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**Department of Sustainability, Environment,
Water, Population and Communities**



AgForce/GFCQ Water Day Bioregional Assessments

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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** including any impacts associated with salt production/salinity



Program Overview

- Six priority areas - 2016
 - Underpin advice to IESC
 - Deliver knowledge and Information Products
 - Build an enduring capacity
 - Achievable within timeframe and budget
-
- OWS and IESC are not regulators**



Principles of BA methodology

- Provides scientific advice on likelihood of direct, indirect and cumulative impacts on receptors.
- Use coupled, hydrogeology/surface hydrology/ecological impact modelling where possible
- Where quantitative methods are not feasible, semi-quantitative and qualitative methods will be substituted
- Multiple lines of evidence provides scientific advice on impacts and risks to assets and receptors
- Decisions and scientific judgement will be recorded and made transparent in the reporting process



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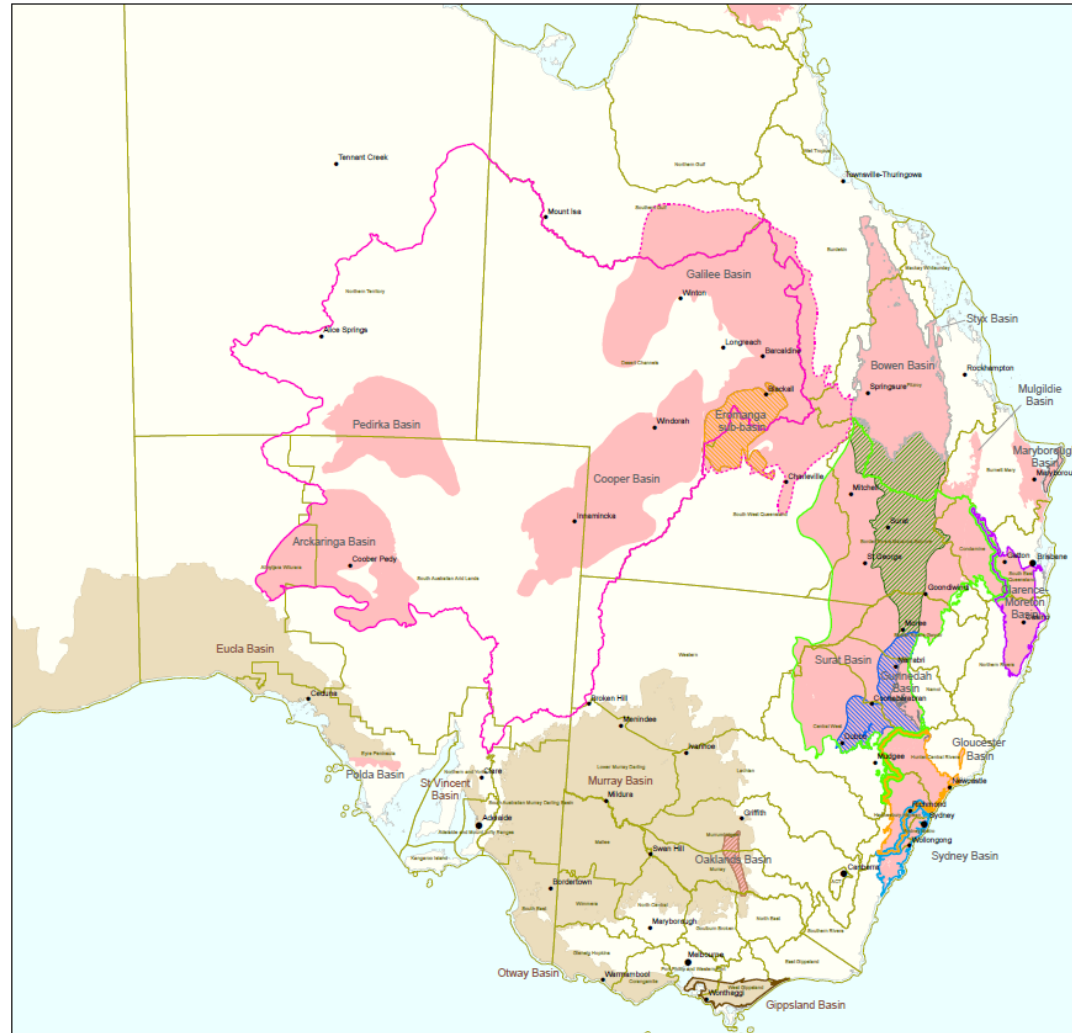
Receptors

