

PROGRAMS OF THE BUREAU OF METEOROLOGY

The Bureau of Meteorology program structure derives from its four basic missions and objectives and involves (see Figure 7 and Appendix 3):

- four Basic Output Sub-programs (Monitoring, Research, Services and International) corresponding to its four basic missions and basic output objectives (Climate Record, Scientific Understanding, Community Welfare and International Cooperation);
- eight Sub-programs (Monitoring and Prediction, Scientific Development, Weather Services, Climate Services, Consultative Services, Hydrological Services, International Activities and Corporate Activities) which result from combining a range of functionally related technical activities with the Monitoring and Research Sub-programs, subdividing the Services Sub-program according to the nature of the service and adding a Corporate Activities Sub-program which supports all Bureau programs and outputs; and
- twenty-eight Component Programs based on a sub-division of the eight Sub-programs by function, user or outcome as appropriate for planning and management purposes.

The objectives and brief descriptions of the eight Sub-programs follow.

Monitoring and Prediction

Objectives: To provide, operate and maintain the basic observation, communications and data processing systems necessary to maintain a round-the-clock nationwide weather watch and to meet present and

future national and international needs for raw and processed meteorological data.

Description: The basic observation, communications and data processing systems which make up the core of this program provide the common foundation on which virtually all the research, services and international functions of the Bureau of Meteorology depend. The observation system includes a Bureau-staffed surface and upper air network of 50 stations, a surface network of some 790 synoptic observation stations, a 6000-strong volunteer rainfall network and a range of other specialised networks and facilities such as radars and satellites. The communications system consists of an integrated network of satellite, radio, telegraph, facsimile and computer facilities for data collection and forecast and warning dissemination. The major analysis and prediction centres are the National Meteorological Operations Centre in Melbourne and the seven Regional Forecasting Centres, one in each State and the Northern Territory. The Monitoring and Prediction Program includes also the engineering, workshop and computing facilities which support and maintain the data collection and processing systems in the Bureau Head Office and the Regions.

Scientific Development

Objectives: To advance the science of meteorology, develop an integrated, comprehensive description and scientific understanding of Australia's weather and climate, develop the application of meteorology in the national interest and improve the operations and services of the Bureau.

Description: The Scientific Development

Program includes both research undertaken in fulfilment of the Bureau's responsibilities, as a national research agency, to contribute to the advancement of meteorological science in Australia, and the research and associated scientific development activities that provide essential internal support to the monitoring, service and international objectives of the Bureau. The main research activities are carried out by the Bureau of Meteorology Research Centre in collaboration with the operational areas of the Bureau.

Weather Services

Objectives: To meet the needs of the general public and specialised users for relevant, accurate and timely weather data, information, forecast and warning services.

Description: The Weather Services Program encompasses the provision of a wide range of forecast, warning and information services to the general public through the mass media, along with services for national and international shipping and aviation, the Department of Defence and other users. It consists of six individual components:

- Severe Weather Warning Services;
- Public Weather Services;
- Marine Weather Services;
- Aviation Weather Services;
- Defence Weather Services; and
- Special Weather Services.

These are based on the data and products produced on a round-the-clock basis by the National Meteorological Operations Centre and the seven Regional Forecasting Centres as part of the Monitoring and Prediction Program.

Climate Services

Objectives: To meet the present and future needs of the general public and specialised users for reliable, responsive climate data, information, monitoring, prediction and advisory services.

Description: The Climate Services Program involves the provision of climatic data and advice to the general public and a wide range of specialist users. Long-term climatic data, obtained from the basic and special observational networks and stored in the National Meteorological Data Bank, are published in the form of climatic summaries and atlases and made available in both hard copy and computer-compatible form for use in research, design and application to all walks of life. The climate services also include the month-to-month and year-to-year monitoring of major climate anomalies such as droughts and floods and, to the extent possible, the prediction of climatic fluctuations likely to affect agriculture and other sectors of the economy.

Consultative Services

Objectives: To meet the need for effective application of meteorological information and expertise in the national interest through the provision of consultative services to specialised users.

Description: The Consultative Services Program includes the provision of advice and the conduct of investigations involving the application of meteorology to such fields as agriculture, engineering, architecture, health, tourism, urban planning and design. Services are provided to Government and private users, on a public interest, cost recovery or commercial basis, as appropriate. The services are coordinated by the Bureau Head Office in Melbourne but draw on data and expertise from throughout the Bureau. Most services are provided at the State level.

Hydrological Services

Objectives: To provide an effective national source of hydrological and hydrometeorological data and advice and to meet the

needs of the general public, emergency services and other specialised users for effective, reliable flood warning services.

Description: The Hydrological Services Program encompasses water resources assessment, hydrometeorological advice for design, and other aspects of operational hydrology including, in particular, the provision of flood warning and forecasting services. The Bureau's hydrological services depend heavily on the basic national meteorological observation networks. The flood warning service involves the integrated processing of meteorological and hydrological data. Flood Warning Centres operate in all Regional Offices of the Bureau.

International Activities

Objectives: To meet Australia's international obligations, advance Australia's interests and support the operations and services of the Bureau through participation in international meteorology.

Description: The International Activities Program encompasses both Australia's involvement in the programs and activities of the World Meteorological Organization (WMO) and in a range of other multilateral and bilateral activities with neighbouring countries in the SW Pacific and SE Asia. Australia is particularly active in the WMO through the operation of one of the three World Meteorological Centres of the WMO World Weather Watch Programme. Bilateral arrangements exist with China, India, Indonesia, Japan, Papua New Guinea, the Republic of Korea, the Russian Federation, Saudi Arabia and the Socialist Republic of Vietnam, in particular. A fundamental principle embodied in the Convention and traditions of WMO is that of voluntary contribution to the total international system and the free exchange of essential data and products between the National Meteorological and Hydrological

Services of all countries. Australia benefits greatly under this system, particularly through free access to the meteorological satellite data of Japan, the USA, China, India, the Russian Federation and Europe.

Corporate Activities

Objectives: To provide efficient, responsive internal management services and overall internal and external program coordination and communication to support the good management and effective operation of the other Sub-programs of the Bureau.

Description: The Corporate Activities Program includes four components: the largest is the Management Services Program which provides Bureau-specific management services (personnel, finance, supply, property and works, industrial, legal, health and safety) via units located in the Head Office and each Regional Office. An Executive Management Program includes the Bureau's Executive and Regional Directors and their immediate support staff along with the Bureau's corporate planning and coordination functions. A small Public Education Program supports the various output Programs through development of public information and educational material on the role of the Bureau and on the effective application of meteorological services. The Bureau of Meteorology Training Centre, which includes the National Meteorological Library, is responsible for the Training Program. It meets the specialist in-house training and staff development needs of the Bureau in collaboration with relevant tertiary education institutions and provides operational meteorological training to Defence, aviation and other external personnel, including approved overseas students under the auspices of relevant international programs.