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# Vegetation management at South Africa's wildland-urban interface

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# Vegetation and Wildland-Urban Interface

Frequent mega wildfires = damage property & loss of lives

Garden Route wildfire: Seven killed in George, South Africa

30 October 2018



At least seven people have been killed in a raging fire along South Africa's popular Garden Route in the Western Cape province, officials say.

Fig 1: (BBC 2018)

Unmanaged vegetation & urbanisation contribute significantly

**SOUTH AFRICA**  
**'Born to burn': The alien trees that turned Cape Town fire into a disaster**  
Invasive aliens make fires burn hotter and spread faster

24 April 2021 - 09:54  
BY CLAIRE KEETON



**Claire Keeton**  
Senior features writer



Fig 2: (Times Live 2021)

Practicalities of vegetation management  
South Africa?



Fig 3: Mechanical firebreak construction (SCFPA 2023)



Fig 4: Prescribed burn firebreak construction (SCFPA 2023)

# Case Study Sites and Methods

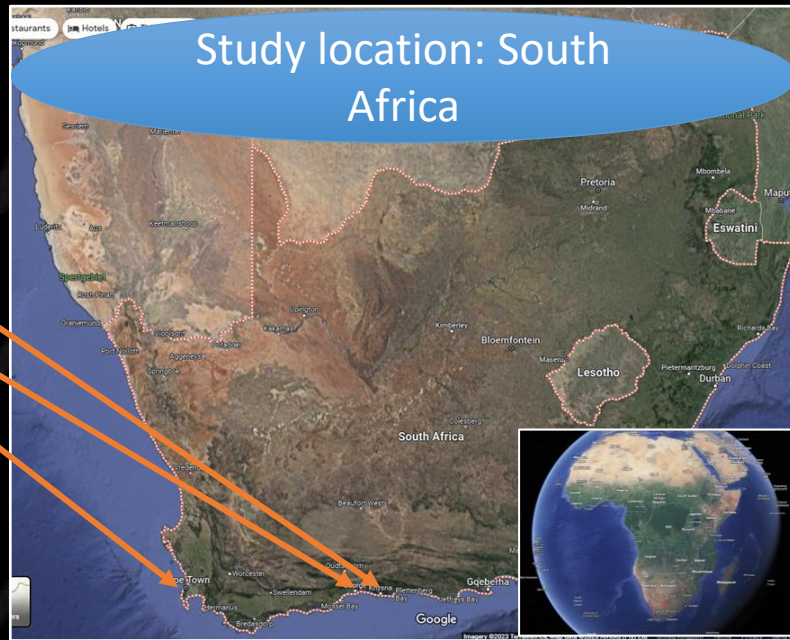


Fig 7: (Google 2023)

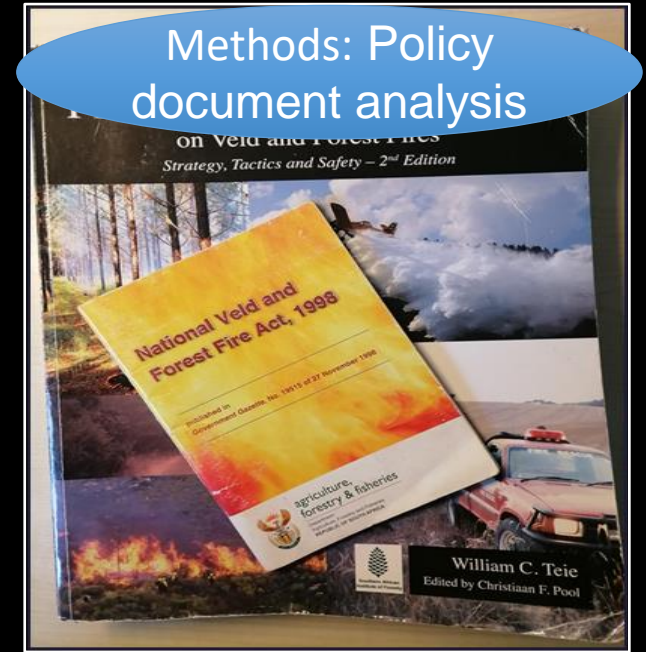


Fig 8: (NVFFA 1998)



Fig 5: (Goldsmith 2023)

