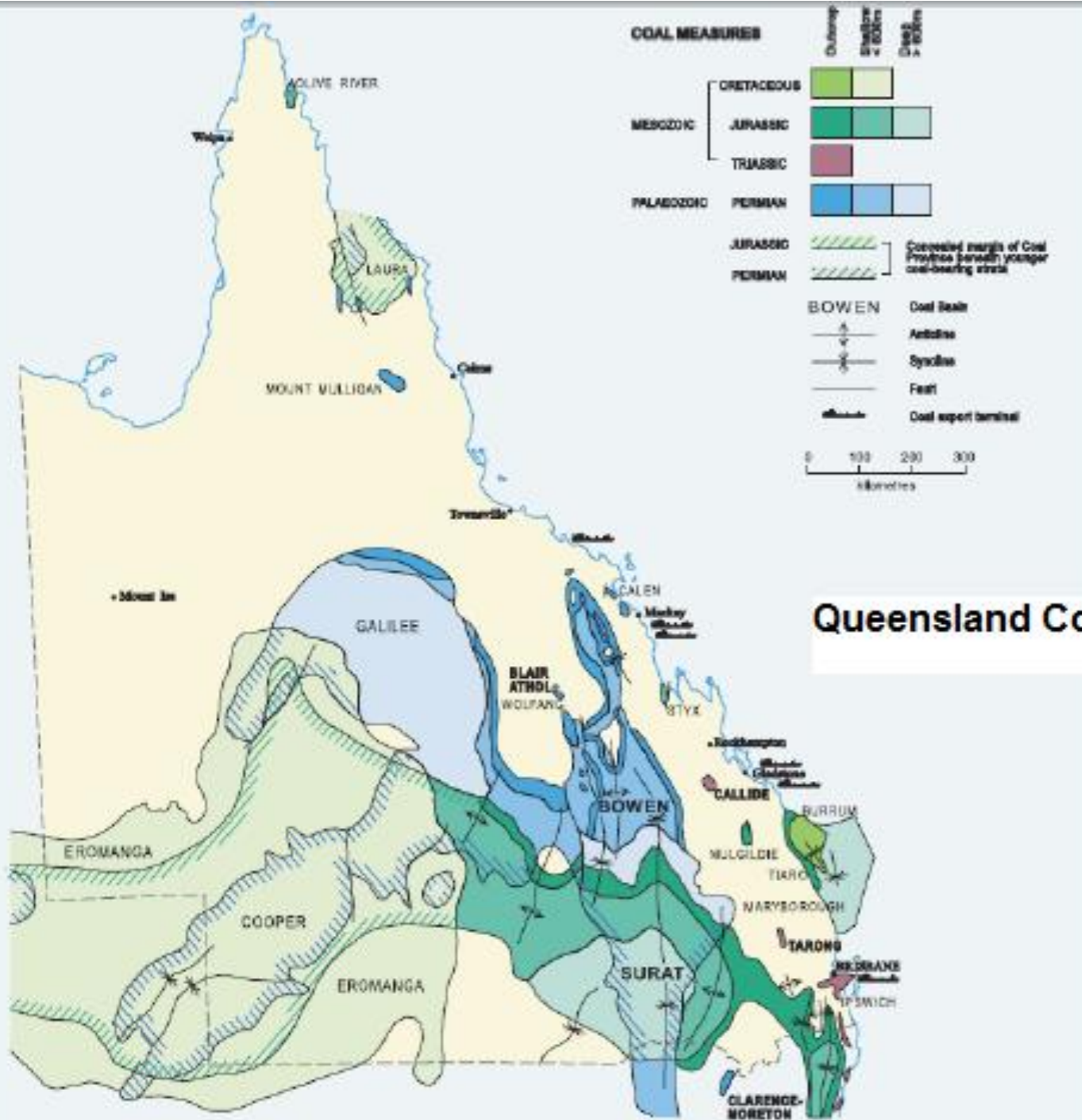


**Queensland and Federal environmental legislation:
too 'horse and buggy' for fossil fuel mining impacts?
Case studies from Central Queensland.**



