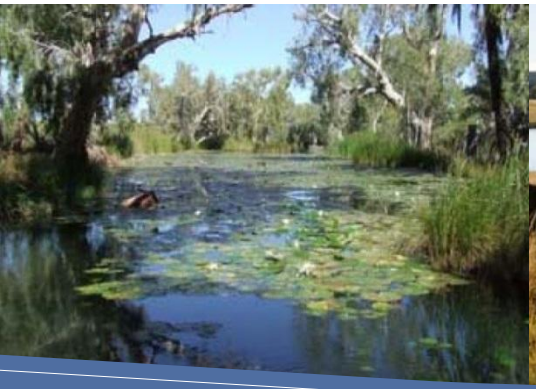
Australian Government

BIOREGIONAL
ASSESSMENTS

Providing scientific water resource information associated with coal seam gas and large coal mines



Office of Water Science

Meeting with AGL – 1 August 2013

A scientific collaboration between the Department of Sustainability, Environment, Water, Population and Communities; Bureau of Meteorology; CSIRO Water for a Healthy Country Flagship; and Geoscience Australia

Purpose of this meeting

- Provide an overview of bioregional assessments
  - Context of the program
  - Where will bioregional assessments be undertaken
  - What are bioregional assessments
  - What has been done to-date
  - Methodology for undertaking bioregional assessments

Program Overview

- Produce bioregional assessments for six priority regions by 30 June 2016, to underpin advice from the IESC and decision making by regulators on development proposals.
- Deliver knowledge and information products incrementally to build confidence, transparency and community understanding.
- Build an enduring capacity to produce assessments into the future.

Context for bioregional assessments

- Recognised need for better baseline information
- Legislation– amendments to the *Environment Protection and Biodiversity Conservation Act 1999*
- Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining (IESC) and Office of Water Science (OWS)
    - OWS and IESC are not regulators

Bioregional Assessment

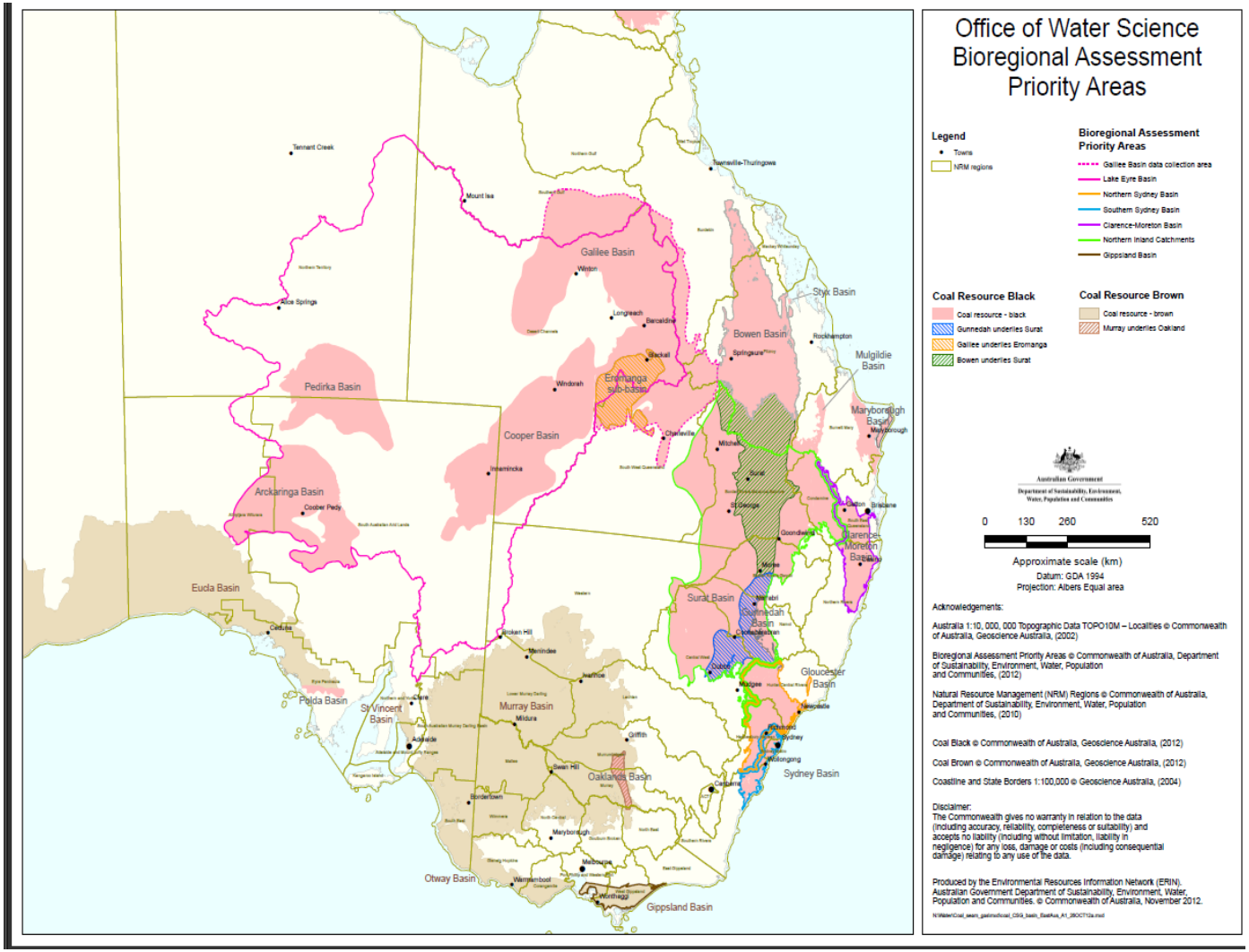
a scientific analysis of ecology, hydrology, geology and hydrogeology of a bioregion with explicit assessment of potential direct, indirect and cumulative impacts of coal seam gas and coal mining development on water resources