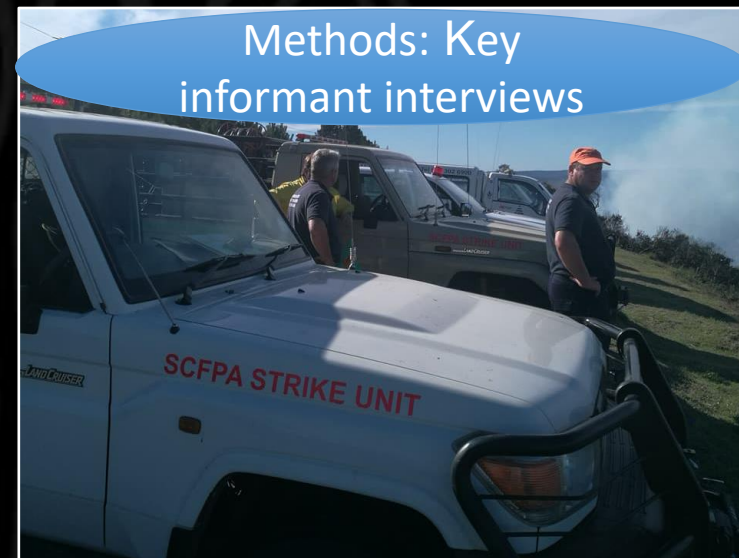
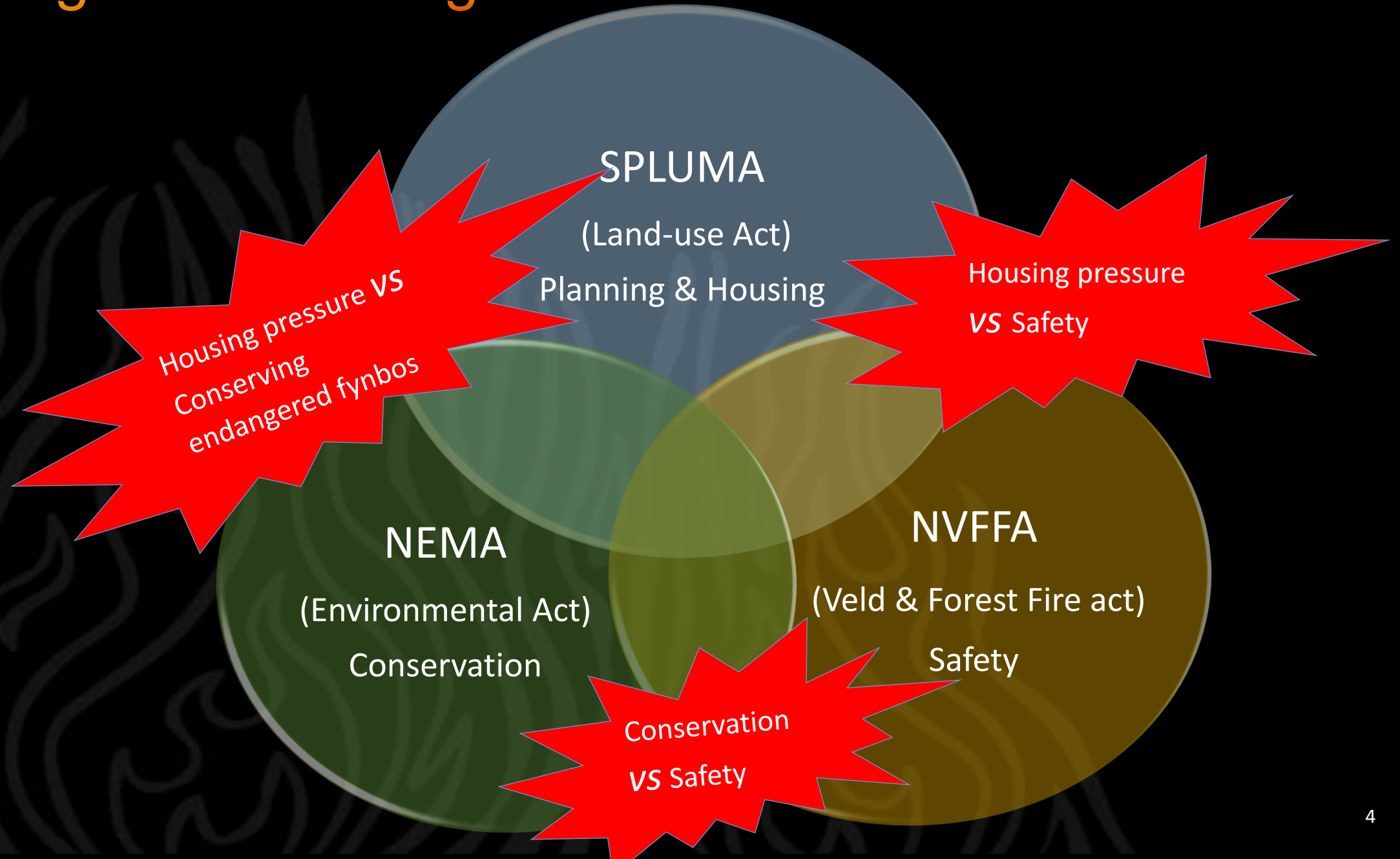


