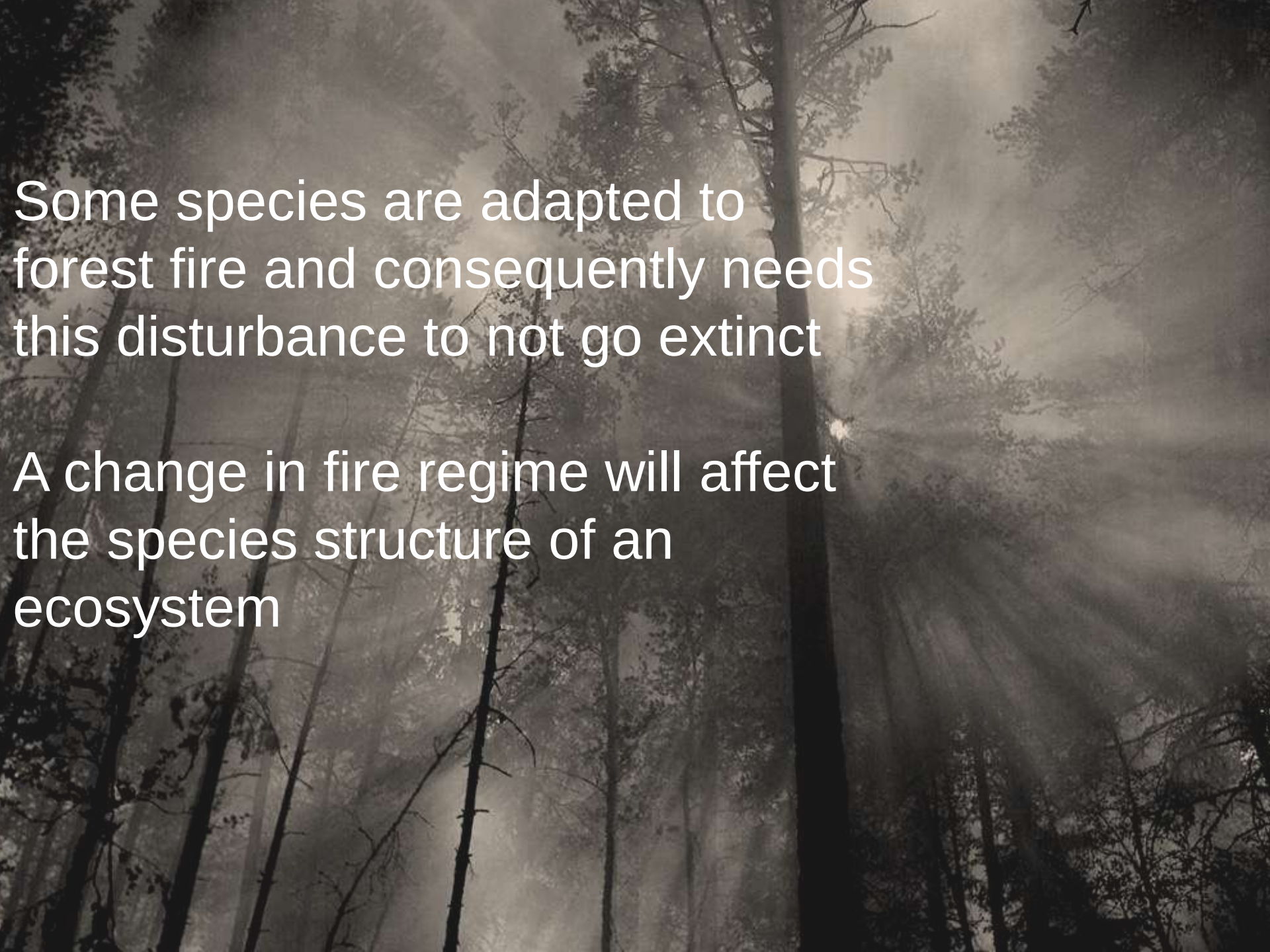
WOOD FUNGI AND FOREST FIRE

FOREST FIRE

Has been the major stand/replacing modifying disturbance in boreal forests, since re-forestation after the glacial period

Today forest fire suppression in Fennoscandia is very strong



Some species are adapted to forest fire and consequently needs this disturbance to not go extinct

A change in fire regime will affect the species structure of an ecosystem

AFTER THE FIRE

RE-COLONIZATION?

