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Climate Services Delivery in Australia

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WMO RA-V Seminar on Climate Services
Honiara, Solomon Islands, 1-4 November 2011

Outline

- Climate Information Services (CIS)
 - Our vision
 - Our customers
 - Our structures and their functions
 - Data Management
 - Data Service Delivery
 - Monitoring
 - Prediction





Climate Information Services: Vision

- *To provide Australians with high quality climate information to enable better decisions on safety, sustainability, well-being and prosperity*



Our customers

- Ministers
- 'Parent' Departments
- Other Government agencies, e.g. Dep. Agriculture Fisheries and Forestry, Dep. Resources, Energy and Tourism, AusAID, State - particularly agriculture/NRM/environment, Defence
- Researchers and climate science generally
- Sectors: Primary industries, Emergency services, Health, Insurance, Planning and Infrastructure, Finance, Energy, Marine, Mining
- International, including the World Meteorological Organization
- Education
- General public, including through the media





Climate Data Management

- Manages the national climate record - Australia's best environmental database
- Automated and manual data entry
- Archives and records management
- Quality Monitoring System
- Liaison with Observations Program



Climate Data Management: Quality Monitoring System



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Climate Data Management: Historical records

A
COLONY OF VICTORIA
METEOROLOGICAL OBSERVATORY at Gabo Island
the 19th of August and the 23rd of August 1863.

Mean Time.	Barometer.		Thermometer in Shade.		Pressure of Vapour.	Relative Humidity.	Dew Point Instrument.			Temperature of Surface Soil.	Wind.		Hours of Fog A Rain B Snow C Hail D Dew T	Clouds.		Amount of Rain.	Spon. Evap.	
	Reading.	Thermometer.	Dry.	Wet.			Temperature of Air.	Temperature of Condensation.	Temperature of Evaporation.		Direction.	Force.		Form.	Direction.			Amount of Clouds.
Midnight																		
3																		
6																		
9	29.828	50.5	50.1	50.0														
3	29.840	50.7	50.2	50.4						W 38 W	1	B 1						
6															7	.03		
9	29.830	50.5	40.9	40.0						W 38 W	4			6				
	29.826	50.5	40.9	40.0						West	4			2				
	55.7		50.7	50.0														
Midnight																		
3																		
6																		
9	29.970	50.2	50.5	50.2														
3	29.922	50.6	50.2	50.2						West	4	B 3						
6																		
9	29.974	50.5	50.1	50.2						W 38 W	4			6	.14			
	29.961	50.5	50.1	50.2														

