowth 11.4.7 can still meet the requirements of the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Other Notable Features: Population of Red-soil Woolly Wrinklewort *Rutidosis lanata* (Endangered under the NC Act) detected on Lot 52 on BWR104 (S26.76287, E150.41196) during the field assessment.

Habitat verified as RE 11.5.1 forms part of a State-significant bioregional corridor.

Several significant fauna species known to occur from this general location, including Rough Frog *Cyclorana verrucosa* and Golden-tailed Gecko

[1] The sandstone substrate at this location is not fine-grained (Landzone 9) as supposed, but coarse-grained. It is so unusual for Brigalow/Belah-dominated communities to occur on coarse-grained (Quartrose) sandstone that there doesn't seem to be an RE to fit the description. The description of 11.9.5a is very similar to the community observed, but usually occurs on shales or fine-grained sandstones rather than the Quartrose coarse sandstones found at this location.

Strophurus taenicauda (Near Threatened under the NC Act), Painted Honeyeater *Grantiella picta* (Vulnerable under the NC Act) and Yakka Skink *Egernia rugosa*; (Vulnerable under the EPBC Act and NC Act). *The field team recommended that habitat in this area be avoided if possible.*

Map 69

Sensitive Areas: Assessment corridor traverses edge of highly sensitive habitat (sensitivity category 2) in the northern part of this section.

Sensitivity Mapping Revisions: Additional polygons of highly sensitive habitat along northern boundary of Lot 36 on SP116140.

Underlying Vegetation Mapping: Highly sensitive habitat verified as RE 11.4.3 (Endangered).

Confirmed MNES: Habitat verified as Endangered RE 11.4.3 is analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Map 76

Sensitive Areas: Highly sensitive habitat (sensitivity category 2) occurs within the adjacent Condamine State Forest, but is unlikely to be directly impacted by the proposed infrastructure.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Robust habitat (sensitivity category 5) formerly mapped as RE 11.5.1a (Least Concern) but verified as RE 11.3.4/11.3.2 (Of Concern).

Confirmed MNES: Nil.

Other Notable Features: Vegetated waterway flowing from Condamine State Forest across the northern section of Lot 48 on RG46.

Riparian habitat provides good movement opportunities for terrestrial fauna and potentially valuable resources for numerous significant terrestrial fauna species, including hollow-bearing trees for arboreal species.

Map 77

Sensitive Areas: Highly sensitive habitat (sensitivity category 2) occurs within the adjacent Condamine State Forest, but is unlikely to be directly impacted by the proposed infrastructure.

Sensitivity Mapping Revisions: 'Predicted' habitat for Dulacca Woodland Snail formerly mapped within the adjacent Condamine State Forest has been removed as no ground-truthing for this species was undertaken to confirm its presence.

Underlying Vegetation Mapping: Robust habitat (sensitivity category 5) formerly mapped as RE 11.5.1a (Least Concern) but verified as RE 11.5.1 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Vegetated waterway flowing from Condamine State Forest across the centre of Lot 48 on RG46.

Riparian habitat provides good movement opportunities for terrestrial fauna and potentially valuable resources for numerous significant terrestrial fauna species, including hollow-bearing trees for arboreal species.

Map 80

Sensitive Areas: The assessment corridor traverses highly sensitive habitat (sensitivity category 2) along much of this section, due primarily to its occurrence within State-significant bioregional corridor.

This section also traverses an area known to support a population of Yakka Skink *Egernia rugosa*; (Vulnerable under the EPBC Act and NC Act) within Lot 1 on RG491.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Majority of highly sensitive habitat confirmed as RE 11.7.4/11.7.7 (Least Concern), except for patch immediately east of neutral habitat on Lot 161 on FTY1867, which was confirmed as RE 11.3.14/11.4.3 (sub-dominant Endangered).

Neutral habitat adjacent to known Yakka Skink population within Lot 1 on RG491 confirmed as RE 11.3.14 (Least Concern).

Robust habitat within Lot 10 on ROG3411 confirmed as regrowth 11.7.4/11.7.7.

Robust habitat adjacent to known Yakka Skink population within Lot 1 on RG491 formerly mapped as regrowth 11.5.1 but verified as regrowth 11.5.1 and REs 11.5.1 and 11.3.14 (both Least Concern).

Confirmed MNES: The assessment corridor traverses an area known to support a population of Yakka Skink *Egernia rugosa*; (Vulnerable under the EPBC Act and NC Act) within Lot 1 on RG491.

Patches of RE 11.4.3 are analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

At least one population of Thomby Range Wattle *Acacia wardellii* (Vulnerable under the EPBC Act and VM Act) is also known from within this segment (Craig Eddie, pers. comm.).

Other Notable Features: *The field team describe the area as supporting good quality habitat for significant species and recommend avoidance or minimisation of disturbance.*

Map 81

Sensitive Areas: The assessment corridor traverses the edges of highly sensitive habitat (sensitivity category 2) within the northern and southern parts of this section, although this habitat was not ground-truthed during the recent field assessment.

This section also traverses an area known to support a population of Yakka Skink *Egernia rugosa*; (Vulnerable under the EPBC Act and NC Act) within Lot 1 on RG491.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Neutral habitat confirmed as RE 11.3.14 (Least Concern).

The northern-most patch of robust habitat was confirmed as regrowth 11.5.1.

The central patch of robust habitat was confirmed as regrowth 11.4.12/11.4.3/11.10.9.

The southern-most, ground-truthed patch of robust habitat was formerly mapped as regrowth 11.4.12/11.4.3/11.10.9, but was verified as regrowth 11.4.12/11.4.3.

Confirmed MNES: The assessment corridor traverses an area known to support a population of Yakka Skink *Egernia rugosa*; (Vulnerable under the EPBC Act and NC Act) within Lot 1 on RG491.

Although classified as 'non-remnant' (as defined under the VM Act), patches of regrowth 11.4.3 can still meet the requirements of the Endangered 'Brigalow' Ecological Community under the EPBC Act.

At least one population of Thomby Range Wattle *Acacia wardellii* (Vulnerable under the EPBC Act and VM Act) is also known from within this segment (Craig Eddie, pers. comm.).

Other Notable Features

The majority of this section occurs within a State-significant bioregional corridor.

The field team describe the area as supporting good quality habitat for significant species and recommend avoidance or minimisation of disturbance.

Map 82

Sensitive Areas: The assessment corridor traverses the edge of highly sensitive habitat (sensitivity category 2) within the central and southern parts of this section and the edge of sensitive habitat (sensitivity category 3) within the northern part of this section.

Sensitivity Mapping Revisions: Sensitive habitat upgraded from robust (sensitivity category 5) and robust habitat in northern and central parts of this section downgraded from extremely sensitive (sensitivity category 1).

Underlying Vegetation Mapping: Highly sensitive habitat within southern-most part of this section confirmed as RE 11.4.3 (Endangered).

Sensitive habitat formerly mapped as regrowth 11.4.12/11.4.3/11.10.9 but verified as remnant 11.4.12/11.4.3/11.10.9 (Endangered).

Robust habitat in northern part of this section formerly mapped as RE 11.4.3 (Endangered) but verified as RE 11.5.1 (Least Concern).

Robust habitat in central part of this section formerly mapped as RE 11.4.3 (Endangered) but verified as non-remnant.

Robust habitat within southern-most part of this section confirmed as RE 11.7.4/11.7.7 (Least Concern).

Confirmed MNES: RE 11.4.3 is analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Although classified as 'non-remnant' (as defined under the VM Act), regrowth 11.4.3 greater than 15 years in age meets the requirements of the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Other Notable Features: Robust habitat in central part of this section forms part of a State-significant bioregional corridor.

Map 83

Sensitive Areas: The assessment corridor traverses the edge of highly sensitive habitat

(sensitivity category 2) within the north-western and south-eastern parts of this section.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Highly sensitive habitat within Lot 10 on RG31 confirmed as RE 11.4.3 (Endangered).

Robust habitat formerly mapped as RE 11.3.25/11.3.4/11.4.3 (sub-dominant Endangered) but verified as RE 11.3.4/11.3.2/11.4.3 (sub-dominant Endangered).

Confirmed MNES: RE 11.4.3 is analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Map 84

Sensitive Areas: The assessment corridor traverses highly sensitive habitat (sensitivity category 2) within the western part of this section, and sensitive habitat (sensitivity category 3) within the central part of this section.

Sensitivity Mapping Revisions: Sensitive habitat upgraded from robust (sensitivity category 5).

Additional patches of robust habitat within eastern part of this section.

Underlying Vegetation Mapping: Highly sensitive habitat confirmed as RE 11.4.3 (Endangered).

Sensitive habitat formerly mapped as RE 11.3.25/11.3.4/11.4.3 (sub-dominant Endangered) but verified as RE 11.3.4/11.4.3 (sub-dominant Endangered).

Additional patches of robust habitat verified as regrowth 11.4.3.

Confirmed MNES: RE 11.4.3 is analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Although classified as 'non-remnant' (as defined under the VM Act), regrowth 11.4.3 greater than 15 years in age meets the requirements of the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Map 85

Sensitive Areas: The assessment corridor traverses the edge of highly sensitive habitat (sensitivity category 2) within the western and central parts of this section, although this habitat was not ground-truthed during the recent field assessment.

Sensitivity Mapping Revisions: Additional patch of robust habitat within western-most part of this section.

Underlying Vegetation Mapping: Robust habitat at eastern extent of this section formerly mapped as RE 11.3.25/11.3.4/11.4.3 (sub-dominant Endangered) but verified as RE 11.3.4/11.3.2/11.4.3 (sub-dominant Endangered).

Central patches of robust habitat confirmed as regrowth 11.4.3.

Additional patch of robust habitat verified as regrowth 11.4.3.

Confirmed MNES: Patches of RE 11.4.3 are analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Although classified as 'non-remnant' (as defined under the VM Act), regrowth 11.4.3 greater than 15 years in age meets the requirements of the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Map 86

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Robust habitat on Lot 8 on RP138762 formerly mapped as RE 11.3.25/11.3.4/11.4.3 (sub-dominant Endangered) but verified as RE 11.3.4/11.3.2/11.4.3 (sub-dominant Endangered).

Robust habitat on Lot 6 on RP138762 formerly mapped as regrowth 11.5.1/11.5.20/11.3.2 but verified as RE 11.5.1/11.5.20 (Least Concern).

Neutral habitat formerly mapped as RE 11.5.1/11.5.20/11.3.2 (sub-dominant Of Concern) but verified as RE 11.3.2 (Of Concern).

Confirmed MNES: Specimens of Chinchilla Wattle *Acacia chinchillensis* (Vulnerable under the EPBC Act and Near Threatened under the NC Act) recorded from cleared area adjacent to neutral habitat on Lot 23 on RG639.

Patches of RE 11.4.3 are analogous to the Endangered 'Brigalow' Ecological Community under the EPBC Act.

Other Notable Features: Grey-crowned Babbler *Pomatostomus temporalis* (regionally significant in the bioregion) detected during the field assessment.

Map 87

Sensitive Areas: Majority of this section traverses sensitive and highly sensitive habitat (sensitivity categories 3 and 2), due mainly to its occurrence within a State-significant bioregional corridor.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Sensitive and highly sensitive habitat confirmed as REs 11.7.4/11.7.7 and 11.7.7/11.7.5 (Least Concern).

Neutral habitat on Lot 2 on RP138762 formerly mapped as RE 11.5.1/11.5.20/11.3.2 (sub-dominant Of Concern) but verified as RE 11.3.2 (Of Concern).

Robust habitat formerly mapped as regrowth 11.9.5 but verified as RE 11.7.4 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Black-striped Wallaby *Macropus dorsalis* (regionally significant in the bioregion) recorded during the field assessment.

Map 88

Sensitive Areas: Central part of this section traverses sensitive habitat (sensitivity category 3).

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Sensitive habitat confirmed as RE 11.3.18/11.5.1/11.3.25 (Least Concern).

Robust habitat confirmed as regrowth 11.5.1/11.5.20.

Confirmed MNES: Nil.

Other Notable Features: Sensitive habitat forms part of a State-significant bioregional corridor.

Map 89

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Confirmed as cleared.

Confirmed MNES: Nil.

Other Notable Features: Grey-crowned Babbler *Pomatostomus temporalis* (regionally significant in the bioregion) detected during the field assessment.

Map 90

Sensitive Areas: The assessment corridor traverses sensitive habitat (sensitivity category 3) within the southern part of this section.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Sensitive habitat confirmed as RE 11.5.1a (Least Concern).

Neutral habitat confirmed as RE 11.5.1a (Least Concern).

Robust habitat confirmed as regrowth 11.5.1a.

Confirmed MNES: Nil.

Other Notable Features: Neutral habitat forms part of a State-significant bioregional corridor.

Map 91

Sensitive Areas: The assessment corridor traverses sensitive habitat (sensitivity category 3) within the northern part of this section.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Sensitive and neutral habitat confirmed as RE 11.5.1a (Least Concern), with the higher rating given to the polygon with the larger patch size.

Confirmed MNES: Nil.

Other Notable Features: Sensitive and neutral habitat forms part of a State-significant bioregional corridor.

Map 92

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Neutral habitat confirmed as RE 11.5.1a (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Neutral habitat forms part of a State-significant bioregional corridor.

Map 95

Sensitive Areas: The majority of the assessment corridor traverses sensitive habitat (sensitivity category 3) within this section.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Sensitive habitat confirmed as RE 11.5.1a (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Sensitive habitat forms part of a State-significant bioregional corridor.

Map 96

Sensitive Areas: The assessment corridor traverses sensitive habitat (sensitivity category 3) within this section, although these areas were not accessed during the recent field assessment.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Robust habitat in eastern part of this section confirmed as REs 11.5.1a and 11.5.1a/11.5.1 (Least Concern).

Confirmed MNES: Nil.

Map 97

Sensitive Areas: The assessment corridor traverses sensitive habitat (sensitivity category 3) within this section.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Sensitive habitat confirmed as REs 11.3.18/11.3.2/11.3.4 (sub-dominant Of Concern) and 11.3.18/11.5.1/11.3.25 (Least Concern).

Neutral habitat confirmed as RE 11.5.1a/11.5.1 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Sensitive and neutral habitat forms part of a State-significant bioregional corridor.

Grey-crowned Babbler *Pomatostomus temporalis* (regionally significant in the bioregion) detected during the field assessment.

Map 98

Sensitive Areas: The assessment corridor traverses highly sensitive and sensitive habitat (sensitivity categories 2 and 3) within the western part of this section.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Highly sensitive habitat confirmed as REs 11.3.18/11.3.2/11.3.4 (sub-dominant Of Concern) and 11.3.18/11.5.1/11.3.25 (Least Concern).

Sensitive habitat confirmed as RE 11.7.6 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Sensitive and highly sensitive habitat forms part of a State-significant bioregional corridor.

Map 99

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Neutral habitat confirmed as RE 11.7.4 (Least Concern).

Robust habitat in western part of this section confirmed as RE 11.5.1 (Least Concern).

Robust habitat in eastern part of this section confirmed as RE 11.5.1a/11.3.25 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features

Grey-crowned Babbler *Pomatostomus temporalis* (regionally significant in the bioregion) detected during the field assessment.

The field team noted the presence of some large eucalypts in this section which should be avoided.

Map 100

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Neutral habitat confirmed as RE 11.7.4 (Least Concern).

Robust habitat in this section confirmed as RE 11.5.1a/11.3.25 (Least Concern).

Confirmed MNES: Nil.

Other Notable Features: Grey-crowned Babbler *Pomatostomus temporalis* (regionally significant in the bioregion) detected during the field assessment.

The field team noted the presence of some large eucalypts in this section which should be avoided.

Map 101

Sensitive Areas: Nil.

Sensitivity Mapping Revisions: Nil.

Underlying Vegetation Mapping: Western patches of robust habitat confirmed as RE 11.5.1a/11.3.25 (Least Concern).

Robust habitat in eastern part of this section confirmed as RE 11.7.7/11.7.4/11.7.5 (Least Concern).

Confirmed MNES: Population of *Philotheca sporadica* (Vulnerable under the EPBC Act NC Act) detected within the eastern part of this section during the field assessment.. *The field team recommended avoiding this area by using the existing easement on the other side of the fence at this location.*

Other Notable Features: Eastern part of this section occurs along the boundary of Braemar State Forest.

3.0 RECOMMENDATIONS

As a rule, avoidance of any vegetated area should be a priority for route alignment where options within cleared land area available, and less sensitive areas should be chosen over more sensitive areas where clearing cannot be avoided.

Sensitivity Category 1 (extremely sensitive) Siting of infrastructure within these areas will be avoided where possible. Where significant ecological values are identified through the scouting process, Special Area Plans will be prepared that are location/issue specific and detail issues and construction control (e.g. time of year, requirements for narrow Right of Way), and include particular restoration and monitoring requirements. The Special Area Plans will include the key elements from Guideline 4 of the Habitat Management Guidelines (Significant Ecological Values Management). The Special Area Plans will be incorporated within the construction and operation Environmental Management Plans (EMPs).

Disturbance within Sensitivity Category 2 should be aligned with existing cleared and disturbed areas, with limited clearing to facilitate construction to be rehabilitated prior to operation.

