FIRE and FOREST MAMMALS

An Overview

by

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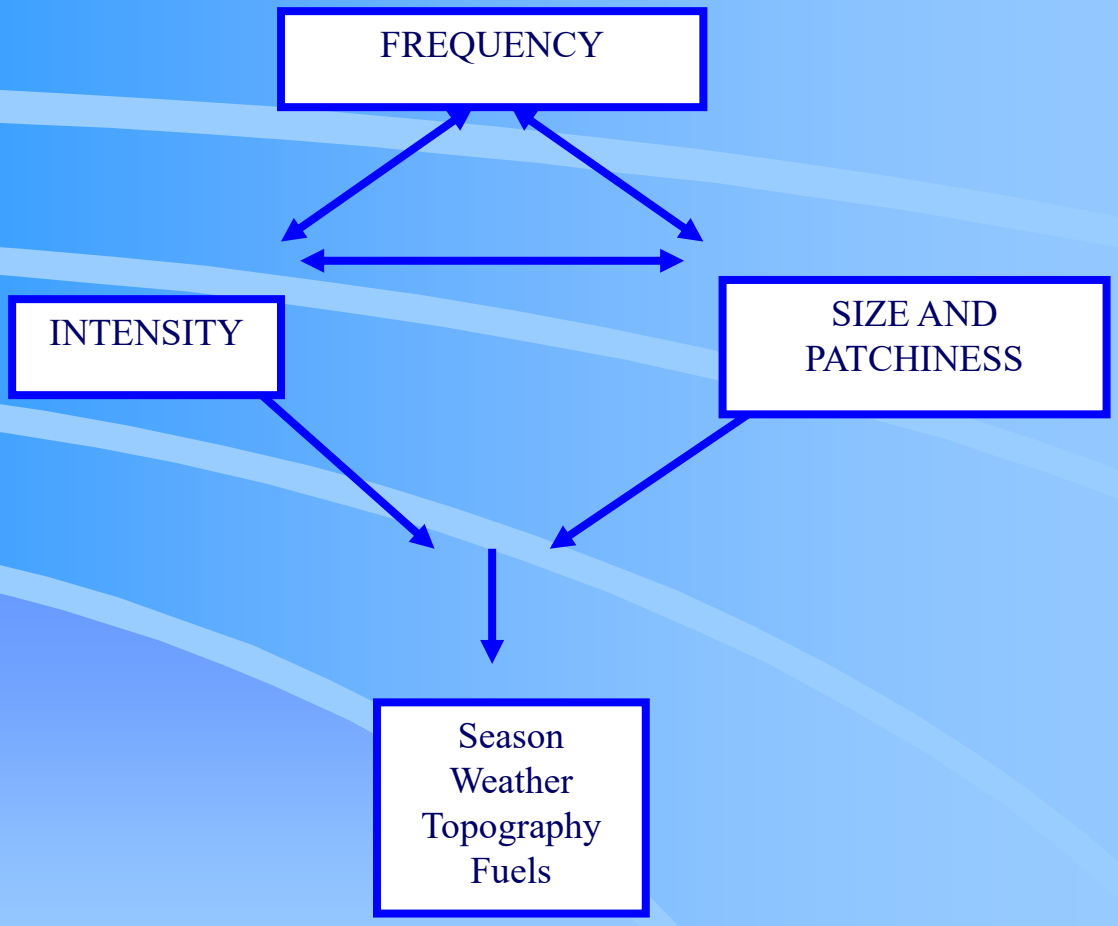
1. Impact of fire on mammals is directly proportional to:

- Fire intensity
- Fire size
- Fire frequency

These factors are linked:



