

Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organization consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of reliability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

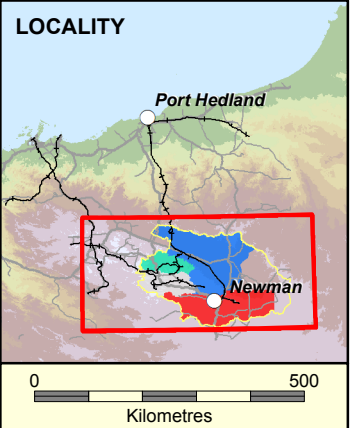
Data source
 DPWV Resources (DPWV 2013); Roads (MRWA 2013); Aerial Image (BHPBIO); Third Party Disturbance digitized from Aerial Imagery (Aug - Sept 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2013); Yandooogina mining area comprises Junction Central, Junction South East, Junction South West and the proposed Oxbow, Pocket and Billard South mining areas.

LEGEND

- | | | | |
|--|---|---|--|
| <ul style="list-style-type: none"> Ecohydrology Study Boundary SEA Area of Interest Karijini National Park DoW Hydrographic Catchments Ecohydrological Receptors Ophthalmia Dam | <ul style="list-style-type: none"> ● Townships BHPBIO Rail Corridor (current) Third Party Rail Corridor (current) Great Northern Highway Other Roads Major Drainage Lines Minor Drainage Lines | <ul style="list-style-type: none"> BHPBIO Mining Areas (current) Third Party Mining Areas (current) BHP Billiton Iron Ore Existing Disturbance Third Party Existing Disturbance | <ul style="list-style-type: none"> Ecohydrology Regions Marilana Creek Region Central Pilbara Region Eastern Pilbara Region Fortescue Marsh Region Fortescue Marsh Catchments included in surface water change assessment |
|--|---|---|--|

Notes:

The study area was partitioned into four regions for each of the BHP Billiton Iron Ore mining regions within the Pilbara Expansion. The boundaries of the regions were mainly based on surface water catchments



Resource Planning Hydrology
 BHP BILLITON IRON ORE

resourcing the future

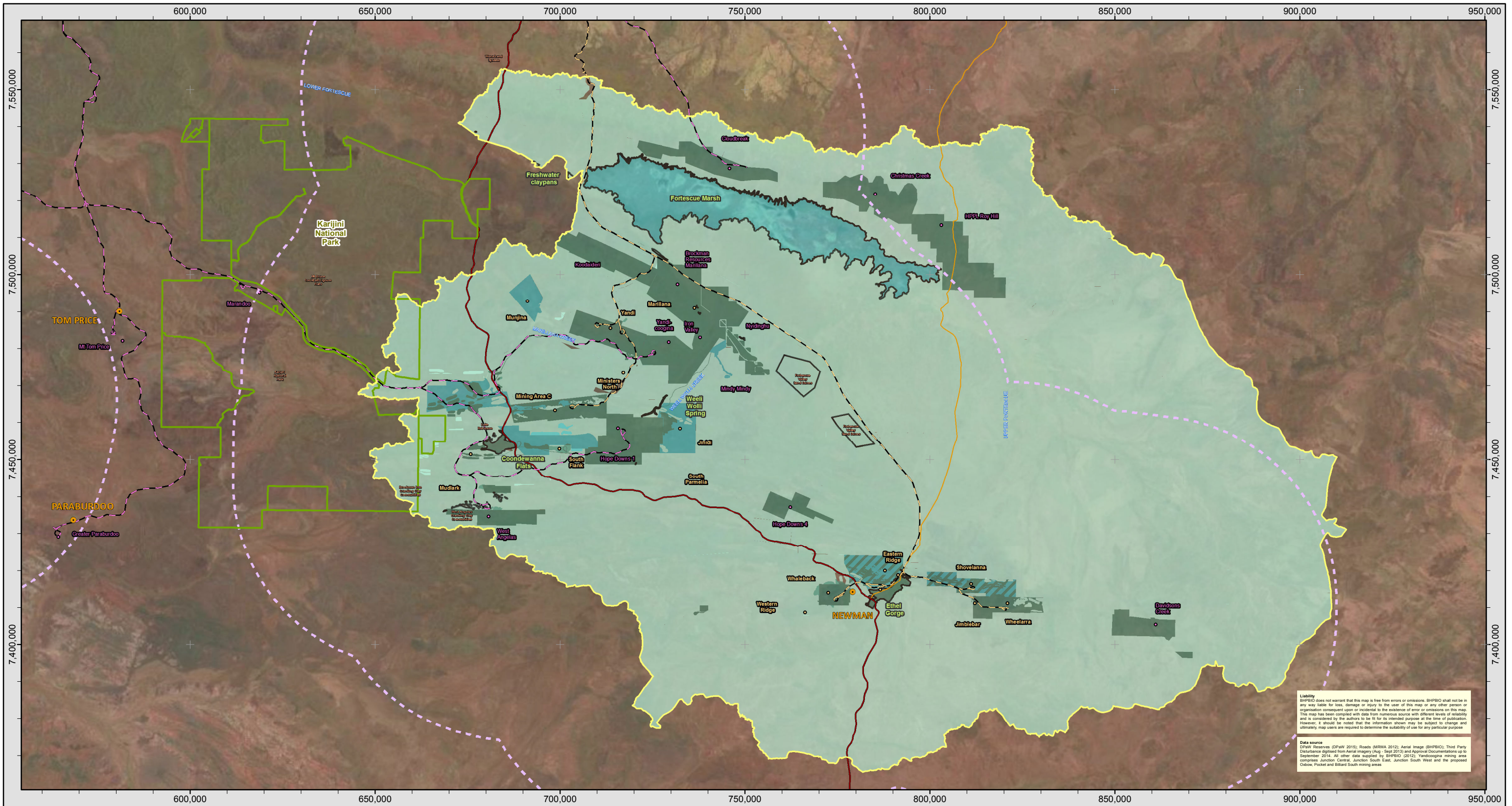
ECOHYDROLOGICAL CHANGE ASSESSMENT
 Study Area Location

0 10 20 40 60
Kilometres

Coordinate System: GDA 1994 MGA Zone 50
 Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter

Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev L	
Date: 14/04/2015	Checked: J Vermaak	Map: 1	
	Reviewed: J Youngs		

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.



Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organization consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of reliability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

Data source
 DPoW Reserves (DPoW 2015); Roads (MSWA 2012); Aerial Image (BHPBIO); Third Party Data; Disturbance digitized from Aerial Imagery (Aug - Sept 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2012). Yandi-coonga mining area comprises Junction Central, Junction South East, Junction South West and the proposed Orow, Pocket and Billard South mining areas.

