

The Knysna Fires of 2017: Learning from this disaster



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Western Cape
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Goals of the study

- To assist authorities and communities to be better prepared for wildfires and reduce impacts;
- To identify how the insurance industry can support fire reduction initiatives;
- To encourage the implementation of Integrated Fire Management (IFM), such as through mitigation, and by supporting institutions.

The 2017 Knysna Fires

- The Knysna fires were the worst wildfire disaster in South African history, with almost 1000 homes destroyed.
- These fires burnt approximately 19 000 ha and mopping up operations continued for weeks afterwards.
- Several dynamics contributed to the devastation including:
 - proceeding drought;
 - very hot and dry conditions;
 - concentration of assets and housing in high-risk areas;
 - vulnerability of dwellings; and
 - high fuel loads in many areas.

“Perfect
Storm”
Conditions

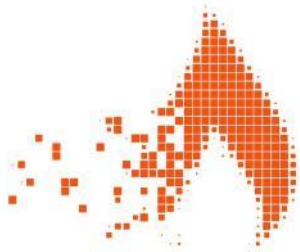
Considering Wildfires...



Some vegetation, such as fynbos, needs fire to persist. Fire should not always be prevented.



Populations on the wildland-urban interface (WUI) are growing.

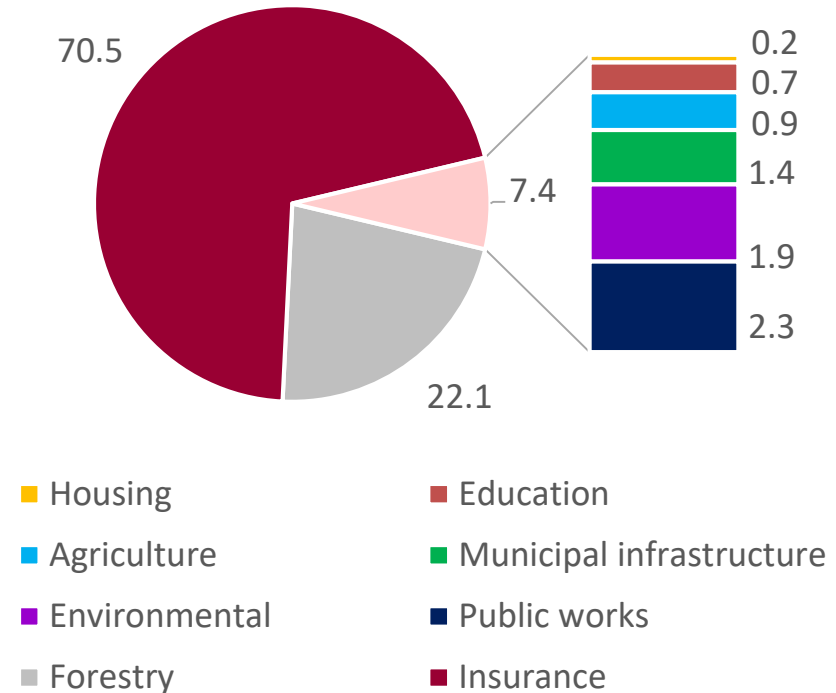


Current approaches to fire safety are often fragmented.

Integrated Fire Management (IFM) and home preparedness can assist in reducing the impact of future fires.

Why do we need to learn from Knysna?

