

Avalanche Search and Rescue Overview for Avalanche Workshop



Avalanche Quiz

1. What is the largest number of people to die in an avalanche accident in NZ?
2. What is the longest burial survival time in NZ?
3. What is the deepest burial survival in NZ?
4. Name four roads (excluding ski area) that have avalanche risk in NZ?
5. How long will 12 probers take to search 0.5 ha using 3hps 50 x 50?
6. How long will an avalanche search dog take to search 0.5 ha?
7. How many operational avalanche search dogs are there in NZ?
8. Which recreational group in NZ has the most avalanche incidents?
9. Which group of workers in NZ has the most avalanche incidents?
10. What % of buried victims are likely to be alive at 90 minutes?

1. What is the largest number of people to die in an avalanche accident?
41
2. What is the longest burial survival time?
Noeline Glacier 11 hours
3. What is the deepest burial survival?
Broken River 3 m
4. Name four roads (excluding ski area) that have avalanche risk?
Milford rd, Wilmot Pass rd, Borland rd, Arthurs Pass, Hanmer – Tophouse rd, Tasman valley Rd.
5. How long will 12 probers take to search 0.5 ha?
About 3 hours
6. How long will an avalanche search dog take to search 0.5 ha?
About 15 min
7. How many operational avalanche search dogs are there?
12 dogs (www.nzlsar-dogs.org.nz)
8. Which recreational group has the most avalanche incidents?
Climbers
9. Which group of workers has the most avalanche incidents?
Ski Patrollers
10. What % of buried victims are likely to be alive at 90 minutes?
34%



Avalanche Transceiver



D Bogie

Work well. But victims need to be wearing them.



Always do a
transceiver search

1 June 2010

6

Dogs



The best method for finding people without transceivers

Dogs should always be called

1 June 2010



Recco



Reflector – on
clothes or boots

Detector – Handheld
can be used out of a
helicopter

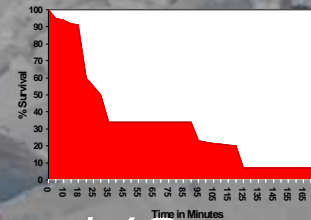


Probability of Live Find – POLF

$$\text{POS} \times \text{POL} = \text{POLF}$$

Need to work out POL

Time since avo + Search time + digging
time = Total time \rightarrow POL



Search time = Size of Area / (Search speed
of method per m^2 x number of resources)

POLF is cumulative



Nelson/Marlborough – St James

Arthurs Pass NP – Craigieburn

Mid Canterbury (Rakaia – Rangitata)