Clearing for linear infrastructure can occur within Sensitivity Category 3 (sensitive) habitat, although infrastructure should be located to minimise habitat fragmentation. Any associated non-linear infrastructure within Category 3 is to be located within or adjacent to already disturbed areas.

Clearing for both linear and non-linear infrastructure is allowable within Category 4 habitat, although fragmentation should be minimised. Clearing within Category 4 habitat is allowable, but should maintain habitat connectivity and hollow-bearing trees, particularly along watercourses.

All areas cleared for construction purposes that are not required for operational purposes are to be rehabilitated. It is estimated that this will encompass up to one third of the area cleared for construction.

For all direct and potentially indirect impacts to habitat, implement the relevant components of the habitat management guidelines, which include a scouting process to identify all significant ecological values present within 200m of the proposed disturbance.

The recent fieldwork has ground-truthed a small portion of the HP Pipeline network sensitivity mapping. Ground-truthing verified RE mapping and sensitivity mapping at specific locations within the pipeline corridor, and mapping has been amended where necessary. It has also allowed the identification of significant ecological values where they were encountered.

Overall, the original mapping undertaken for the impact assessment process has proven to be approximately 80% accurate in terms of sensitivity mapping. It does not, however, indicate the presence of species or habitats of special conservation significance, emphasising the importance of the incorporation of the scouting process into infrastructure location planning. The sensitivity mapping should be used in the first instance to guide route placement, and then scouted to refine the alignment with minimum ecological disturbance.

In addition to the mitigation actions set out in **Table 1** for each of the sensitivity categories, **Table 2** provides a list of additional impact mitigation measures for the HP Pipeline alignment based on field survey results.

Table 2. Additional impact mitigation recommendations for ground-truthed, significant terrestrial ecological values within the proposed HP Network assessment corridor

Ground-truthed Value	Relevant Maps	Recommendations
Sensitive Habitat		
Extremely Sensitive Habitat (Sensitivity Category 1)	None present at survey sites	
Highly Sensitive Habitat (Sensitivity Category 2)	6, 67, 69, 80, 82, 83 and 84	Disturbance should be aligned with existing cleared and disturbed areas, with limited clearing to facilitate construction to be rehabilitated prior to operation.
Sensitive Habitat (Sensitivity Category 3)	82, 84, 87, 88, 90, 91, 95, 96, 97 and 98	Clearing for linear infrastructure allowable, although infrastructure should be located to minimise habitat fragmentation. Any associated non-linear infrastructure is to be located within or adjacent to already disturbed areas.
MNES		
Threatened Ecological Communities	6, 67, 69, 80, 81, 82, 83, 84, 85 and 86	Implement relevant components of the habitat management guidelines for works within a 200m buffer of all occurrences through the Environmental Management Plan for the Project. Any loss will require offsetting.
Endangered Species	None present at survey sites	Implement relevant components of the habitat management guidelines for works within a 200m buffer of confirmed habitat through the Environmental Management Plan for the Project.
Vulnerable Species	5, 6, 67, 80, 81, 86 and 101	Implement relevant components of the habitat management guidelines for works within a 200m buffer of confirmed habitat through the Environmental Management Plan for the Project. Loss of habitat for Yakka Skink and Painted Honeyeater will require offsetting.
Significant REs		
Endangered REs		Implement relevant components of the habitat management guidelines for works within a 200m buffer of all occurrences through the Environmental Management Plan for the Project. Any loss will require offsetting.
Of Concern REs		Implement relevant components of the habitat management guidelines for works within a 200m buffer of all occurrences through the Environmental Management Plan for the Project. Any loss will require offsetting.
State Significant Species		
Endangered Species	None present at survey sites	
Vulnerable Species	1a, 6, 67, 80 and 81	Implement relevant components of the habitat management guidelines for works within a 200m buffer of confirmed habitat through the Environmental Management Plan for the Project. Loss of habitat for Yakka Skink, Painted Honeyeater, Glossy Black-Cockatoo and Pale Imperial Hairstreak will require offsetting.
Near Threatened Species	None present at survey sites	
Other Significant Values		
State-significant Bioregional Corridors	80, 81, 82, 87, 88, 90, 91, 92, 97 and 98	Within bioregional corridors, the placement of access tracks that results in unnecessary fragmentation and/or severing or recognised corridors should be avoided and existing tracks should be used where possible.

APPENDIX A

REVISED TERRESTRIAL ECOLOGY SENSITIVITY MAPPING FOLLOWING FIELD ASSESSMENT

0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

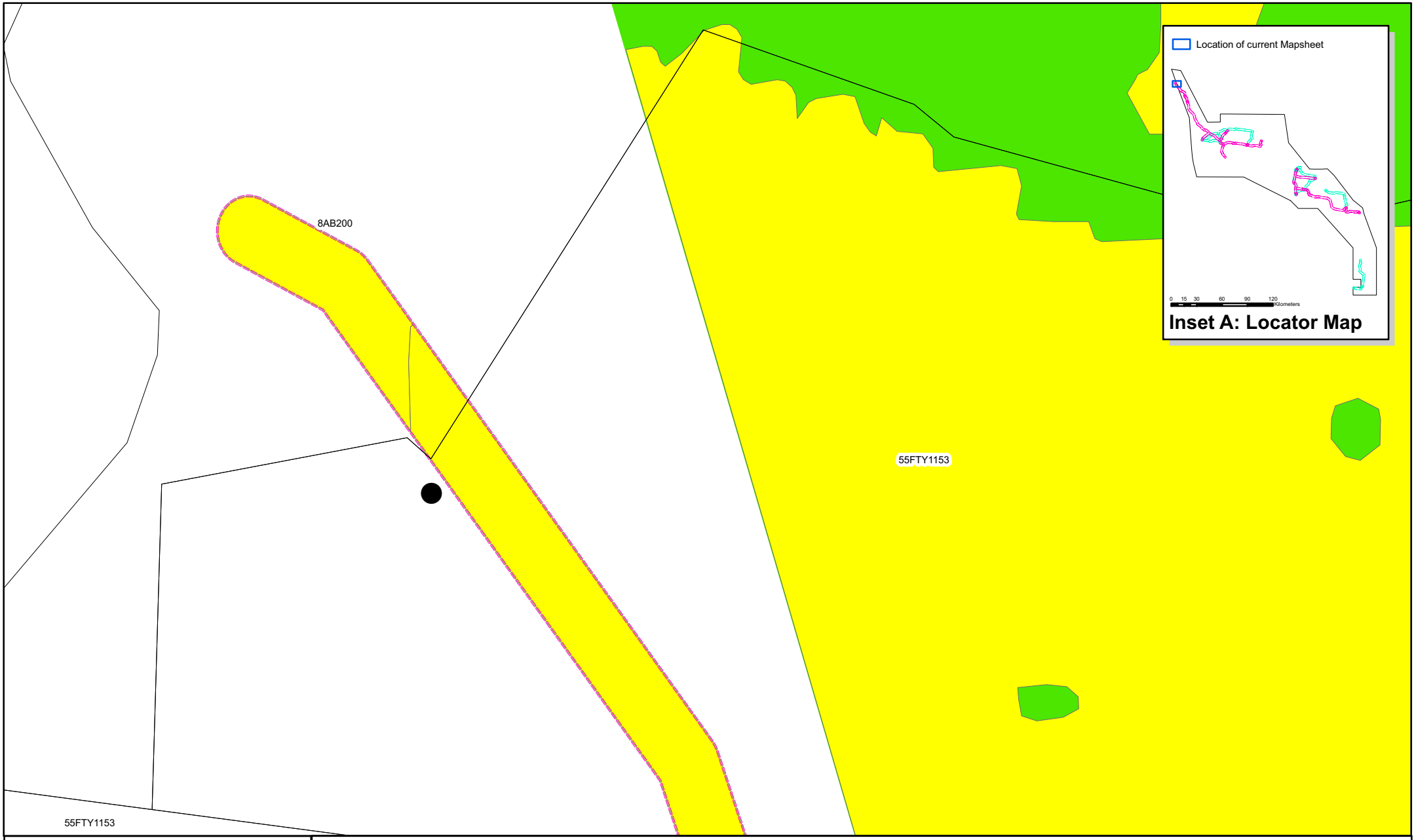
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 1a)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

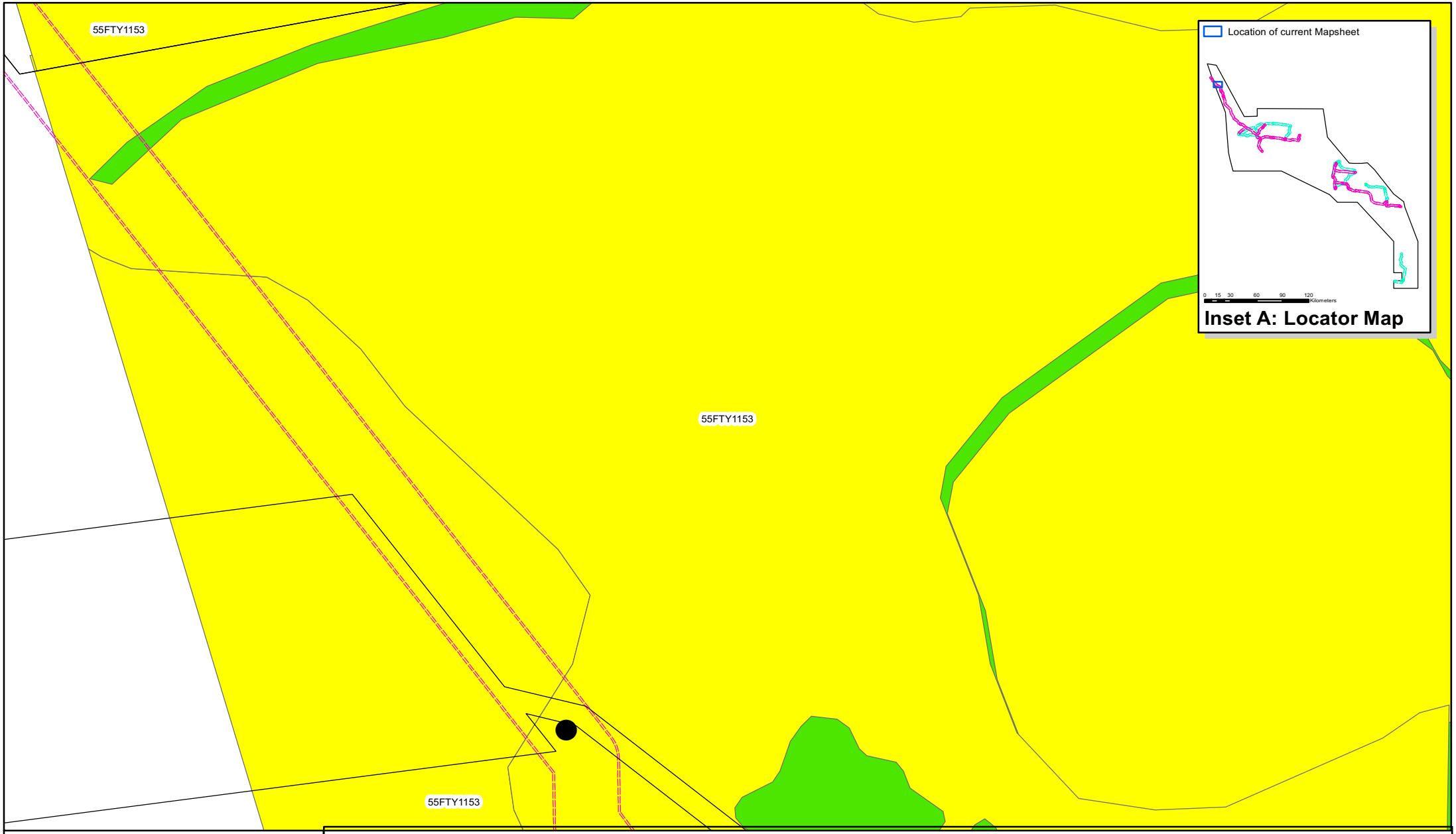
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 1b)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

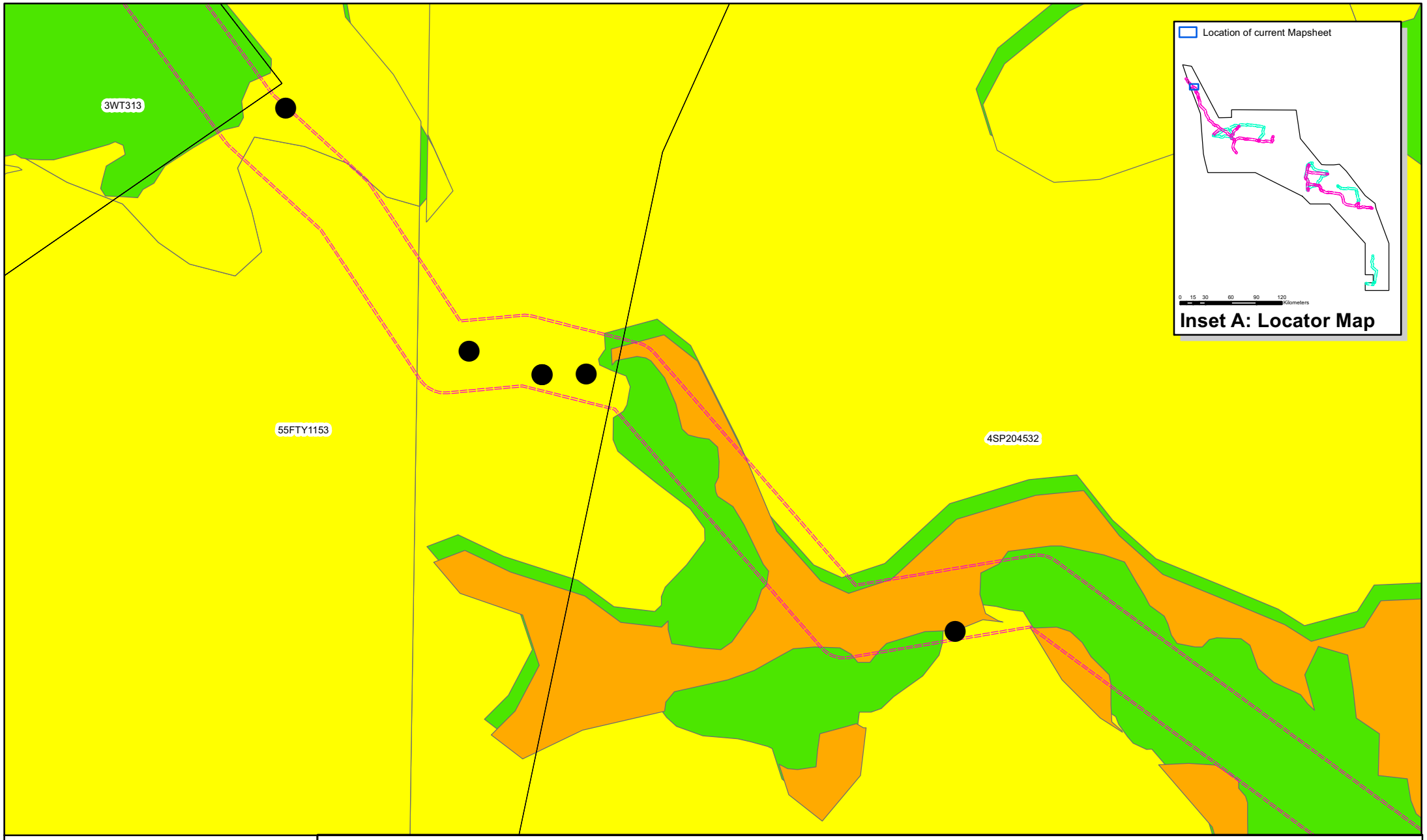
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 1)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