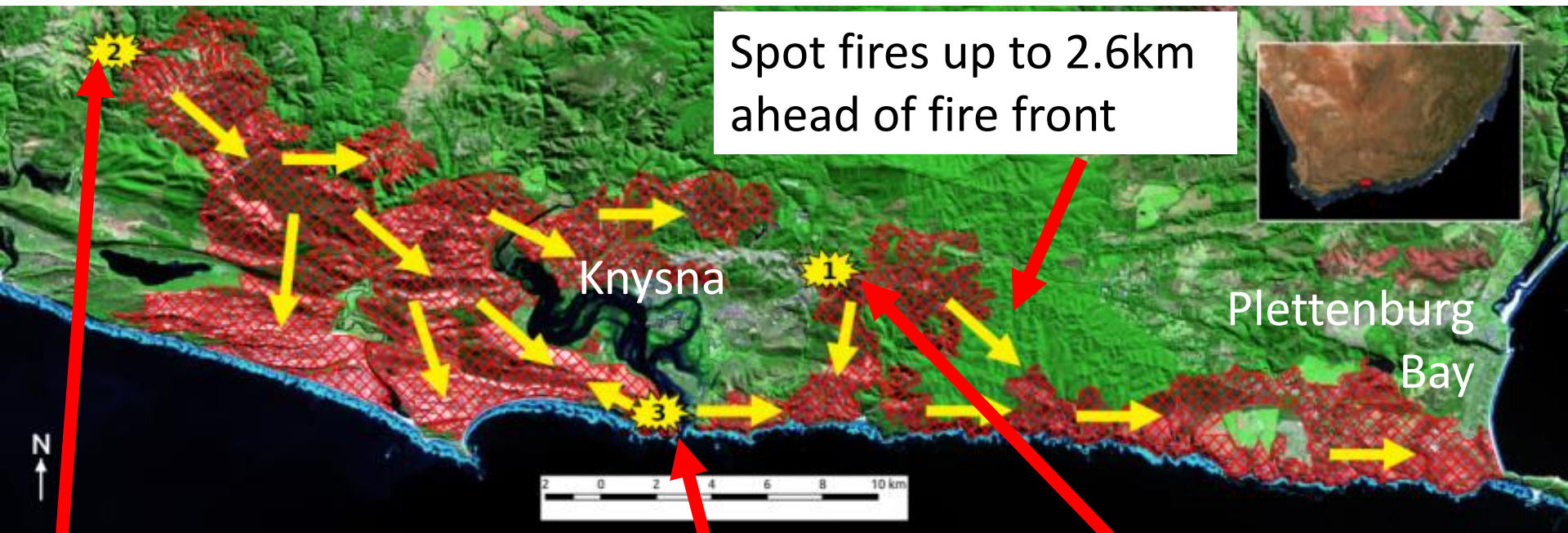
- The economic cost of the Knysna fires was at least R3.3 billion.
- This excludes untold losses to those who lost homes, businesses and jobs, and the local economy.



Proportion of costs reported by government departments, insurance and forestry industry*