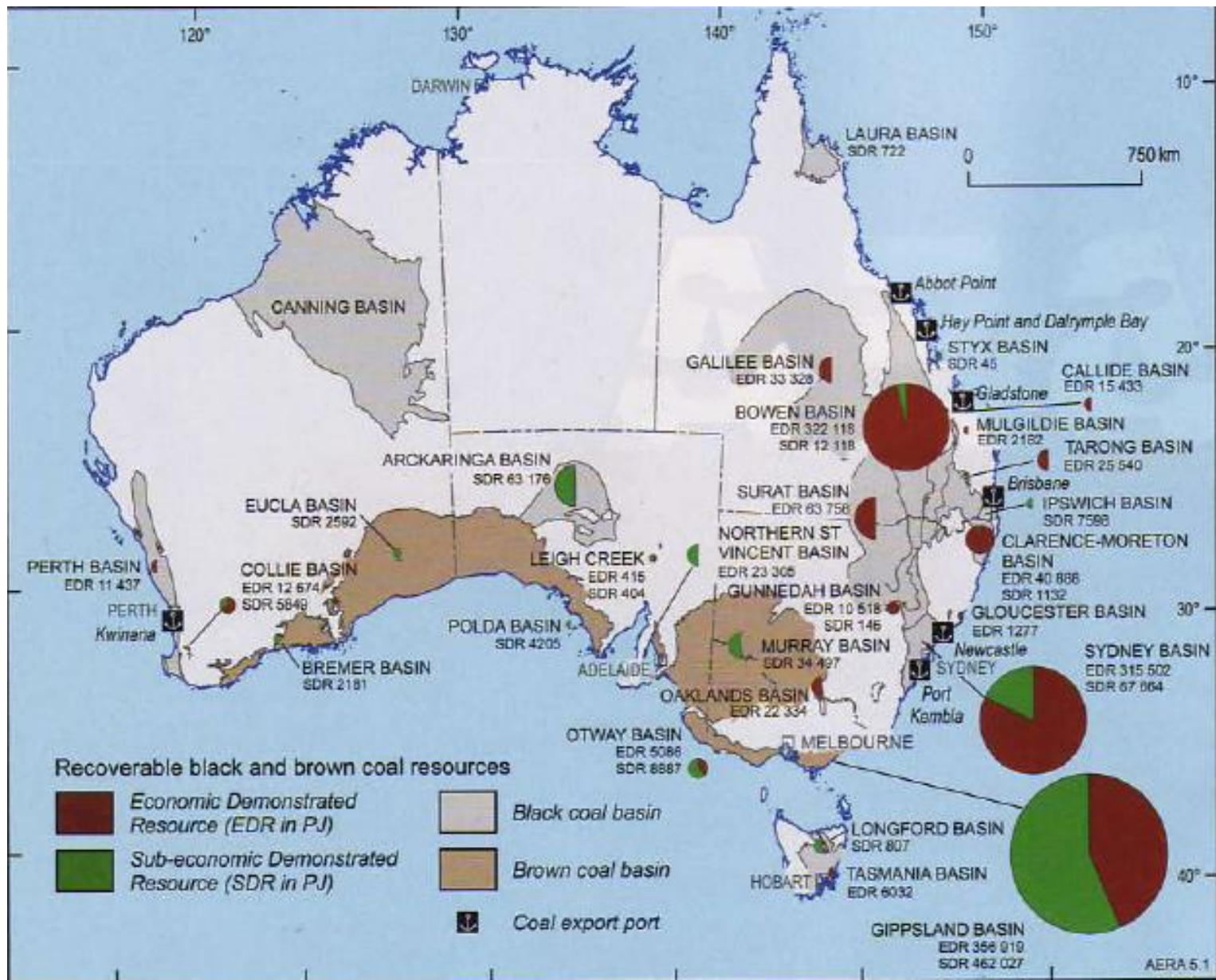
**Rolleston Mine
8mtpa**



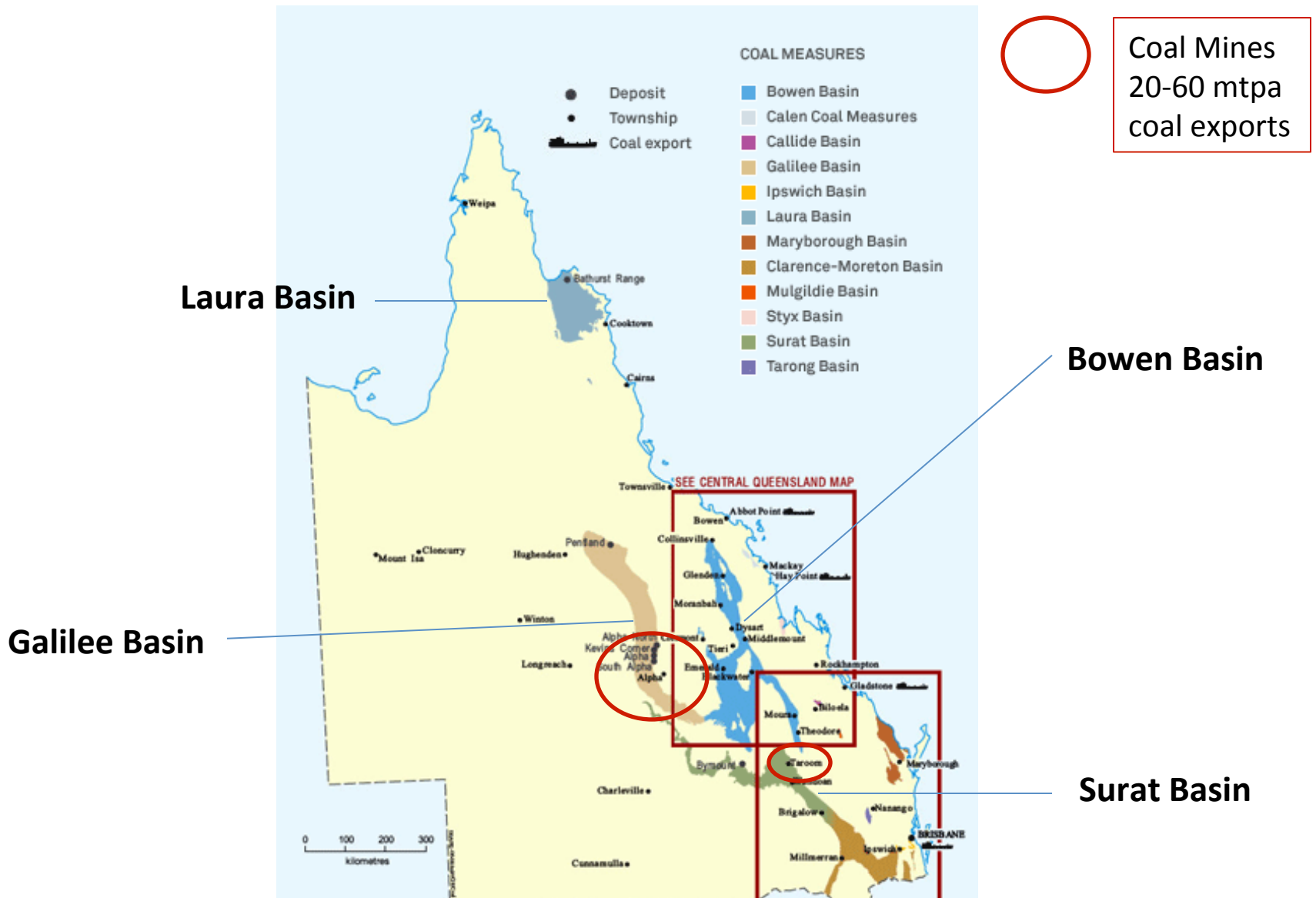
Queensland Coal Basins

Major Coal Basins in Australia (Geosciences Australia 2011)

 Economically Demonstrated Resource

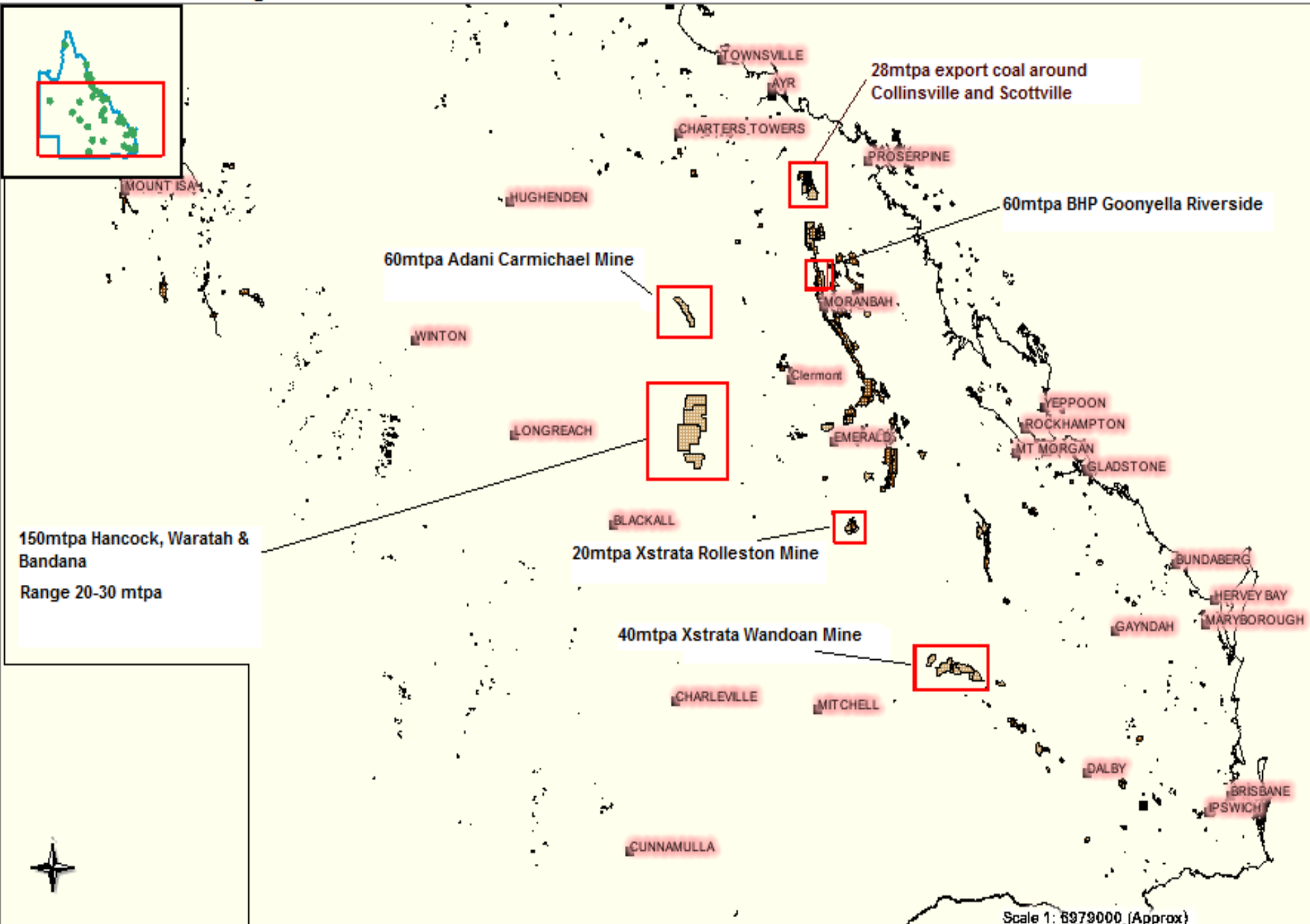


Major Coal Basins in Queensland



**Coal Mines are getting bigger:
from 3-8 million tonnes per
annum (mtpa) to 20 to 60 mtpa**

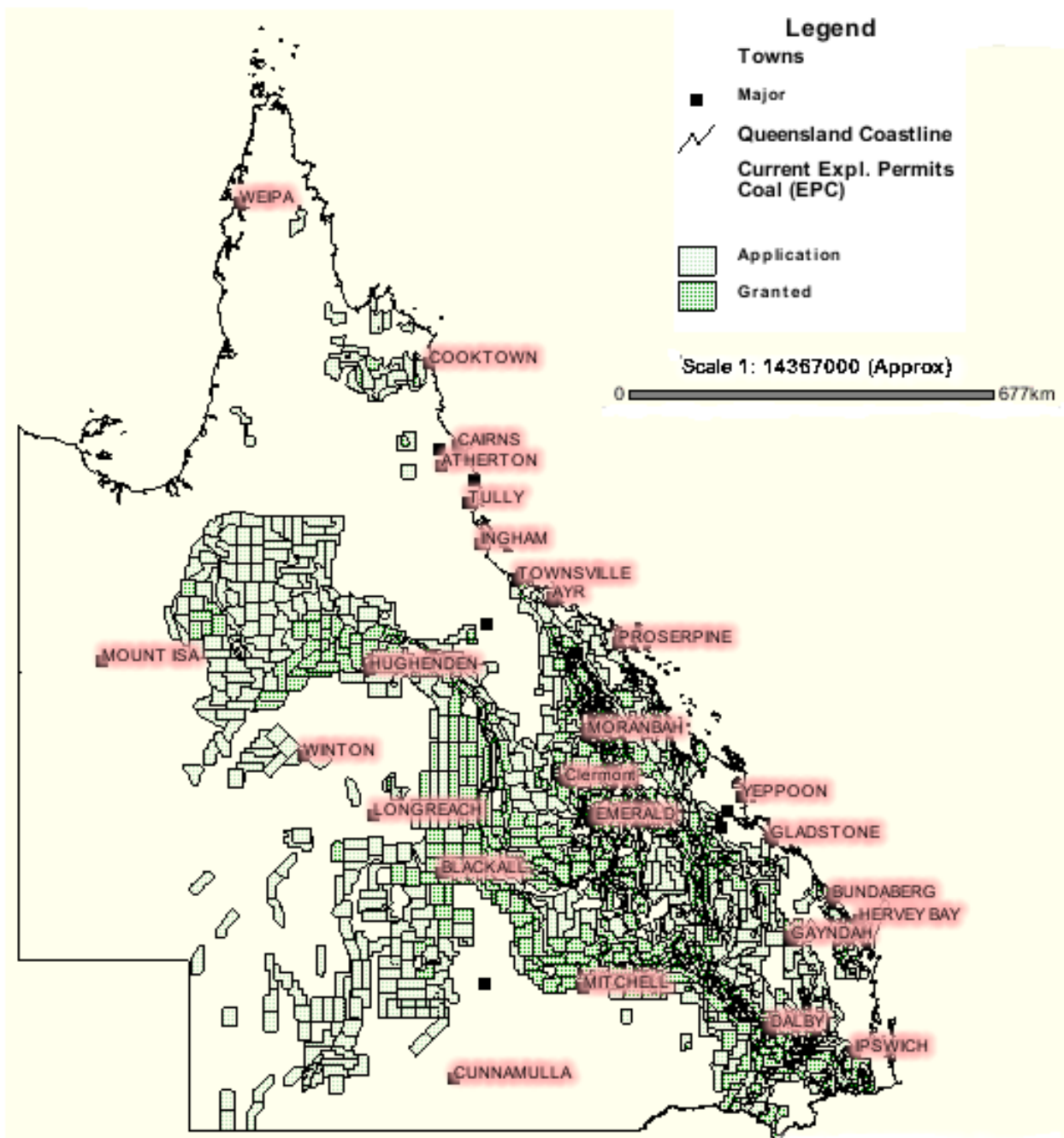
Huge Coal Mines Planned in Bowen, Surat and Galilee Basins