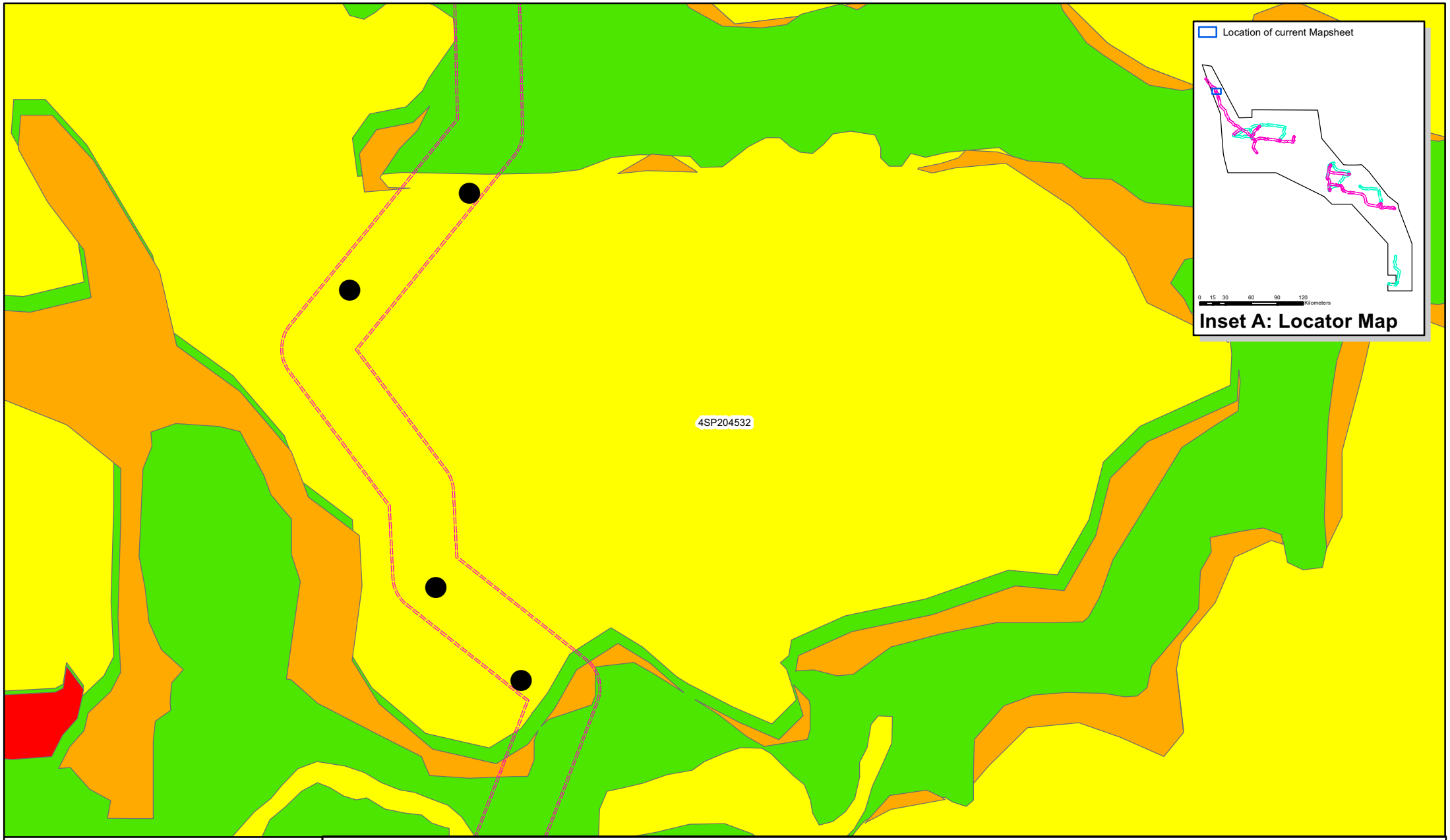
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 3)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

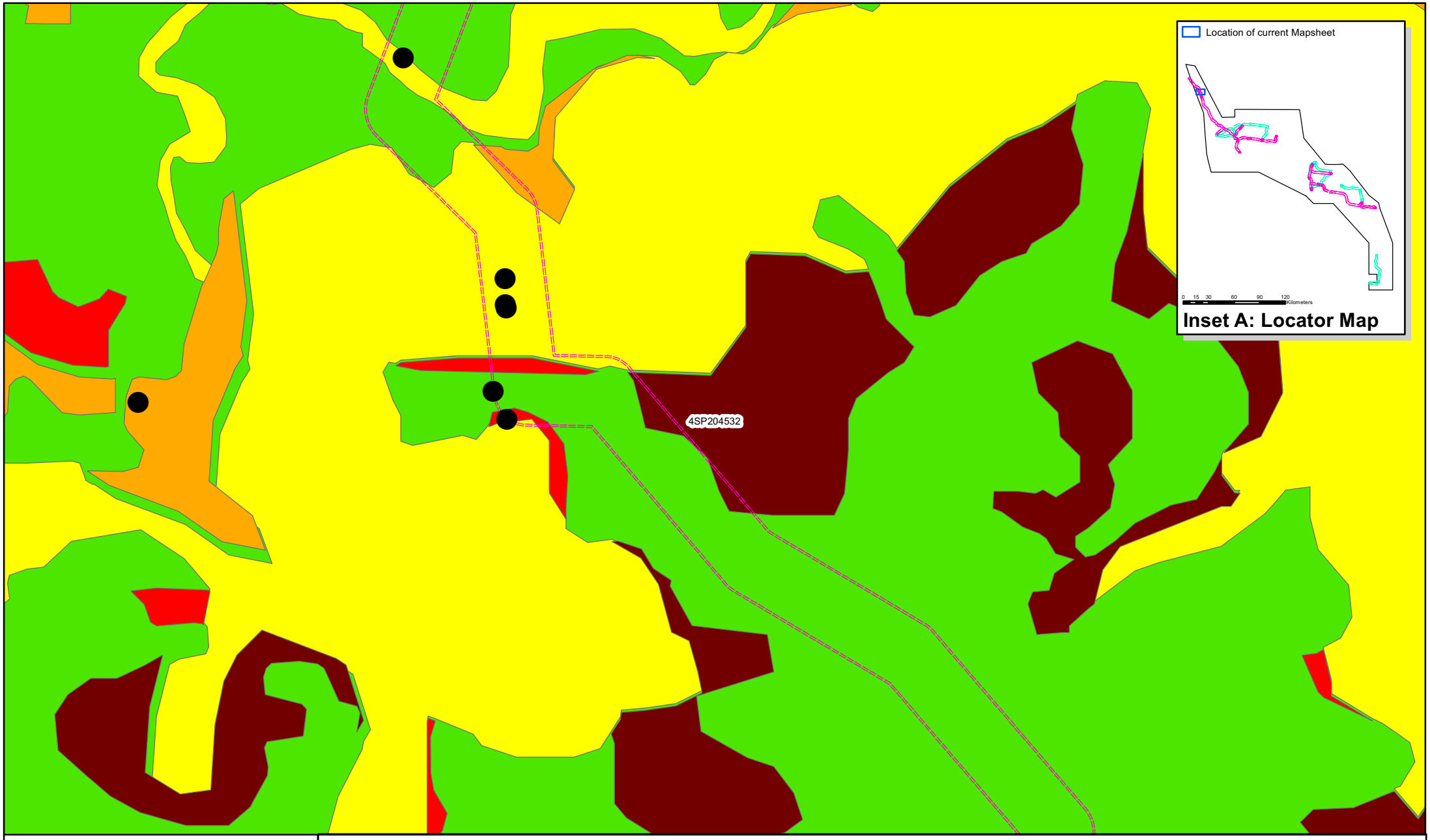
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 5)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

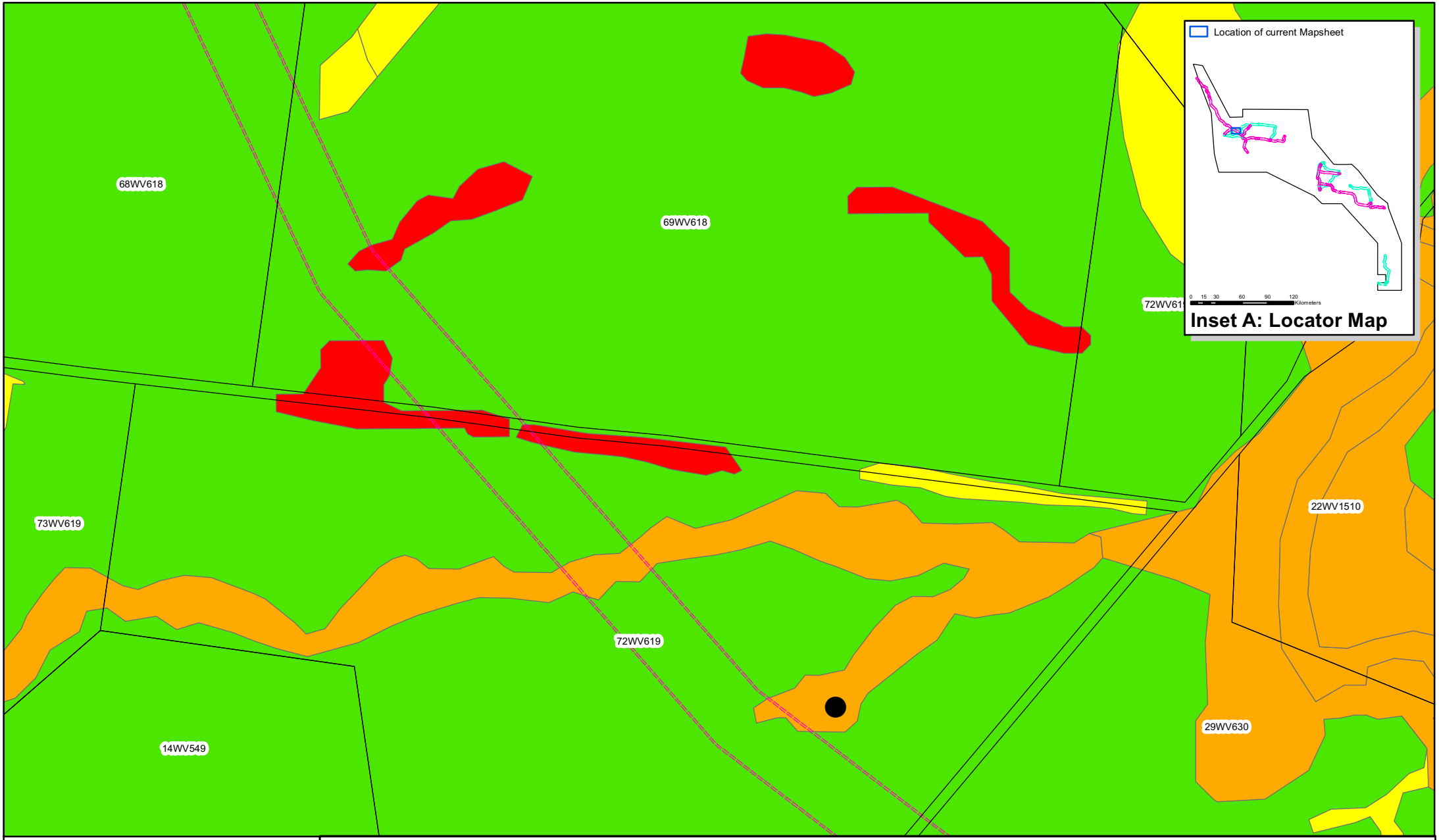
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 6)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

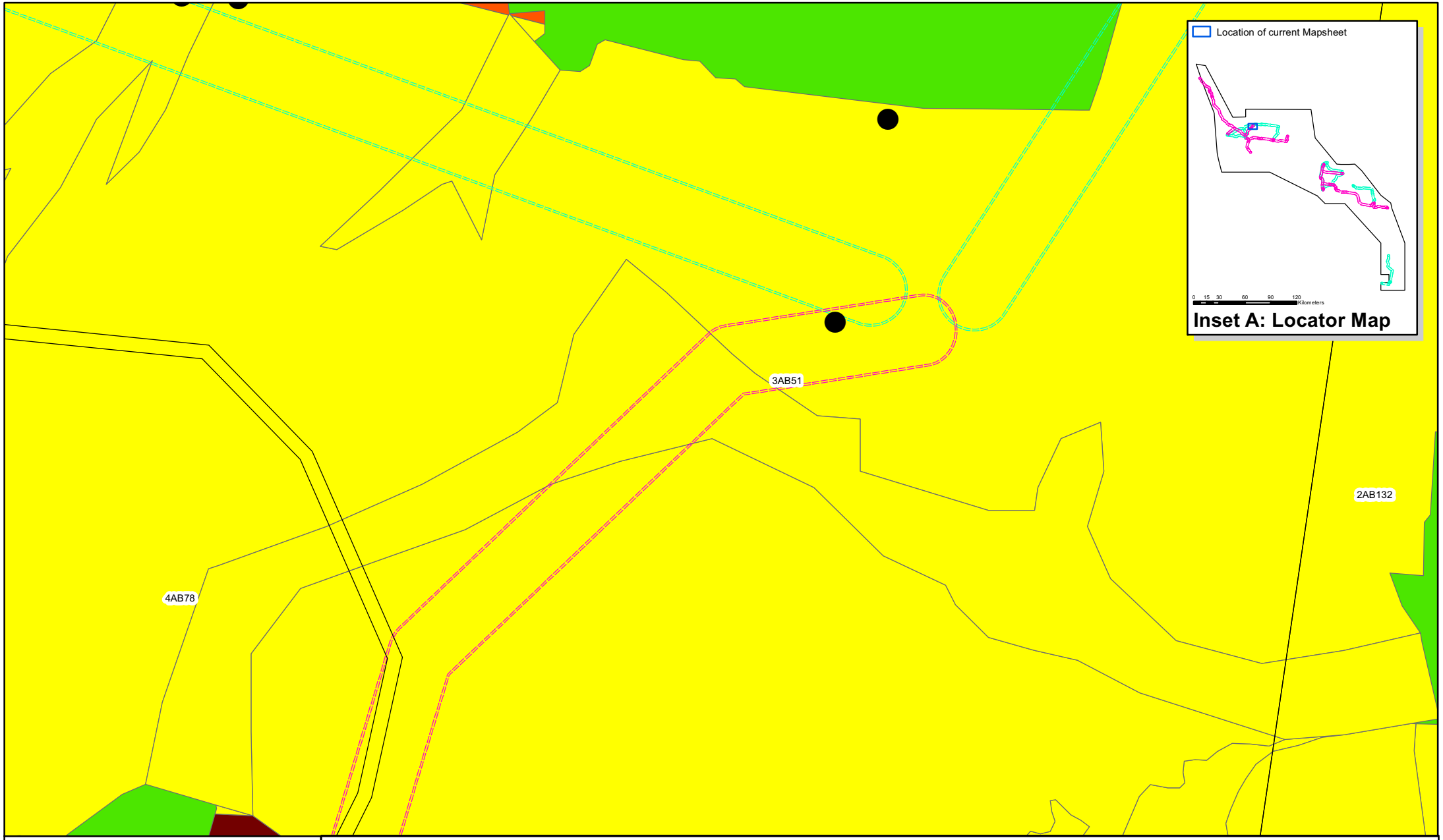
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 30)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

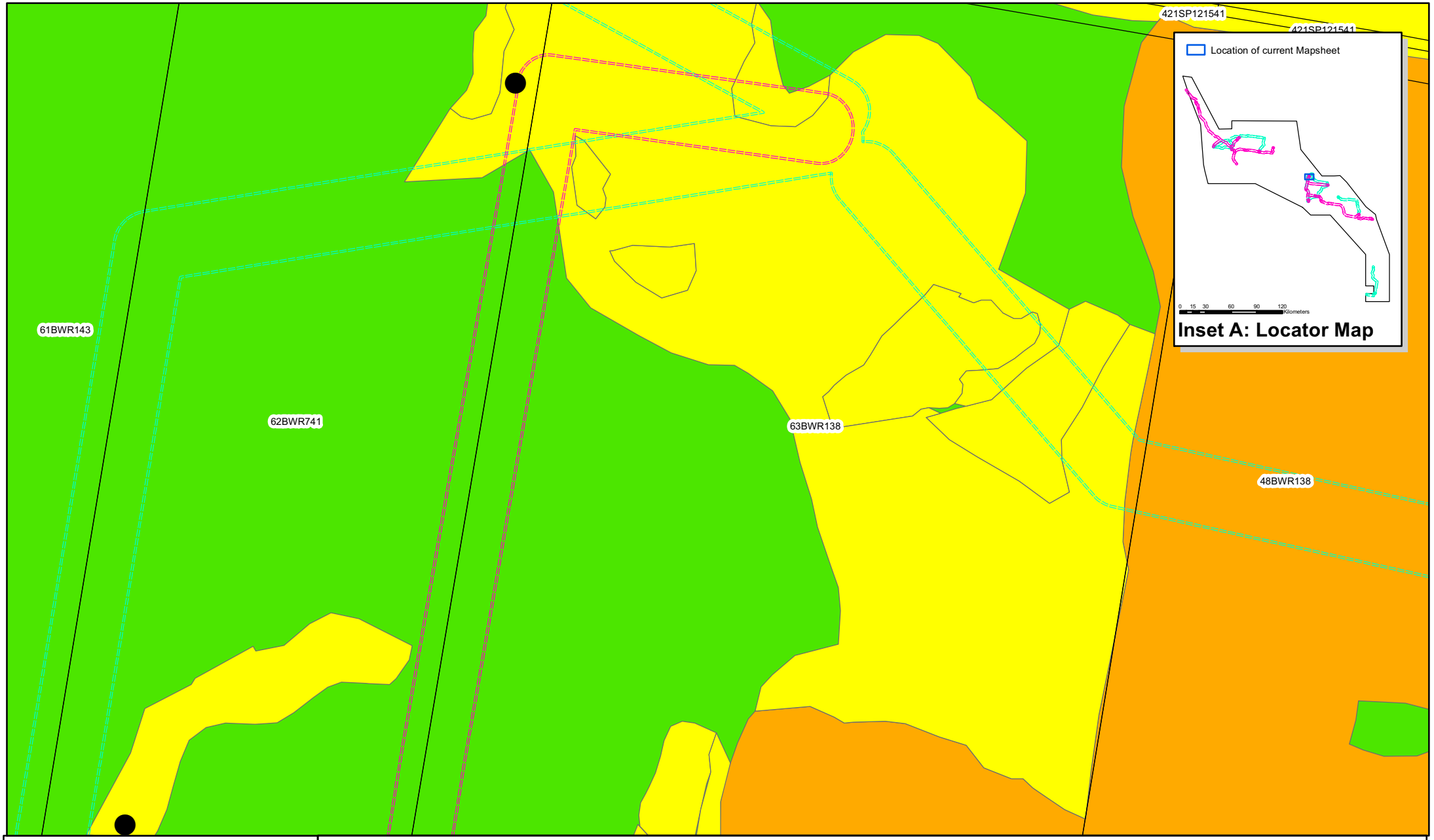
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 36)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 59)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG

0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

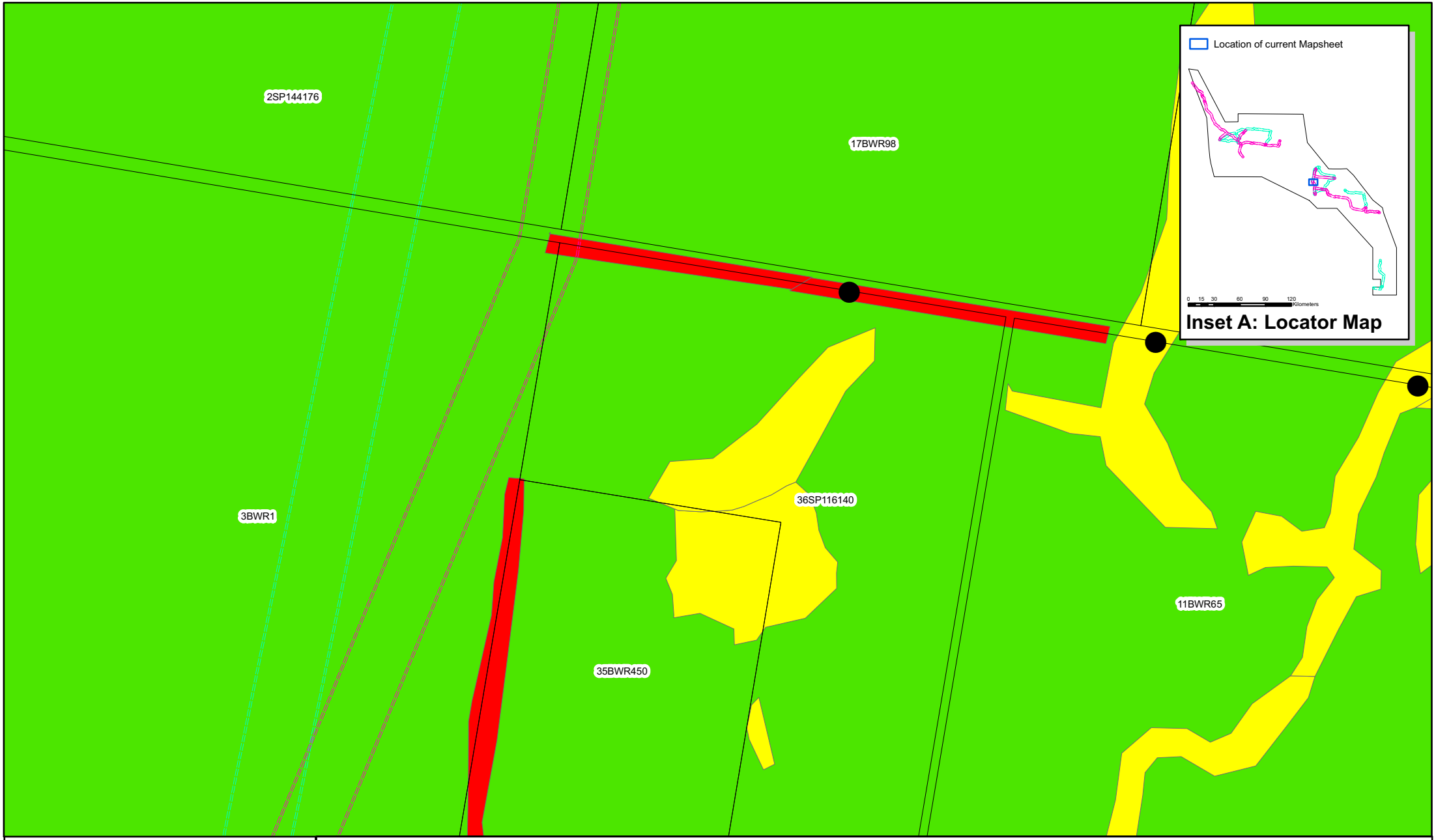
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 67)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.25 0.5 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

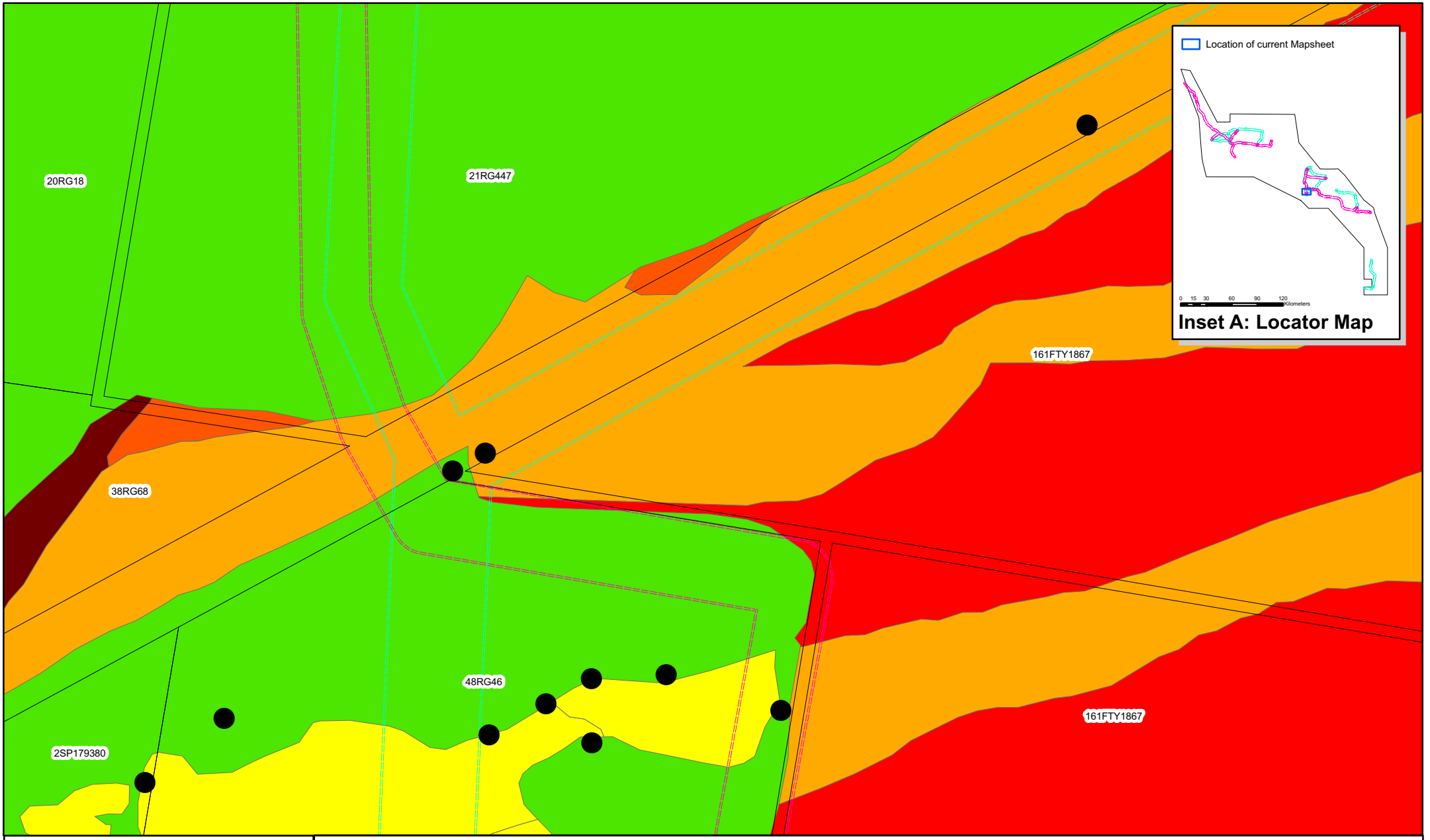
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 69)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

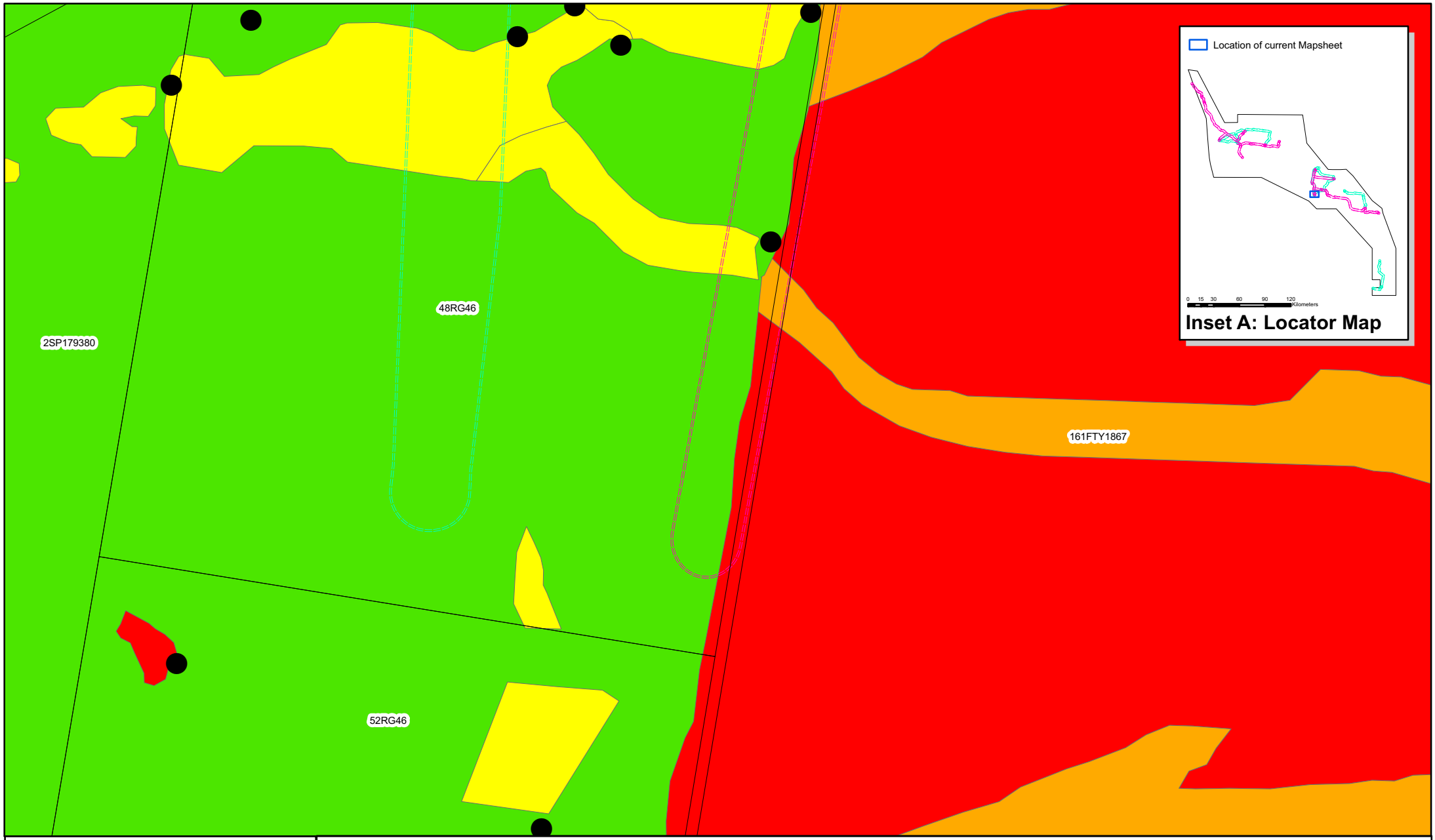
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 76)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

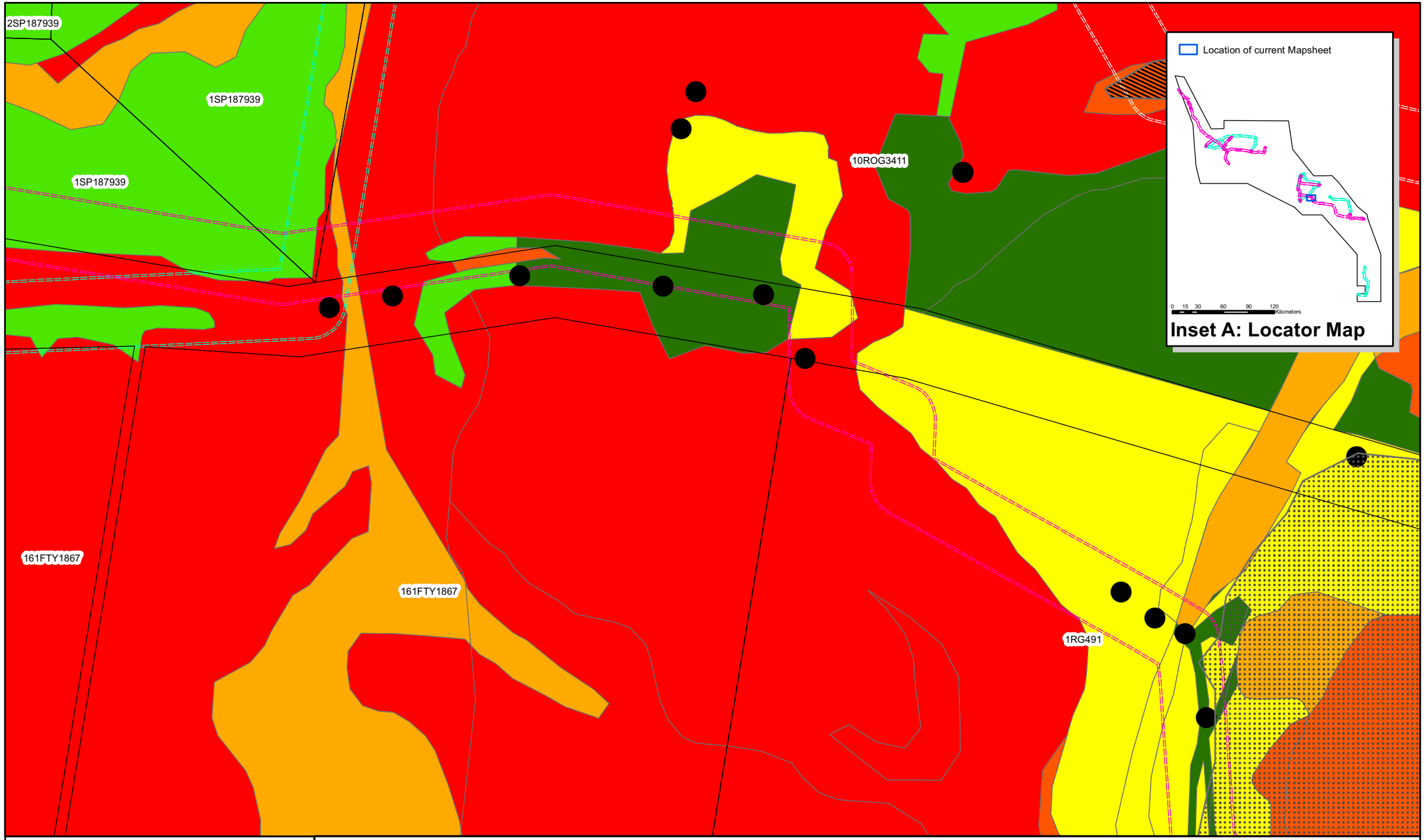
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network
- 200m Assessment Corridor

Proposed HP Network (Map 77)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