LEGEND

- Ecohydrology Study Boundary
- SEA Area of Interest
- Karijini National Park
- Ecohydrological Receptors & Assets
- Townships
- BHPBIO Mining Areas (current & proposed)
- Third Party Mining Areas (current & proposed)
- BHPBIO Rail Corridor (current)
- Third Party Rail Corridor (current)
- Great Northern Highway
- Other Roads
- Knowledge Status
- High
- Moderate-High
- Moderate
- Low

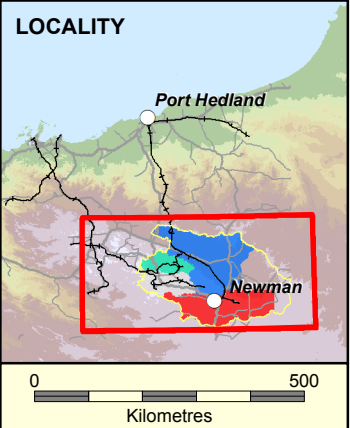
The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose. No representation or warranty is given that project development associated with any or all of the disturbance indicated on this map will actually proceed. As project development is dependent upon future events, the outcome of which is uncertain and cannot be assured, actual development may vary materially from this conceptual map.

Notes:

High knowledge status areas associated with current and approved BHP Billiton Iron Ore and third party mining operations, Weeli Wollli Springs, Ethel Gorge and Coondewanna Flats.

Moderate knowledge status areas are being assessed for future development and Fortescue Marsh.

No specific hydrological studies carried out in areas with low knowledge status.



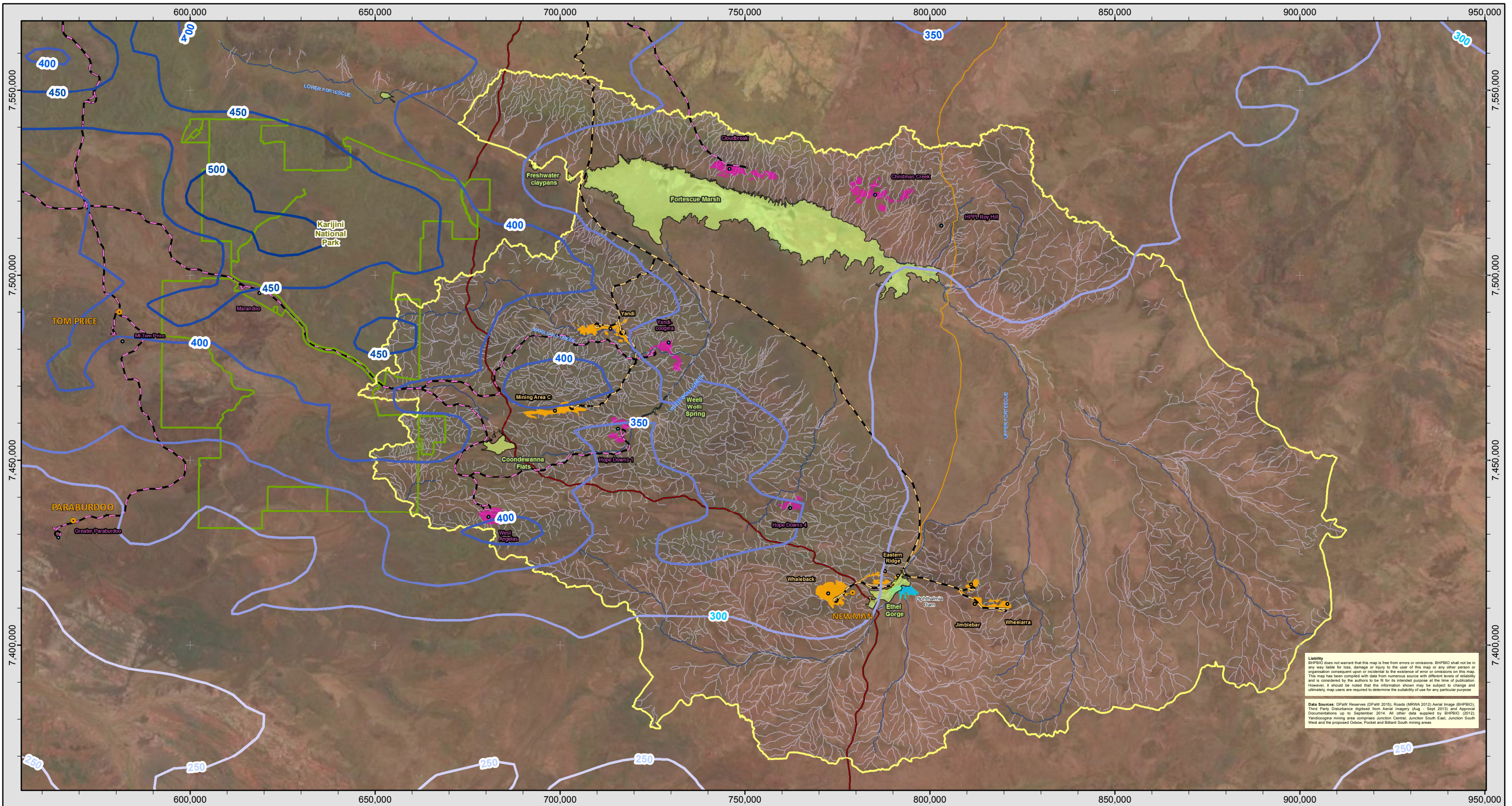
Resource Planning Hydrology
 BHP BILLITON IRON ORE

resourcing the future

ECOHYDROLOGICAL CHANGE ASSESSMENT
 Knowledge Status

Coordinate System: GDA 1994 MGA Zone 50
 Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter

Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev L
Date: 14/04/2015	Checked: J Vermaak	Map: 2
	Reviewed: J Youngs	



Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organization consequent upon or incidental to the existence of error or omissions on this map. The map has been compiled with data from numerous source with different levels of reliability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

Data Sources: DPaW Reserves (DPaW 2010); Roads (MRWA 2012); Aerial Image (BHPBIO); Third Party Disturbance digitised from Aerial Imagery (Aug - Sept 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2012); Hydrogeology mining area comprises Junction Central, Junction South East, Junction South West and the proposed Outback, Pocket and Billard South mining areas.

LEGEND

Ecohydrology Study Boundary	Mean annual rainfall isohyet (mm)	Townships	BHP Billiton Iron Ore Existing Disturbance
Karijini National Park	250	BHPBIO Mining Areas	Third Party Existing Disturbance
Ecohydrological Receptors	300	Third Party Mining Areas	Major Drainage Lines
Ophthalmia Dam	350	BHPBIO Rail Corridor	Minor Drainage Lines
	400	Third Party Rail Corridor	
	450	Great Northern Highway	
	500	Other Roads	

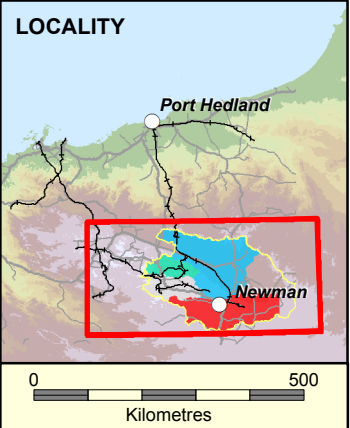
The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

Source: Rainfall Isohyets

Rainfall isohyets have been derived based on the SILO data set, 1961 to 2012 (Bureau of Meteorology)

Source: Major & Minor Drainage Lines

Geoscience Australia 250k Watercourse drainage hierarchy May 2006



Resource Planning Hydrology
 BHP BILLITON IRON ORE

ECOHYDROLOGICAL CHANGE ASSESSMENT
 Rainfall Distribution

0 10 20 40 60 Kilometres

Coordinate System: GDA 1994 MGA Zone 50
 Projection: Transverse Mercator; Datum: GDA 1994; Units: Meter

Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev 1
Date: 14/04/2015	Checked: J Vermaak	Map: 3
	Reviewed: J Youngs	



Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organization consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of reliability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

Data source: DPAW Reserves (DPAW 2015); Roads (MRWA 2012); Aerial Image (BHPBIO); Third Party Disturbance digitised from Aerial Imagery (Aug - Sept 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2012); Yandooogina mining area comprises Junction Central, Junction South East, Junction South West and the proposed Outlook, Packet and Billard South mining areas.