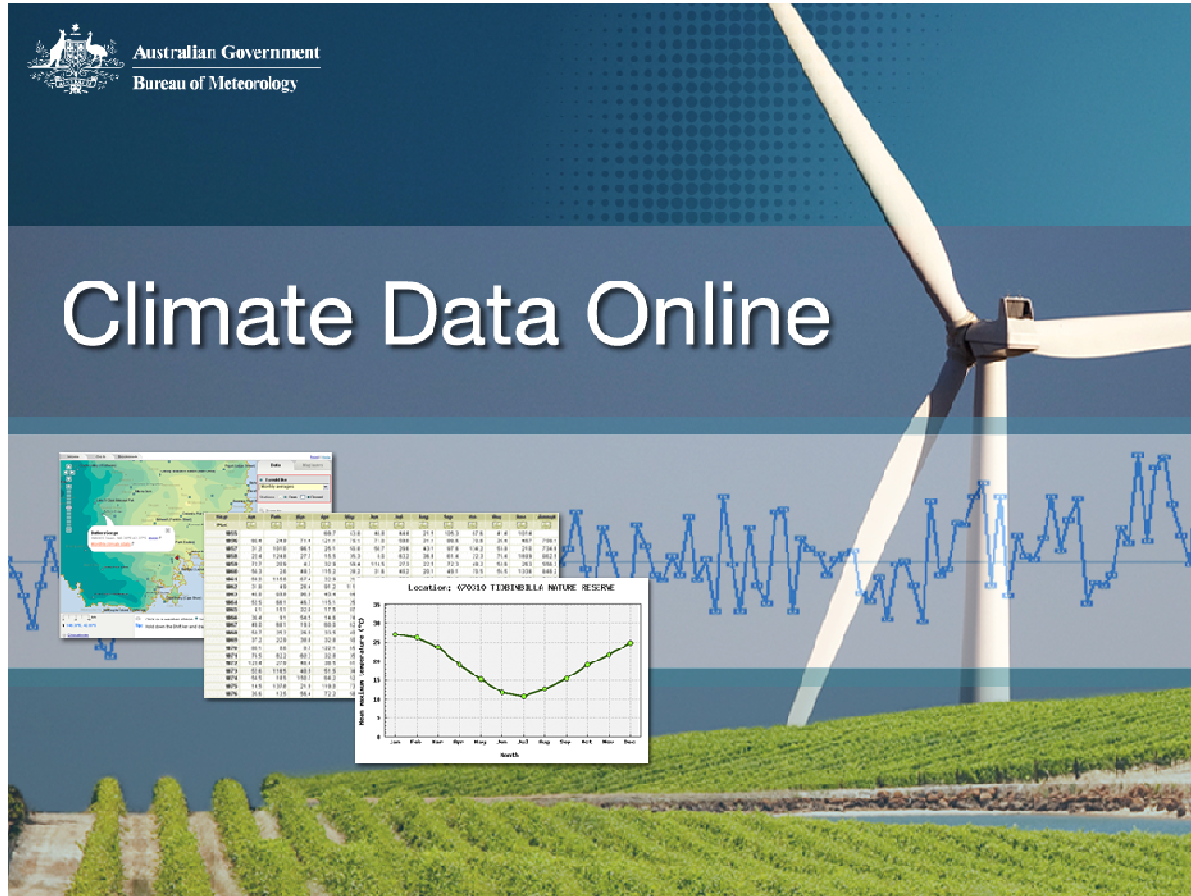


Climate Data Services

- Climate data provision
 - Climate Data Online (CDO) growing
 - Requests through phone calls, emails, website, etc
- Climate publications
- Growing ocean climate and hydrometeorology services
- Developing customer relationship management capability and online payment
- Focus around working with stakeholders to provide solutions to user problems



Climate Data Online





Climate Monitoring Services

- National climate watch – routine summaries, drought, special climate statements, etc
- National and regional climate statements
- Maintain high-quality reference climate datasets suitable for the analysis of climate change over Australia
- Climate change tracker
http://www.bom.gov.au/climate/change/aus_cvac.shtml
- International, e.g.
 - Contribute to global climate monitoring through the WMO
 - Pacific climate projects