Focus to date

- Bioregional Assessment Methodology
- NRM assets data collection
- Consortium - Office of Water Science, Bureau of Meteorology, CSIRO and Geoscience Australia
- Information platform
- Research projects

Bioregional Assessment Methodology

- Generic best practice approach
- Transparent and publically available products – released over duration of assessment
- Products expected to be enduring ie able to be repeated over time
- Availability of data and models define what can be undertaken and quantified
- Products will come from current and new data sources


Office of Water Science
Bioregional Assessment
Priority Areas
Legend
Towns
NRM regions
Bioregional Assessment
Priority Areas
Galilee Basin data collection area
Lake Eyre Basin
Northern Sydney Basin
Southern Sydney Basin
Clarence-Moreton Basin
Northern Inland Catchments
Gippsland Basin
Coal Resource Black
Coal resource - black
Gunnedah underlies Surat
Galilee underlies Eromanga
Bowen underlies Surat
Coal Resource Brown
Coal resource - brown
Murray underlies Oakland
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Department of Sustainability, Environment, Water, Population and Communities
0 130 260 520
Approximate scale (km)
Datum: GDA 1994
Projection: Albers Equal area
Acknowledgements:
Australia 1:10, 000, 000 Topographic Data TOPO10M – Localities © Commonwealth of Australia, Geoscience Australia, (2002)
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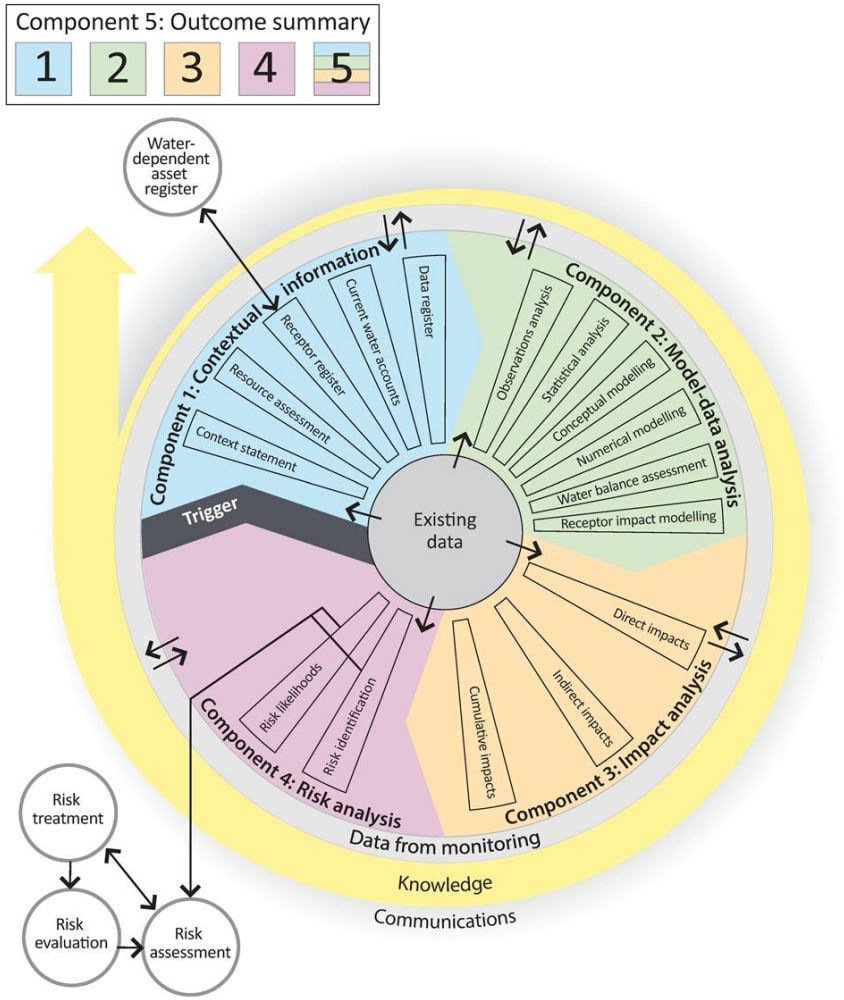
Galilee Basin
Styx Basin
Bowen Basin
Mulgildie Basin
Maryborough Basin
Pedirka Basin
Cooper Basin
Eromanga sub-basin
Arckaringa Basin
Eucla Basin
Surat Basin
Gunnedah Basin
Clarence-Moreton Basin
Gloucester Basin
Sydney Basin
Murray Basin
Polda Basin
St Vincent Basin
Oaklands Basin
Otway Basin
Gippsland Basin

Receptors

Water-dependent assets

Receptors

Bioregional Assessment Methodology



Materiality

- ‘Concept of Materiality’ – potential impacts on receptors that are identified as important based on spatial relationships such as scale, proximity and connectivity
- Other filters – stakeholder agreed sub-setting, aggregating and removing of non-materially affected assets and receptors

Uncertainty analyses are integral

- ‘Single number’ assessments of impacts will always be contested by parties with opposing interests.
  - Incorporate levels of certainty in model output and their impacts.
- Decisions made on scientific advice require some measure of certainty associated with this advice.
- Accuracy and precision of data and model predictions is required at all levels of analysis and reporting
- Advice on the relative uncertainties and costs of reducing uncertainties to prioritise monitoring/sampling programs is required

Your thoughts or questions?

Department of Sustainability, Environment, Water, Population and Communities

w www.environment.gov.au/coal-seam-gas-mining/

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Bureau of Meteorology

Geoscience Australia

CSIRO