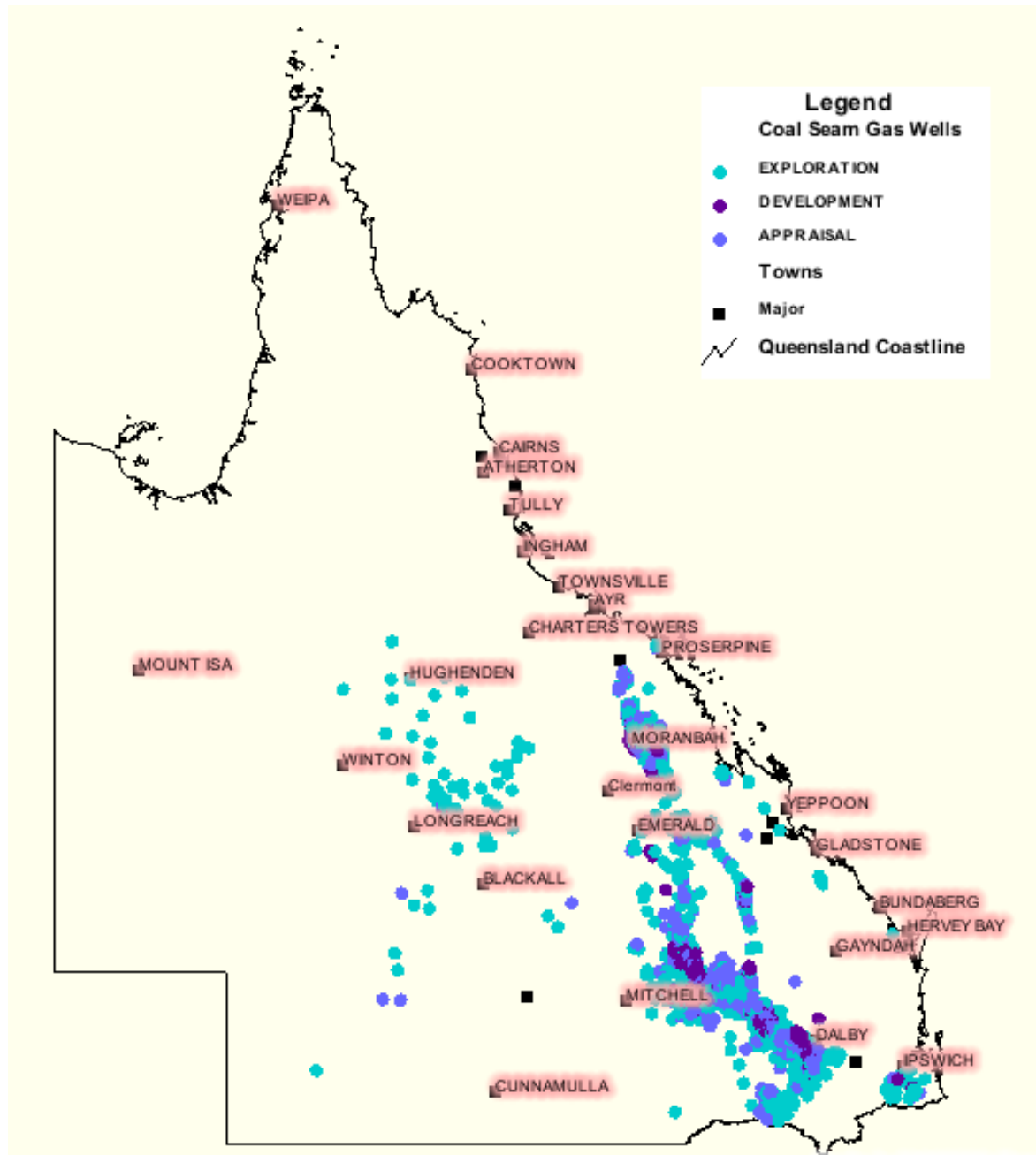
**Many more coal mines are
planned in the next decade.**

**Coal Exploration permits
cover 38% of Queensland.**

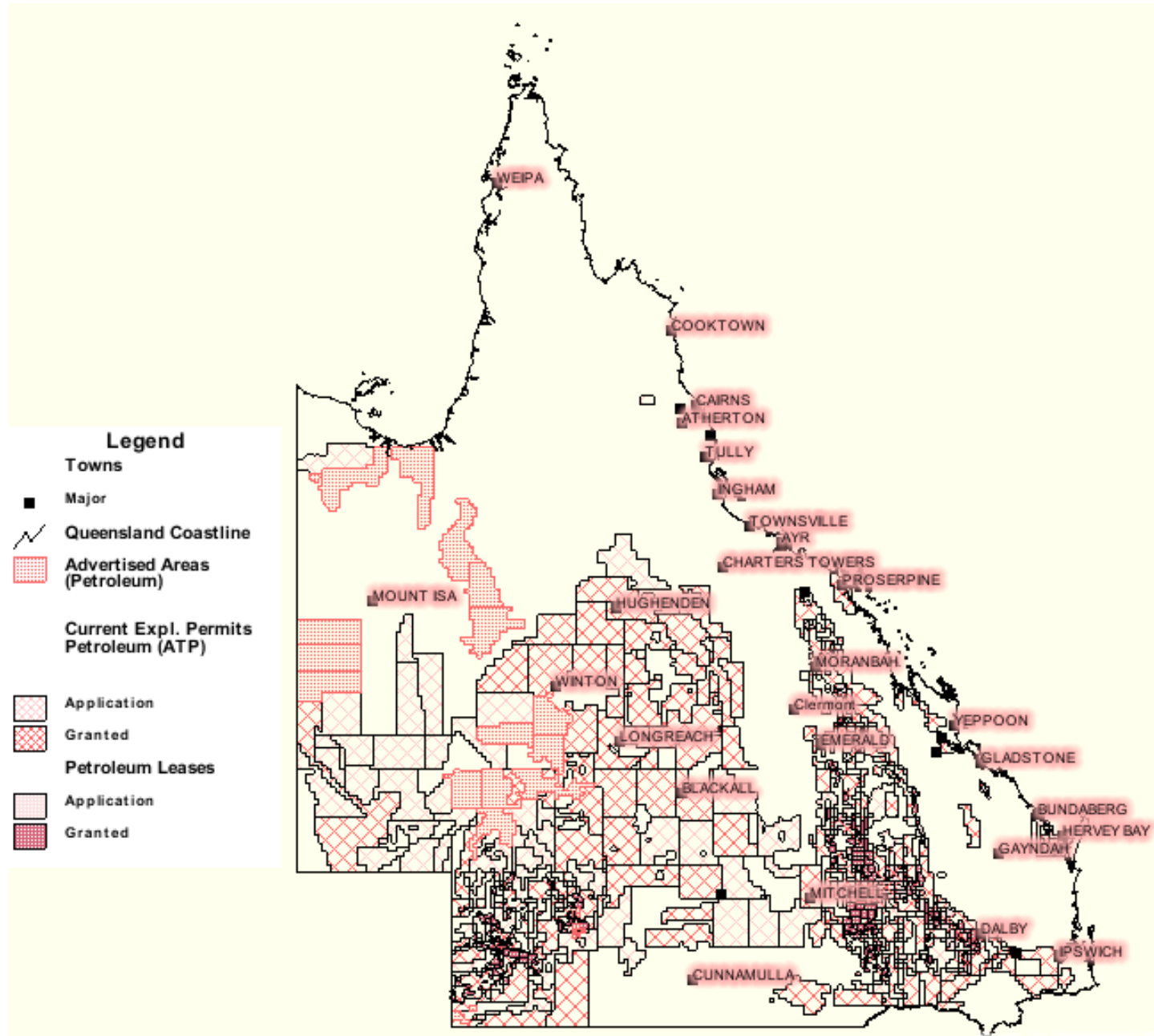
Coal Mining Exploration Permits, Sep 12th 2011



Unconventional Gas: Coal Seam Gas Wells in Queensland (Sept. 2011)