Fig 6: (SCFPA 2023)

# Challenges: Conflicting Goals and Government Mandates



# Capacity and Implementation Gaps



Legislative enforcement and non-compliance



Resource and state capacity



Make landowners responsible

# Landowners

- Government:
  - E.g., South African National Parks
- Commercial Farms & Forestry:
  - E.g., MTO Group
- Ordinary householders
  - Informal settlement
  - Township settlements
  - Formal settlements

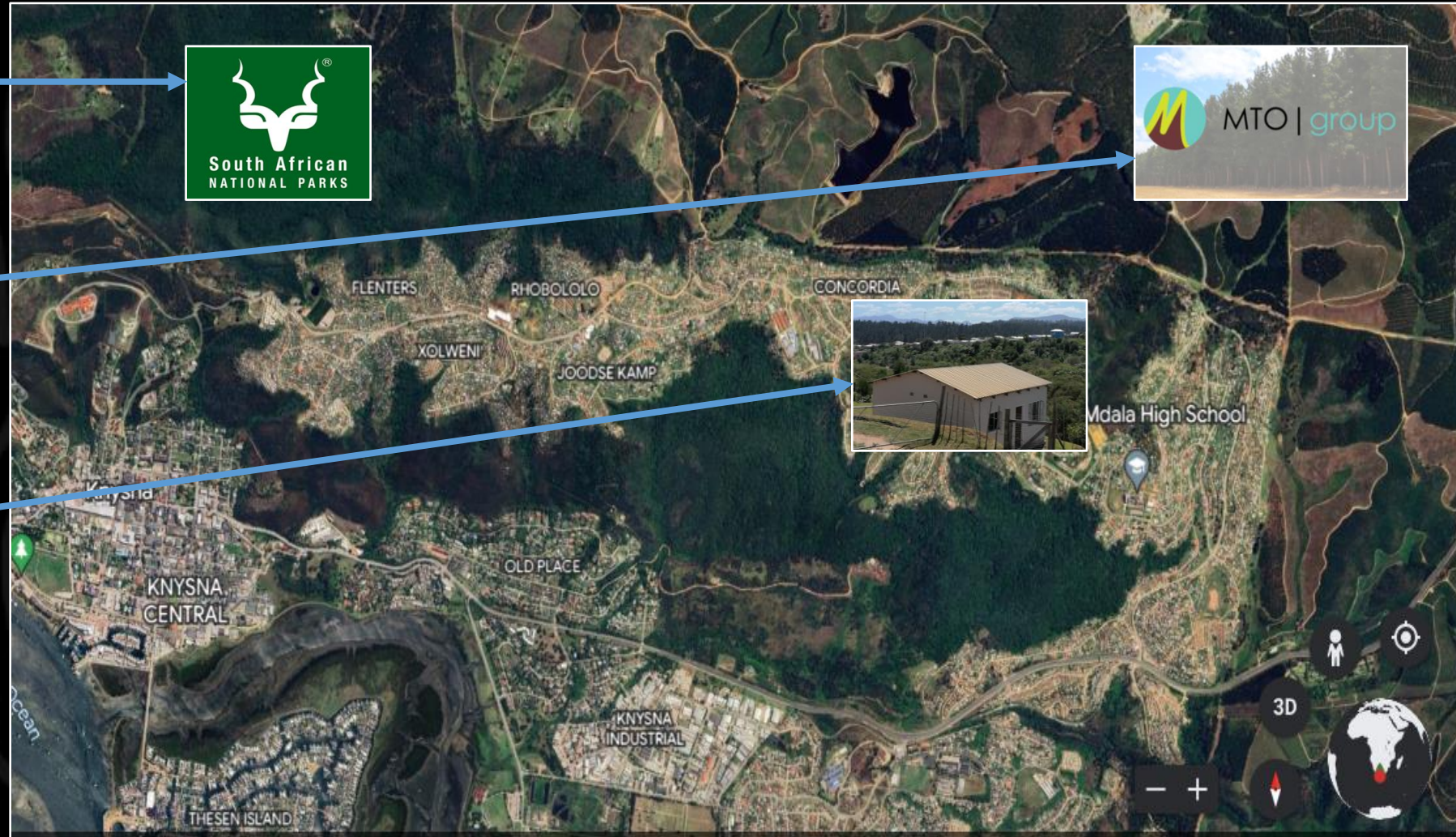


Fig 9: Landowners (Google 2023)

- ❖ Government and big farmers are well resourced and have more technical expertise to manage their vegetation compared to householders