Aoraki – MacKenzie

Central Otago

Fiordland - Milford

Red is > 1000 m

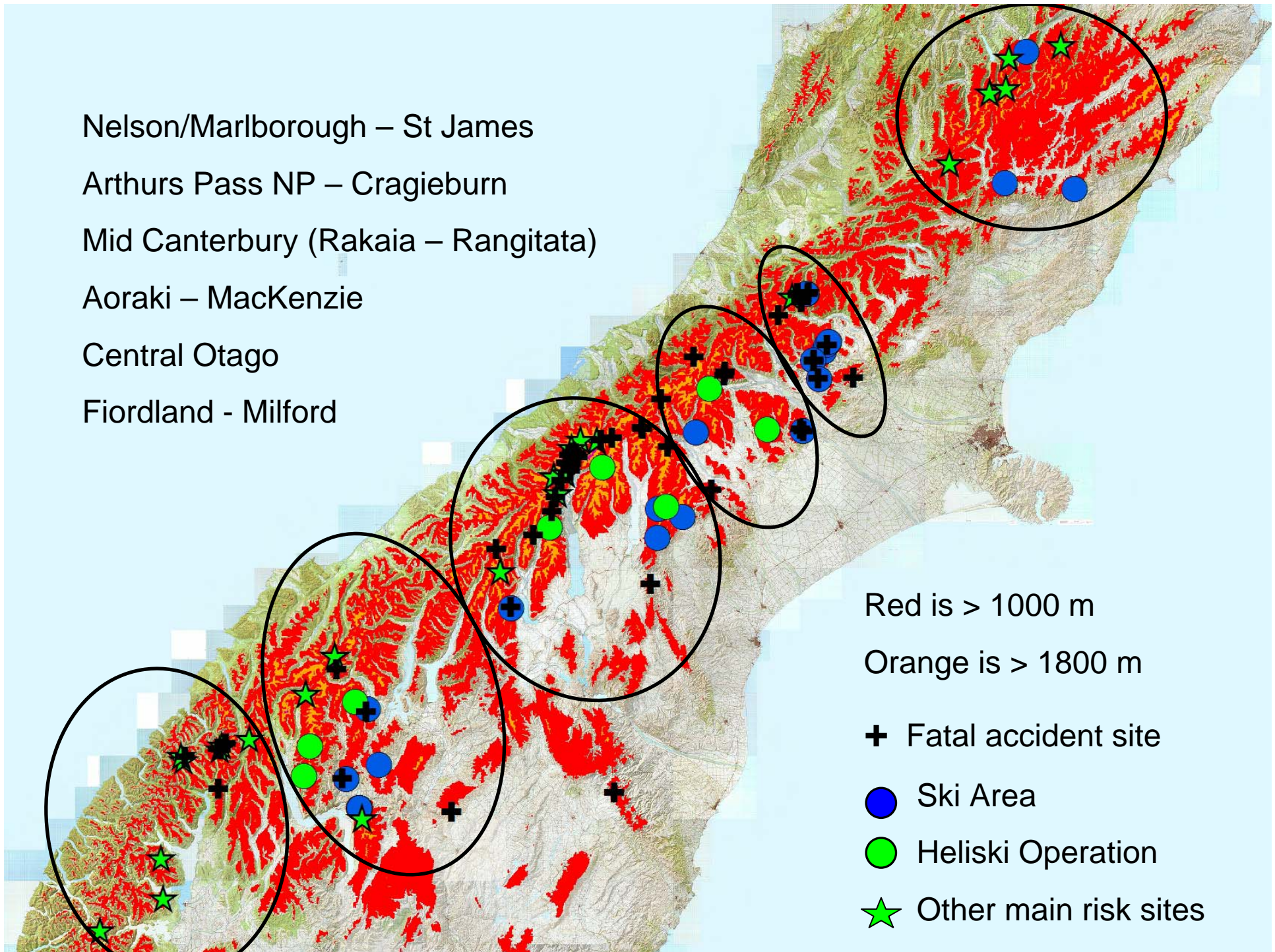