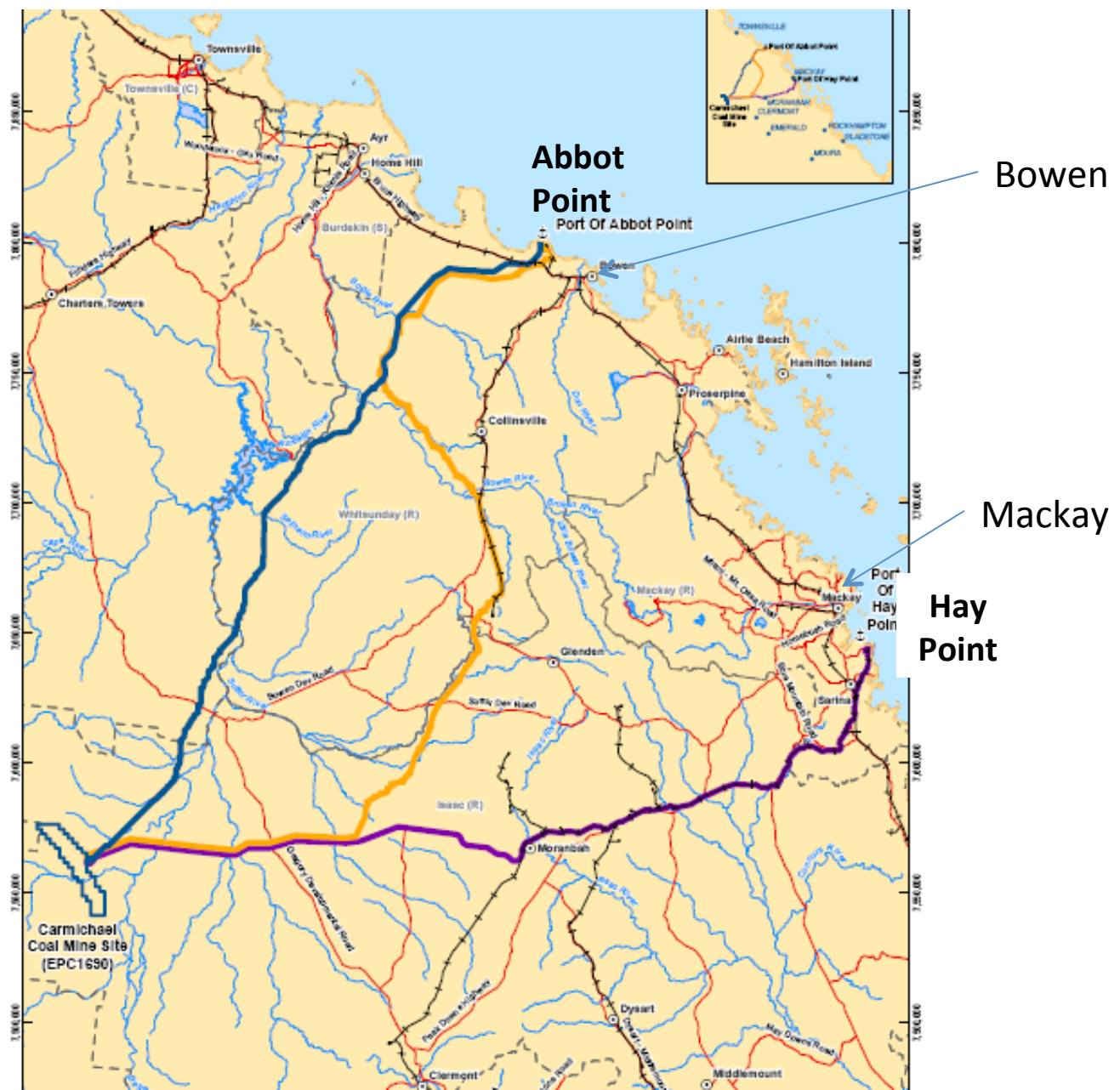
Petroleum (Unconventional Gas) Mining Tenures



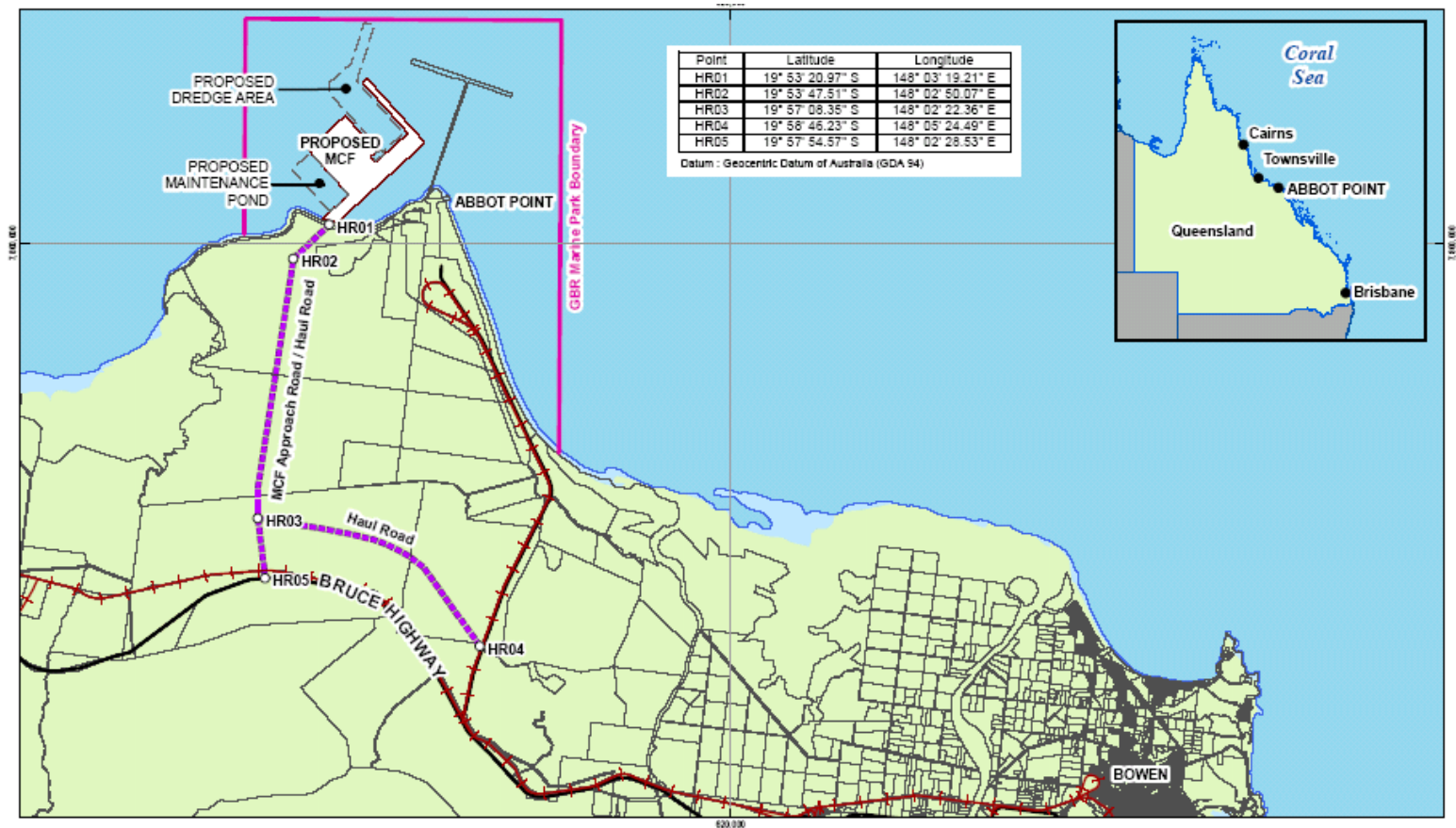
Along with more coal and gas mines comes the demand for more ports, rail lines, water pipelines, gas pipelines, power lines etc. which fragment remaining habitat for wildlife further reducing biodiversity.

Five coal mining companies want individual coal railway lines to coastal ports i.e. four to Abbot Point and one to a new port at Dudgeon Point in the Hay Point port complex south of Mackay

Rail corridor widths requested 0.5 to 1.5 km wide



Location and size of Multi-Purpose Cargo Facility (MCF) Port & Shipping Channel plus Port of Abbot Point



1:120,000 (at A4)

0 1,000 2,000 3,000 4,000 5,000 metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

LEGEND

- MCF Bund
- MCF Approach Road / Haul Road
- Railway
- Major Road
- Cadastral Parcel
- GBRMP Boundary

Ports Corporation of Queensland
Abbot Point Multi Cargo Facility

Job Number: 41-20549
Revision: A
Date: 27 MAR 2009

GHD
CLIENTS | PEOPLE | PERFORMANCE

Ports Corporation of Queensland
PCQ

Locality Plan

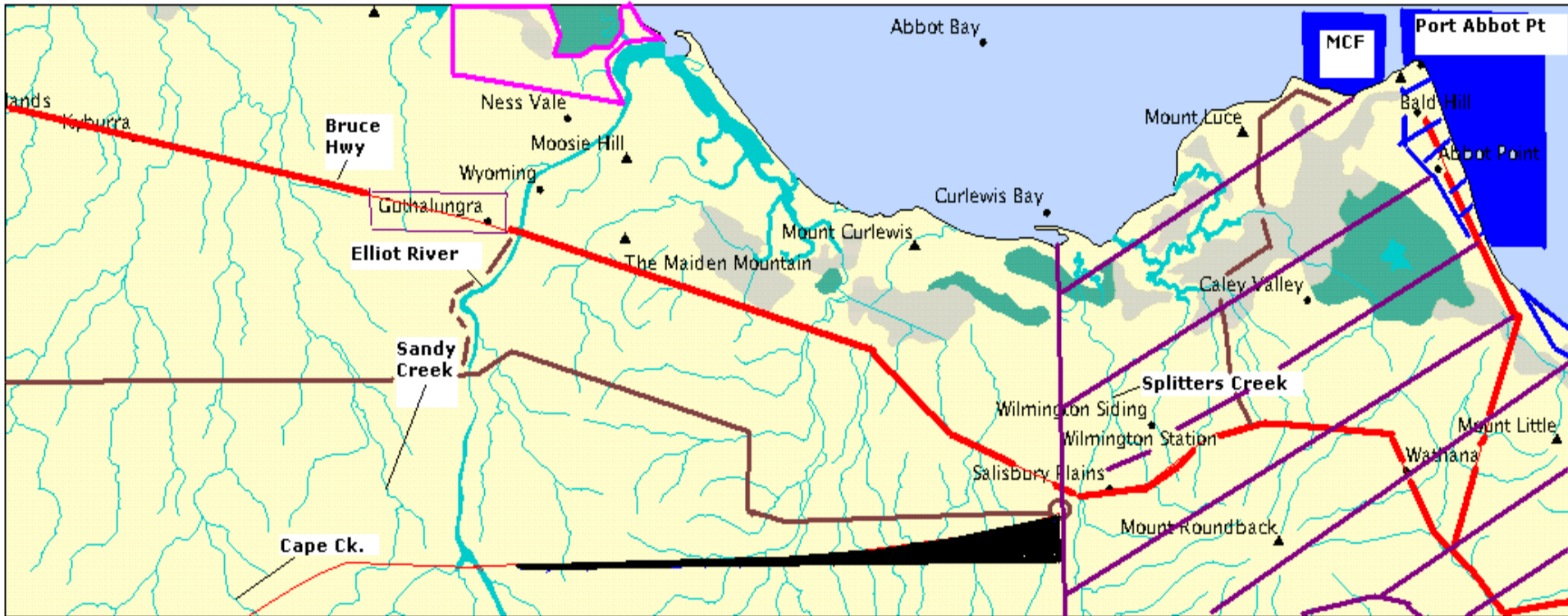
Level 4, 201 Charlotte St Brisbane QLD 4000 T 61 7 3316 3000 F 61 7 3316 3333 E bna@ghd.com.au www.ghd.com.au