2. Post-fire recovery is a function of:

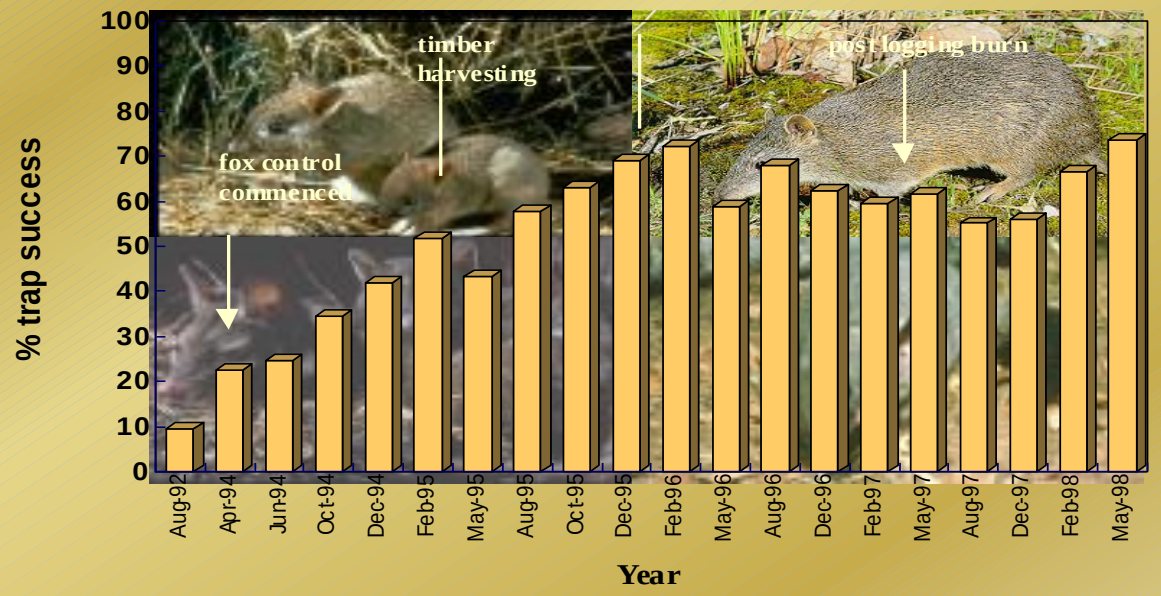
- Rate of recovery of habitat (vegetation)
- Survivorship
- Fecundity
- Natal dispersal distances
- Adjacent populations
- Time of next fire

Life history strategies are useful for predicting fire impacts (Friend 1998)

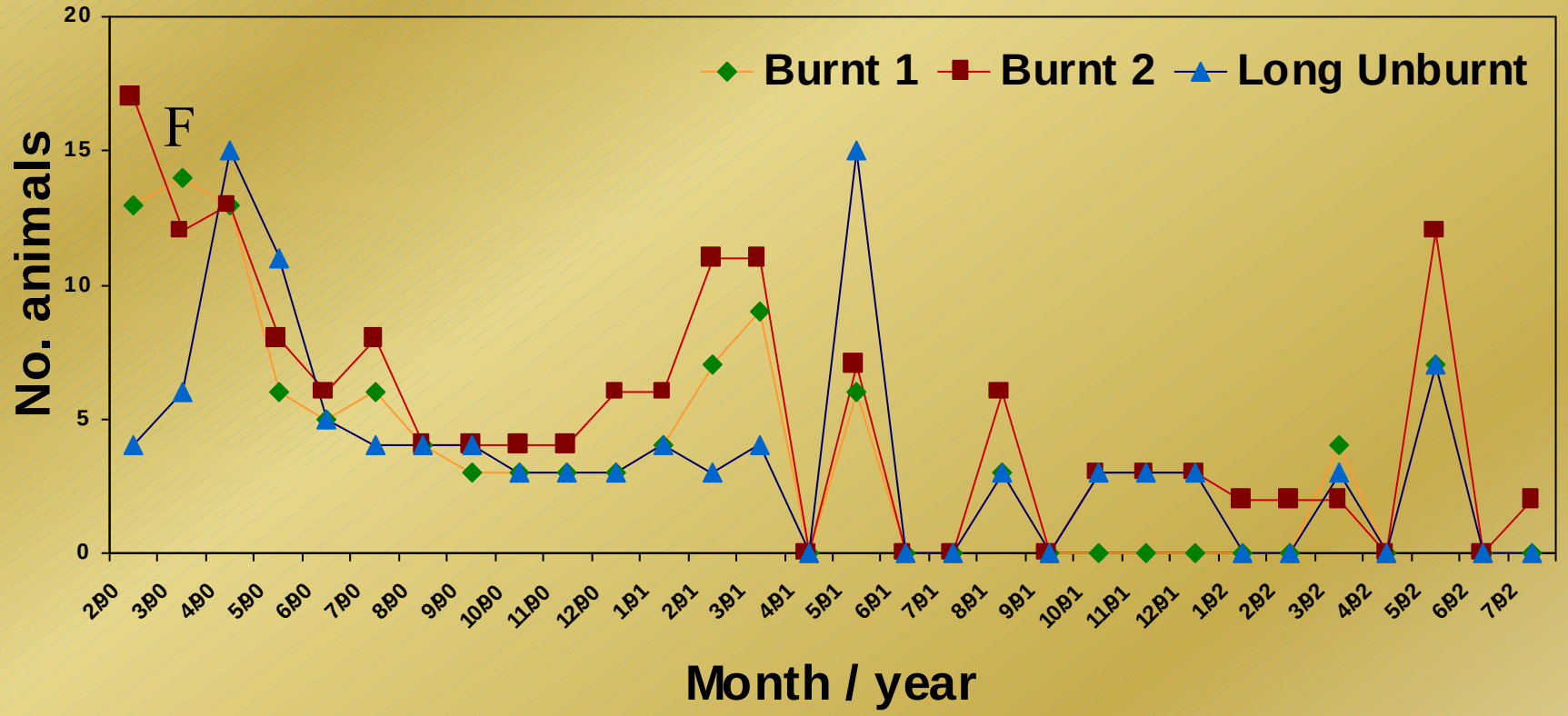
- Habitat preference (diet, shelter, breeding sites)
- Reproductive biology
- Mobility
- Natal dispersal
- Predator awareness
- Site fidelity