LEGEND

- Ecohydrology Study Boundary
- DoW Hydrographic Catchments
- Karijini National Park
- Ecohydrological Receptors
- Ophthalmia Dam
- Townships
- BHPBIO Mining Areas
- Third Party Mining Areas
- BHPBIO Rail Corridor
- Third Party Rail Corridor
- Great Northern Highway
- Other Roads
- BHP Billiton Iron Ore Existing Disturbance
- Third Party Existing Disturbance
- Major Drainage Lines
- Minor Drainage Lines

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

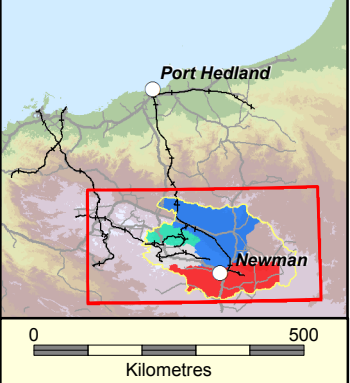
Source: DoW hydrographic catchments

Sub-catchment boundaries delineated based on DEM data (data source: 5m DEM LIDAR captured by Fugro Aug 2013 and 30m DEM 1secSRTM from Geoscience Australia)

Source: Major & Minor Drainage Lines

Geoscience Australia 250k Watercourse drainage hierarchy May 2006

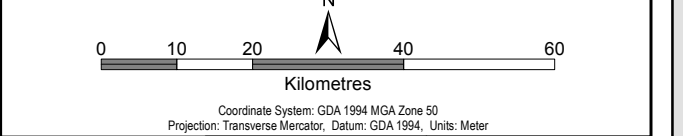
LOCALITY



bhpbilliton
 resourcing the future

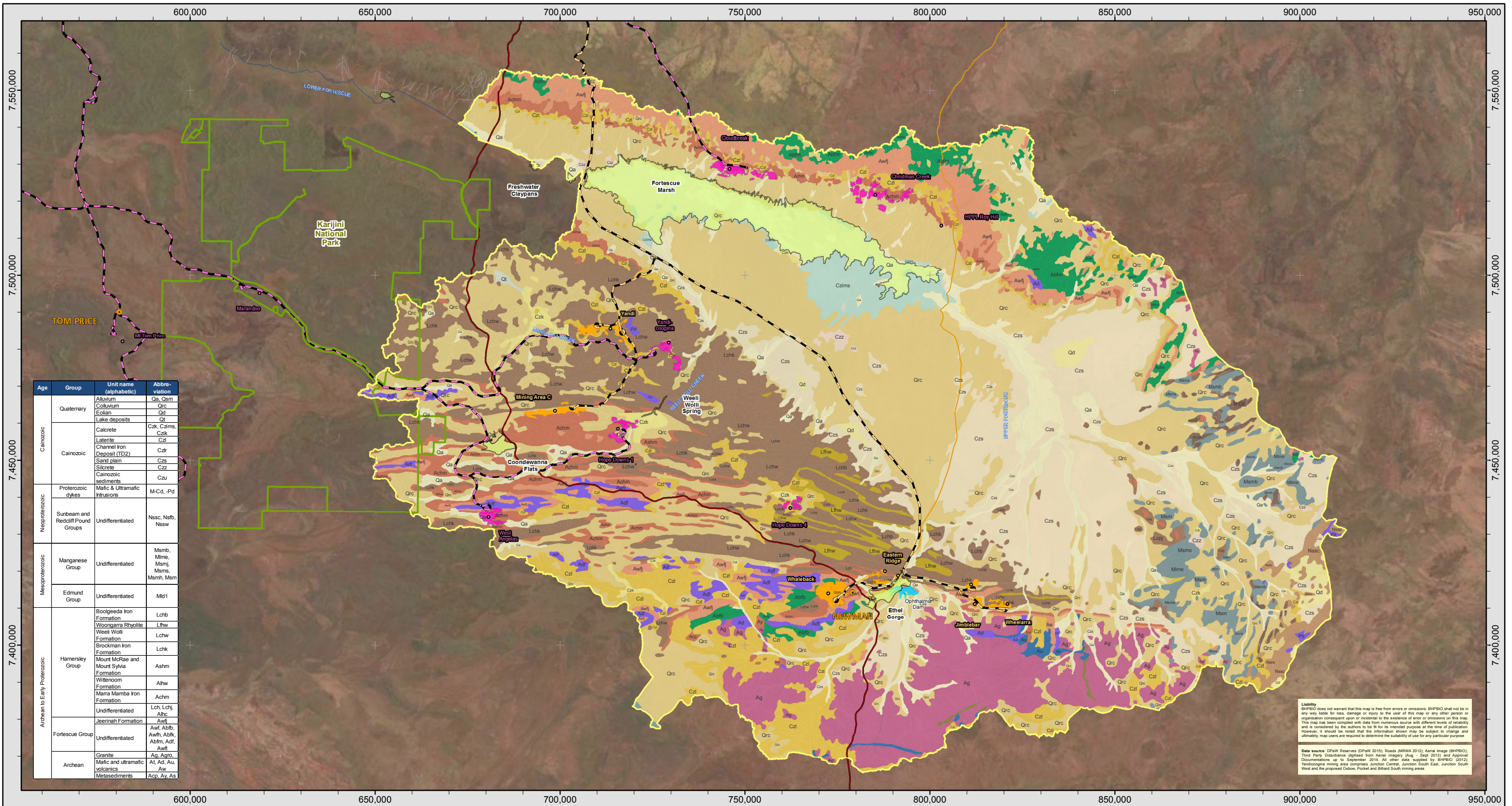
Resource Planning Hydrology
 BHP BILLITON IRON ORE

ECOHYDROLOGICAL CHANGE ASSESSMENT
 Surface Water Catchments



Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev K
Date: 14/04/2015	Checked: J Vermaak	Map: 4
	Reviewed: J Youngs	