MCF will impact 580ha of Great Barrier Reef World Heritage Area

■ Proposed Hancock Rail Line Marshalling Yars - 10km long

— Proposed Hancock Coal P.L. Rail

— Bruce Highway



5 km Scale 1: 171,800

- Splitters Creek Balancing Storage & Abbot Point Relift Pump Station
- Abbot Point State Development Area

— Approximate Location Guthalungra Prawn Farm

— Earthen channel for Water for Bowen

— Feeder channels for Reticulation Network



***Two Thirds of Nationally Significant
Caley (Keela) Valley Abbot Point
Wetlands would need to be filled in if
all five coal rail lines are built***

20,000 birds & 230 bird species

In Queensland only National Parks are protected from Mining.

100 privately owned Nature Refuges, part of the National Reserve System of Protected Areas for biodiversity conservation, now adjacent to or covered by Coal Mining Exploration Permits in Queensland.

State suggest the use of Offsets to compensate for mining Nature Refuges but that contradicts “no net loss” of biodiversity policy.



Bimblebox Nature Refuge

95% has never been cleared.

Sustainable raising of organic beef
coexists with wildlife

IUCN Class IV – Federal government

IUCN Class VI – QLD government





131 bird species

1 Endangered

15 of Conservation
Significance for Desert
Uplands Bioregion



Hooded Robins

Numerous marsupials &



reptiles & some amphibians





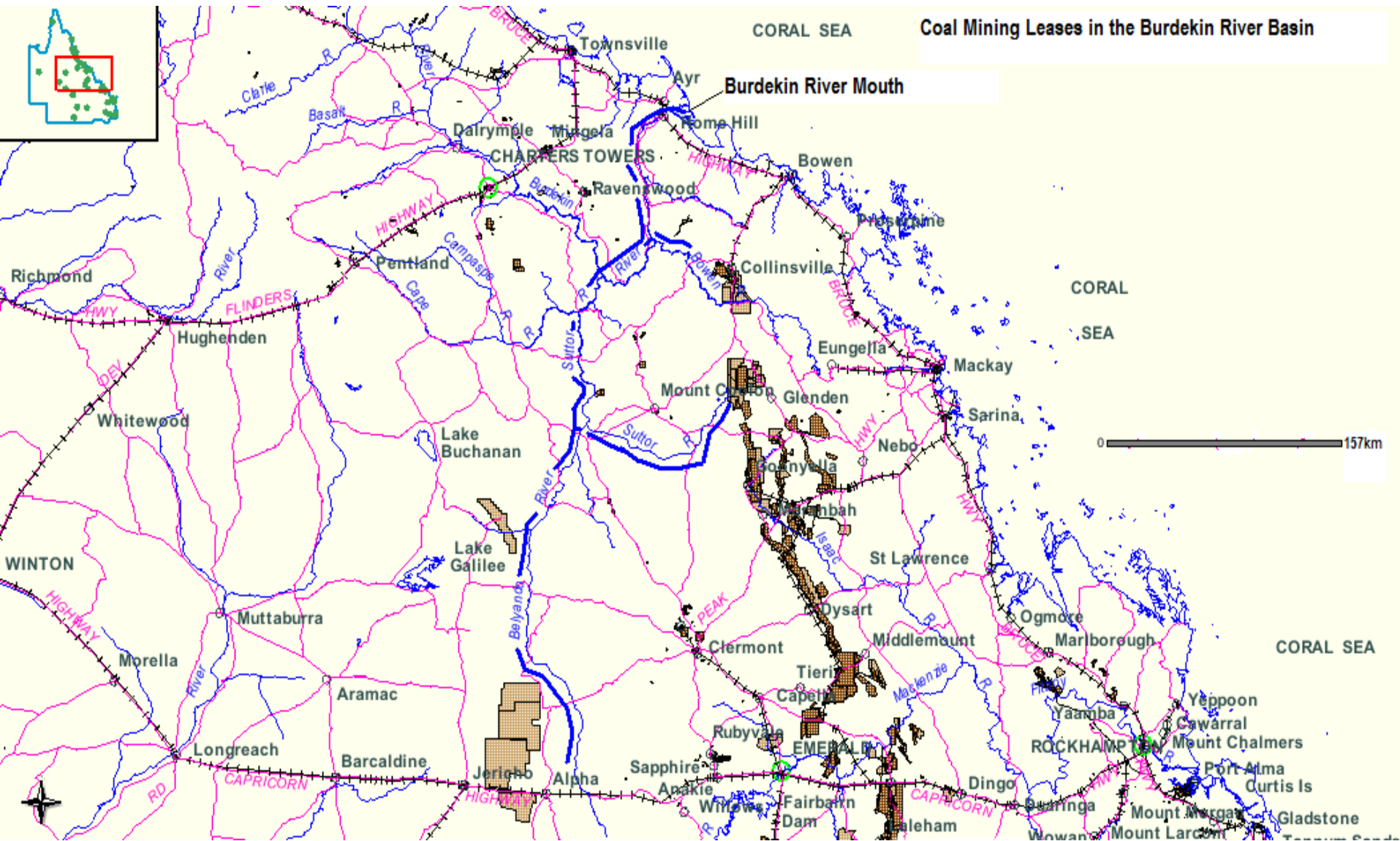
Black-throated Finch (*Poephila cincta*)
Giru 15 March 2003 © Ian Montgomery 2003

Fine Particulate Coal Dust Harms All Life

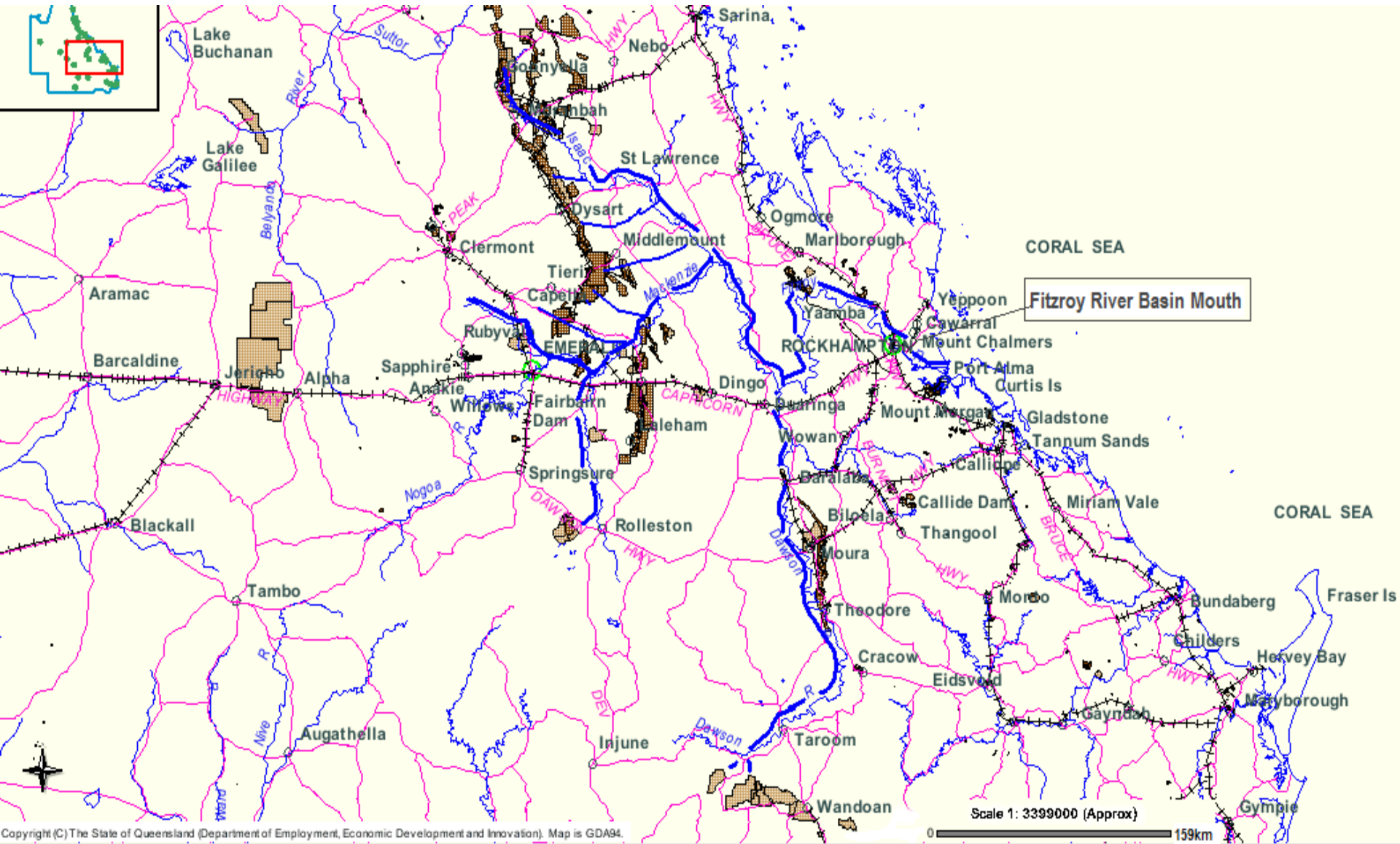


Long Term Impacts of Large Scale Fossil Fuel Mining on Waterways and the Great Barrier Reef?