3. Low intensity, patchy or small fires have low impact

- Kingston Timber Harvesting Study -
Trap Success Rates For All Medium Sized Mammals
(Woylie, Quenda, Chuditch, Bt Possum) Along Road Transects



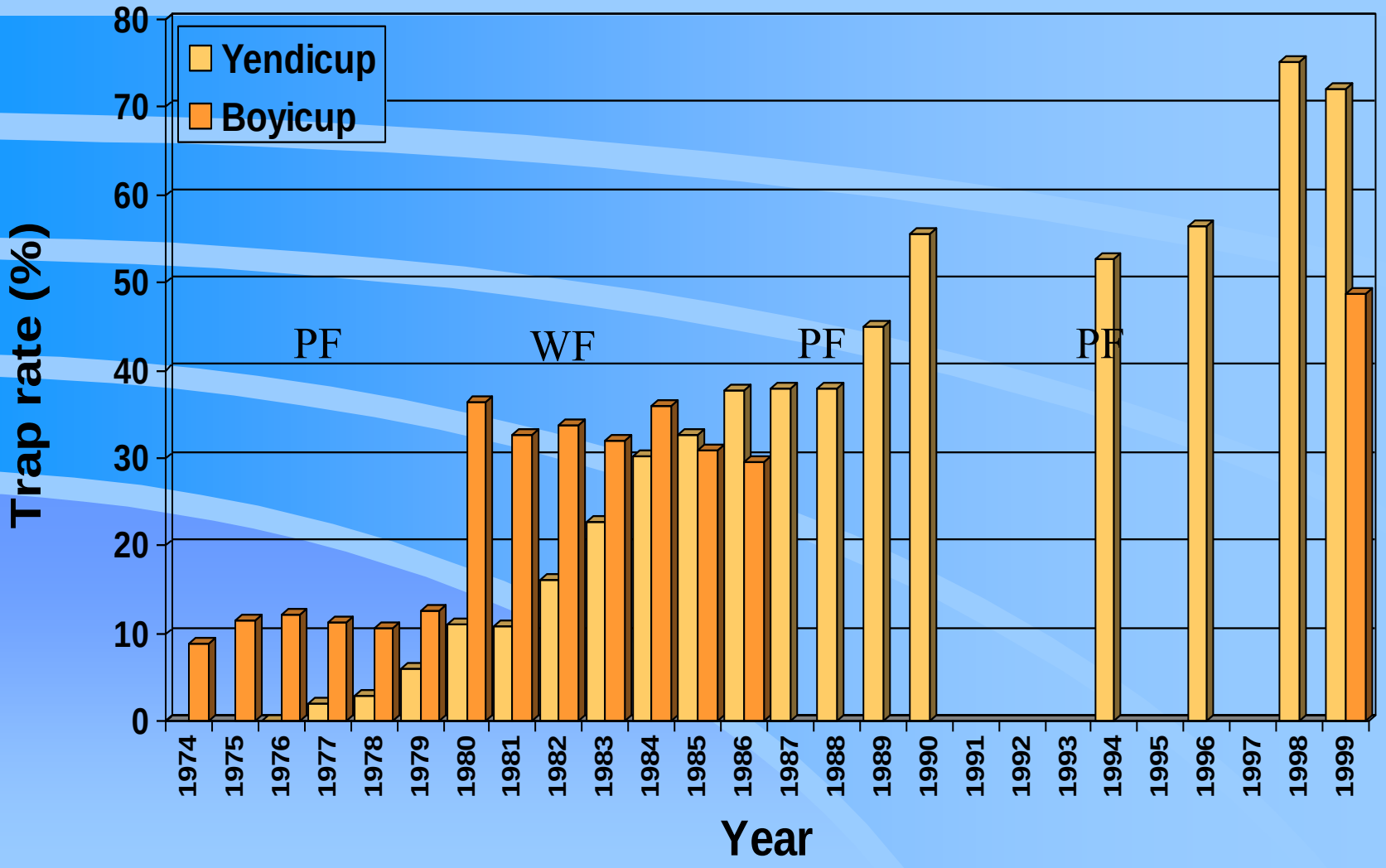
Response of Red-tailed Phascogale to a 100 ha fire