Orange is > 1800 m

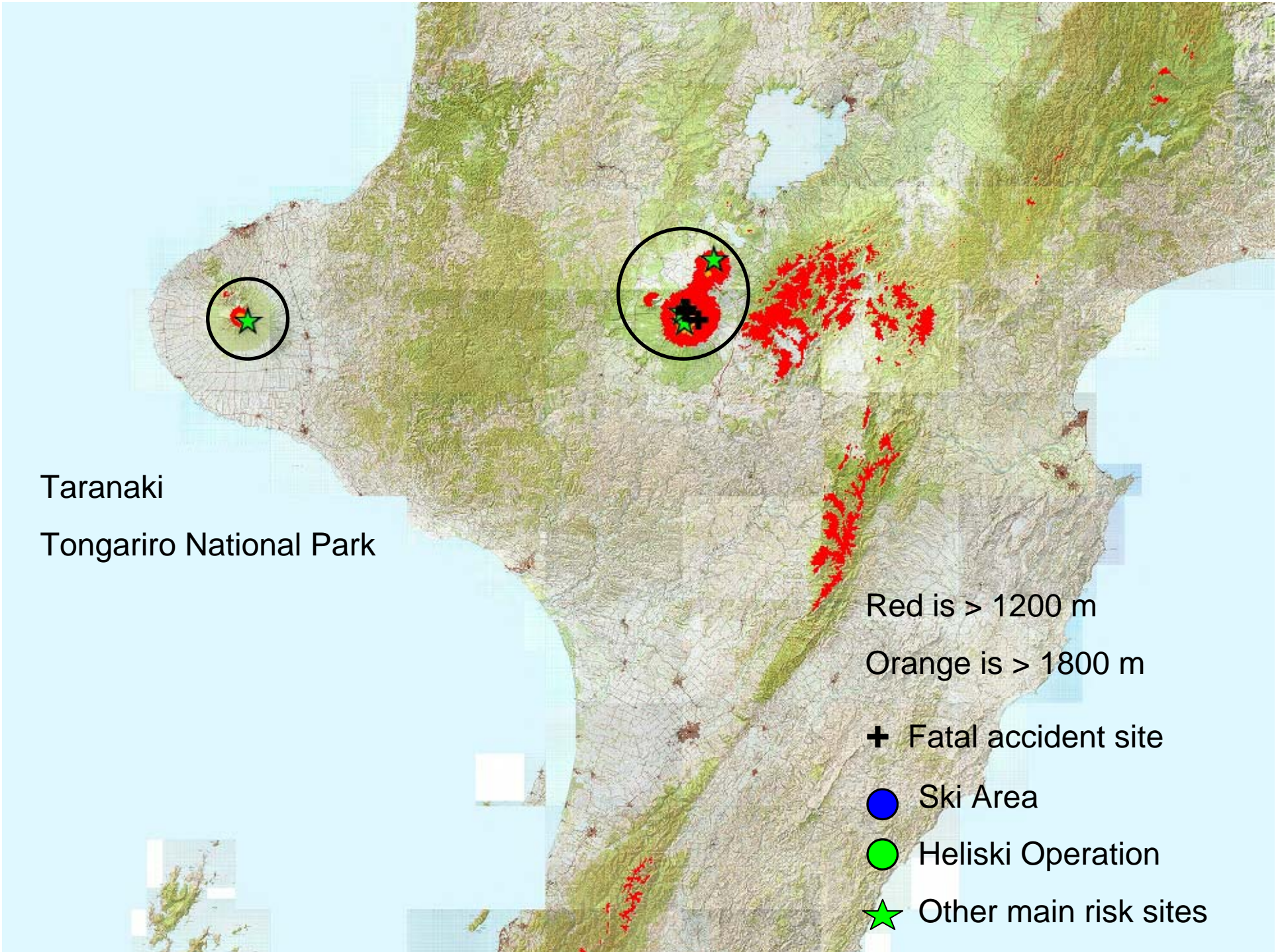
+ Fatal accident site

● Ski Area

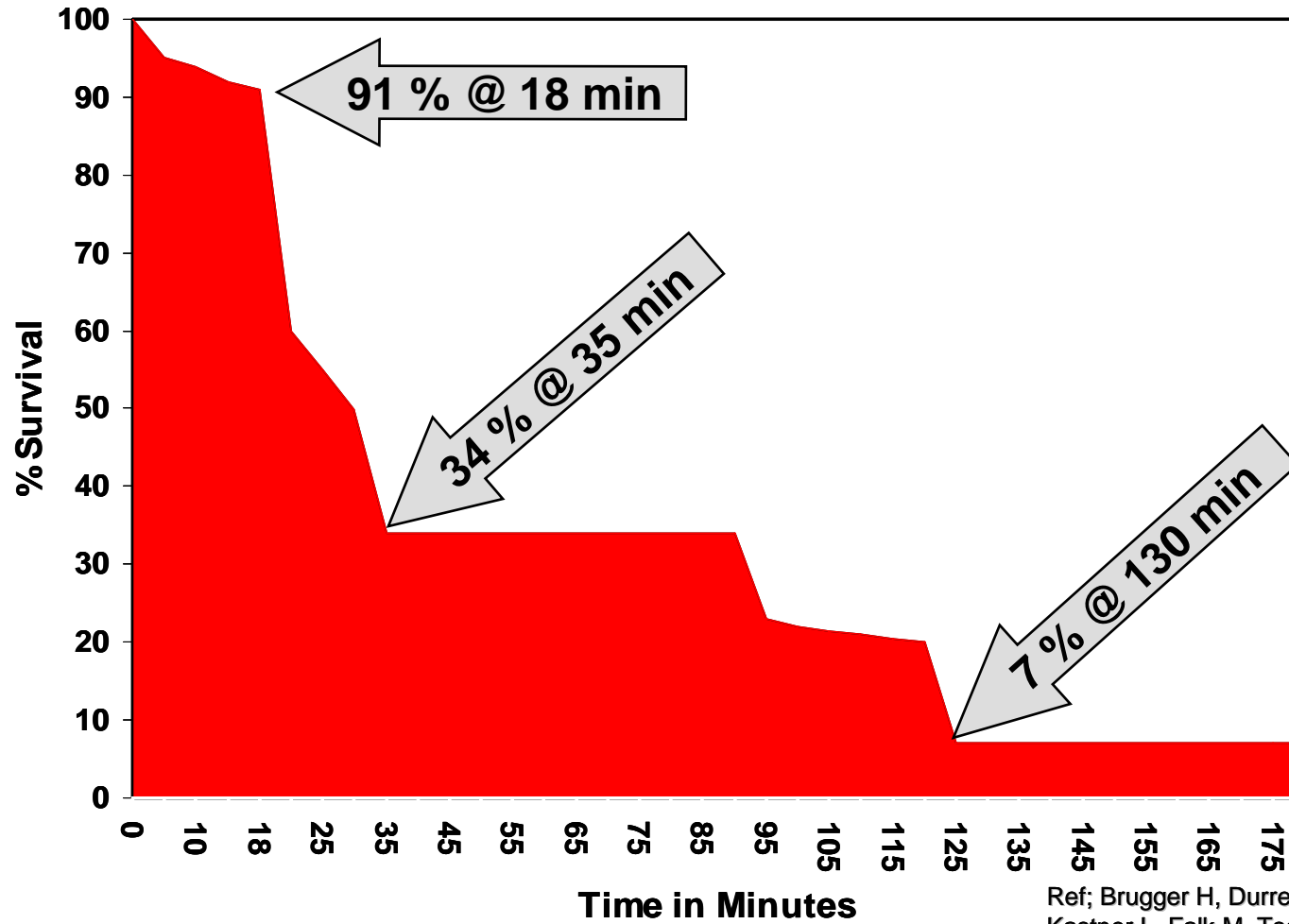