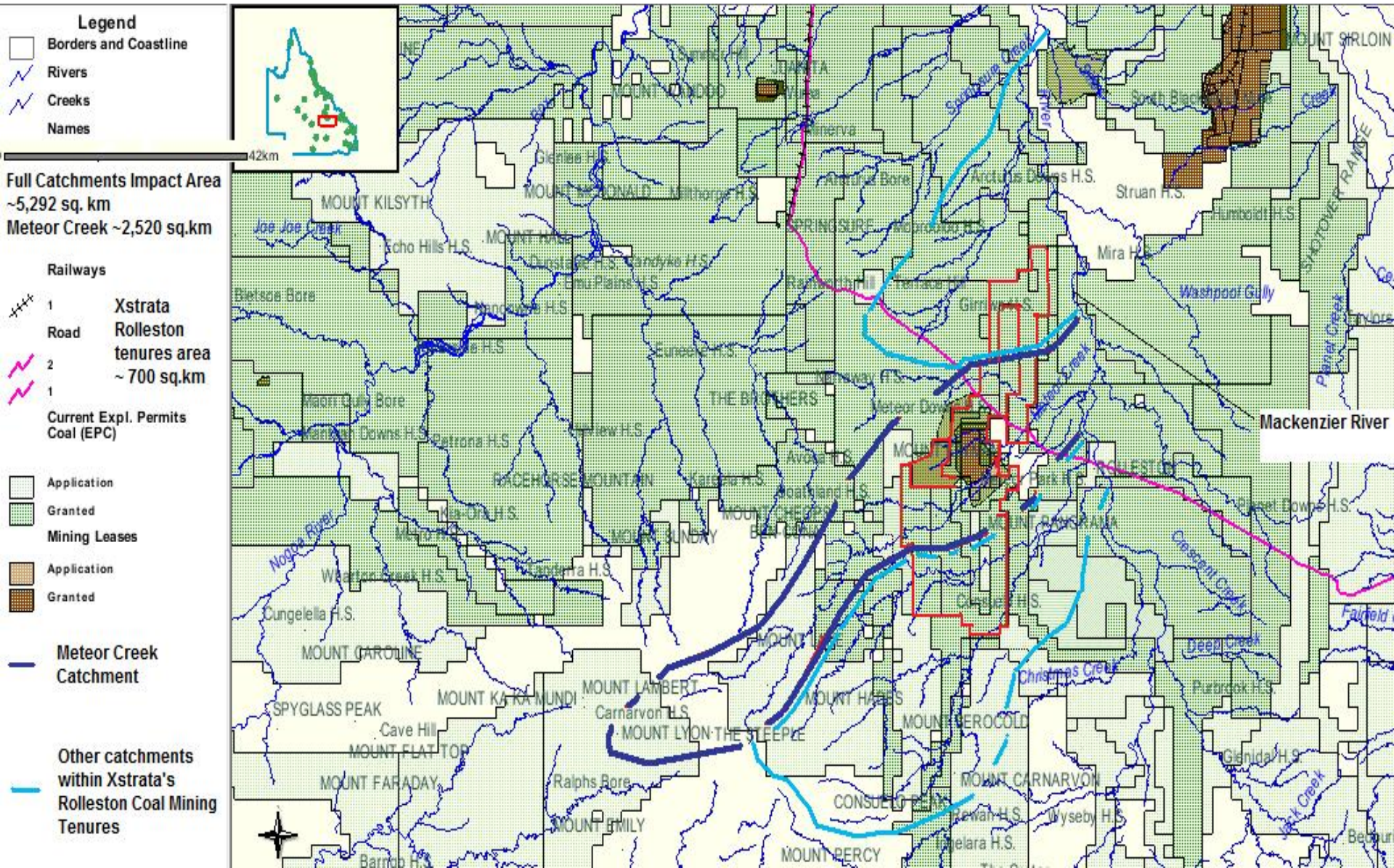
Burdekin River Basin ~ 470km to Great Barrier Reef marine waters



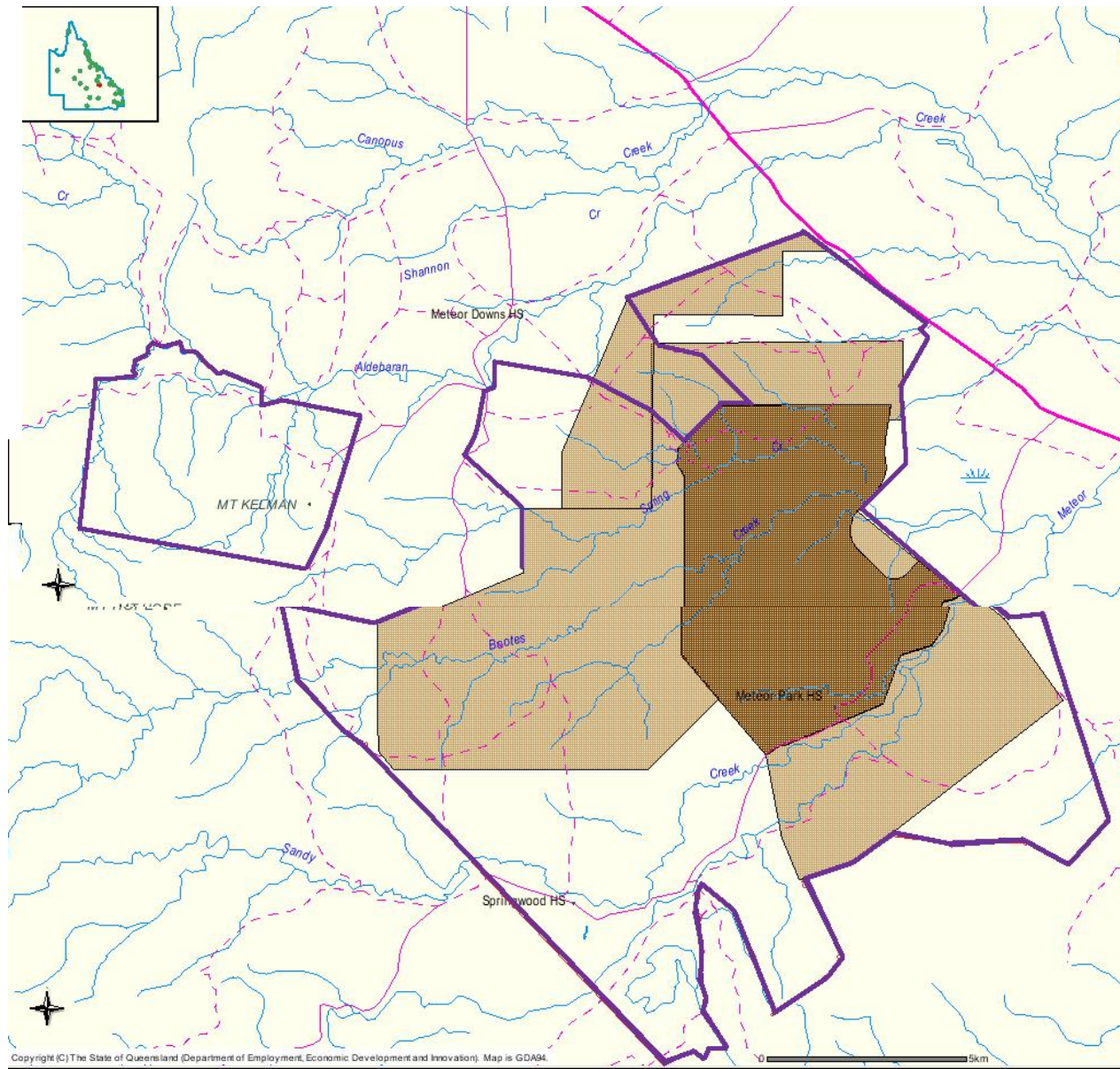
Fitzroy River Basin ~400 km to the Great Barrier Reef



Xstrata's Rolleston Coal Mine Leases and Exploration permits in downstream end of Meteor Creek: an area of many wetlands.



Rolleston Open Cut Coal Mine Leases across a number of creeks



Breach of Rolleston Mine Wastewater Impoundment 2009 Wet Season



Breached coal wastewater pond empties waste into Meteor Creek Feb 2010



Site of wastewater impoundment breach, Xstrata's Rolleston Mine, Feb floods 2010

2009 Flooding Meteor Creek



Flooded Wastewater Impoundments: Downstream Impacts



Coal Slurry: Geochemistry and Impacts on Human Health and Environmental Quality

A PowerPoint Presentation
by William H. Orem, Ph.D.
Research Geochemist
US Geological Survey

Click "Next" and "Previous"
links to view slides (16 total)

Coal Mining, Coal Slurry Release and Decline of Freshwater Mussels in Appalachian Basin Watersheds

- **Of 60 species of freshwater mussels in the Tennessee and Cumberland River systems, 30 are protected due to sharp declines in populations; the other 30 species are also in decline.**
- **The reasons for this decline are unknown and probably complex, but "Blackwater Events" from the release of coal slurry may be involved**
- **High levels of polycyclic aromatic hydrocarbons (PAHs) have been found in the sediments of the watersheds having the greatest mussel declines. These PAHs are likely coal slurry-derived.**

A pocketbook mussel (*Lampsilis ovata*)
in the upper Tennessee River Basin.