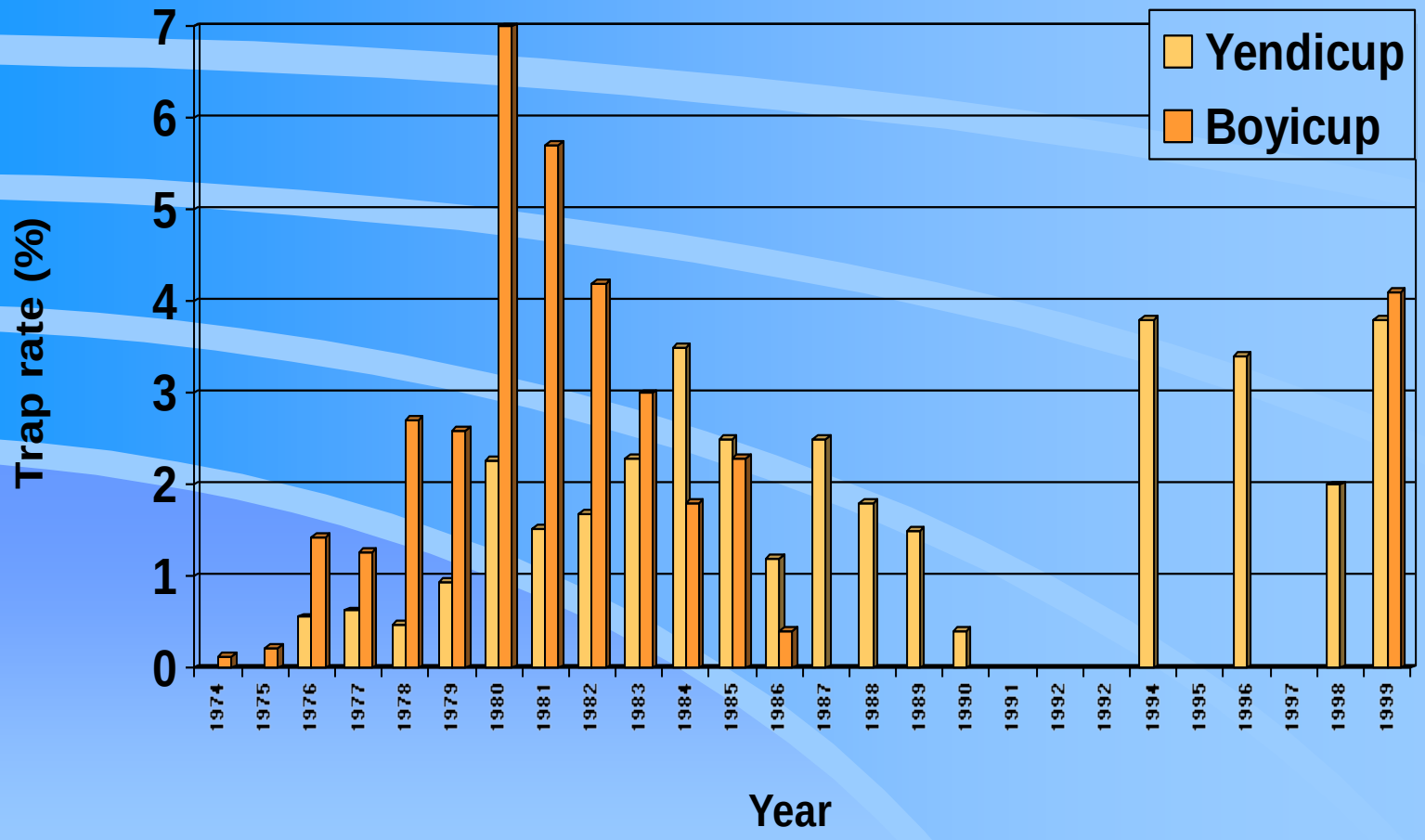
•(Burrows &Friend 1998)