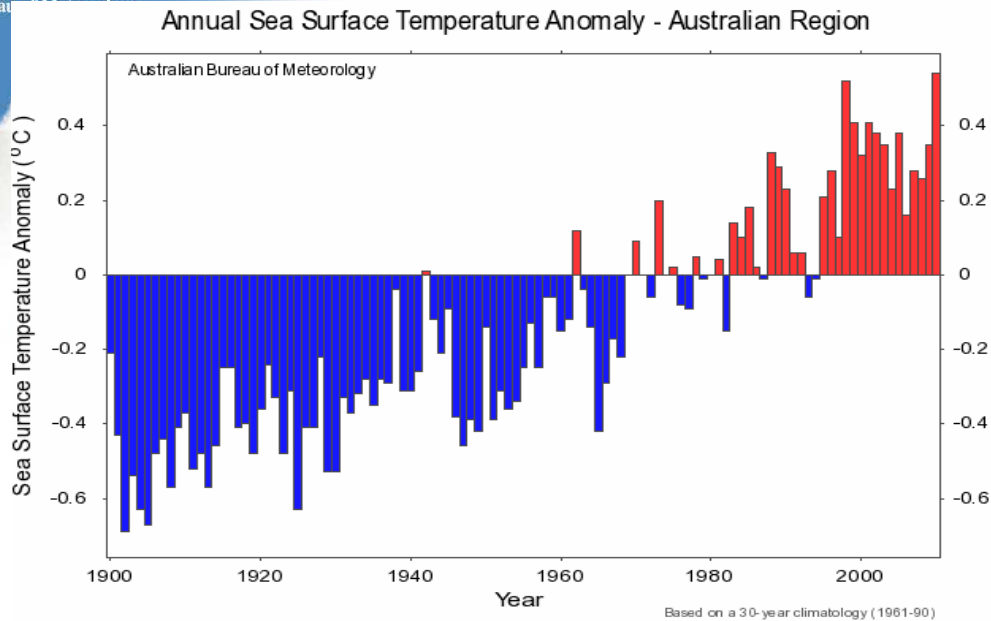




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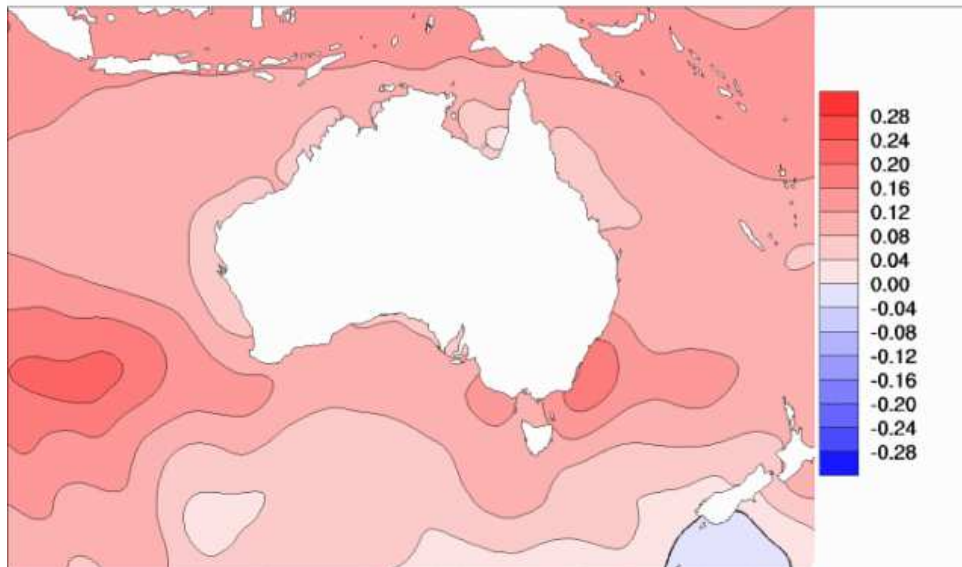
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Sea Surface Temperature Trends



- Sea Surface Temperature Increases are consistent with warming over the land surface.

- Noting that the instrumentation associated with ocean monitoring is very different to those on the land.