*Are freshwater mussels the
"Canary In the Coal Mine"
with regard to the impacts of
coal slurry on water quality?*

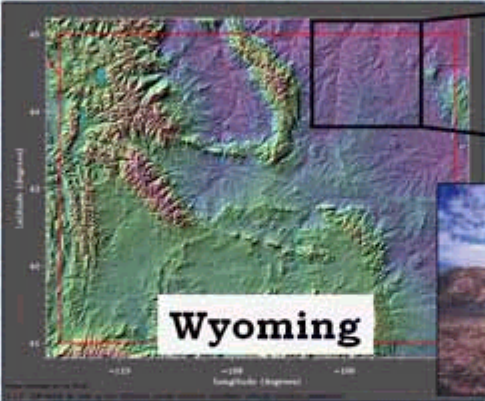

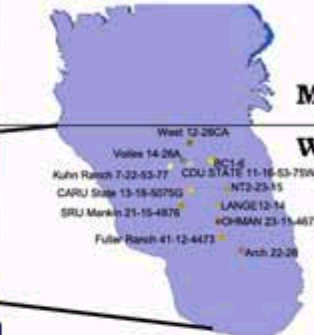
Coal Bed Methane in Drinking Water: Links with Renal/Pelvic Cancer



Coal Slurry: Geochemistry and Impacts on Human Health and Environmental Quality

A PowerPoint Presentation
by William H. Orem, Ph.D.
Research Geochemist
US Geological Survey

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Toxic Organics from Coal and Renal/Pelvic Cancer Studies in the Powder River Basin, Wyoming		MT	
			SD
			NB

Produced water from CBM wells in the Powder River Basin, WY contain coal-derived toxic organic compounds, including: PAH's, biphenyls, aromatic amines, and O-, S-, and N-containing heterocyclic compounds.

Water supply wells in the PRB contain organic compounds similar to those found in the produced water. Links between well water from coal beds and renal/pelvic cancer are being explored; Wyoming ranks first in the USA in rates and deaths from renal/pelvic cancer.

Meteor Downs Wetlands: Xstrata Rolleston Coal Mine Expansion



Meteor Downs Wetlands with Black Swans: Xstrata Rolleston Coal Mine Expansion

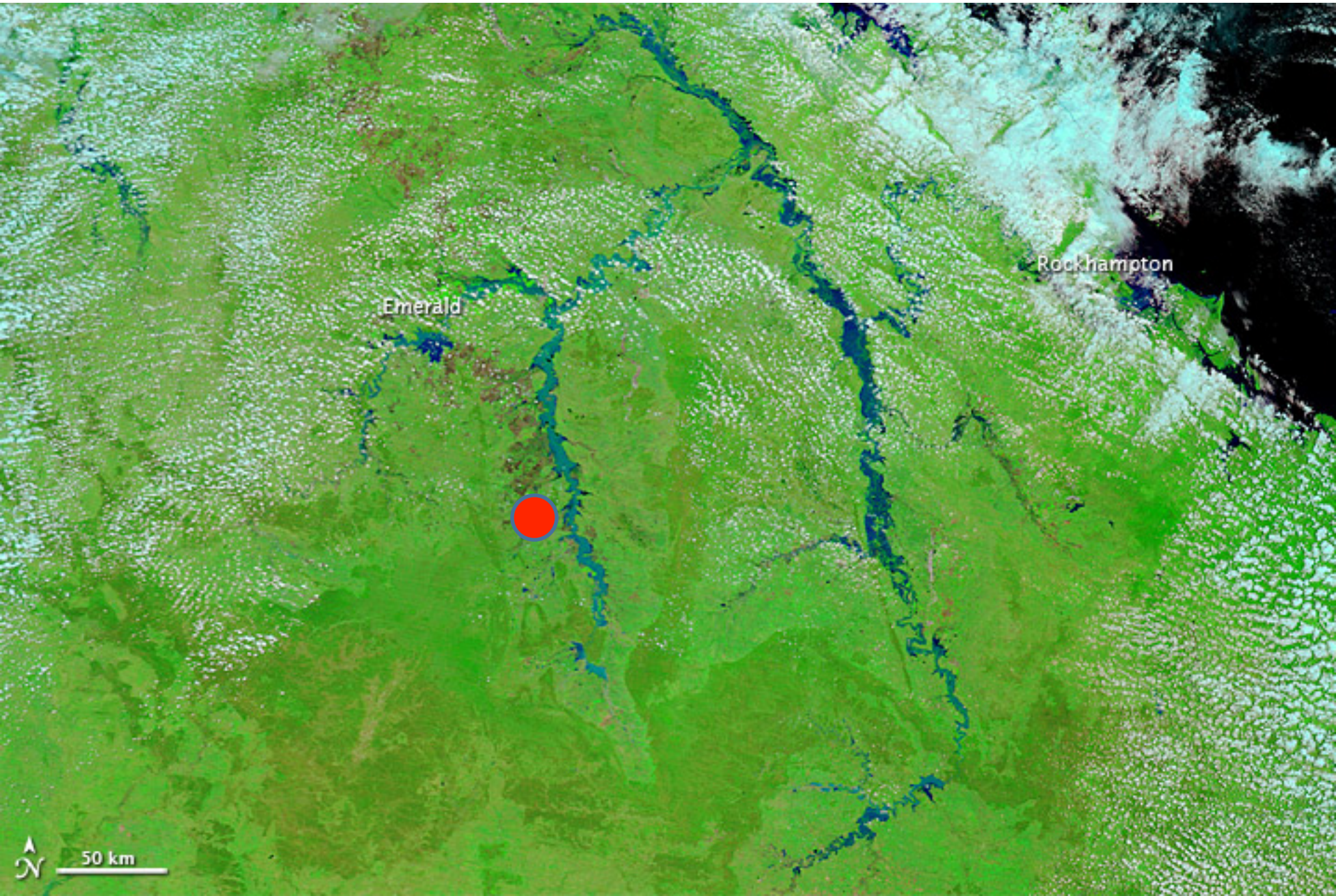


Coal Stockpiles from Xstrata's Rolleston Mine on the Meteor Downs Property



Fitzroy River Basin Flooding – 2010/2011 Wet Season

Red dot indicates general location of Xstrata's Rolleston Coal Mine





Mantuan Downs near Rolleston – 2011 Wet Season

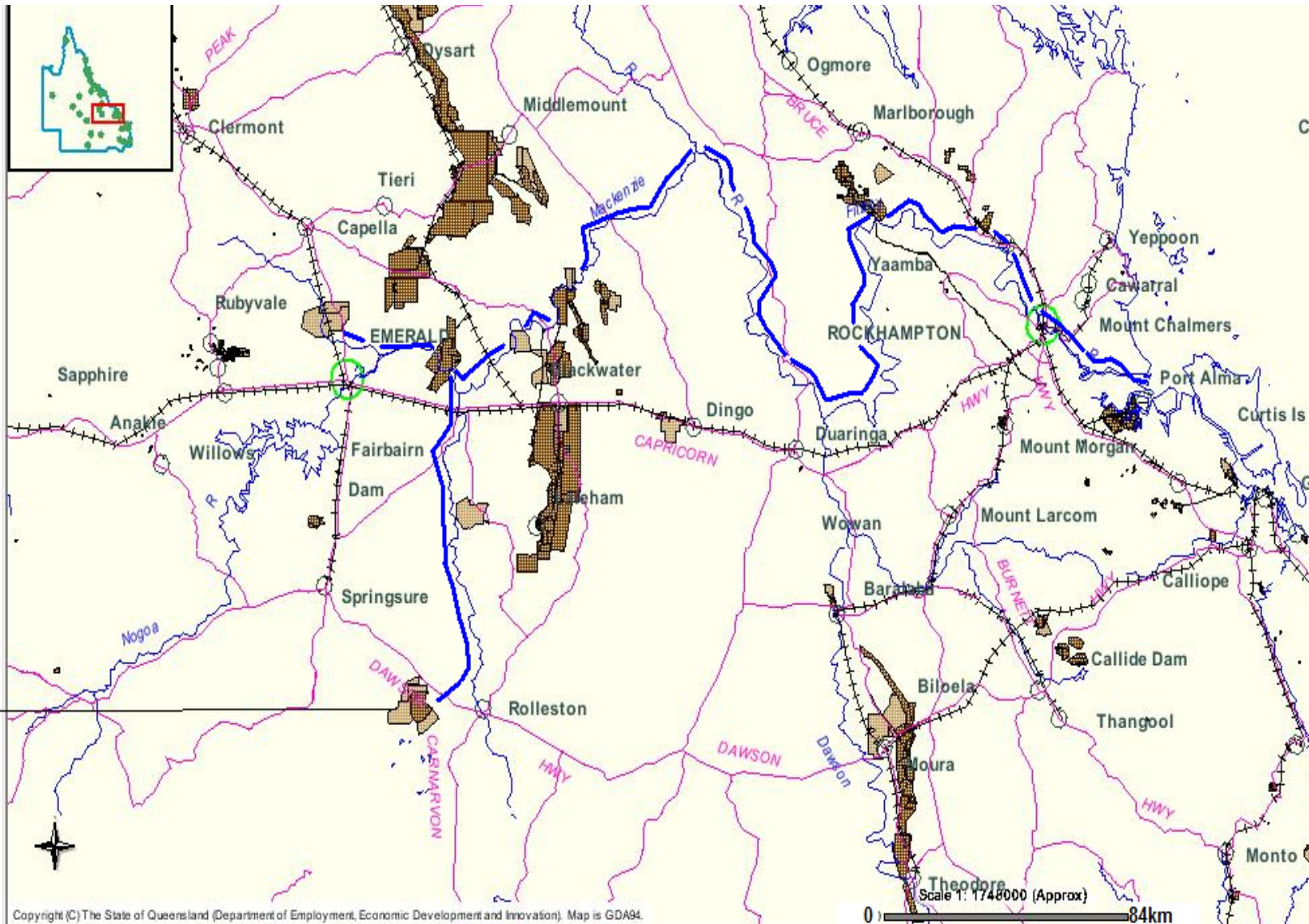
Floodwater flow path past coal mines to the Great Barrier Reef marine waters