SW Catchments



Age	Group	Unit name (alphabetic)	Abbreviation
Cainozoic	Quaternary	Alluvium	Qa, Qsm
		Colluvium	Qrc
		Eolian	Qd
		Lake deposits	Qt
	Cainozoic	Cainozoic	Calcrete
Latentite			Czl
Channel Iron Deposit (TDZ)			Czr
Sand plain			Czs
Siltstone			Czz
Cainozoic sediments			Czu
Proterozoic dykes			Mafic & Ultramafic intrusions
Neoproterozoic	Sunbeam and Redcliff Pound Groups	Undifferentiated	Nssc, Nsf, Nsw
		Manganese Group	Mmb, Mime, Msm, Msmh, Msm
Mesoproterozoic	Edmund Group	Undifferentiated	Mid1
		Archean to Early Proterozoic	Hamersley Group
Woonagatta Rhyolite	Lhw		
Weeli Wollie Formation	Lchw		
Brockman Iron Formation	Lchk		
Mount McRae and Mount Sylvia Formations	Ashm		
Wittenoom Formation	Alhw		
Marra Mamba Iron Formation	Achm		
Undifferentiated	Lch, Lchj, Ahc		
Jeerinah Formation	Awj		
Archean	Archean		
		Mafic and ultramafic volcanics	At, Ad, Au, Aw
Archean	Archean	Metasediments	Ac, Ay, As

Liability
BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organization consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of reliability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

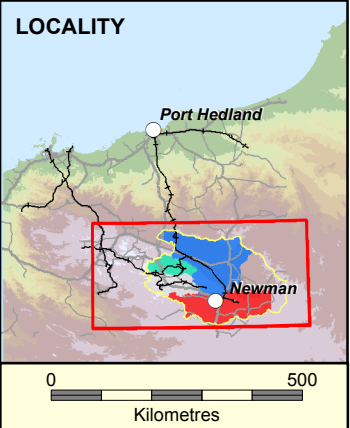
Data source: DPWV Reserves (DPWV 2015); Roads (BMRWA 2012); Aerial Imagery (BHPBIO); Third Party Disturbance digitised from Aerial imagery (Aug - Sept 2013) and Appraisal Documentations up to September 2014. All other data supplied by BHPBIO (2012); Yandicoogina mining area comprises Junction Central, Junction South East, Junction South West and the proposed Outback Pocket and Billard South mining areas.

LEGEND

- Ecohydrology Study Boundary
- Karijini National Park
- Ecohydrological Receptors
- Ophthalmia Dam
- Townships
- BHPBIO Mining Areas
- Third Party Mining Areas
- BHPBIO Rail Corridor
- Third Party Rail Corridor
- Great Northern Highway
- Other Roads
- BHP Billiton Iron Ore Existing Disturbance
- Third Party Existing Disturbance
- Major Drainage Lines
- Minor Drainage Lines

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

Source:
1:1 million scale dataset 2012
Surface Geology from Geoscience Australia



Resource Planning Hydrology
BHP BILLITON IRON ORE

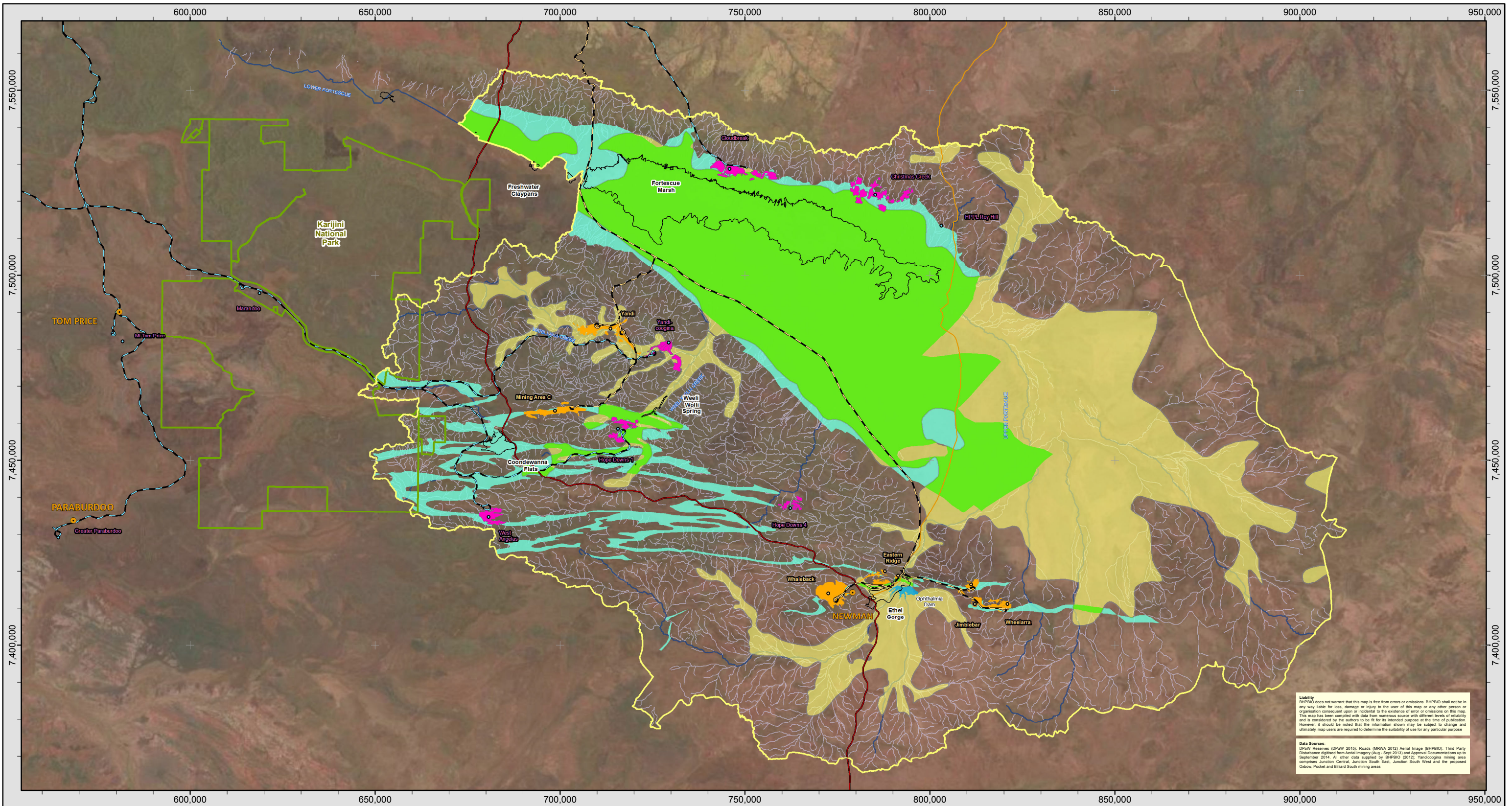
bhpbilliton
resourcing the future

ECOHYDROLOGICAL CHANGE ASSESSMENT
Surface Geology

0 10 20 40 60
Kilometres

Coordinate System: GDA 1994 MGA Zone 50
Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter

Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev 1
Date: 14/04/2015	Checked: J Vermaak	Map: 5
	Reviewed: J Youngs	



Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organisation consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of establishability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

Data Sources:
 DPoW Reserves (DPoW 2015); Roads (MRWA 2012); Aerial Image (BHPBIO); Third Party Disturbance digitised from Aerial Imagery (Aug - Sept 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2012). Yandooogina mining area comprises Junction Central, Junction South East, Junction South West and the proposed Oxley, Picket and Billard South mining areas.