● Heliski Operation

★ Other main risk sites





Probability of Survival When Buried in an Avalanche in the Open

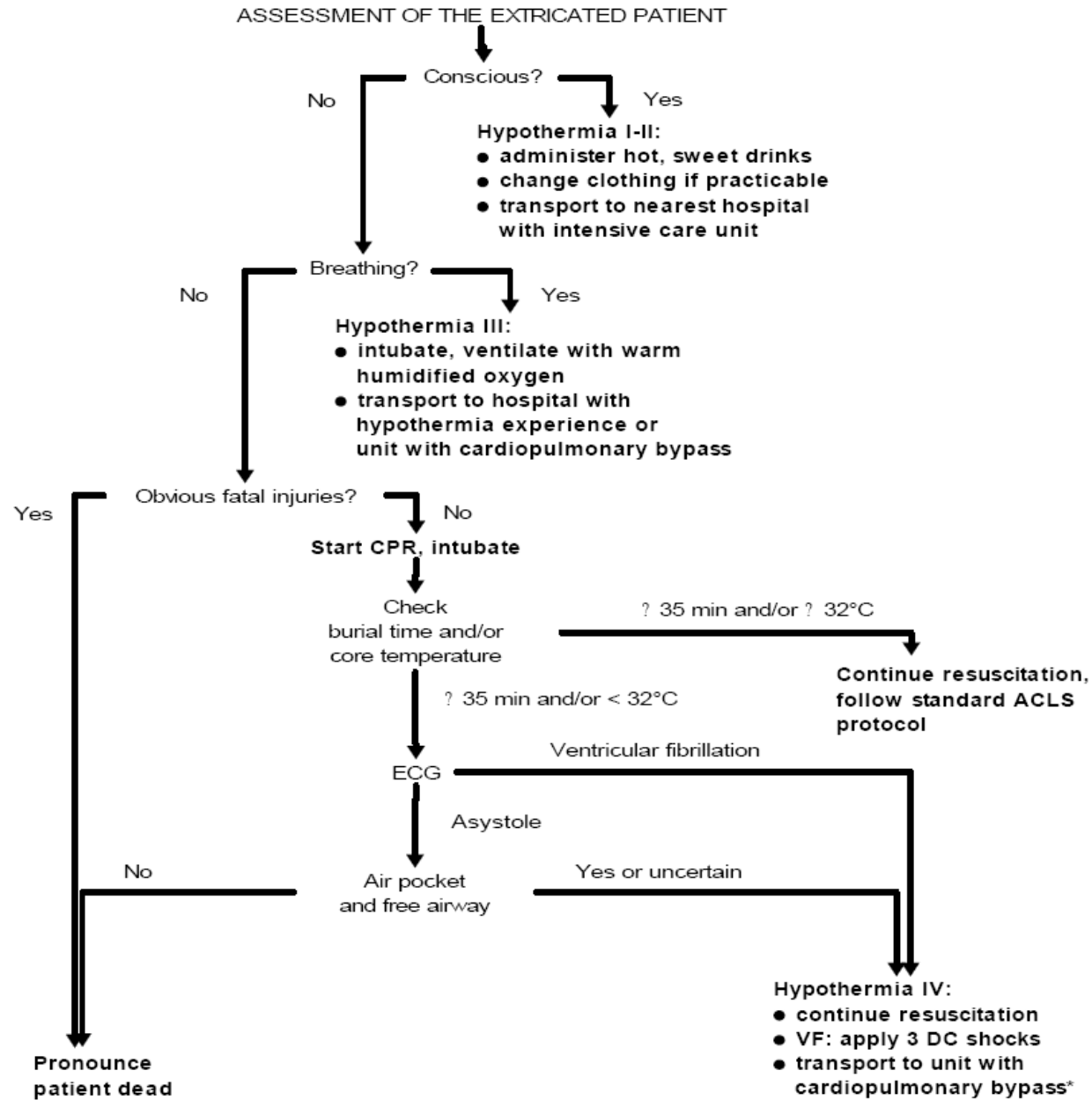


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