

# SAFNet

## Southern African Fire Network

The southern African Fire Network is a regional network that fosters collaborative efforts in fire monitoring and management in southern Africa. SAFNet is a GOFCC-GOLD regional fire network.



### The SAFNet Mission

SAFNet's **goal** is to achieve more effective and appropriate fire management policies & practices in southern Africa through the use of remote sensing and other geospatial information technology.

SAFNet's **purpose** is to enhance the use of information from field observations and remote sensing of fires for natural resource management in southern Africa.

### What does SAFNet do?

- Promotes the use of validated remote sensing & geospatial information in southern Africa.
- Facilitates fire-related natural resource management at regional, national and community levels.
- Provides a forum for informed communication on fire related issues within the region.
- Communicates regional fire needs at the international level (via GOFCC).
- Collates and disseminates regional fire information, data and best practices for field observations.
- Links with existing fire and other appropriate networks.

### Who is involved in SAFNET?

Current membership of SAFNet is drawn from managers of national parks, government forest fire sectors, regional NGOs, community based organizations independent consultants, university and research bodies in southern Africa. A strong international link for instance, through GOFCC-GOLD provides exposure to existing international data archives, new technologies and external expertise in fire issues.

### Why is SAFNet important?

Fire is prevalent throughout southern Africa, with local to regional impacts on land use, productivity, carrying capacity and biodiversity. Fire also causes regional to global impacts on hydrologic, biogeochemical, and atmospheric processes. These impacts are not well understood and are complicated by rapid and substantial social, economic, and environmental changes across southern Africa.

Fire occurs due to lightning and because of people. Humans have exercised significant control over fire regimes in southern Africa for at least 10,000 years. Fire has been used as a management tool - in hunting, pasture management and crop production. Uncontrolled fire can damage natural resources, which can have devastating effects when followed by periods of low rainfall. Wild fires contribute a significant amount of greenhouse gases into the atmosphere, contributing to global change.

To promote positive, and avoid negative impacts, fire needs to be managed wisely. This in turn requires access to reliable information on fire. Much of this information can be provided by field observations and remote sensing technology. To maximize the use of this information requires strong links between the data providers and data users. SAFNet aims to strengthen these links to promote proactive fire management in southern Africa.

### How can SAFNet have an impact?

SAFNet generates data that is useful for:

- The early detection of fires in situations that could endanger livelihoods or destroy precious natural resources
- Mapping and quantifying areas affected by fires as inputs to fire management policy
- Integrating research on community land use practices with fire information to reduce the negative impact of anthropogenic fires
- Providing data for validation of satellite sensors
- Contributing to National Environmental Action Plans
- Facilitating proactive fire management in community organizations, forested areas and wildlife reserves
- Improving the quality of estimates of greenhouse gas emissions from vegetation fire

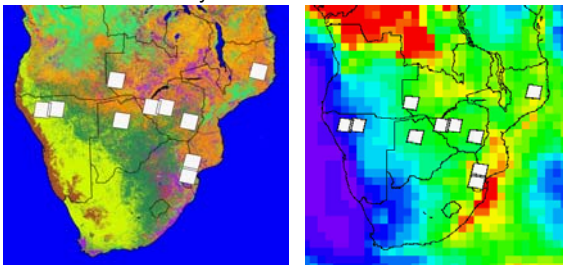


## How does SAFNet operate?

SAFNet is currently coordinated by Dr Pauline Dube at the University of Botswana. SAFNet was initiated using small seed funding grants from NASA, USAID (EMIS and GISD) and START. Future collaboration with partners and funding agents is being sought.

SAFNet evaluates new and existing fire management technologies through research projects with partner organizations. SAFNet is validating MODIS active fire and burned area products in partnership with the University of Maryland and NASA. The network has begun to assess and demonstrate the use of these products in operational fire management.

2000 SAFNet validation sites, Landsat ETM+ path/rows distributed from dry savanna to wet miombo woodland



MODIS 1km land cover product

2000 annual precipitation  
(blue < 300mm, red > 1500mm)

SAFNet also manages a project on Climate Change and Wildfires in the Limpopo Basin.

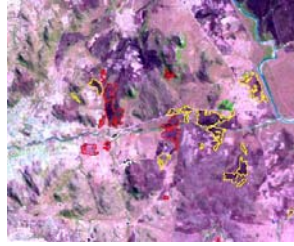
SAFNet builds capacity through research, sharing information, joint activities and training.

SAFNet members are involved in fire-related natural resource management in six southern African countries in national parks, private game reserves, state forests, communal and commercial farming areas.

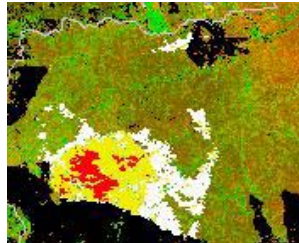


**Wildfires in Botswana destroy veld products such as thatching grass - an important source of income for rural communities in the dry season.**

## Early Results from SAFNet Research

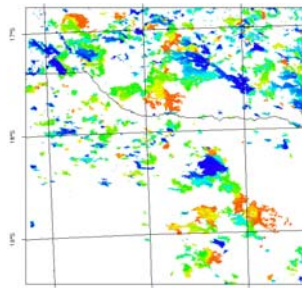


Fire scar validation using Landsat satellite data in Kruger National Park, South Africa

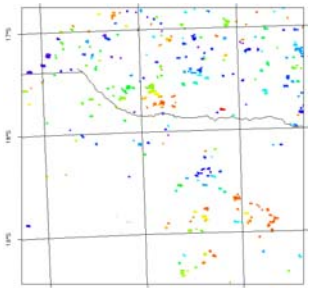


Satellite derived fuel and fire model for Kruger National Park. The patchiness of recently burned areas is shown in shades of white, yellow and red. Old burns are shown in black.

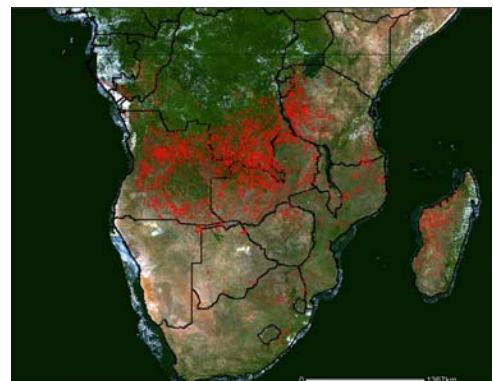
### Angolan-Nambian border August 21 – September 18, 2000



MODIS 500m burned area results



MODIS 1km day & night active fire results



### Active fires for the period 2-9 Aug 2002

Source: Central and Southern Africa Web Fire Maps  
<http://firemaps.geog.umd.edu>

## For more information:

[www.safnet.net](http://www.safnet.net)

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### Links

University of Maryland web mapping site: <http://firemaps.geog.umd.edu>

NASA MODIS Rapid Response System: <http://rapidfire.sci.gsfc.nasa.gov>

### Contacts by Country

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