*Only sectors for which data was made available

General Fire Spread Pattern



2. Elandskraal fire:
05h00 on 7 June
(22 March ignition)

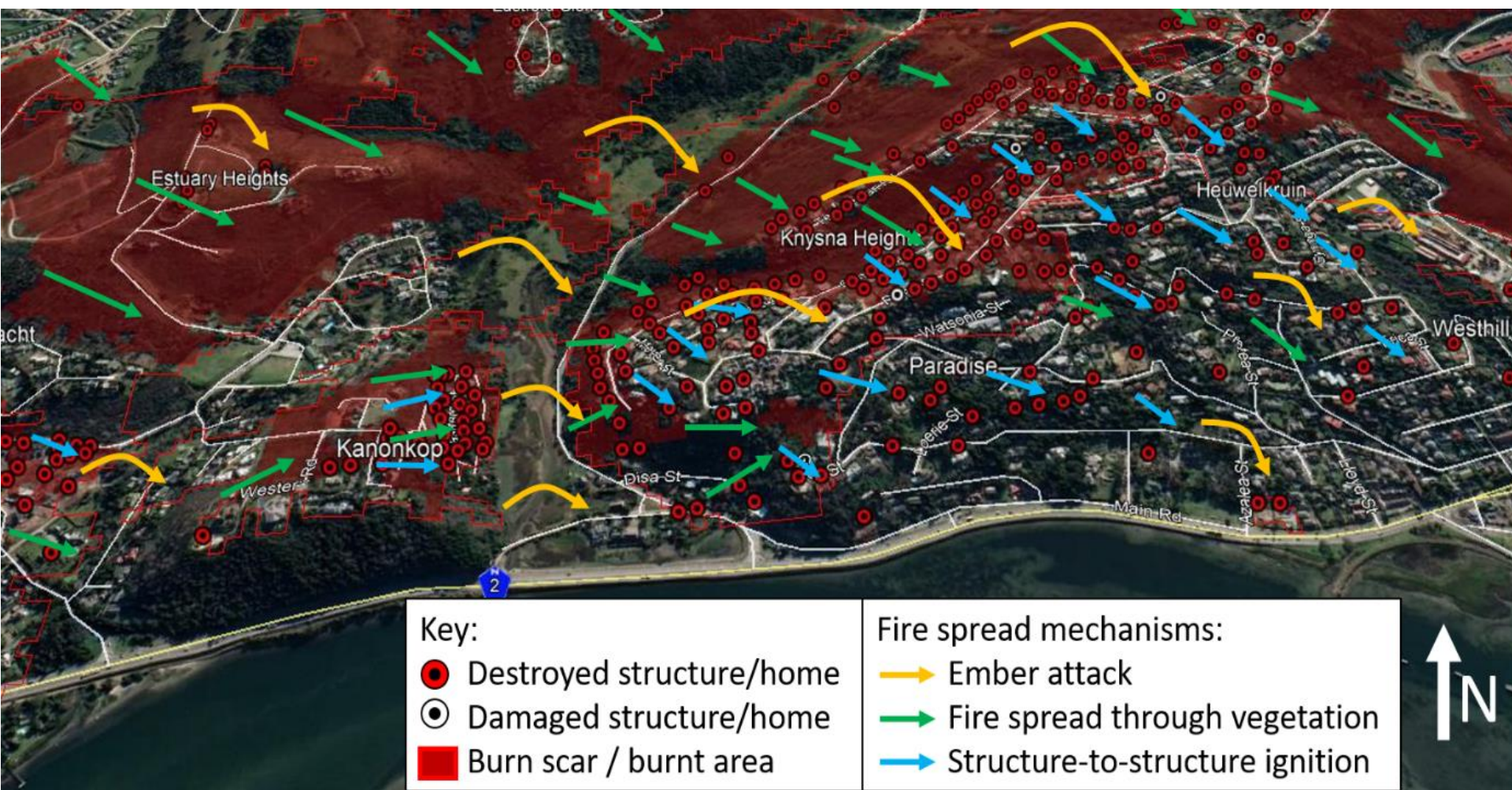
3. Reported ignition
starting ahead of fire front
(see 'Knysna Fire Stories'
and the Vulcan Report).