Mammal capture rates - Perup Forest

(Woylie, BT Possum, Quenda, Chuditch)

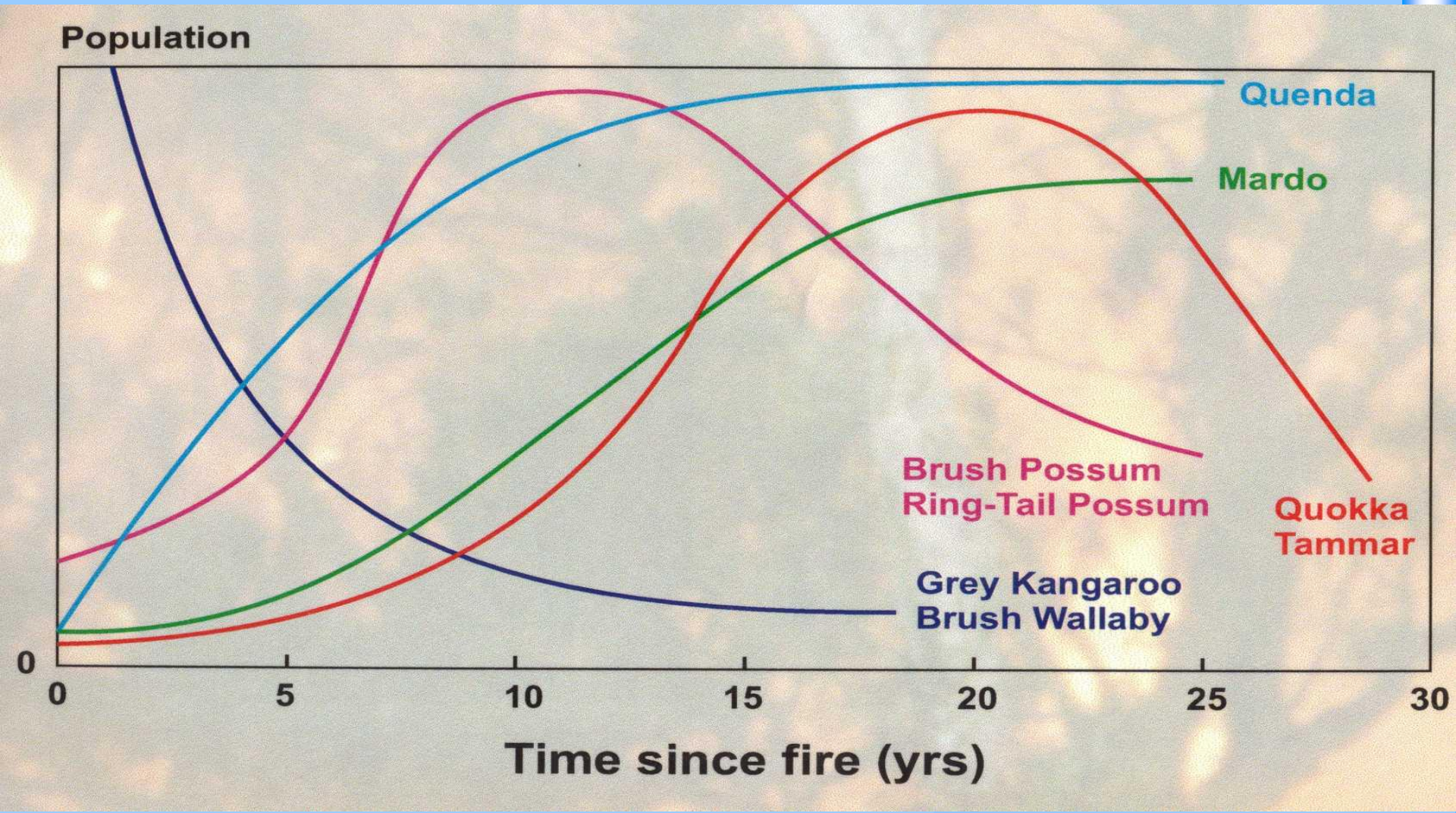


BT Possum capture rates - Perup forest



4. High intensity, large fires have high impact

5. There is no single fire regime that is optimal for all mammals



6. Scale

- **Fire scale is a critical but poorly understood factor affecting mammals.**
- **Distances moved by natal dispersal are fundamental elements of demography, population dispersal, colonization and gene flow**

(Vogel 2001)

- **Juxtaposition of populations (what have we got and where is it?)**
- **Grazing & predation pressure**
- **Indicative scales: 500 - 3,000 ha**