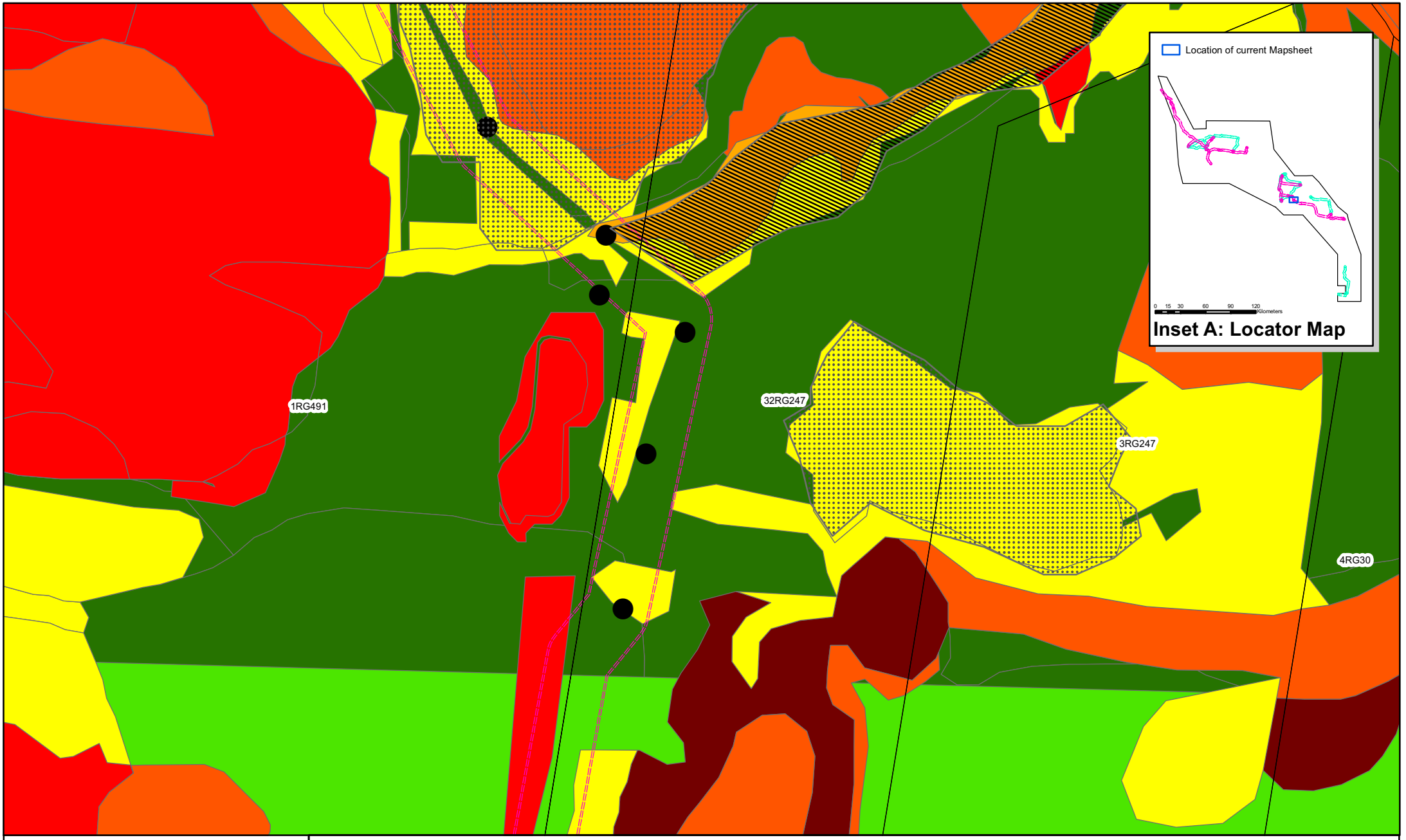
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor
- Known significant ecological features
- Confirmed population of Yakka Skink

Proposed HP Network (Map 80)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

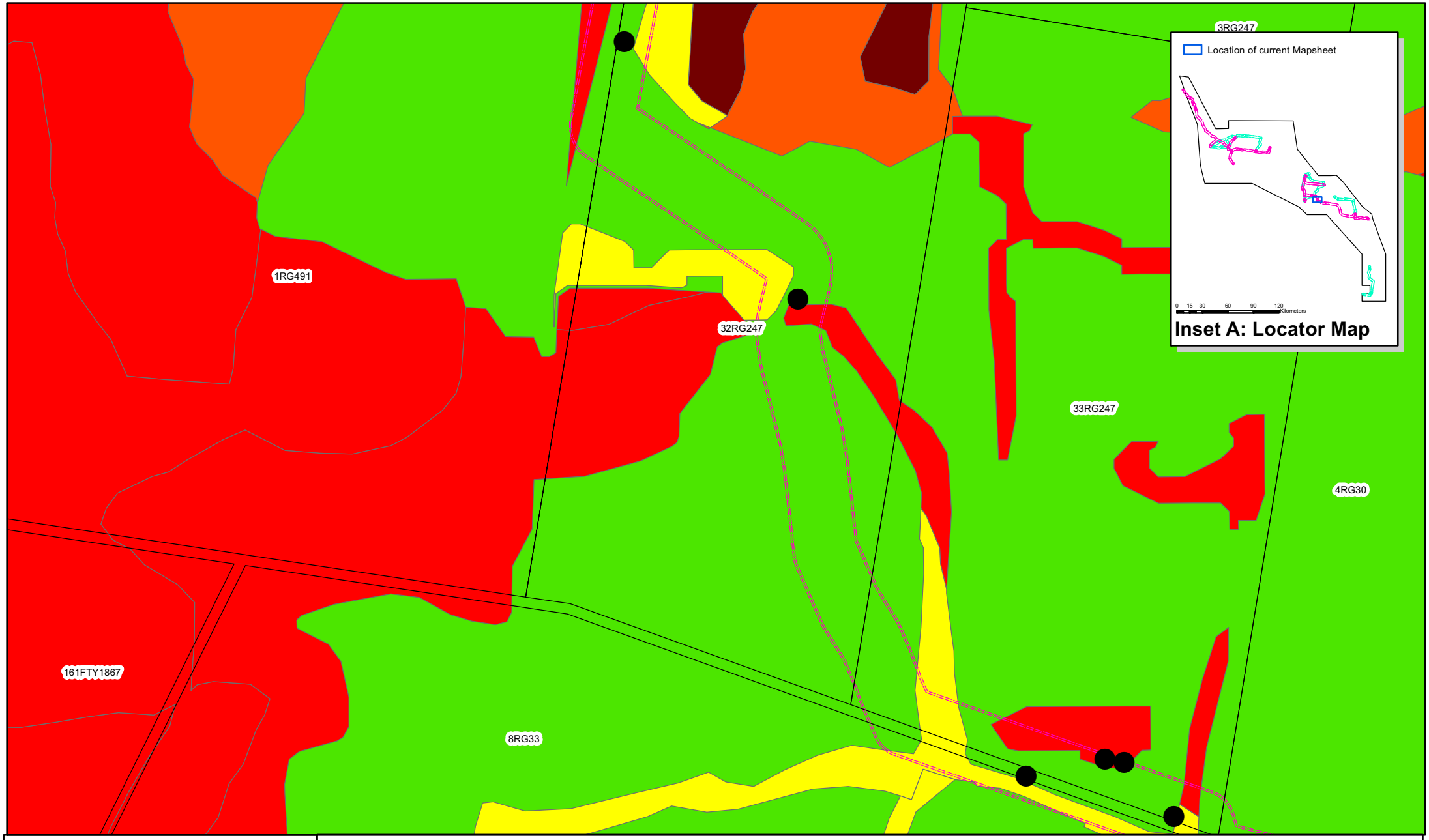
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor
- Known significant ecological features
- Confirmed population of Yakka Skink

Proposed HP Network (Map 81)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

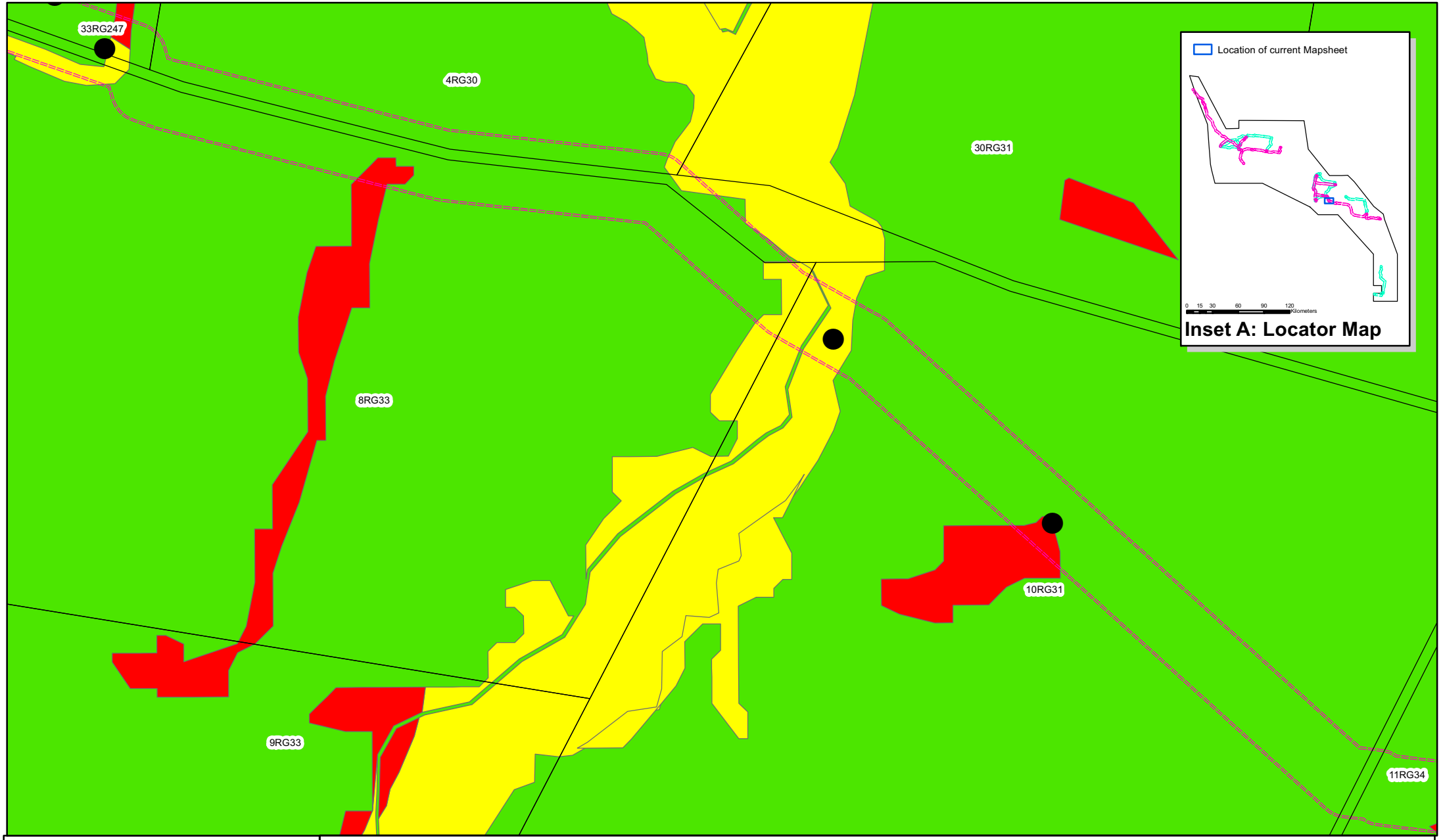
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 82)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

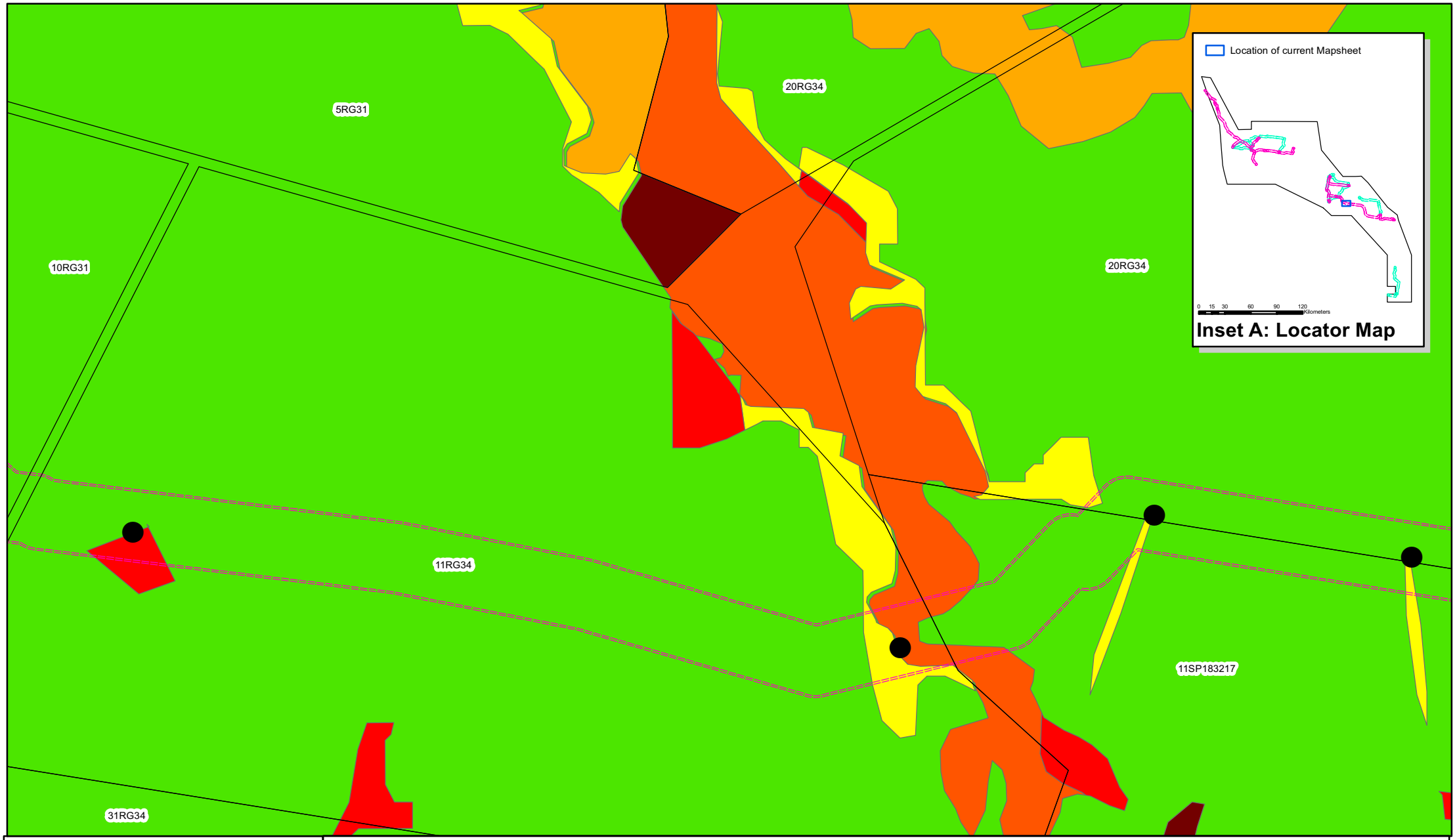
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 83)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

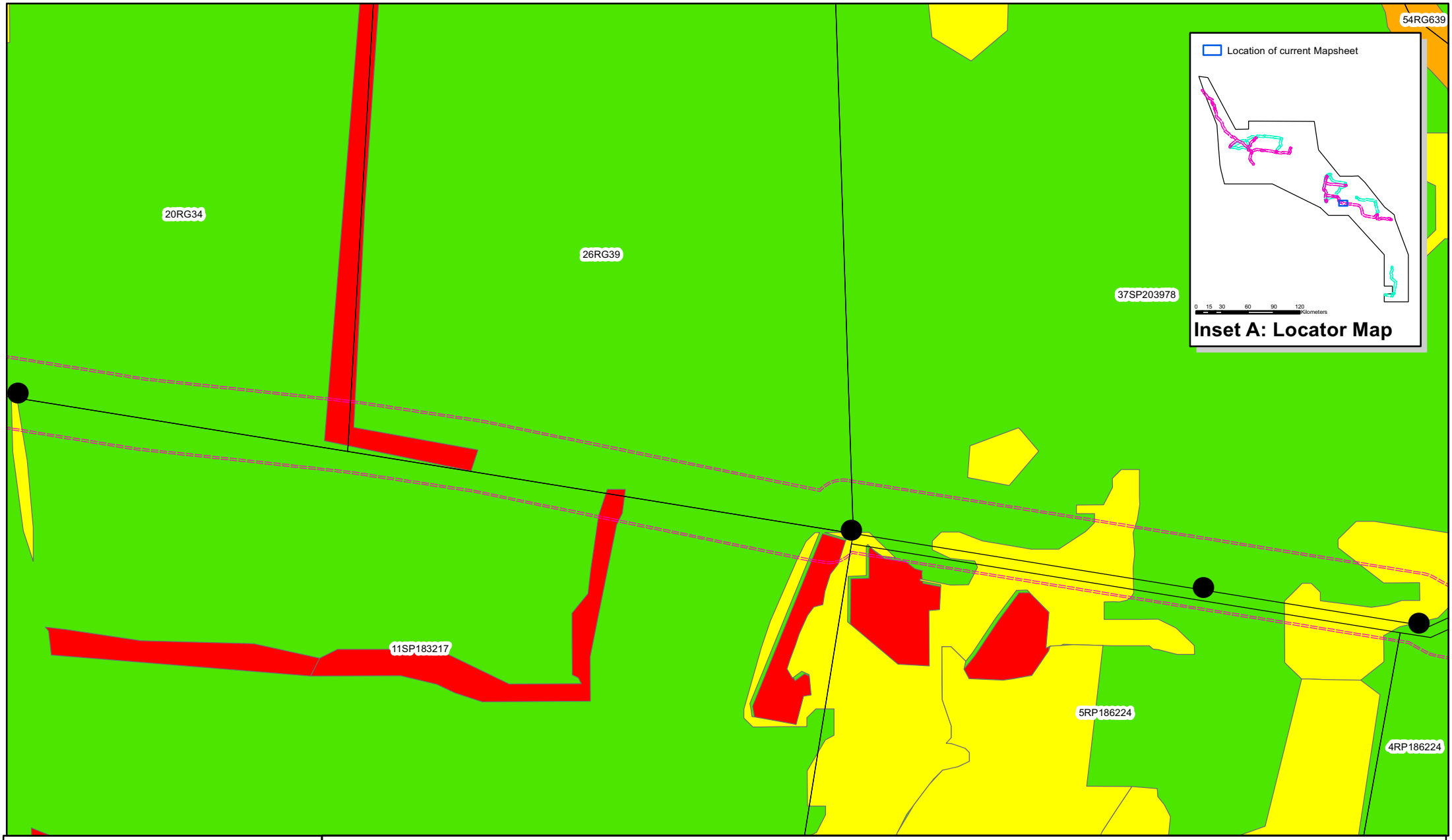
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 84) Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

