

**The Savanna Fire
Ignition Research Experiment**

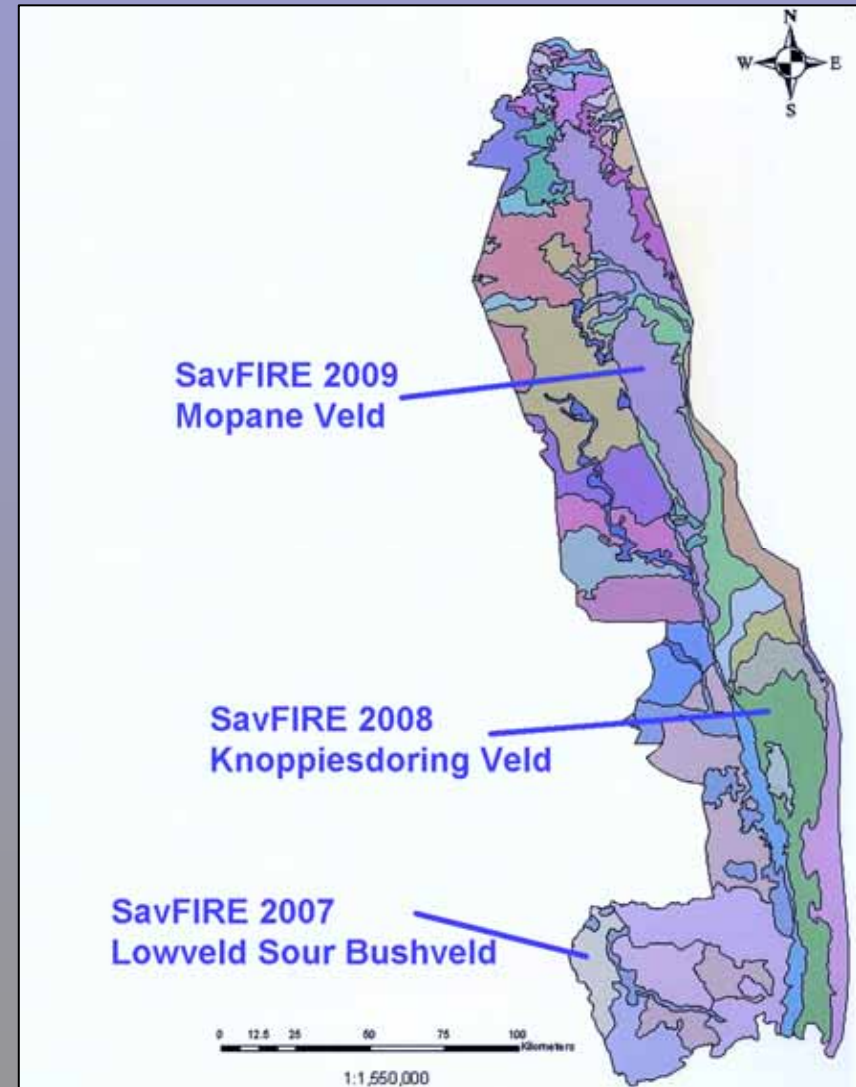
**SavFIRE, a Partnership
between Social Upliftment
and Science**

*Lynne & Winston Trollope
Associates*

*Working-on-Fire International
Chris Austin*

SavFIRE

- 4 phase experiment being conducted in the Kruger National Park (KNP) in South Africa
- 2006 – 2010
- Being conducted in 3 landscapes



SavFIRE

- Resulting from changes in the prescribed burning policy in the KNP
- KNP changed from lightning driven Burning Policy to an Integrated Fire Management Burning System
- Changed from Perimeter ignitions to Point ignitions



Perimeter Ignition



Point Ignition

WHY POINT vs PERIMETER?

- Point ignitions believed to promote biodiversity
- Hypothesis is that Perimeter ignitions “homogenise” habitats

BUT

- Point ignitions more difficult to control and pose a greater danger and threat to tourism infrastructure

SavFIRE – a multi-partner relationship

- Funded by Working-on-Fire (WoF), South Africa and the South African National Parks



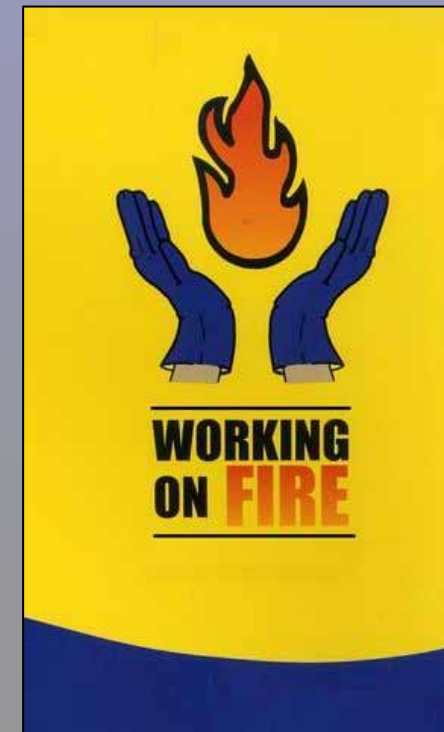
- Participants from WoF International, KNP, WoF South Africa and rural communities, Universities of KwaZulu Natal & Wits plus the enthusiastic volunteers

Objectives

- **To test the hypothesis that under certain atmospheric conditions applying prescribed, perimeter-ignited burns to areas above a critical size will result in fire mosaics and therefore promote and/or maintain biodiversity and reduce the danger factor for prescribed burning in wildlife areas**
- **To provide management options for the Rangers**
- **To address the requirements of the KNP Mission and Objectives goals**