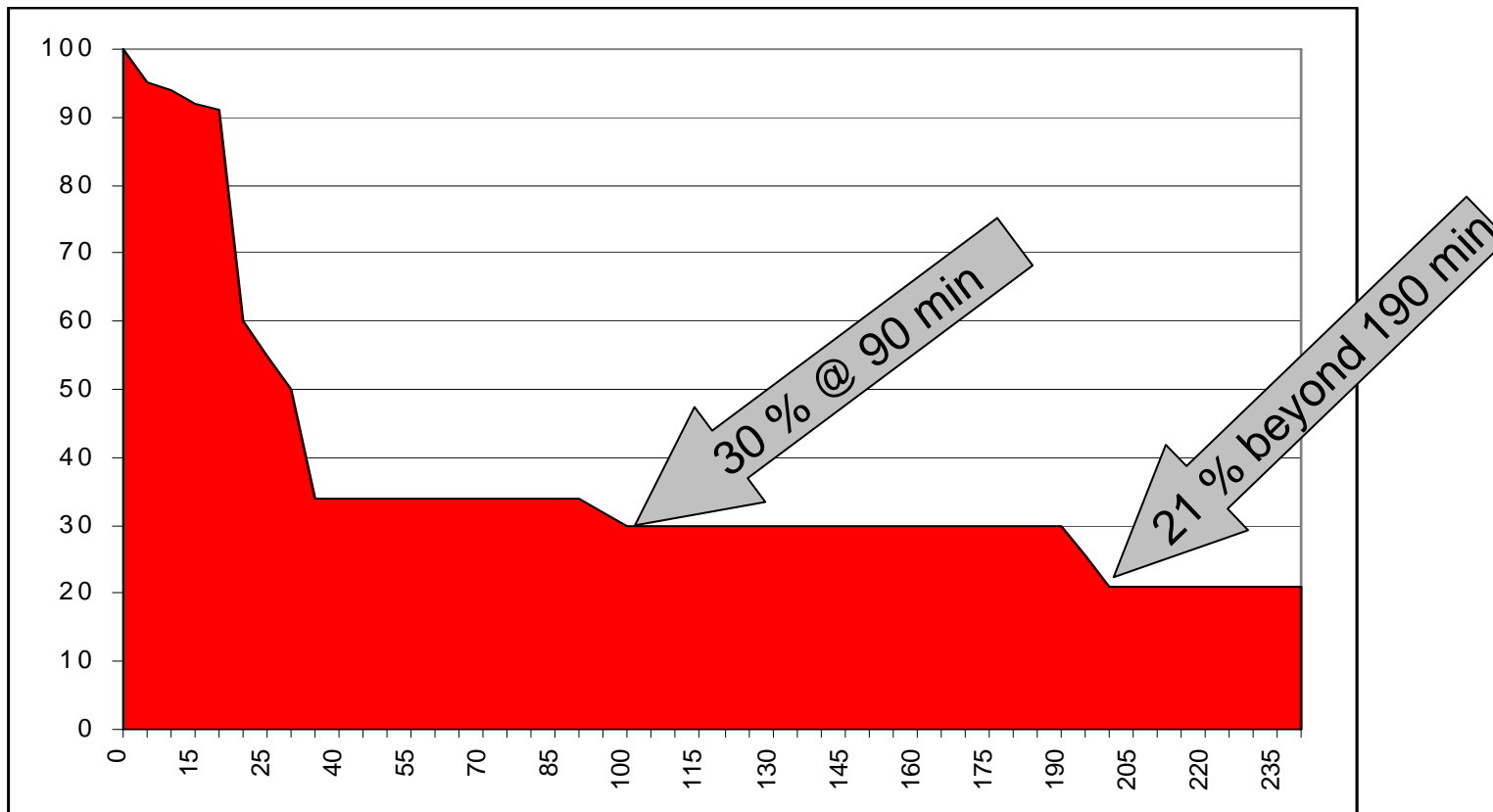
Ref; Brugger H, Durrer B, Adler-Kastner L, Falk M, Tschirky F (2001) Elsevier