- Strongest warming trends are in the Tasman Sea and Indian Ocean

- Total warming in these areas has reached up to 1°C since 1900

Climate Prediction Services

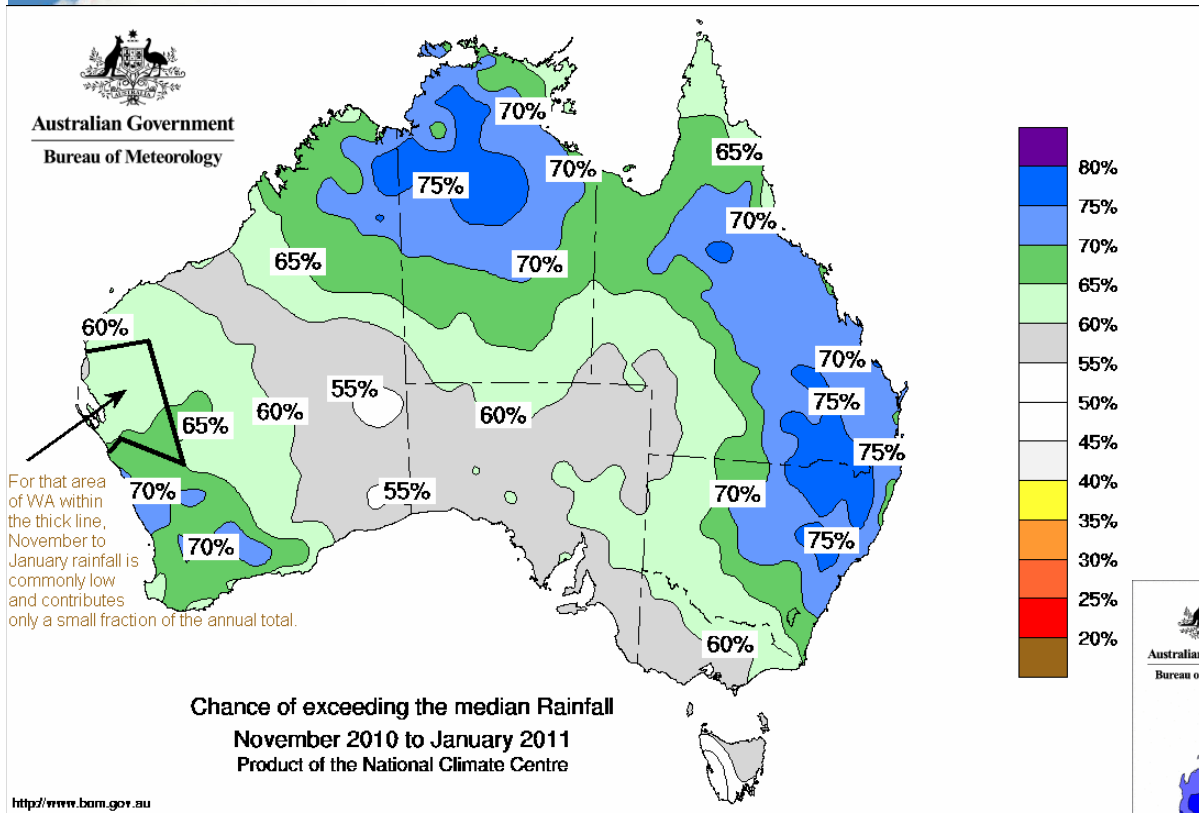
- Seasonal climate outlook service
 - Rainfall, temperature, tropical cyclones
 - ENSO wrap-up
 - Upgrade
 - From statistical to dynamic model (POAMA)
 - Based on stakeholder needs
- Developing forecasts on intraseasonal ('weeks') timescale
- Integrating with seasonal streamflow forecasts
- International, including Pacific seasonal forecast system





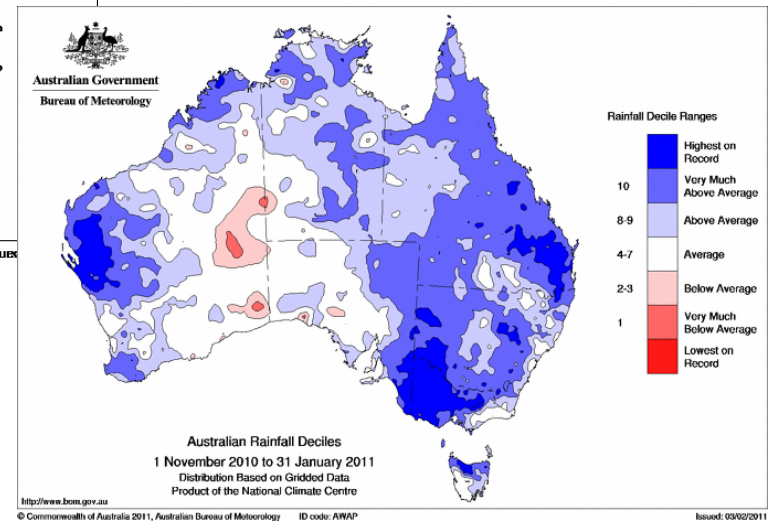
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Recent extreme wet and forecast



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Forecast: Nov 2010 to Jan 2011