Water-dependent assets



Receptors



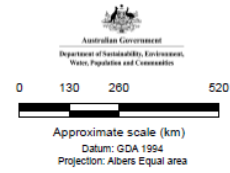


Office of Water Science Bioregional Assessment Priority Areas

- Legend**
- Towns
 - NRM regions
 - 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



Acknowledgements:
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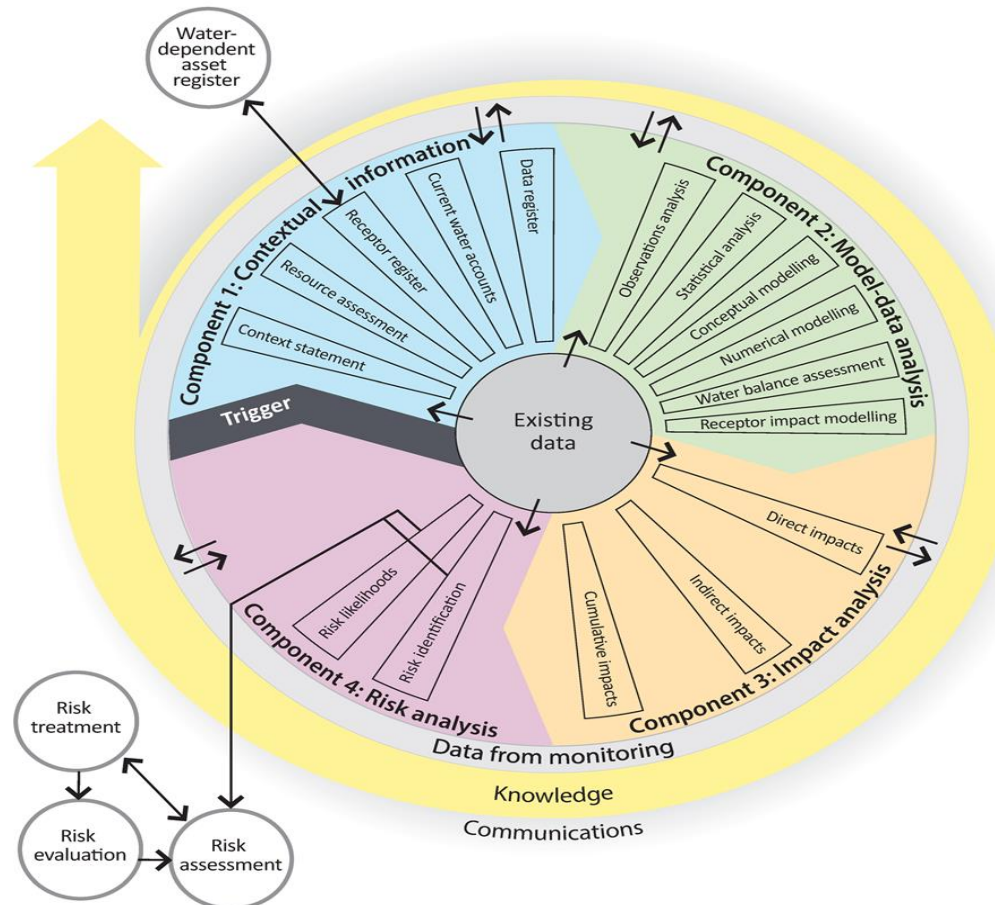
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Methodology for Bioregional Assessments (BRAM)





Bioregional Assessment Outputs

- Scientific advice** - likelihood of direct, indirect and cumulative impacts on anthropogenic and ecological receptors
- Conceptual modelling** - causal pathways connecting depressurisation/dewatering of coal seams at depth with impacts on receptors
- Quantitative, semi-quantitative and qualitative **model outputs**
- Extent and nature of impacts** from development
- Measures of confidence of** impacts on receptors
- Advice on the **likelihood of risks to receptors**
- Recommendations on **monitoring programs, review frequency** of future Bioregional Assessments, the nature and type of **additional risk assessment** studies and approaches to risk mitigation for minimising significant impacts.



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Your thoughts on ways to engage ?