Legend

- Background
- Railway
- Rivers
- Major Towns
- Roads
- Towns
- River Names
- Place Names
- Mining Leases
- Application
- Granted

Flowpath of floodwaters past coal mines to the Great Barrier Reef marine waters

Xstrata's Rolleston Open Cut Mining Lease and Mining lease Applications Sept 4th 2011



Port of Gladstone – Wet Season 2011



COAL MINES IN THE FLOODPLAINS: River floodwaters next to a coal mine



COAL MINES IN THE FLOODPLAINS

Dawson River flooding surrounds the Baralaba mine in Queensland. Dec 2010



Dawson River floods mine)

Stills from video shot in late December 2010 shows the Dawson River flooding the Baralaba mine in Queensland.



BUILDING FOR THE 100 YEAR FLOOD EVENT IS NOT ENOUGH

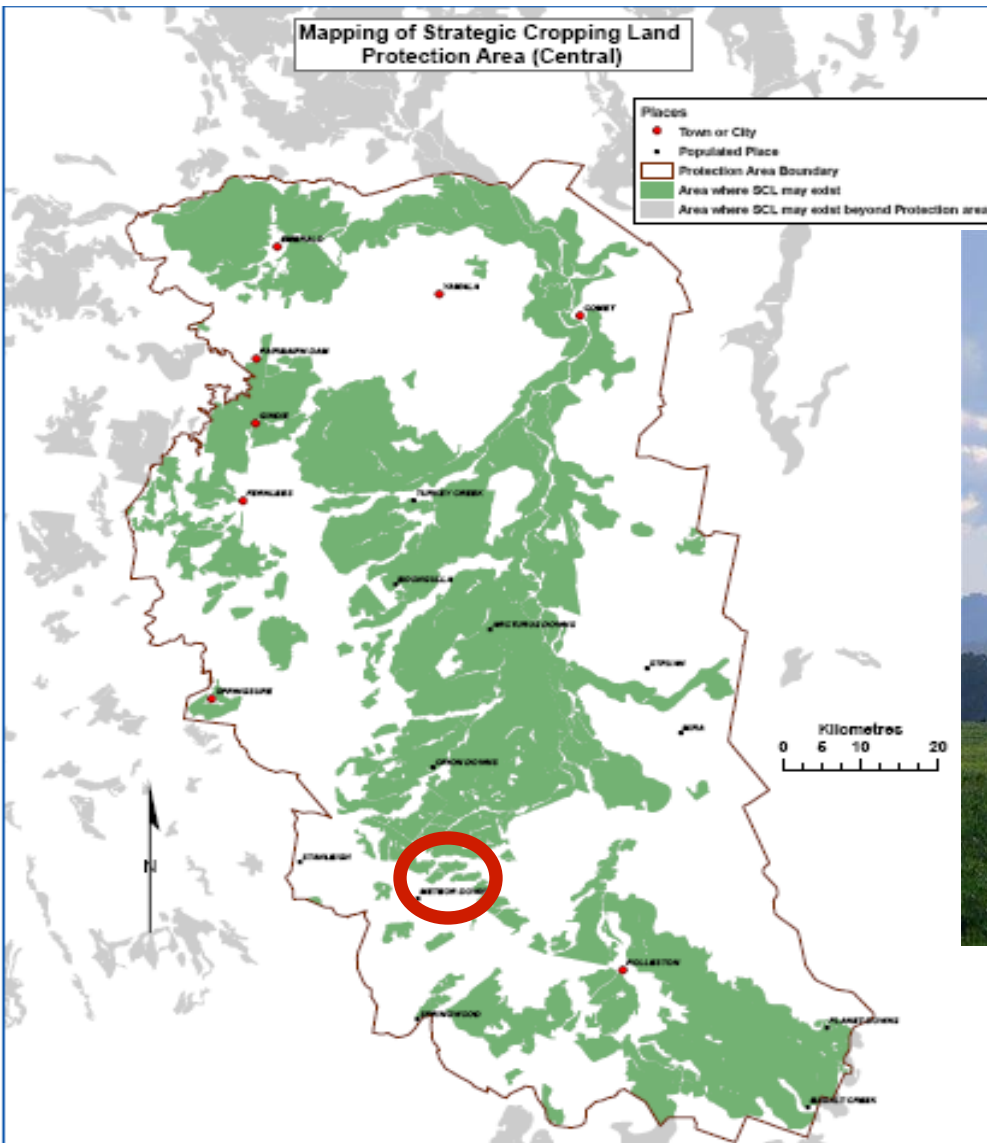


Ensham Mine – 2008 Wet Season

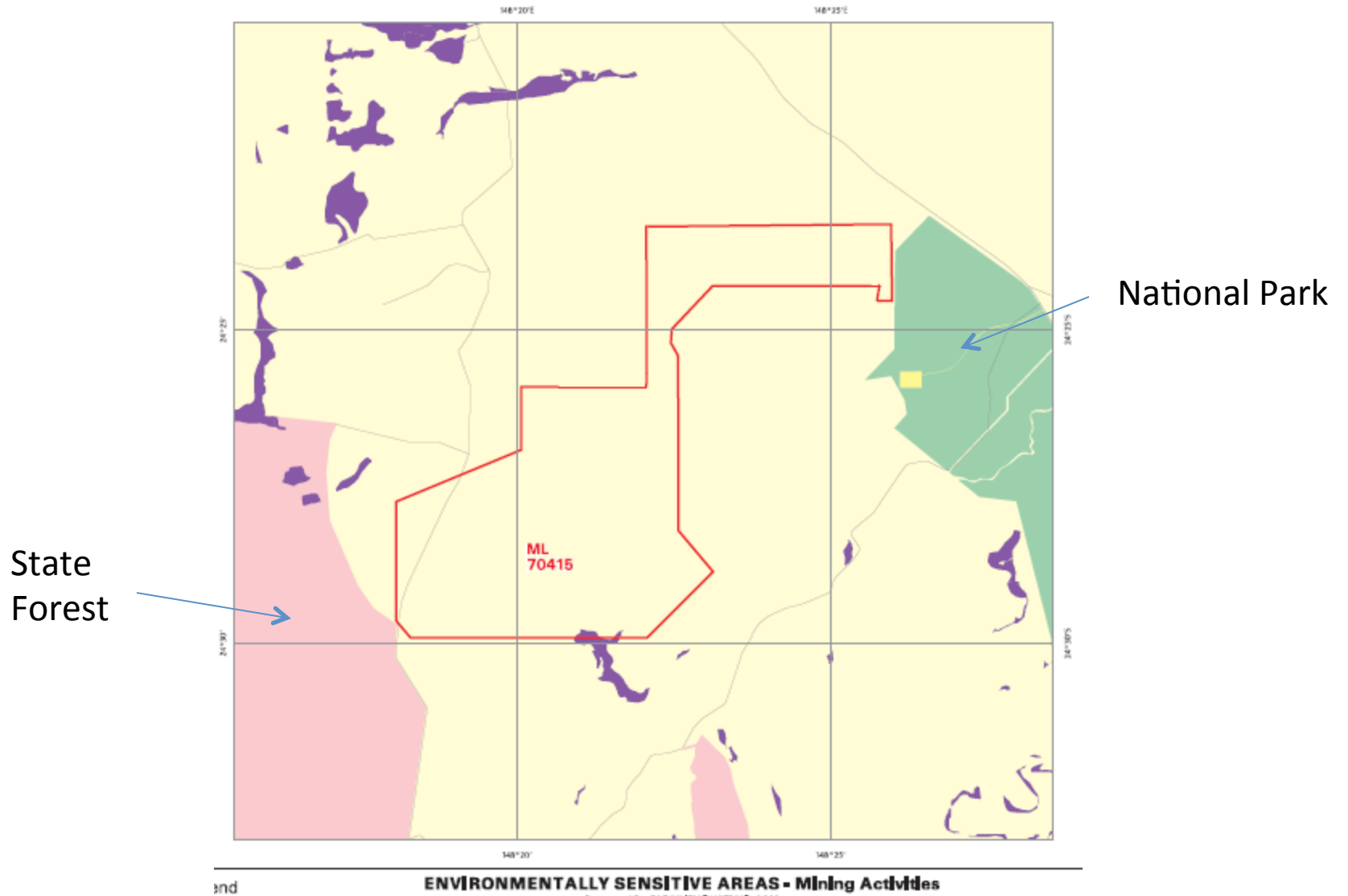
Most coal mines flooded in 2010/2011 Wet Season. DERM had to introduce Temporary Environmental Programs (TEPs) to alter Environmental Authorities to allow release of contaminated waters into waterways using a 'solution is dilution' approach.



Rolleston Mine to expand into Strategic Cropping Lands



Xstrata's Rolleston Mine Lease between a National Park and a State Forest



Mine Rehabilitation: Central Queensland





Permanent Void