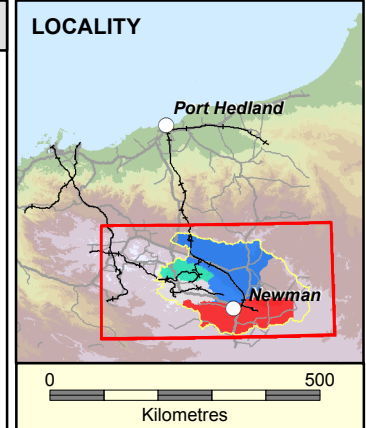
LEGEND

- | | | |
|---|--|------------------------|
| Ecohydrology Study Boundary | BHP Billiton Iron Ore Existing Disturbance | Great Northern Highway |
| Karijini National Park | Third Party Existing Disturbance | Other Roads |
| Ecohydrological Receptors | Townships | Major Drainage Lines |
| Ophthalmia Dam | BHPBIO Mining Areas | Minor Drainage Lines |
| Approximate extent of Tertiary Detrital Aquifer | Third Party Mining Areas | |
| Tertiary Detrital Aquifer overlying Dolomite Aquifer | BHPBIO Rail Corridor | |
| Approximate extent of the Dolomite Aquifer (Paraburdoo Member of the Wittenoom Formation) | Third Party Rail Corridor | |

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

Source:
 Valley Fill - Distribution of Palaeovalleys in Arid and Semi-arid WA-SA-NT: managed by Geoscience Australia funded by National Water Commission

Paraburdoo Dolomite - 1:500 000 bedrock geology map: Department of Mines and Petroleum



bhpbilliton
 resourcing the future

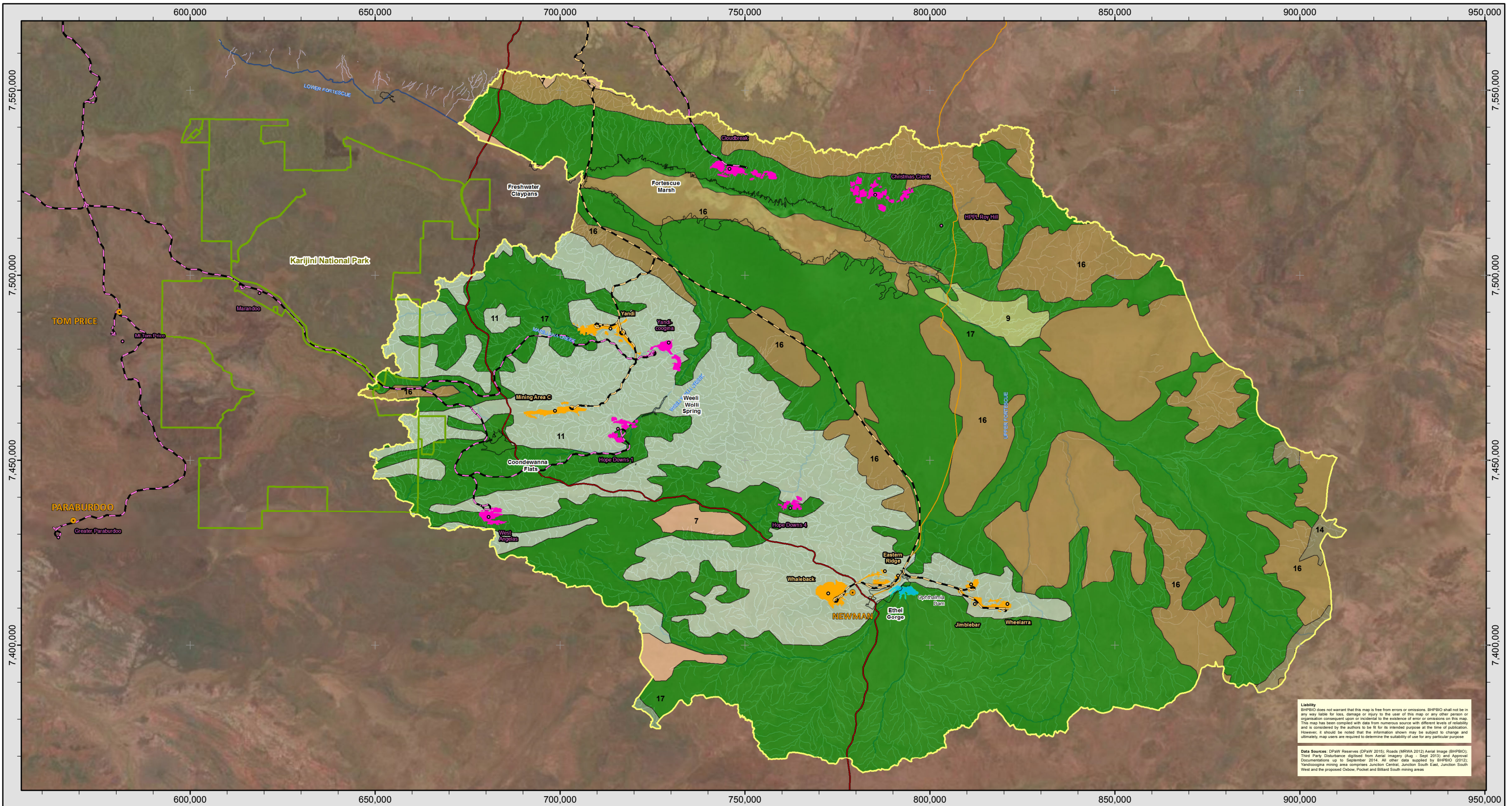
Resource Planning Hydrology
 BHP BILLITON IRON ORE

ECOHYDROLOGICAL CHANGE ASSESSMENT
 Regional Aquifers

0 10 20 40 60
 Kilometres

Coordinate System: GDA 1994 MGA Zone 50
 Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter

Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev 1
Date: 14/04/2015	Checked: J Vermaak	Map: 6
	Reviewed: J Youngs	



Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organisation consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of reliability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

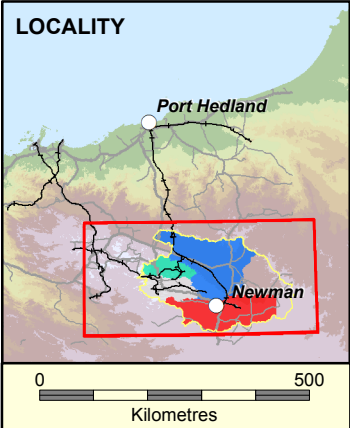
Data Sources: DPWH Reserves (DPWH 2015); Roads (MRA 2012); Aerial Image (BHPBIO); Third Party Disturbance digitised from Aerial imagery (Aug - Sept 2013) and Approval Documents up to September 2014. All other data supplied by BHPBIO (2012). Vegetation mining area comprises Junction Central, Junction South East, Junction South West and the proposed Oubou, Pocket and Billard South mining areas.

