Wildfire Science and Management: Protection and Mitigation

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MWH ®

BUILDING A BETTER WORLD

Not Clouds but Smoke

From this and 60+ Others
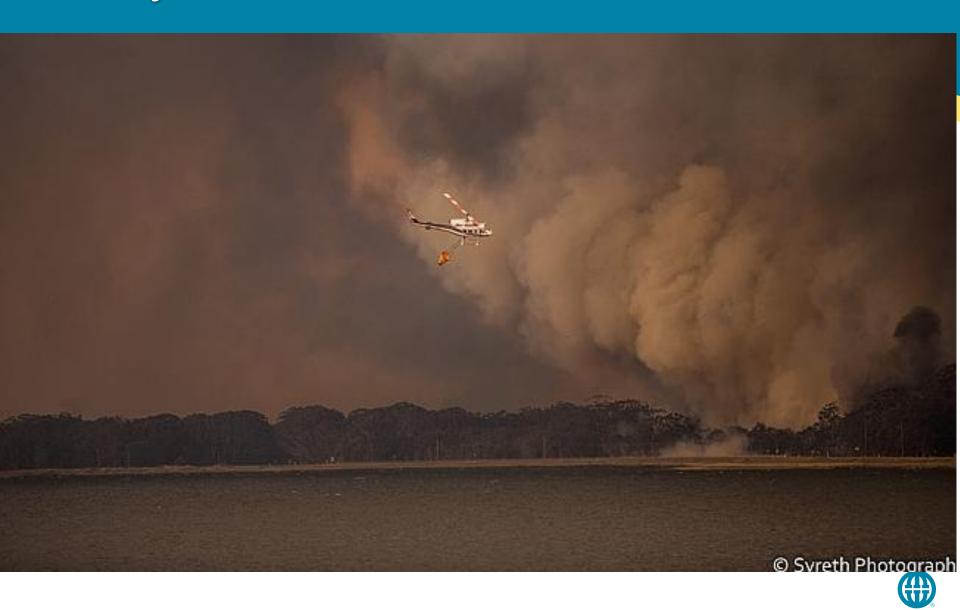

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Up Close – no fun at all

Futility

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Fires

Siri Akaakara (Royal Forest Department, Thailand)

"There is no honour in fighting a fire that could have been prevented"

Our emphasis and focus should be on Prevention for the Management, Investment and the Science we apply.

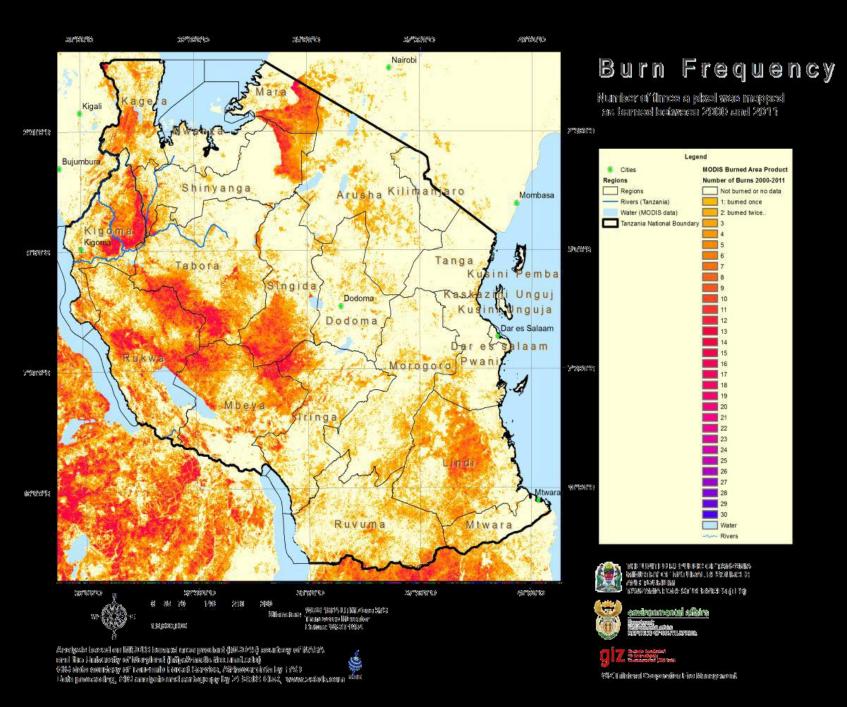# Five "Rs" of Fire Management

- Research
  - Data Collection and Analysis
- Risk Reduction
  - Preventing Fires and Lessening their impact
- Readiness
  - Preparing to Fight Unwanted Fires
- Response
  - Fighting Damaging Fires
- Recovery
  - Community Welfare, Infrastructure Repair, Restoring Damaged Landscapes

Research & Analysis - Fire Information

- Globally impacts of fires are recognized
  - There is commonly lack of data and information regarding trends and underlying causes
  - Obtaining information on the occurrence, scope and damage of wildfires is a key challenge
- Science
  - Remote Sensing – fire season and post-season data collection
- Management
  - Systematically collect basic data on all fires
    - Ignition Location
    - Fire Duration
    - Fire Size
    - Fire Cause

Burn Frequency

Number of times a pixel was mapped as burned between 2000 and 2011

Legend

Cities	**MODIS Burned Area Product**
Regions	**Number of Burns 2000-2011**
Regions	Not burned or no data
Rivers (Tanzania)	1: burned once
Water (MODIS data)	2: burned twice..
Tanzania National Boundary	3
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	Water
	Rivers

Risk Reduction

- Fire history, sources and causes of impacts including underlying causes
  - Comes from Research and Analysis
- Knowledge of Fire Likelihood and Consequence means
  - Science & Management can be applied to reducing likelihood
    - Land use and Fire Use for subsistence and agribusiness
    - Weather and Drought Information
    - The Social Economy of People and Populations
  - Science & Management can be applied to reducing consequence
    - Fuels management to reduce fire intensity and fire spread
    - Alternatives to fire use in land use
    - Planning and building for built assets

Readiness

- Ensuring resources, capacities and triggers for action are in place
    - Science
        - Climate and weather monitoring & prediction
        - Fire Danger Rating System
    - Management
        - Detection & Suppression Resource Needs Assessment
        - Fire Detection, Suppression & Communications Resources
        - Fire training systems and tools

Response

- The High Profile and Most Visible Aspect of Fire Management

UNFORTUNATELY

- Requirements include:
    - Operational Roles, Responsibilities and Procedures.
    - Response Mobilisation Plans
    - Fire Predictive Tools
    - Strategic Information Access
    - Operational Management Systems

Recovery

- Often very poorly managed and some times not considered at all in post fire efforts and planning
    - In many countries often limited to repairing damage, replacing infrastructure
    - There can be impacts and need for post-fire recovery of communities
- Requirements:
    - Community Welfare assistance
    - Economic loss reduction (e.g. salvage logging and replanting, infrastructure repair)
    - Environmental repair

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AND REPEAT

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Many Thanks