A CHANGE IN ECOSYSTEM PROPERTIES

NEW SPECIES EMERGE

WOOD FUNGI

WOOD FUNGI

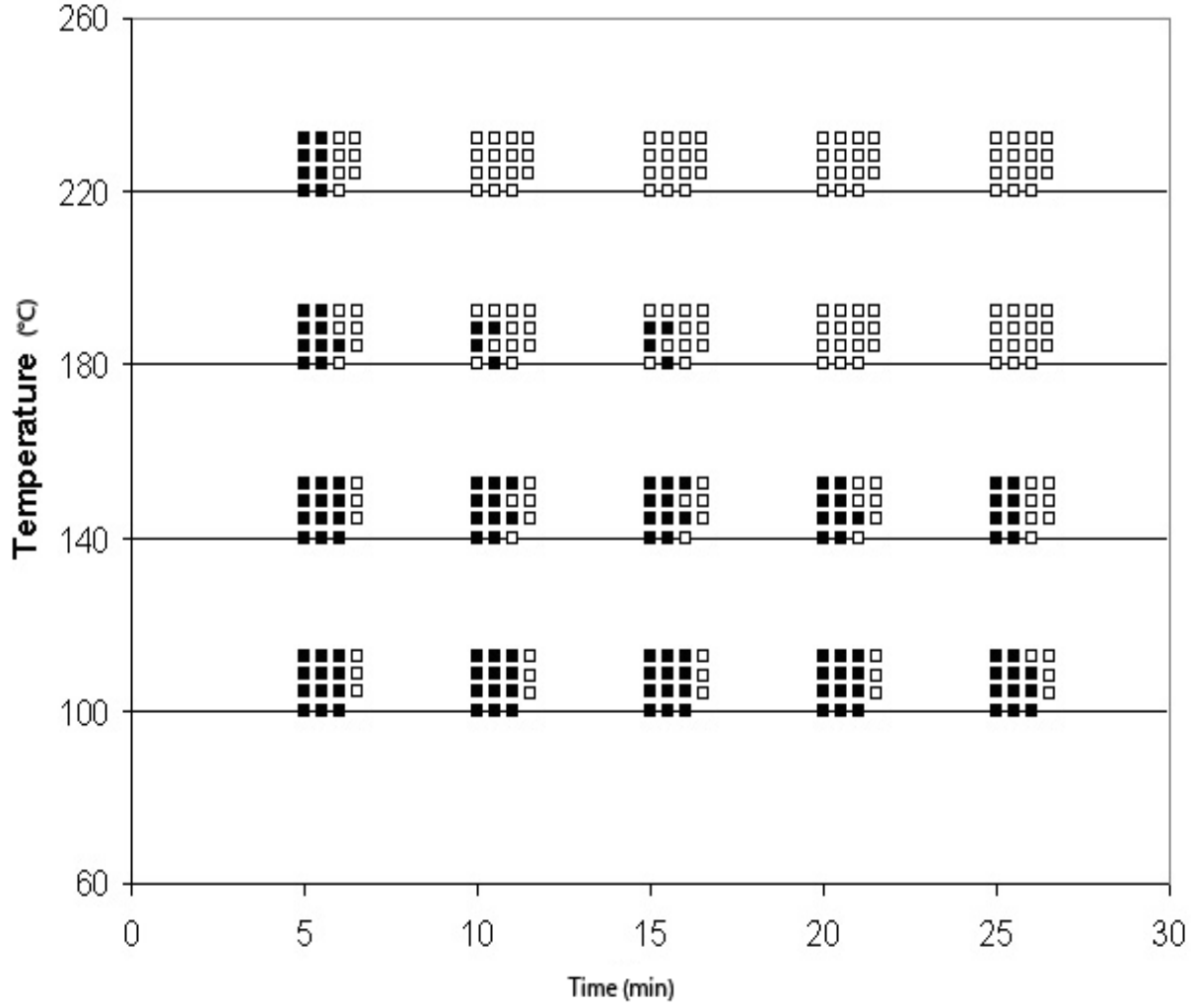