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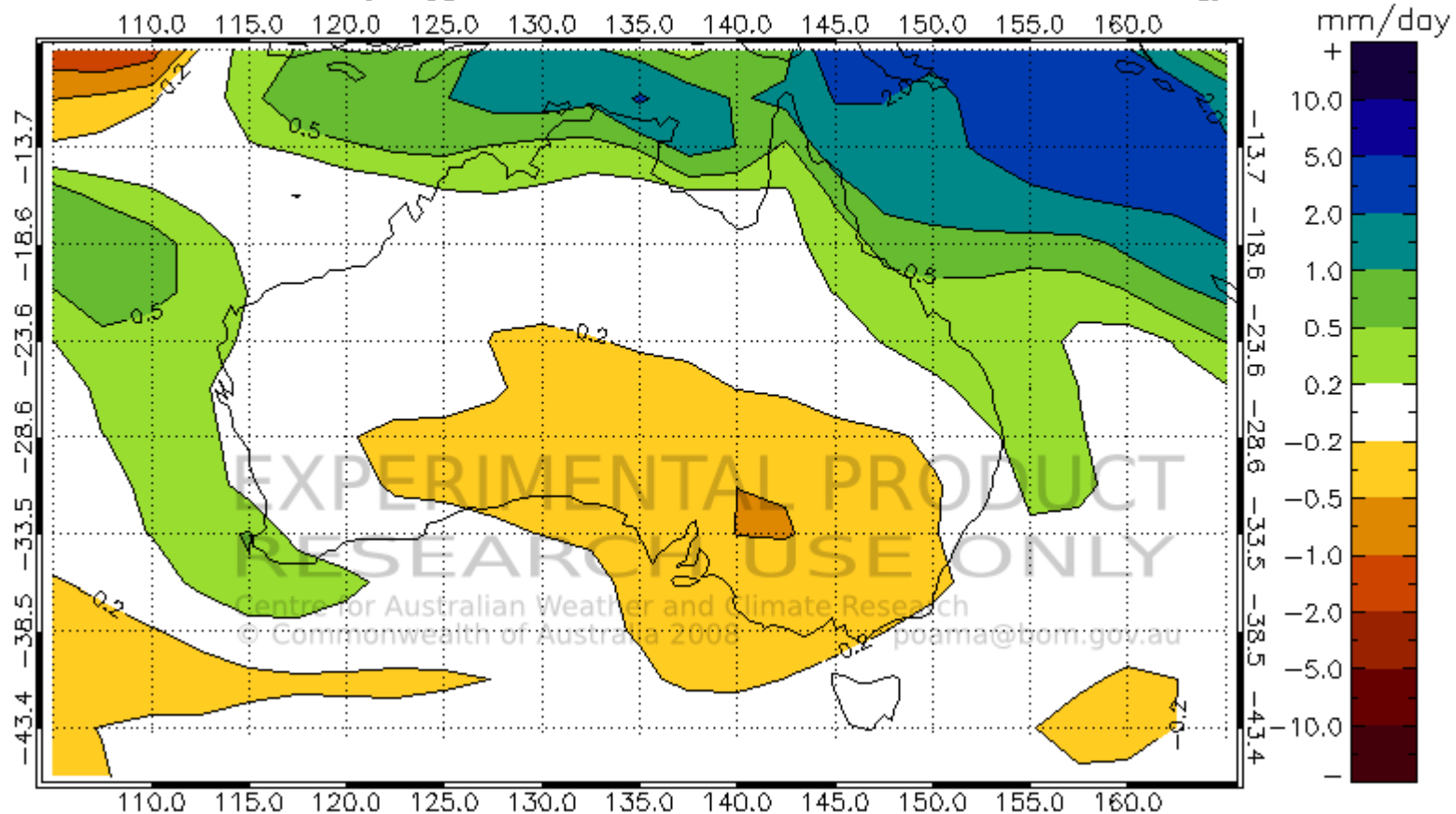
Issue: 03/02/2011

Observed: Nov 2010 to Jan 2011



Rainfall Outlook: April to June 2011

POAMA 1.5 AMJ 2011 Mean 24 hour rainfall anomaly. 20110327 forecast.
1 month lead, 30 day lagged ensemble mean. 1980–2006 model climatology.



Climate Liaison

- Enhance stakeholder engagement
- High level advice, e.g.
 - Monthly climate briefings for key Canberra stakeholders
 - Parliamentary briefings
 - Senate Estimates
- Secretariat for Australian Climate Information Advisory Council
- Program planning and coordination, including for the Regional Climate Services Centres and for cross-cutting activities





Regional Climate Services Centres

- Regional climate expertise on climate data, monitoring and prediction
- Based in each State capital and Darwin
- Progressing to three person centres except where a centre extends services beyond its state/territory, e.g.
 - A greater data provision role
 - Special climate monitoring or prediction role
- Potential future focus on services for key regional vulnerabilities



Our key partners

- Communication and Adoption Section
- Climate and Water IT Branch
- CAWCR
- Extended Hydrological Prediction Services
- National Meteorological and Oceanographic Centre
- Observations and Engineering Branch
- World Meteorological Organization and overseas National Meteorological and Hydrological Services



True Service model

- Not just about pushing out products
- To really “go the extra mile” and improve the decision making capability of users, need to build ongoing interactions and relationships
- Encourage users to assess their decision making and where climate information is a factor.
- Work with us to deliver solutions to their climate problems.
- Challenge of funding models to deliver these benefits.