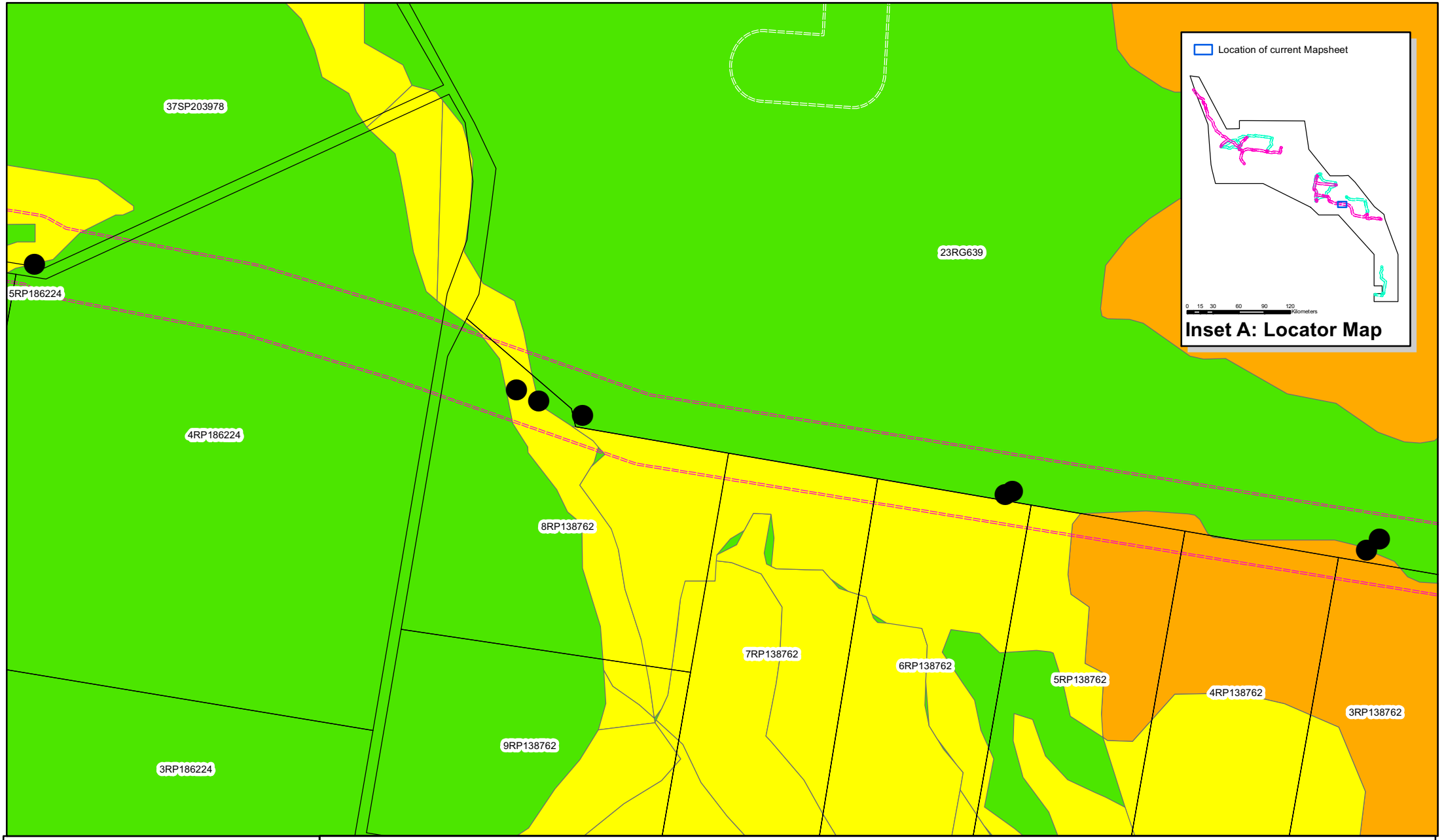
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 85)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

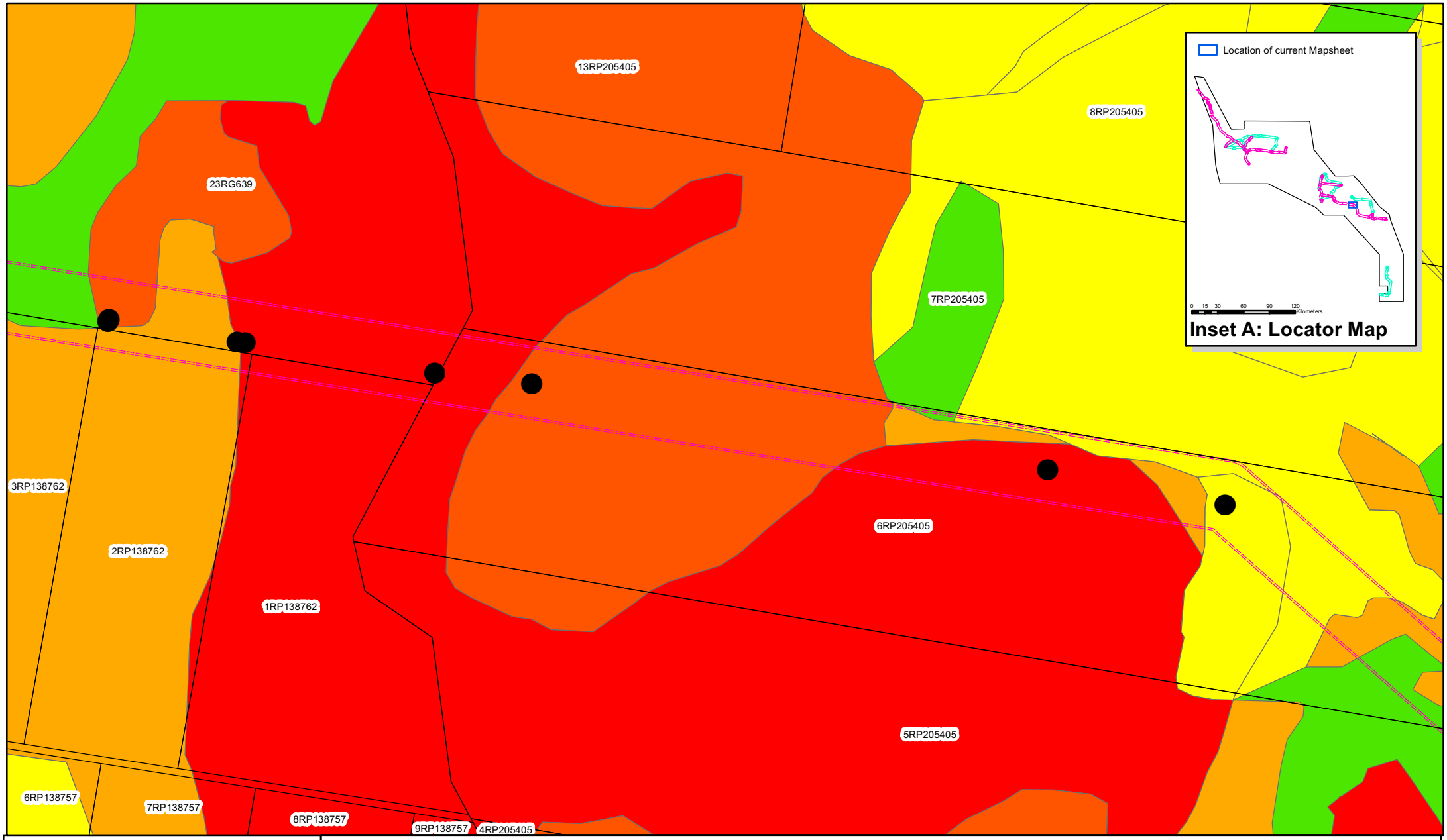
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 86)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

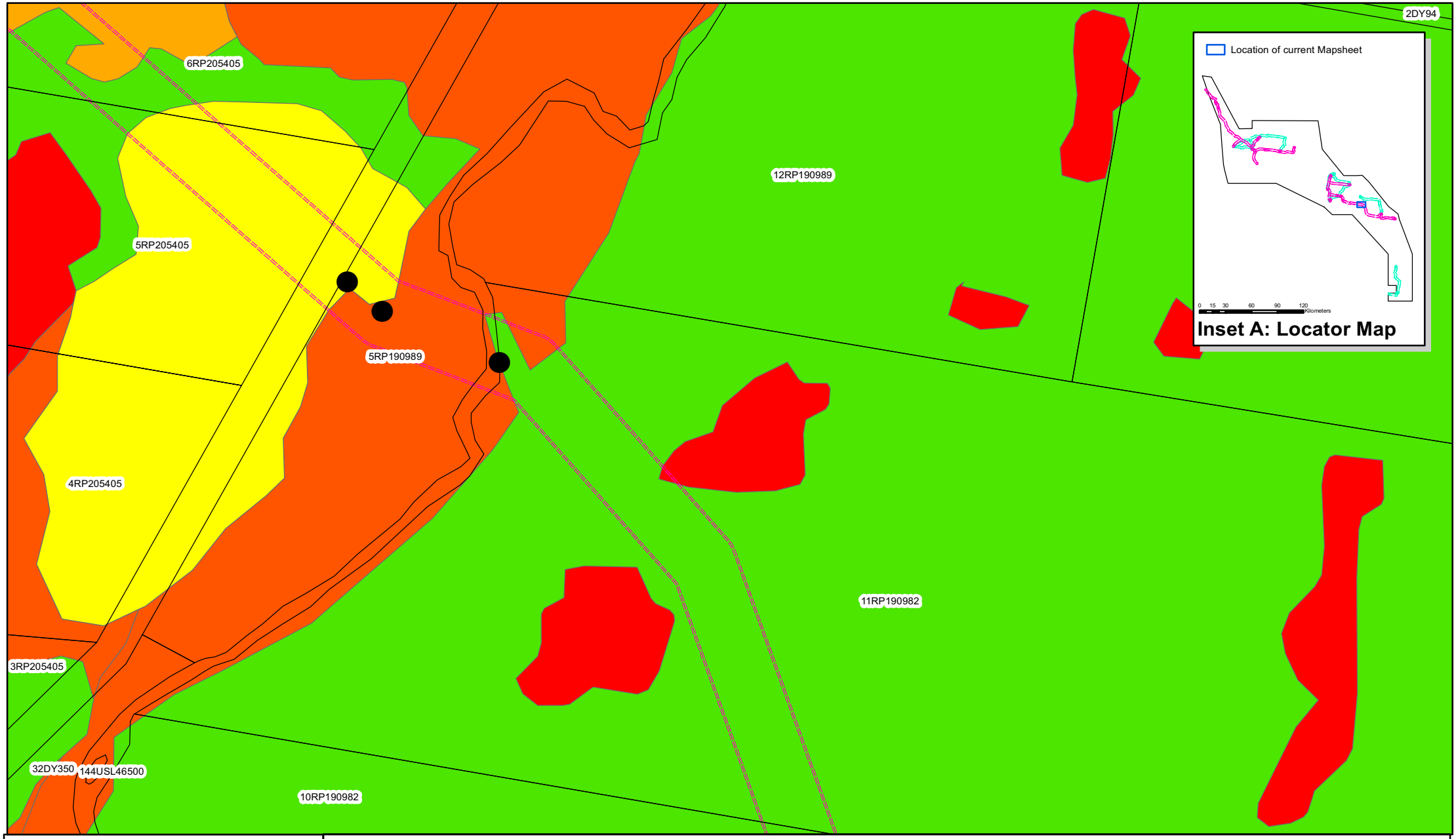
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 87) Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

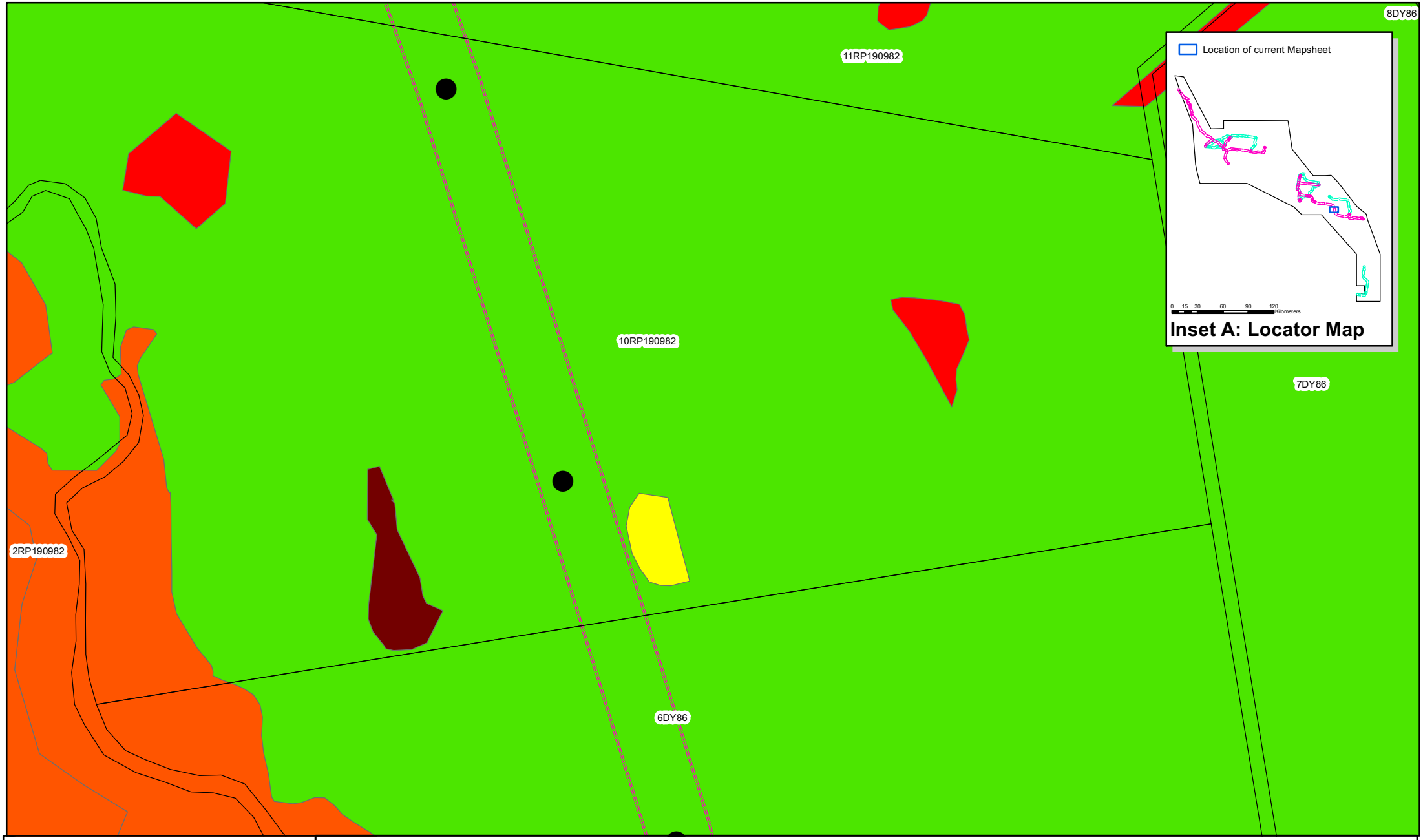
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 88)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