# Settlement Forms: Informal Settlement

- Location

- Sprawls on townships & city edges
- Abandoned farms & firebreaks

- Origin & tenure

- Illegal settlements
- Former forestry migrant workers

- Socioeconomic Status

- Extreme poverty & under resourced
- *Umdywadi*



Fig 11: (Halu 2023)



Fig 12: (Google 2023)



Fig 10: (Goldsmith 2022)

# Risk Perception & Identity in Divided Post-apartheid Society: Informal Settlement

- Settlement layout
  - Unplanned clustered communities
  - Highly highly igneous building material
- Low risk perception
  - No collective vegetation reduction efforts
  - Uninformed of vegetation management
- Opportunistic pervasive incentive
  - Hopes of in-situ settlement upgrade
  - New settlements on new firebreak



Fig 14: (Google 2023)



Fig 15: (Halu 2023)



Fig 13: (Goldsmith 2022)



# Settlement Form: Township

- Location
  - Out of town
    - Apartheid segregation legacy



Fig 17: (Goldsmith 2022)

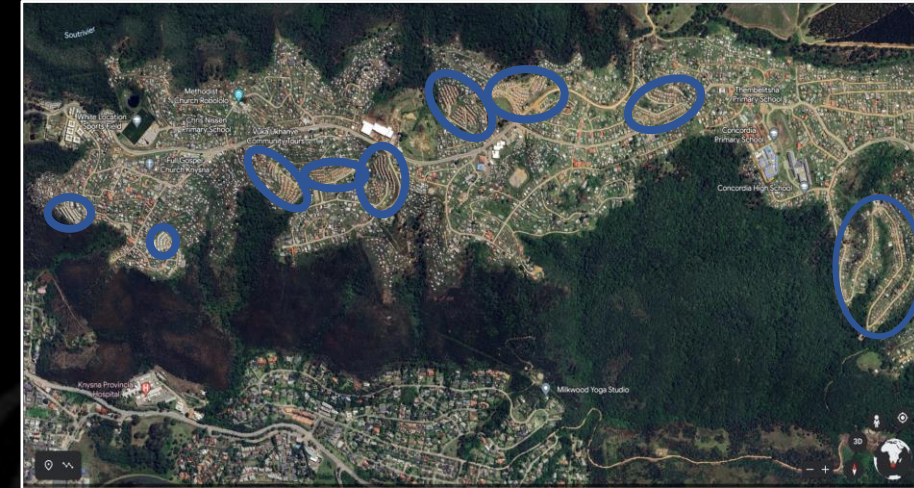


Fig 18: (Google 2023)

- Origin & tenure
  - Government mass-built settlements
  - In-situ upgrade formalization
- Socioeconomic Status
  - Moderate & better resourced



Fig 16: (Goldsmith 2022)

# Risk Perception & Identity in Divided Post-apartheid Society: Township

- Settlement layout

- Dense housing layout reduce risk to edges
- Less vegetation intermix



Fig 20: (Google 2023)



Fig 21: (Halu 2023)

- Low risk perception

- No collective vegetation reduction efforts
- Uninformed of strategic vegetation management

- Unplanned expansion

- Informal settlement sprawls displace/obstruct firebreaks



Fig 19: (Goldsmith 2022)

# Settlement Form: Formal Settlement

- Location
  - City edges
  - Isolated eco-villages estates
- Origin & tenure
  - Formal suburban setting
  - Small private land holdings
- Socioeconomic Status
  - Affluent & high socioeconomic



Fig 23: (Goldsmith 2022)



Fig24: (Google 2023)



Fig 22: (SCFPA 2023)

# Risk Perception & Identity in Divided Post-apartheid Society: Formal Settlement

- Settlement layout
  - Intense vegetation intermix
- Risk perception
  - Conformance
    - Members of Fire Protection Association
  - Non-compliance
    - Old age physically incapable
    - Overgrown second home vacation properties
- Conservancy lifestyle
  - Eco-village English garden & scenery
  - Conserving the endangered fynbos



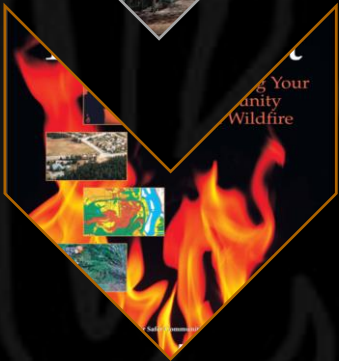
Fig 26: (Goldsmith 2023)



Fig 25: (Goldsmith 2022)

# Conclusion

- Unmanaged vegetation increases wildfire risk and strains suppression efforts





# Any Thoughts



# Vegetation Management Techniques

- Prescribed burn

- Burn firebreak



- Ecological block burn



- Non-Burning

- Vegetation removal firebreak



- Pruning and thinning



- Alien eradication/stack burn



- Ecological block burn