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Thank you

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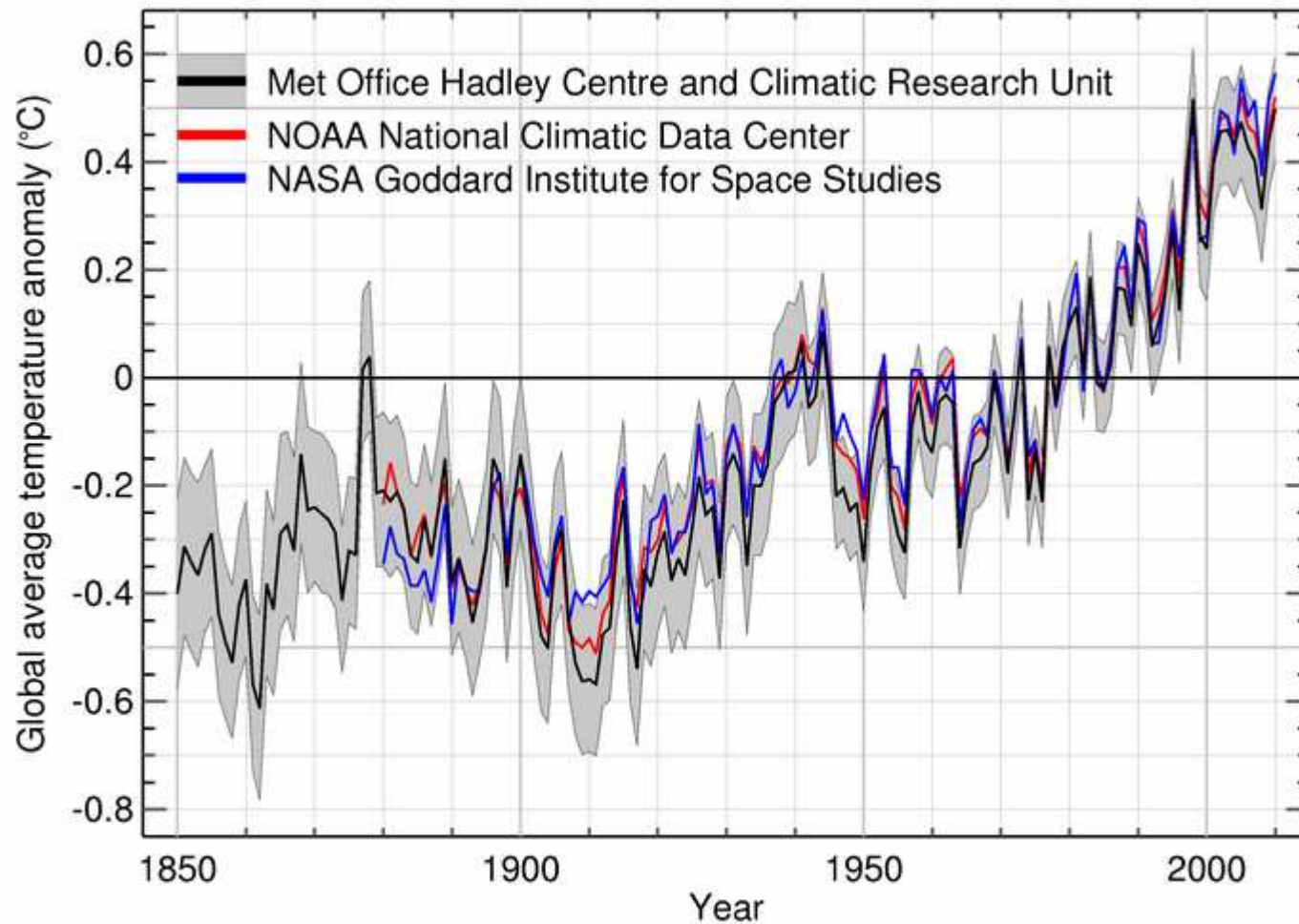
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Global average annual mean surface temperature anomalies.



Reference period: 1961 – 1990