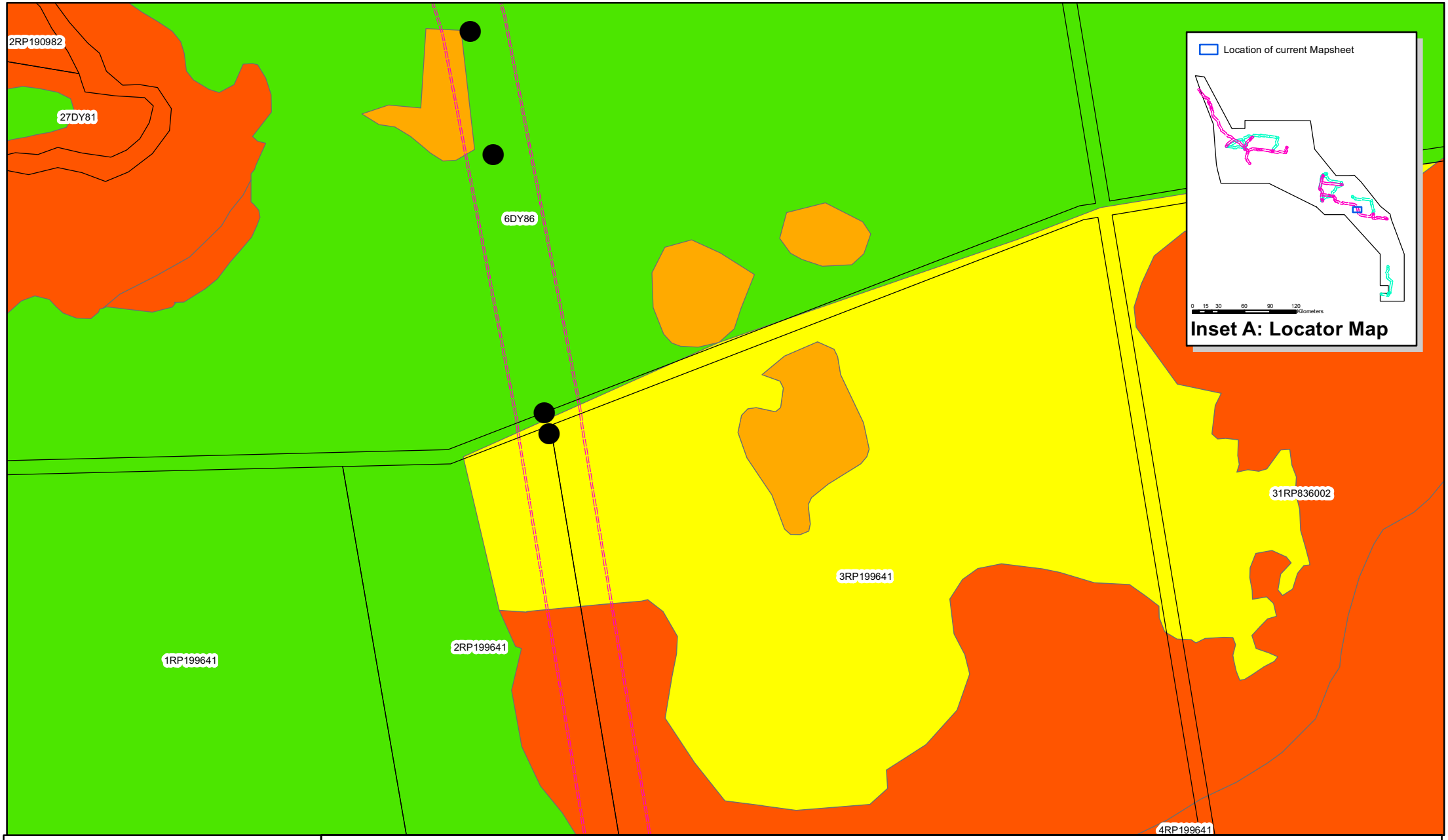
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 89)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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N

Biodiversity Assessment AND MANAGEMENT PTY LTD

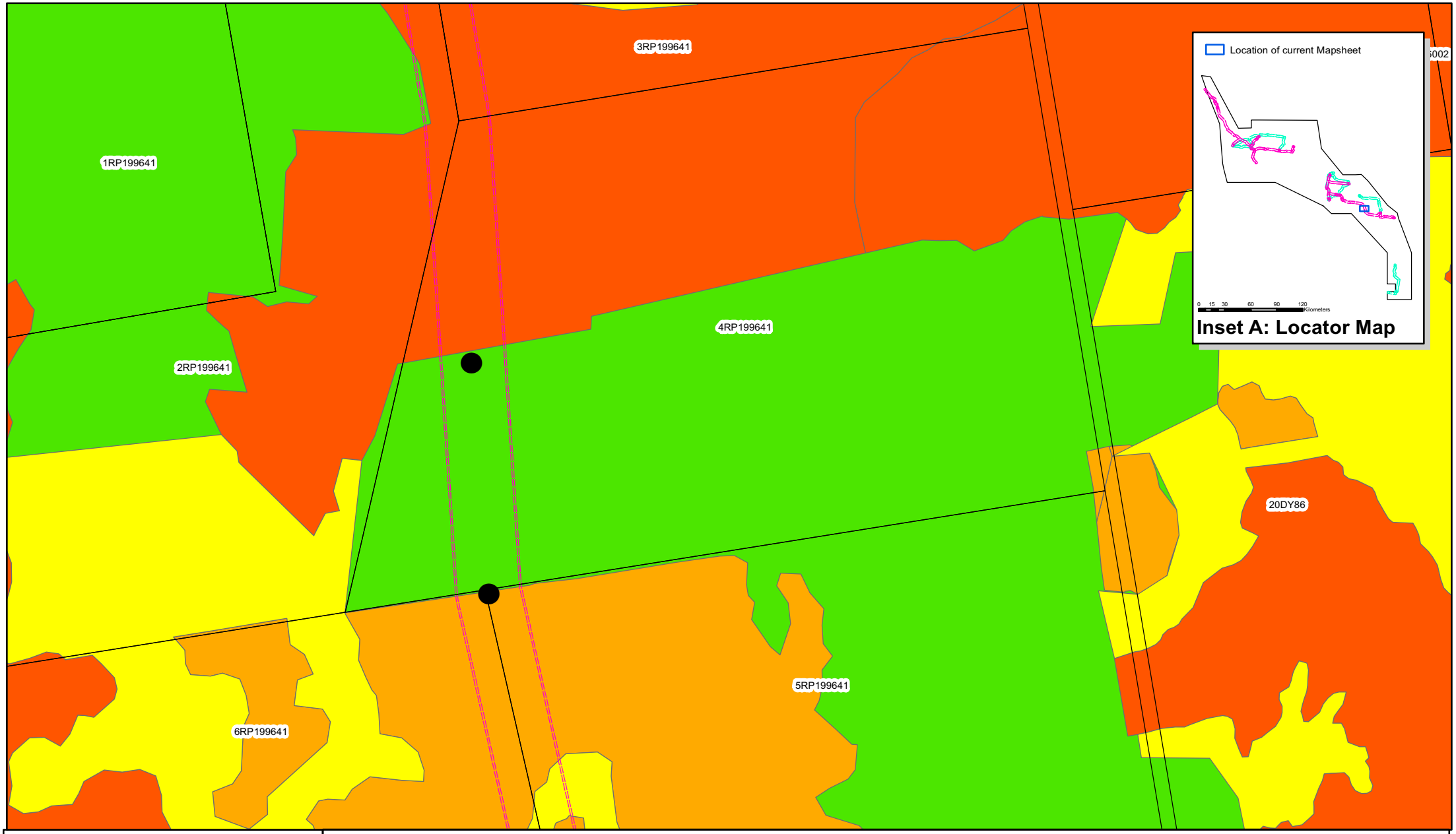
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 90)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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Biodiversity Assessment AND MANAGEMENT PTY LTD

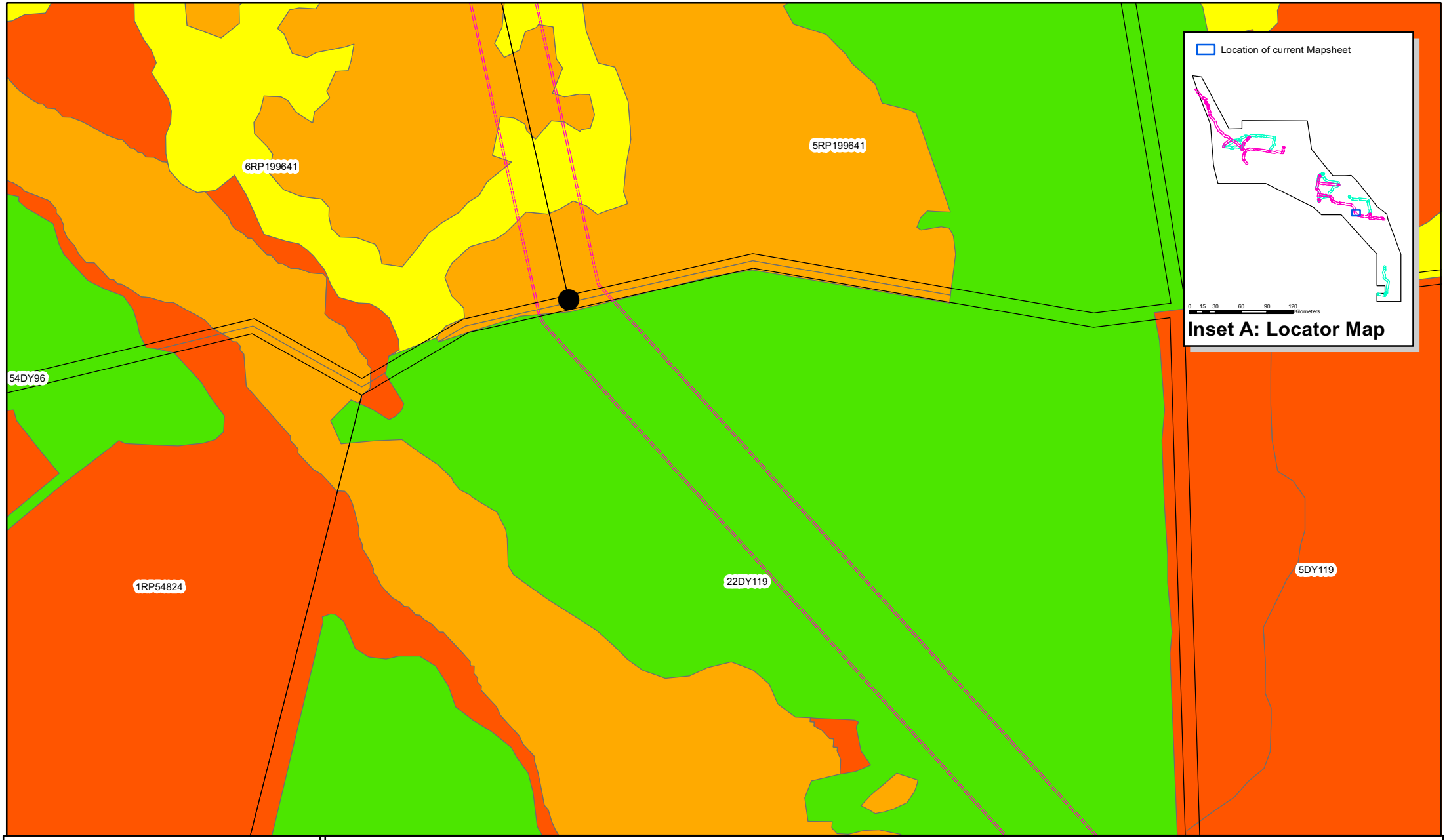
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 91)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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Biodiversity Assessment AND MANAGEMENT PTY LTD

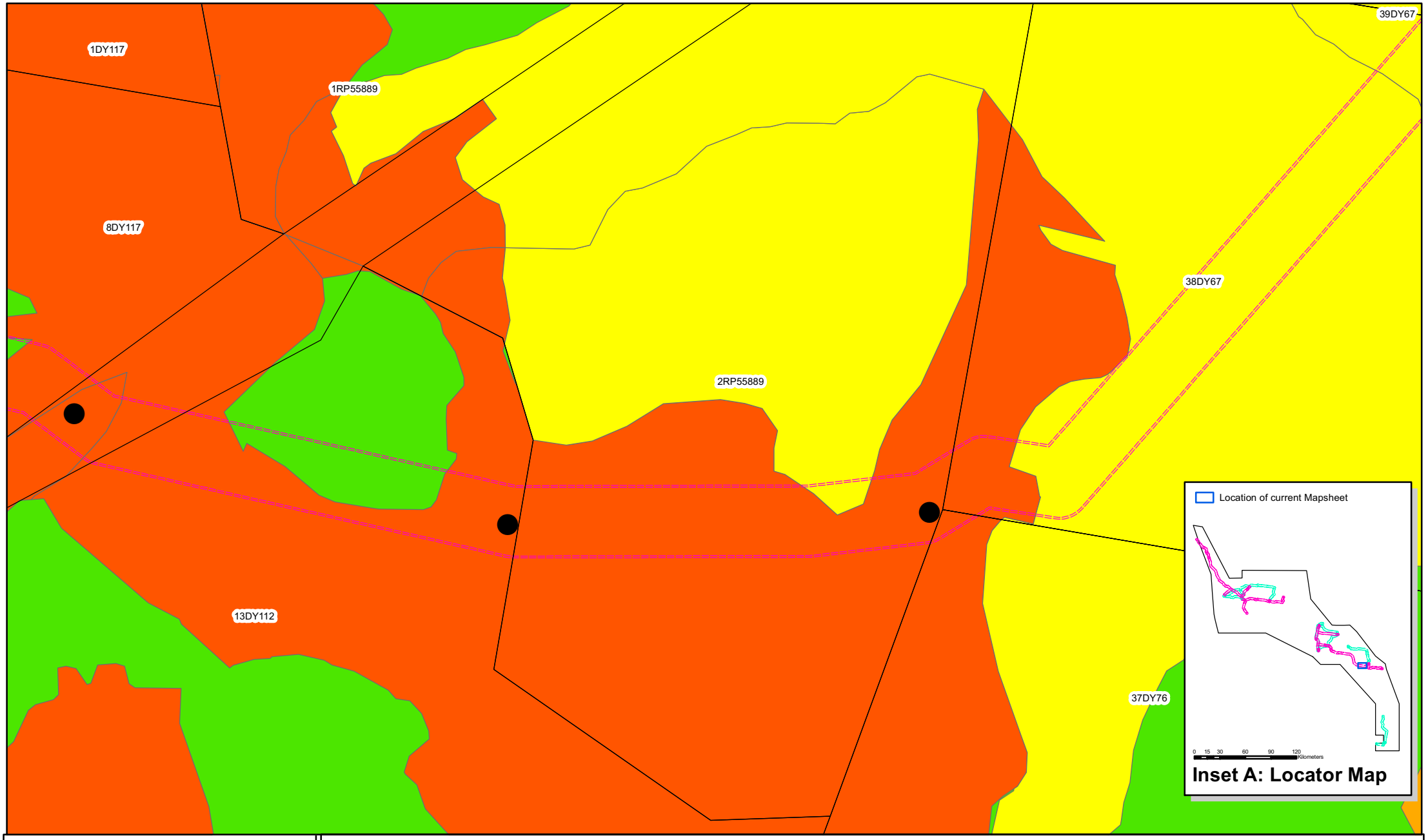
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 92)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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Biodiversity Assessment AND MANAGEMENT PTY LTD

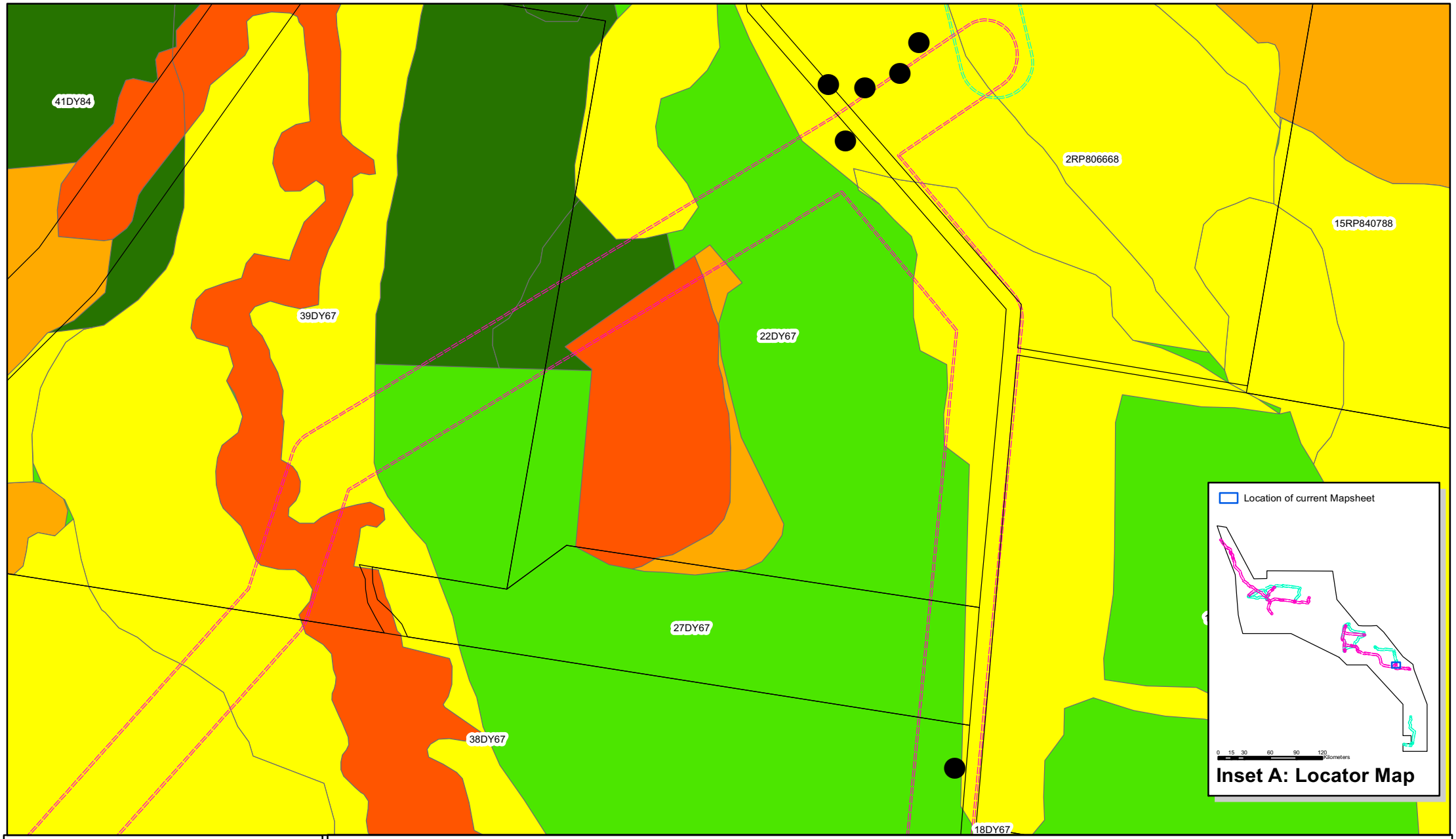
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 95)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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Biodiversity Assessment AND MANAGEMENT PTY LTD