LEGEND

- | | | | |
|-----------------------------|---------------------------|---|--|
| Ecohydrology Study Boundary | Townships | Vegetation Classification | BHP Billiton Iron Ore Existing Disturbance |
| Karijini National Park | BHPBIO Mining Areas | 16 - Acacia shrubland: Spinifex Grassland: Shrub steppe | Third Party Existing Disturbance |
| Ecohydrological Receptors | Third Party Mining Areas | 15 - Eucalyptus forest: Tall Schrubland: Scrub-wattle | Major Drainage Lines |
| Ophthalmia Dam | BHPBIO Rail Corridor | 17 - Eucalyptus woodland: Low Woodland: Mulga | Minor Drainage Lines |
| | Third Party Rail Corridor | 9 - Melaleuca woodland: Tall-Bunch Grassland: Scattered tree | |
| | Great Northern Highway | 14 - Mixed shrubland: Spinifex Grassland: Sparse shrub steppe | |
| | Other Roads | 7 - Short-Bunch Grassland: Treeless | |
| | | 11 - Spinifex Grassland: Tree steppe | |

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

Source:
 Beard, J.S., 1975, 1:1 000 000 vegetation series: Map Sheet 5 and Explanatory Notes. University of Western Australia Press, Western Australia



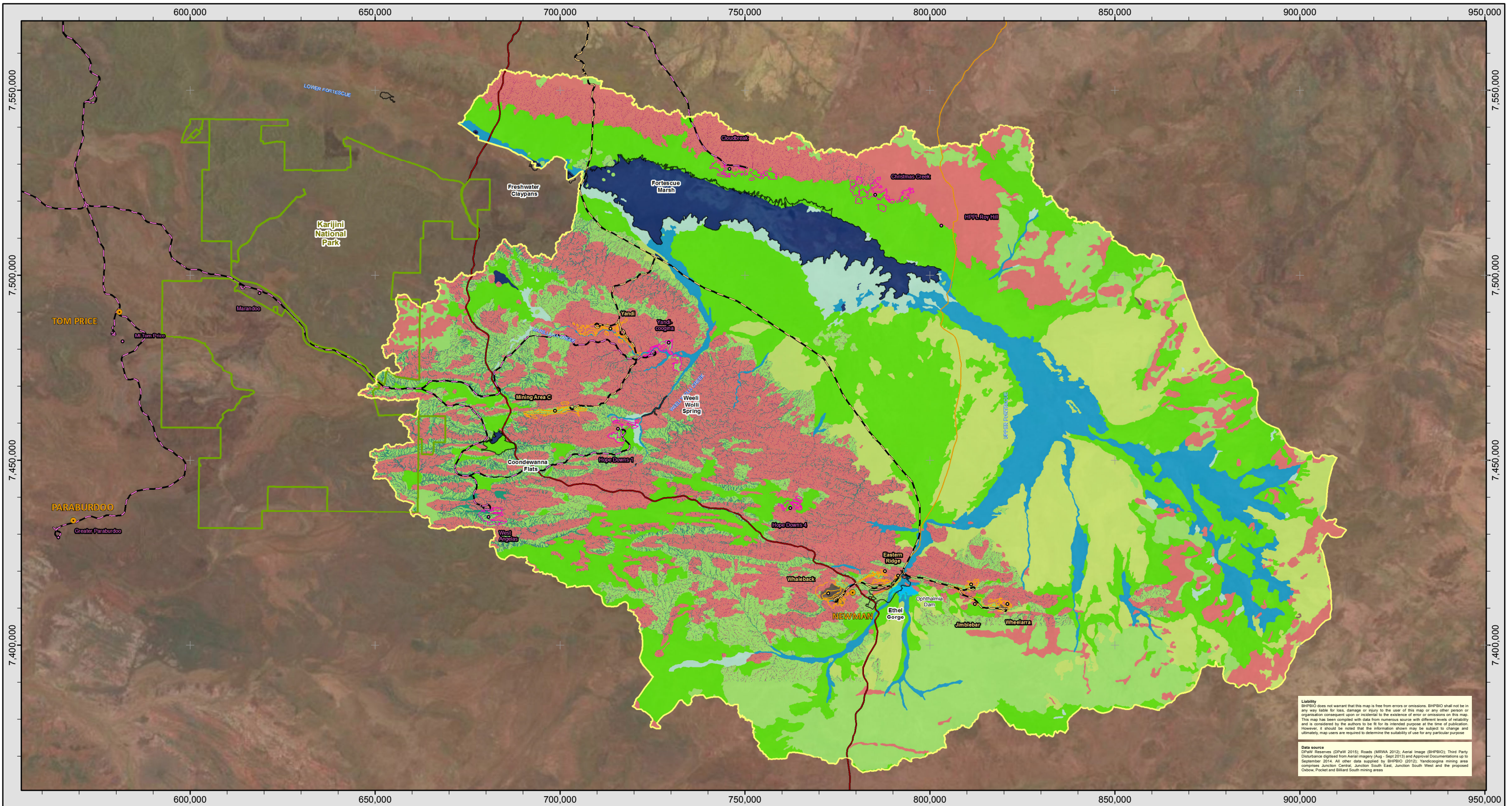
Resource Planning Hydrology
 BHP BILLITON IRON ORE

ECOHYDROLOGICAL CHANGE ASSESSMENT
 Vegetation Associations

0 10 20 40 60
 Kilometres

Coordinate System: GDA 1994 MGA Zone 50
 Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter

Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev H
Date: 14/04/2015	Checked: J Vermaak	Map: 7
	Reviewed: J Youngs	



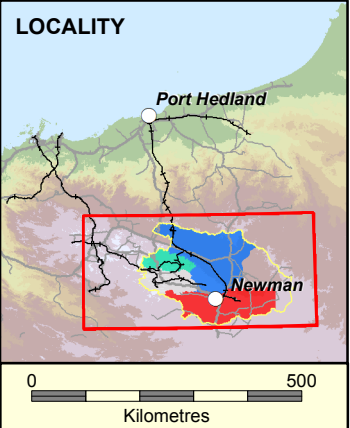
Liability
BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organization consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of reliability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

Data source
DPaW Reserves (DPaW 2015); Roads (MRA 2012); Aerial Image (BHPBIO); Third Party Disturbance digitised from Aerial imagery (Aug - Sep 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2012); Yandicoogina mining area comprises Junction Central, Junction South East, Junction South West and the proposed Oubow, Pocket and Billard South mining areas.