WOOD FUNGI GET THEIR RESOURCES BY DECAYING WOOD

THE ENGINEERS OF DEAD WOOD

VERY IMPORTANT FOR THE FUNCTION OF ECOSYSTEMS

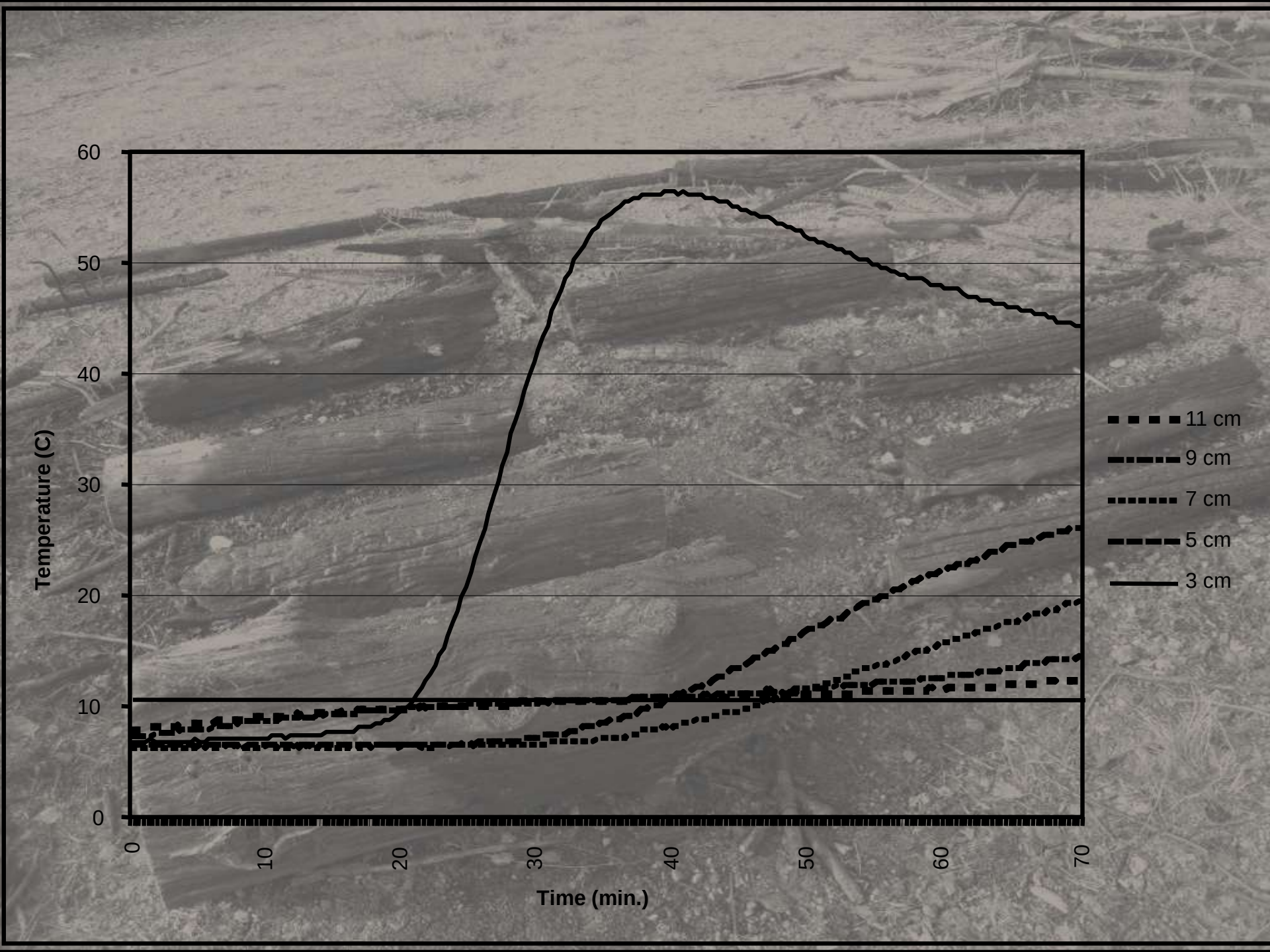