1. Kruisfontein:
03h30 on 7 June

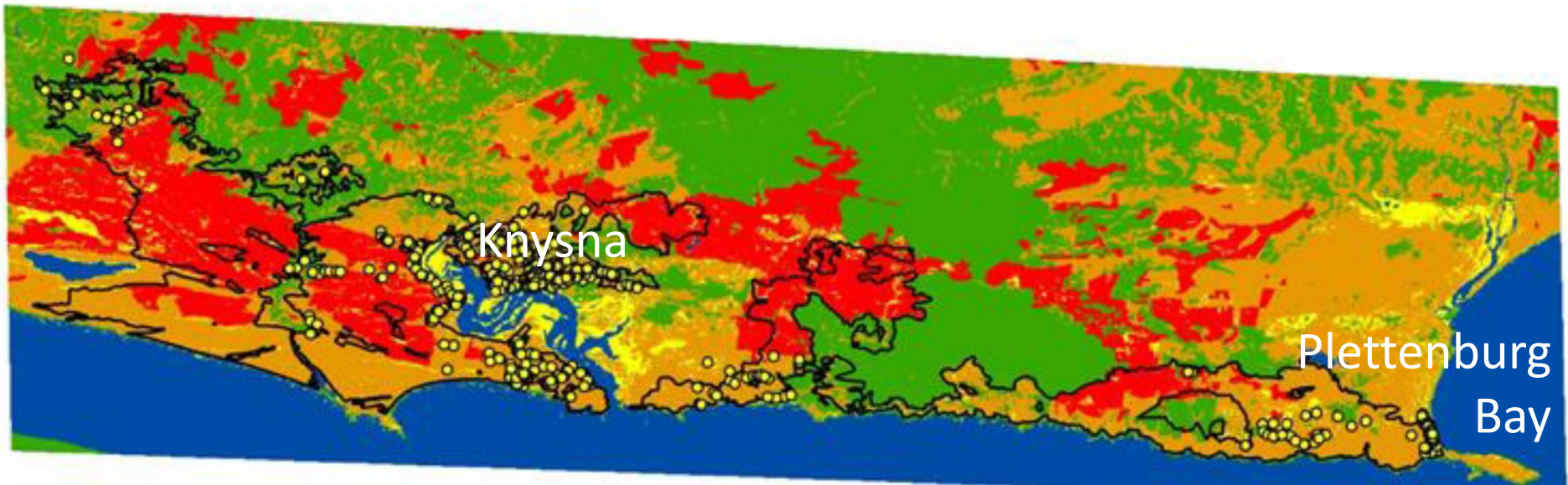
Satellite Tracking: Spotting / Ember Attack



Wildland Fire Spread



Fuel loads in the area



Fuel Load



Extreme



High



Medium



Low

Summary of Home Damage

Structures destroyed / Severe damage	929
Structures damaged (significant underestimate) / Minor structure destroyed	137
Total	> 1066

Why do we need to learn from Knysna?

- Similar high wildfire risk conditions are prevalent in many parts of South Africa.
- Without change, more very large destructive fires (“mega-fires”) are **inevitable** in the future in South Africa, particularly given projected changes in climate and population growth.
- SA’s next mega-fire: “When?” rather than “If?” e.g. George 2018 was many times bigger.

Core messages

- Although population growth, urban expansion and climate change are inevitable, it is possible to reduce the risk of destructive fires and their impact
- This requires recognising that our current fragmented approaches to fire management are not effective.
- IFM is essential to successfully engaging all stakeholders in fire risk management

Key findings

- We need to boost capacity to both respond to large wildfires and promote risk reduction.
- We need to improve land management as it is critical to reduce the severity of wildfires.
- Home preparedness measures would have saved many of the dwellings destroyed by the fires.
- Homeowners have a major role to play in home fire safety.

The Home Ignition Zone (HIZ)



These
homes
didn't
survive

These
homes
survived

- Home survivability is typically governed by the items within 30m around a home (e.g. vegetation, decking, log piles, etc.).
- 74% of destroyed homes had vegetation right up to them.

Do we take fire risk seriously?



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Knysna Rebuilding?



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Key recommendations

- Better manage and control fuel loads especially along WUIs.
- Incorporate IFM into different fire management activities in a strategic framework to reduce the overall impact of unwanted fire damage and promote the beneficial use of fire.
- Place greater focus on public education and awareness programmes on wildfire risks.

Insurance industry

- Where possible, help build the capacity of municipal fire services to deal with wild fires.
- Support prescribed burning by extending insurance cover for these.
- Require policy-holders to undertake measures to reduce risk.
- Develop more affordable insurance products for the so called 'missing middle'.

Communities / residents

- Home preparedness and design is key to survival. International building codes for homes on the WUI should be adopted.
- Join the local Fire Protection Association (FPA),
- Participate in setting up FireWise communities.
- Residents, landowners and FPAs should work together.
- Residents need to regularly check that they are adequately insured against fire.

Conclusion

- The costs of the Knysna fires to the town and its inhabitants illustrate the importance of implementing effective measures to reduce risk in the Garden Route and South Africa.
- When living in fire prone environments residents, landowners and fire management agencies have a shared responsibility for reducing fire risk.

Acknowledgements

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- The numerous individuals and organisations who gave freely of their time and knowledge in the course of the study.