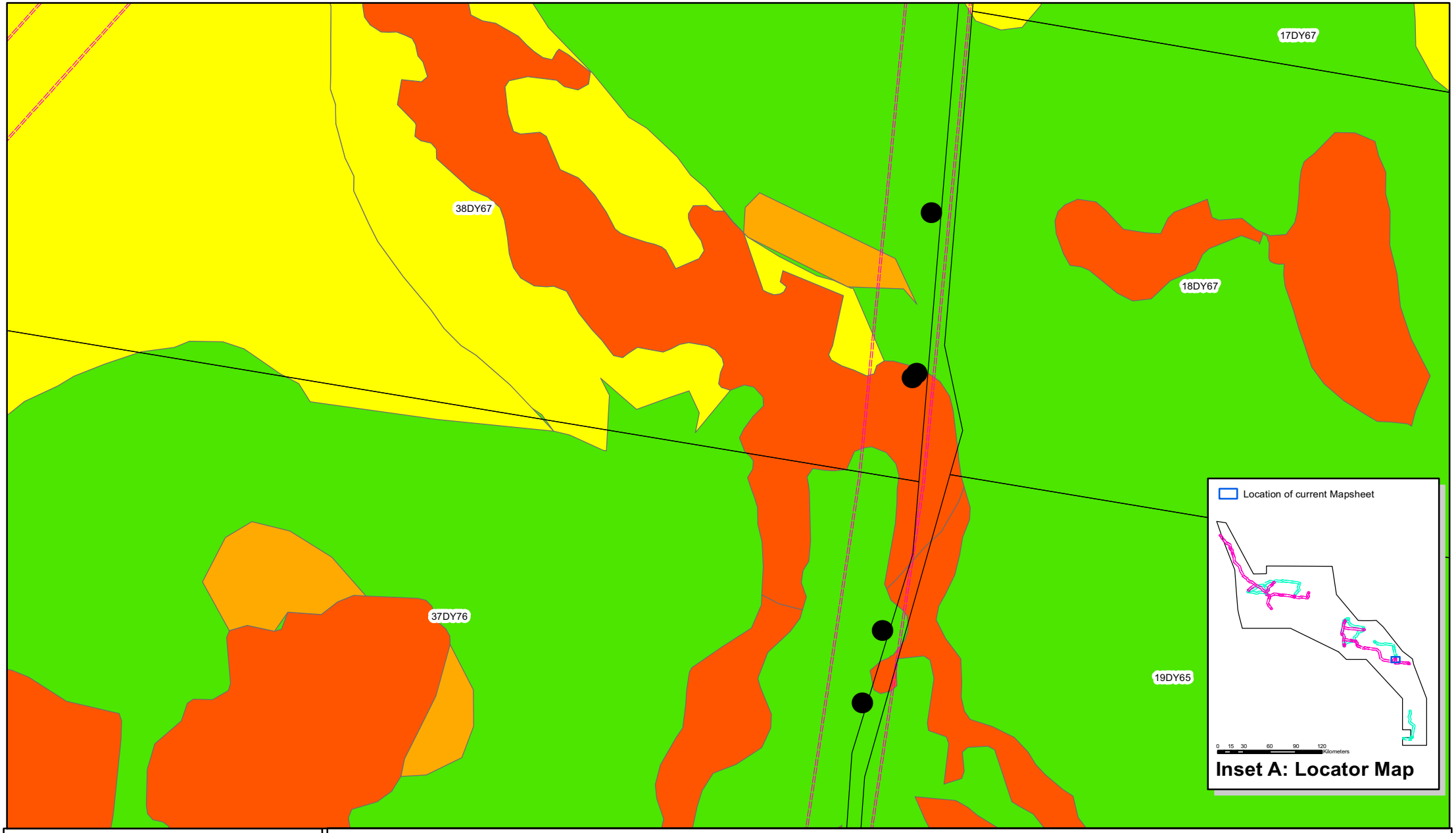
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 96)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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N

Biodiversity Assessment AND MANAGEMENT PTY LTD

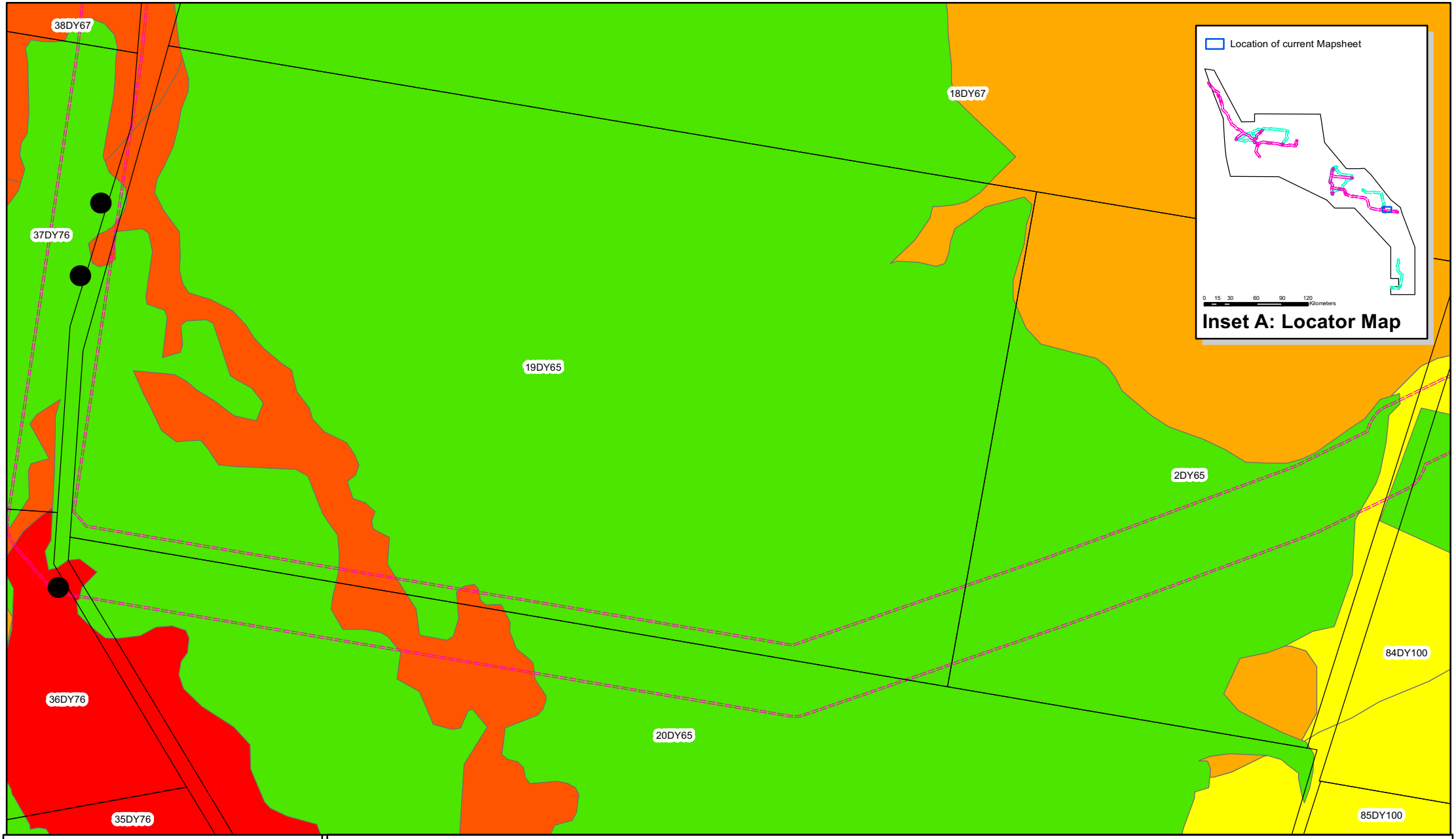
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 97)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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Biodiversity Assessment AND MANAGEMENT PTY LTD

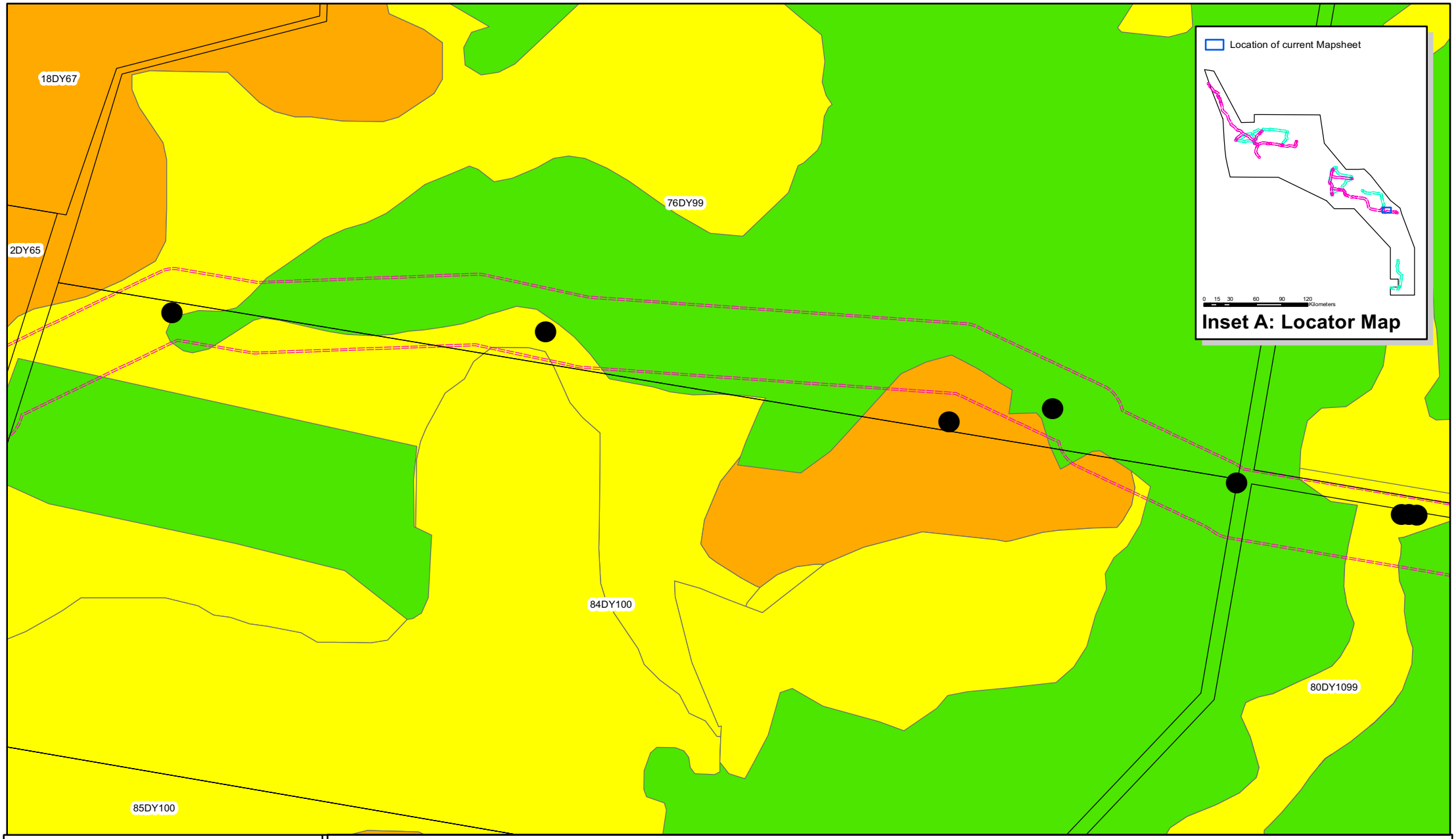
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 98)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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Biodiversity Assessment AND MANAGEMENT PTY LTD

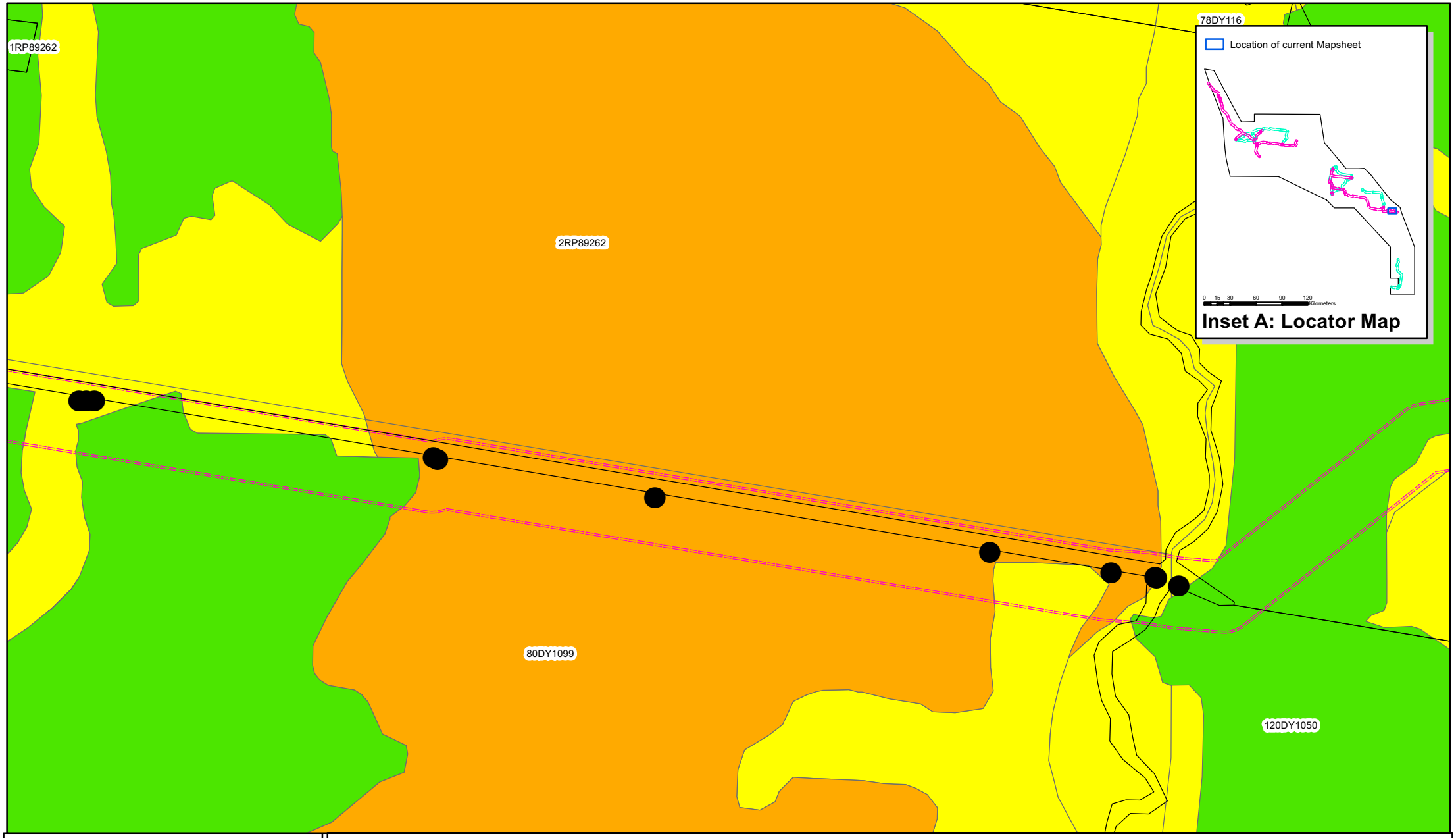
Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 99)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG



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Biodiversity Assessment AND MANAGEMENT PTY LTD

Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 100)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG

0 0.2 0.4 Km

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

Legend

Sensitivity Categories

- Extremely
- Highly
- Sensitive
- Neutral
- Robust
- Clearing within Corridors
- Clearing outside Corridors
- Survey Site Waypoint
- Proposed HP Network 200m Assessment Corridor

Proposed HP Network (Map 101)
Terrestrial Ecology "Sensitivity" Mapping (revised)

Australia Pacific LNG