

### **Portfolio or Agency mission/charter**

The Department of Agriculture, Fisheries and Forestry (DAFF) is the Australian Government Department responsible for agriculture, fisheries, forestry and food. DAFF's mission is to increase the profitability, competitiveness and sustainability of Australian agriculture, fisheries, forestry and food industries and enhance the natural resource base to achieve greater national wealth and stronger rural and regional communities.

### **Key objective/s with respect to space-related activity**

To enhance the natural resource base on which our portfolio industries rely, by

- developing national initiatives to address issues of sustainable resources management and use; and
- conducting research to build an information base and encourage information-sharing.

Space-related activities, principally remote sensing, enable the development of methods for more cost efficient collection and use of natural resources information. Remotely sensed data products (such as AVHRR NDVI) are also used to produce spatially explicit information on regions affected by Exceptional Circumstances (particularly drought).

### **Current space-related activities/responsibilities**

- Research projects (see list below);
- Development of spatially explicit data sets for natural resources management.

### **Space-related research projects**

- MODIS active fire or thermal anomalies data, in conjunction with rainfall pattern data, were used to estimate the extent and distribution of planned and unplanned fires in Australian forests for the Australia's State of the Forests Report 2008.
- The interim native vegetation extent dataset (AusVeg 2004) has been compiled from datasets supplied by state and territory agencies derived from Landsat TM data.
- Use of sea surface temperature data from NOAA AVHRR is used to predict the maximum potential range of marine invasive species, based on known or estimated temperature tolerances at various life stages.
- SPOT 5 and QuickBird is increasingly being used by State agencies to update catchment-scale land use, whilst NOAA AVHRR has been used to update the 2005-06 national-scale land use.

- NOAA AVHRR time series data is used for the assessment of Exceptional Circumstances drought applications and reviews.
- MODIS NBAR data, processed into fractional cover, is currently being used to model wind and water erosion. Field validation is being undertaken by State agencies in collaboration with BRS. Algorithm development will be undertaken by CSIRO and Geoscience Australia.
- MODIS EVI data archive has been used to produce dynamic land cover products, in collaboration with Geoscience Australia.

### **Recent major achievements**

- Update of national scale land use maps using NOAA AVHRR data and the 2005-06 agricultural census data from the Australian Bureau of Statistics.
- Dynamic land cover map, produced for period 2000-08, allows investigation of trends and changes in land cover over time.
- Analysis of MODIS time-series on thermal anomalies has shown 88% of the occurrences of all fires in Australia's forest are unplanned.

### **Publicly available information on portfolio/agency budgets and expenditure on space-related activity**

DAFF space-related research/data set development 2009-10

### **Space-related legislation administered by portfolio/agency**

None

### **International space-related agreements**

None

### **Portfolio/Agency involvement in other space-related agreement/arrangements**

None

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