LEGEND			
Ecohydrology Study Boundary	Townships	BHP Billiton Iron Ore	Ecohydrological units (EHUs)
Karijini National Park	BHPBIO Mining Areas	BHP Billiton Iron Ore Existing Disturbance	5 - Sand plains
Ecohydrological Receptors	Third Party Mining Areas	Third Parties	6 - Alluvial plains
Ophthalmia Dam	BHPBIO Rail Corridor	Third Party Existing Disturbance	7 - Calcrete plains
	Third Party Rail Corridor		8 - Lowland major channel systems
	Great Northern Highway		9 - Lowland receiving areas
	Other Roads		

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

Notes:
The EHU map was adapted based on the Pilbara land-systems mapping (Technical Bulletin No 92, Department of Agriculture, 2004)



Resource Planning Hydrology
BHP BILLITON IRON ORE

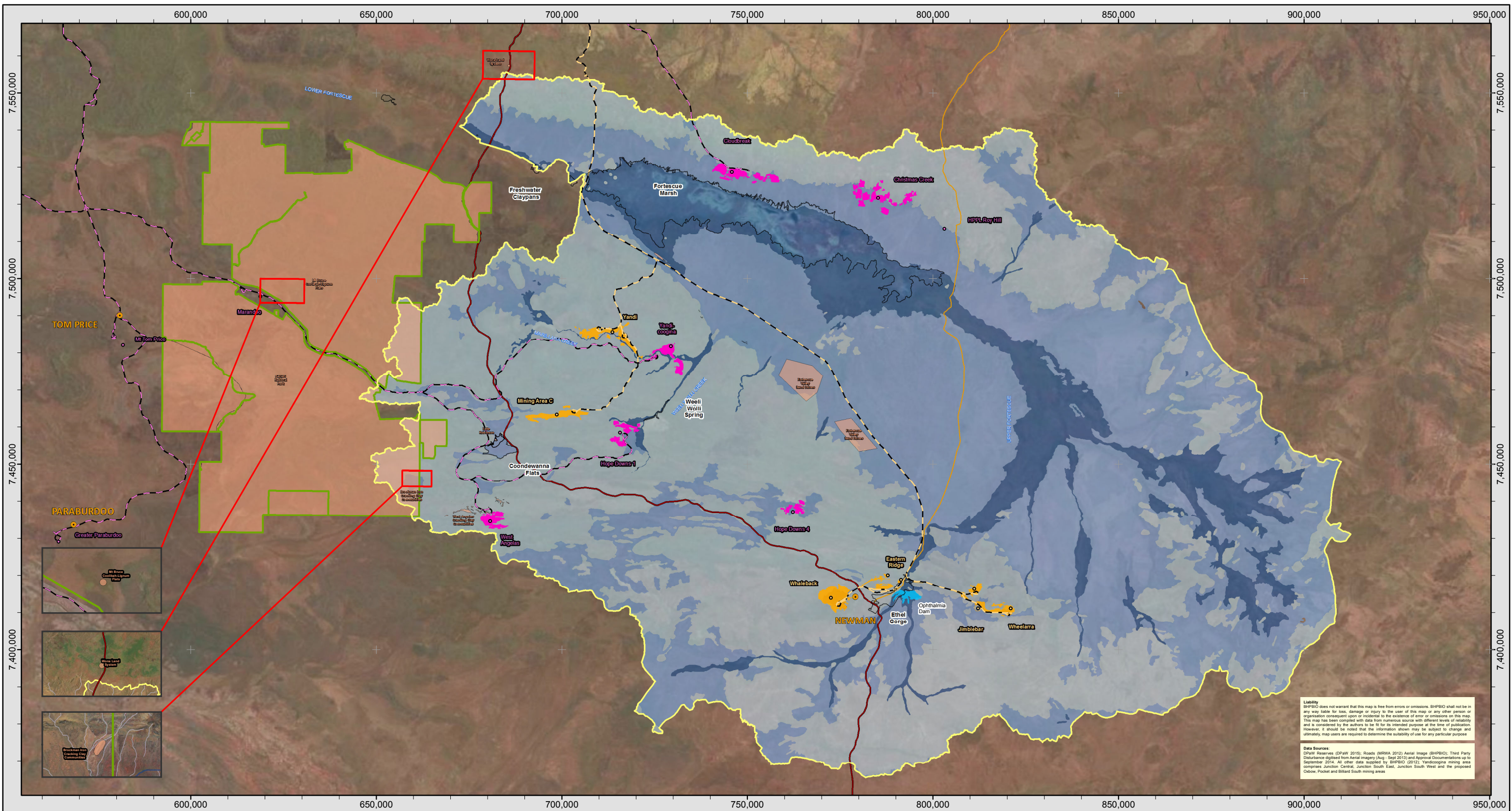
ECOHYDROLOGICAL CHANGE ASSESSMENT
Overview of the Ecohydrological Units

Scale @ A3: 1:1,000,000
Date: 14/04/2015

Prepared: J Botterill
Checked: J Vermaak
Reviewed: J Youngs

Revision: Rev 1
Map: 8

Coordinate System: GDA 1994 MGA Zone 50
Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter



Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organisation consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of establishability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

Data Sources:
 DPW Reserves (DPW 2015); Roads (MRWA 2012); Aerial Image (BHPBIO); Third Party Disturbance digitised from Aerial Imagery (Aug - Sept 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2012). Yandi/Coonga mining area comprises Junction Central, Junction South East, Junction South West and the proposed Ochoo, Picket and Billard South mining areas.

LEGEND

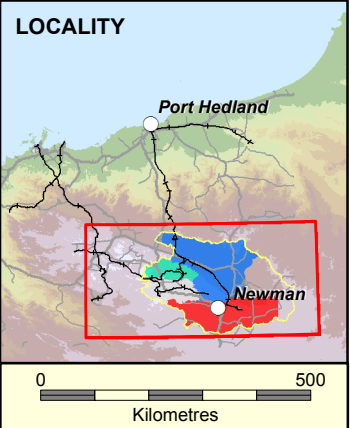
Ecohydrology Study Boundary	Third Party Mining Areas	BHP Billiton Iron Ore Existing Disturbance
Karijini National Park	BHPBIO Mining Areas	Third Party Existing Disturbance
Ecohydrological Receptors	Third Party Rail Corridor	Groundwater Sensitivity
Ecological Assets	BHPBIO Rail Corridor	Low
Ophthalmia Dam	Great Northern Highway	Moderate
Townships	Other Roads	High

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

Notes:

The ratings reflect the sensitivity of landscape elements and ecosystem components to change in the groundwater regime. This is a function of ecohydrological connectivity and ecosystem water requirements. The ratings are for screening purposes and are precautionary.