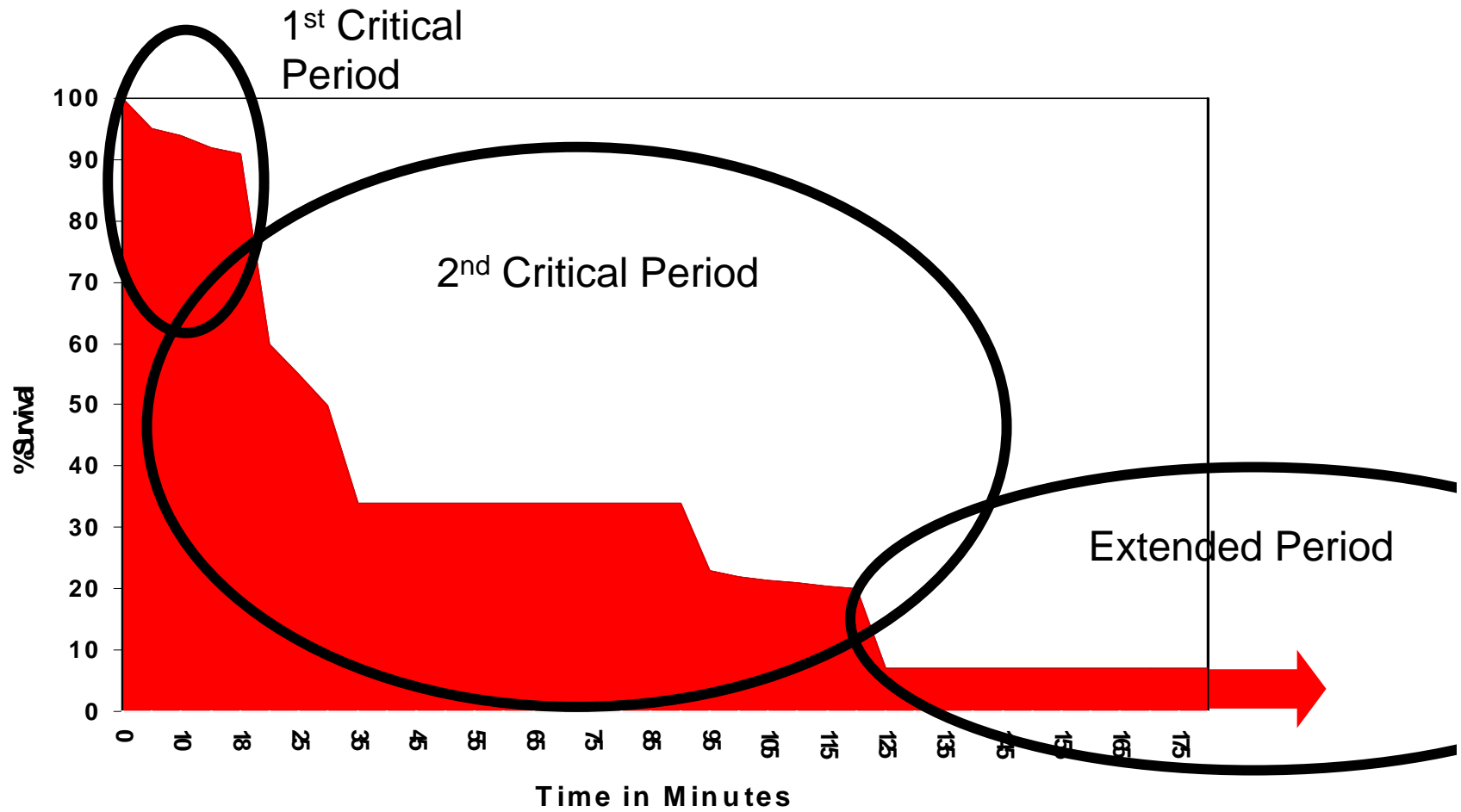
International Commission for Alpine Rescue



Buried in Vehicles or Buildings



Three Distinct Periods



90 Minutes is our target time

- Pre-planning
- Dogs
- Skilled rescuers
- Advanced medical help on site
- Rapid transport



Type of response needed

Situation	Immediate requirements	Additional requirements
<p>Within last 2 hours Known to have transceivers</p>	<ul style="list-style-type: none"> •ASC •Expert medical help •Extra diggers 	<ul style="list-style-type: none"> •More diggers •More medical •Dogs •RECCO
<p>Within last 2 hours No or unknown transceivers</p>	<ul style="list-style-type: none"> •ASC •Dogs •Diggers •Expert medical help 	<ul style="list-style-type: none"> •Probers •More diggers •More medical •RECCO
<p>Older event</p>	<ul style="list-style-type: none"> •ASC •Dogs •Diggers 	<ul style="list-style-type: none"> •Expert medical help •More diggers •Probers •RECCO

Key SAR Avalanche Issues

- Need for a fast response
- Interagency co-ordination
- Risks from avalanches to rescuers
- Standards for key roles at avalanche incidents
- Standards for SAR personnel working in avalanche terrain
- Communications
- Pre planning
- CIMS
- Organised Avalanche Rescue skills
- Medical

Scenarios that we need to be prepared for

- Annually we can expect
 - 20 to 30 incidents per annum
 - 4 to 10 responses⁺ nationally for 1 to 4
 - climbers
 - out of bounds boarders/skiers
 - heliskiers
 - ski patrollers
 - ski tourers
 - ski area users
 - hunters / trampers

+ = means needed help from outside of the involved group

Every 3 to 5 years one or more of the following

- Entire heliski party
- Major ski area incident
- Outdoor education/training group, large group of climbers, trampers or skiers
- Large group of walkers on a track near a road end
- Milford road bus