Working-on-Fire

- **WoF** - South African government funded, integrated fire management programme based on alleviating poverty and uplifting people
- Private enterprise (Lowveld Forest Fire Association) joined forces with government to address disaster management and poverty
- To provide trained crews to fight wildfires



Working-on-Fire



- Provides opportunities for unemployed people, preferably from disadvantaged communities, to be trained in fire fighting and prescribed burning

Working-on-Fire



- No gender issue in WoF, opportunities are equal for all
- Prospective fire fighters, both men & women, must first pass a fitness test, a basic medical examination & undergo an aptitude interview

Training

- **WoF accredited Training Division gives the selected Fire Crews comprehensive training**
- **This poverty relief program has a fixed entry and exit policy and aims to make people employable in other sectors of society rather than providing permanent employment in WoF**

Training



- Training is based on the US Hotshot crew system for prescribed burning, and fire fighting or suppression
- Has been Africanized to suit local conditions



- **WoF has a high discipline requirement - undisciplined people are a danger to themselves, and also to their team members**

WoF Crews

- Fire management is a dangerous Operation



- Zero tolerance for unfitness
 - the Crews **must** be fit
- Crews run a minimum of 5 - 10 kms every morning and engage in daily exercises to maintain fitness levels

SavFIRE & WoF in the Kruger National Park



- 2007 – Bandit Steyn & WoF Crews burnt 128,6 kms of fire breaks, 100m wide, around 8 experimental blocks in the Pretoriuskop area
- 2008 – burnt 140 kms in the Satara region for Phase II
- Huge achievement with no mishaps



- Many fire fighters have never been to a National Park
- They have never seen lions, elephants, rhino or other game



WoF in the Kruger National Park

- WoF Incident commander for SavFIRE is Chris Austin
- Bandit Steyn and Alex Held are Operations Chiefs, one controlling operations on the perimeter burn and one controlling the point ignitions



Game Guards are important!

- Working in a National Park is dangerous - protection by the Parks Game Guards required at all times



- Efficient radio communications must be in place

SavFIRE – Preburn Measurements

- Grass species, basal cover & fuel loads on each catenae measured
- 2007 – data collected at 5093 points
- 2008 – 8600 points surveyed



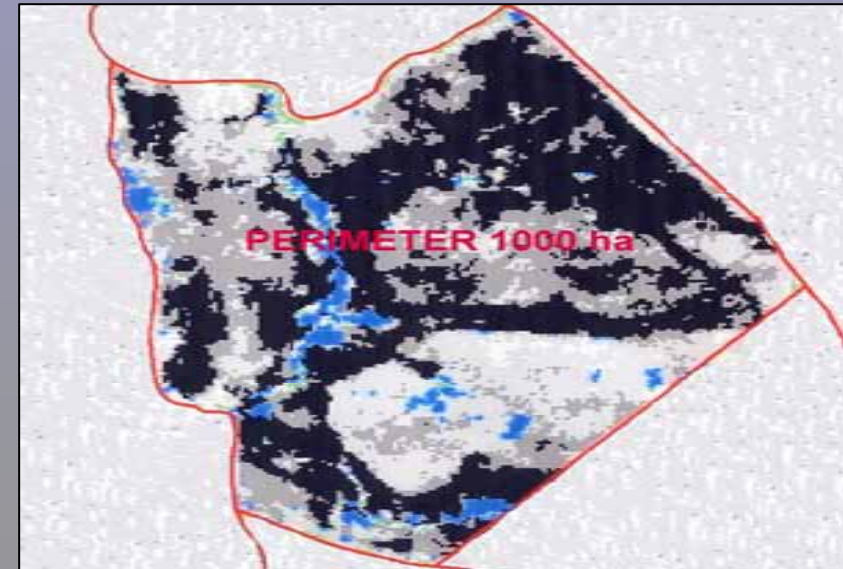
- 110 kms transects walked



- **Fire Fighters learning how to use the Disc Pasture Meter so that they can assist with grass surveys**

Data Collection

- Vegetation is characterised
- Aerial photography throughout burns during daylight hours
- Satellite imagery used for interpretation



Satellite image of different fire intensities

Applying the Fires

- 2007 - Paired plots, totalling 12000 hectares, were burnt during SavFIRE under pre-determined weather conditions, sometimes



late into the night

- 2008 – Plots (15000 ha) will be burnt during May

Pyrodiversity & fire behaviour closely monitored



Team Spirit

- Respect for one another and camaraderie is high when working on a fire



- **When putting in the head fire on the perimeter burn on the Bravo 2000 block late at night, a fire fighter took off his protective helmet and offered it to me as I hurried down the fire line taking official photos with a 3 to 4 meter wall of flame racing off into the savanna on the other side of the 4x4 track.**

Needless to say I declined his very chivalrous offer as he needed the protection from the searing heat far more than I did!



Postburn Measurements




**Crews learning to use
Cyber trackers**



**Taking Post-burn
Disc Pasture Meter
measurements**



- 
- **Being part of SavFIRE means you eat on-the-run and sleep on-the-run as when the weather conditions are right - temperatures below 20^o C and humidity above 50% - it's all systems go, be it early or late, day or night, Monday or Sunday, and don't forget, fire waits for no man!**
 - **So WoF fire crews we salute you for your months of dedication to assisting science and your commitment to furthering insight into fire management, fire mosaics and fire ecology**

Business the Unusual Way

- **SavFIRE is practicing science the unusual way**
- **Meeting the challenge of including communities in science in the Kruger National Park**
- **Give unemployed, disadvantaged persons status, value and hope - the result is dedication, commitment and tremendous team spirit**

The SavFIRE TEAMS



2007



2008



Working-on-Fire



Thank you!