Low = 1, 2, 3 and 4 EHU
 Moderate = 5 and 6 EHU
 High = 7, 8 and 9 EHU

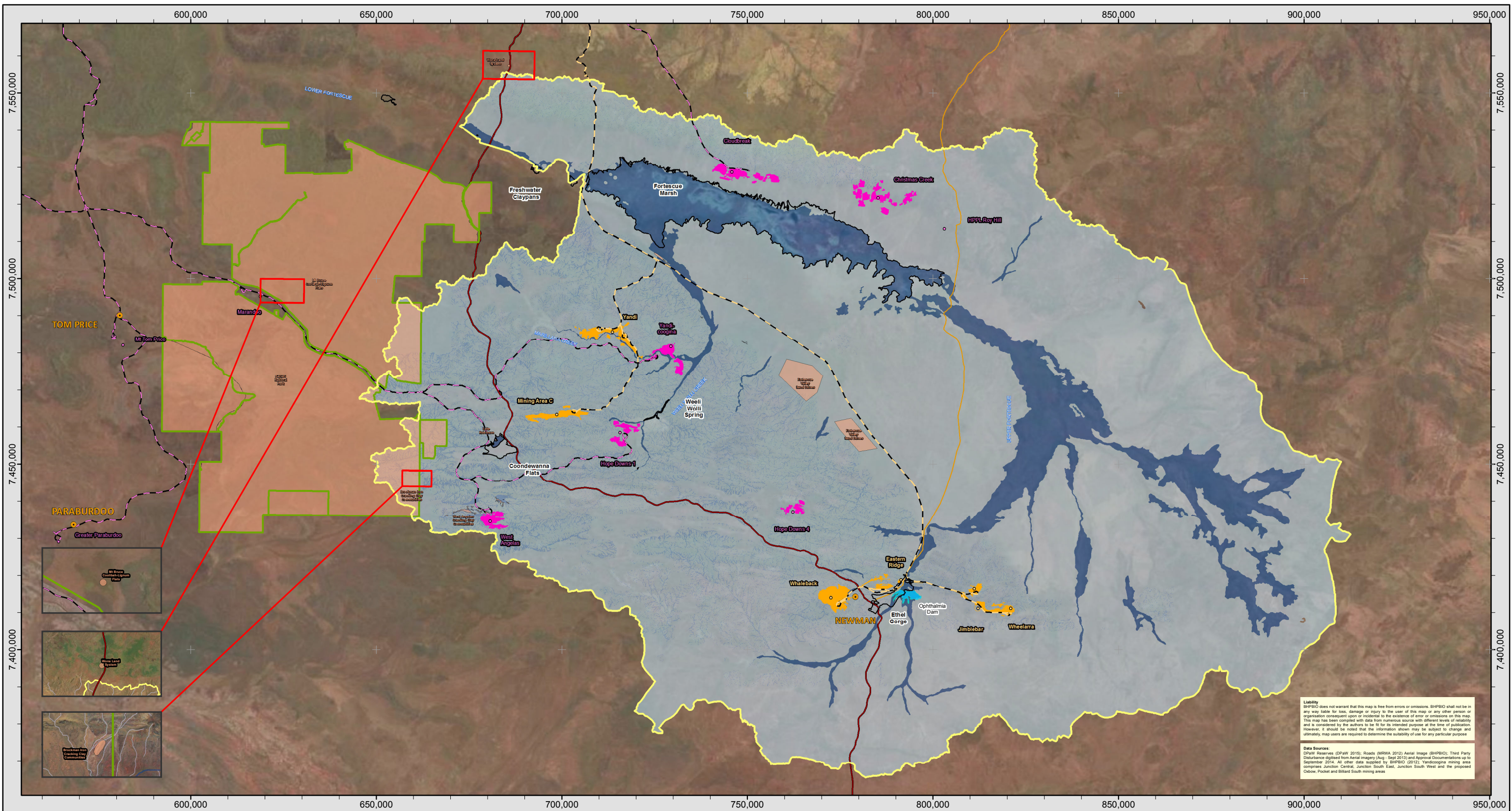


Resource Planning Hydrology
 BHP BILLITON IRON ORE

ECOHYDROLOGICAL CHANGE ASSESSMENT
 Groundwater Ecohydrological Sensitivity

Coordinate System: GDA 1994 MGA Zone 50
 Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter

Scale @ A3: 1:1,000,000	Prepared: J Botterill	Revision: Rev K
Date: 14/04/2015	Checked: J Vermaak	Map: 9
	Reviewed: J Youngs	



Liability
 BHPBIO does not warrant that this map is free from errors or omissions. BHPBIO shall not be in any way liable for loss, damage or injury to the user of this map or any other person or organisation consequent upon or incidental to the existence of error or omissions on this map. This map has been compiled with data from numerous sources with different levels of establishability and is considered by the authors to be fit for its intended purpose at the time of publication. However, it should be noted that the information shown may be subject to change and ultimately, map users are required to determine the suitability of use for any particular purpose.

Data Sources:
 DPWV Reserves (DPWV 2015); Roads (MRWA 2012); Aerial Image (BHPBIO); Third Party Disturbance digitised from Aerial Imagery (Aug - Sept 2013) and Approval Documentations up to September 2014. All other data supplied by BHPBIO (2012). Yandooogina mining area comprises Junction Central, Junction South East, Junction South West and the proposed Oatley, Picket and Billard South mining areas.

LEGEND

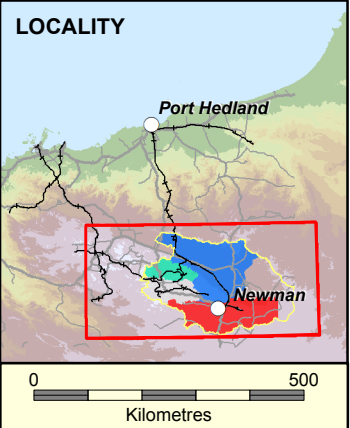
Ecohydrology Study Boundary	BHPBIO Mining Areas	BHP Billiton Iron Ore Existing Disturbance
Karijini National Park	Third Party Mining Areas	Third Party Existing Disturbance
Ecohydrological Receptors	BHPBIO Rail Corridor	Surface Water Sensitivity
Ecological Assets	Third Party Rail Corridor	Low
Ophthalmia Dam	Great Northern Highway	Moderate
Townships	Other Roads	High

The content of this map is conceptual only, of a general nature and does not purport to contain all information relevant to future project development associated with the Project. This map has been prepared solely for the purposes of informing environmental impact assessment pursuant to the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Conservation Act 1999 and is not intended for use for any other purpose.

Notes:

The ratings reflect the sensitivity of landscape elements and ecosystem components to change in the surface water regime. This is a function of ecohydrological connectivity and ecosystem water requirements. The ratings are for screening purposes and are precautionary.

Low = 1, 2, 5, 6 and 7 EHU
 Moderate = 3 and 4 EHU
 High = 8 and 9 EHU



Resource Planning Hydrology
 BHP BILLITON IRON ORE

ECOHYDROLOGICAL CHANGE ASSESSMENT
 Surface Water Ecohydrological Sensitivity

Scale @ A3: 1:1,000,000
 Date: 20/04/2015

Prepared: J Botterill
 Checked: J Vermaak
 Reviewed: J Youngs

Revision: Rev K
 Map: 10

Coordinate System: GDA 1994 MGA Zone 50
 Projection: Transverse Mercator, Datum: GDA 1994, Units: Meter