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MANAGING RISK – DELIVERING FIRE INFORMATION TO REMOTE AREAS

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INTRODUCTION

Although many pastoralists use the Department of Land Information's (DLI) Satellite Remote Sensing Services (SRSS) website (<http://www.dli.wa.gov.au/corporate.nsf/web/Fire+Hotspots>) to view the fire hotspot information from the NOAA satellites, slow connection speeds and high access costs have previously limited the type of information and services that can be provided over the Internet. Fire information is most valuable when it is viewed in near real time. SRSS decided that providing an automated fax service would reach a greater number of pastoralists and be cost effective to both SRSS and the end user. Feedback received by SRSS at the end of 2002 showed that many pastoralists were looking at broadband access to the Internet. During 2003 an email service was offered, with colour and a higher resolution, as an option to the original fax service.

DATA

The fire hotspot locations used in the automated fax and email service are automatically produced each morning on a UNIX workstation at SRSS. The locations are calculated using an algorithm that is based on Lee and Tag (1990) with ideas taken from Flasse and Ceccato (1996). The data used are from the Advanced Very High Resolution Radiometer (AVHRR) sensor onboard the National Oceanic and Atmospheric Administration (NOAA) polar orbiting satellites. The data are made available to SRSS through its membership of the Western Australian Satellite Technology and Applications Consortium (WASTAC). Data are collated from both NOAA-16 (passes over at approximately 02:00 WST) and NOAA-12 (passes over at approximately 04:30 WST).

METHODOLOGY

All 1:250000 map sheets for WA and NT have been converted to ERMMapper format. The map sheets are used as the backdrop for each client's region of interest (ROI). The fire hotspot locations are in latitude/longitude format as a text file. A program was written in IDL (Interactive Data Language) to combine these two datasets. The program produces images in two formats; GIF format for the fax software, RightFax, and JPEG format for the email software, mpack. This program runs every morning at 8:00 and the faxes and emails are sent out at 8:30. The status of the faxes is checked at about 9:30 and any that may have failed (usually due to the client's fax machine not being turned on) are resent. The GIF images are black and white and the fire hotspots are marked with a black square. The JPEG images are coloured and the fire hotspots are marked with a red square. A registration form was sent to pastoral stations and government agencies with interests in the pastoral region. Each station or agency that returned the form was contacted by phone and then sent a test fax or email of their ROI. If the test was satisfactory, the pastoralist's details were added to the automated system.

FUTURE DEVELOPMENTS

Later this year we hope to introduce an afternoon service (at about 1:30) using the fire hotspot locations detected on the Moderate Resolution Imaging Spectroradiometer (MODIS) sensor onboard the Terra satellite. Next year clients will be given the option of having ArcView shapefiles mailed to them. This would allow them to use the fire hotspot locations in ArcView GIS and ArcExplorer and build a history of fire hotspot activity on their property.

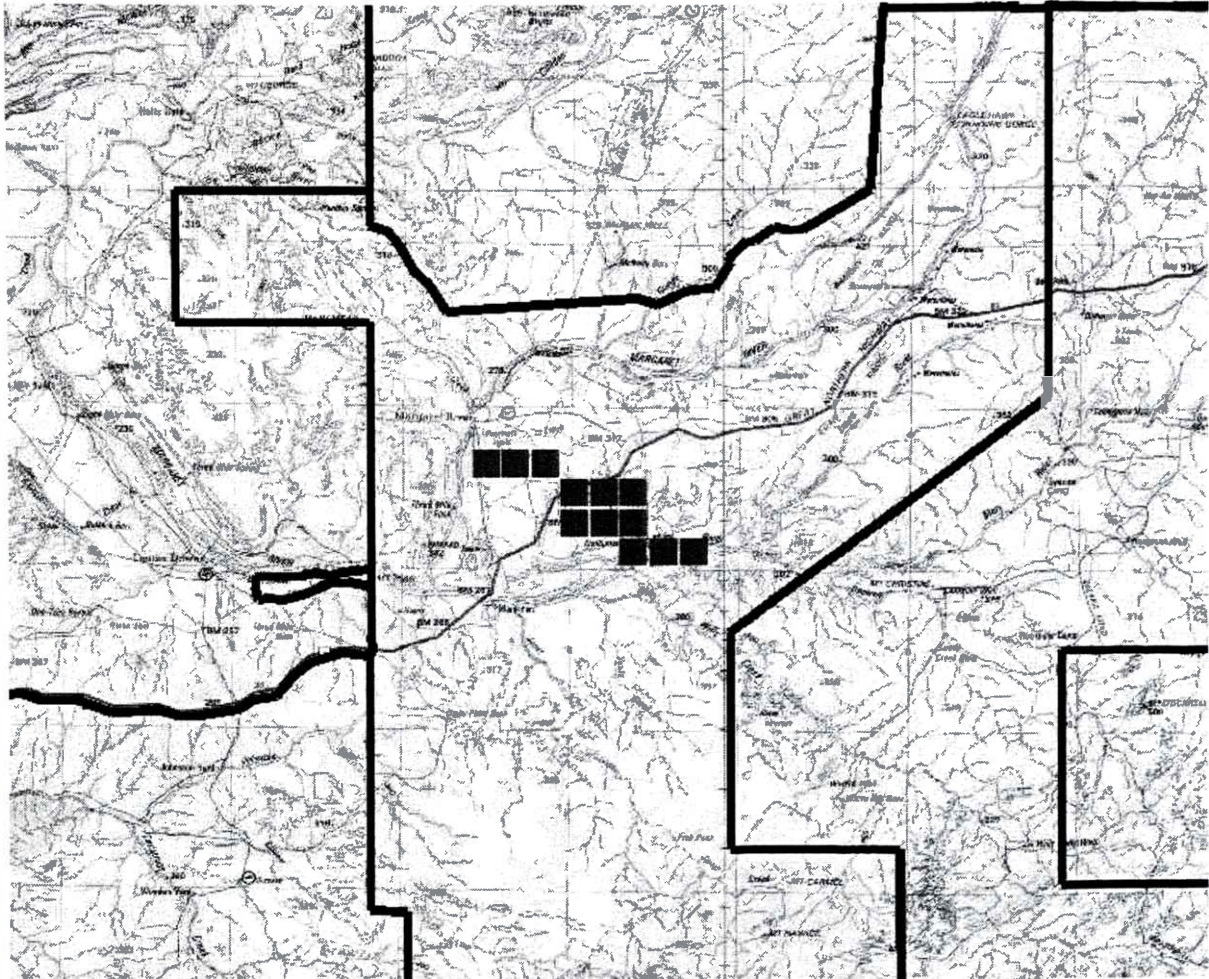


Figure 1. Sample fire hotspot email product.

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