1.
2.
3.
SURVIVAL

Heat resistance

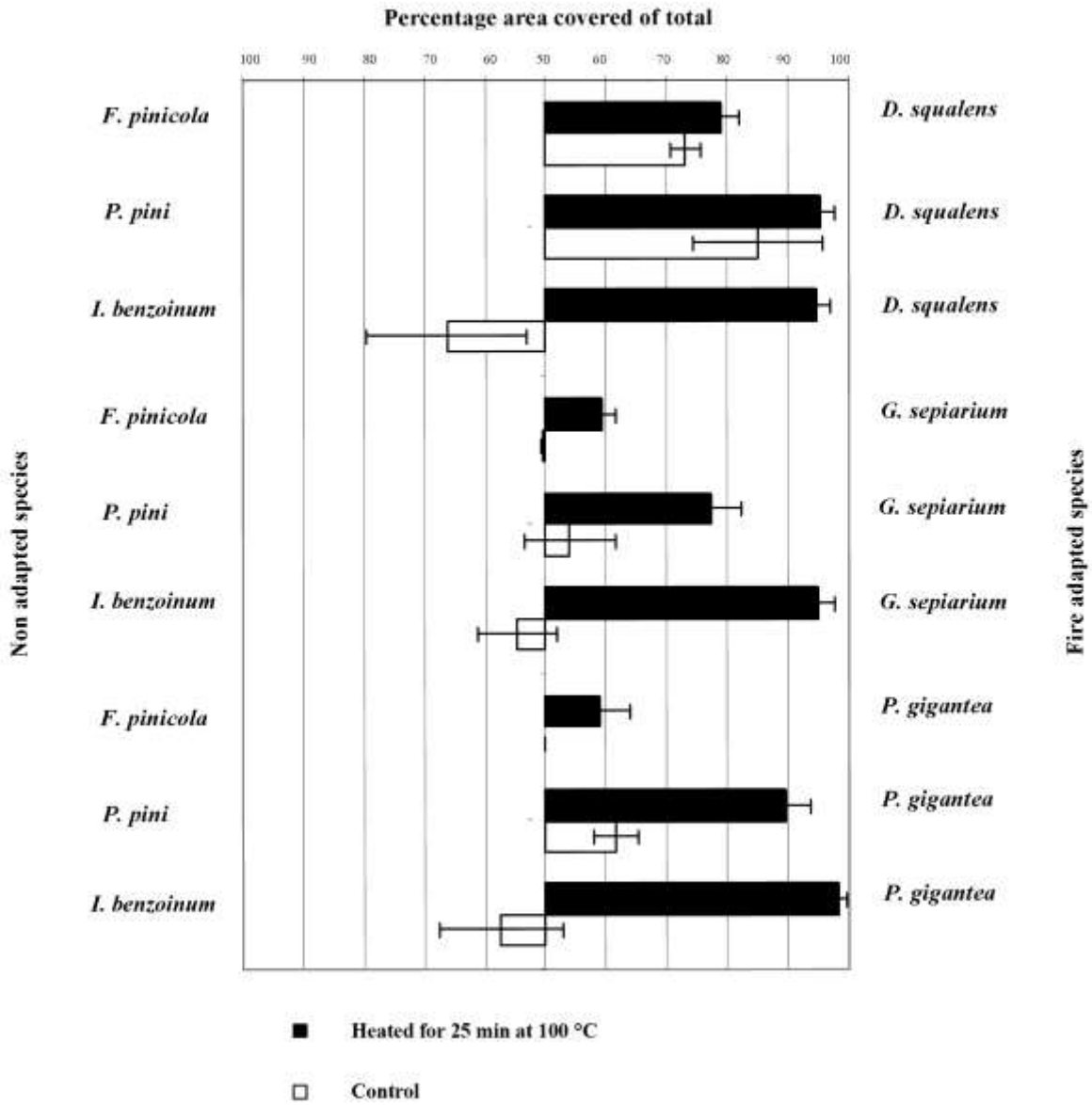


1	5	9	13
2	6	10	14
3	7	11	15
4	8	12	

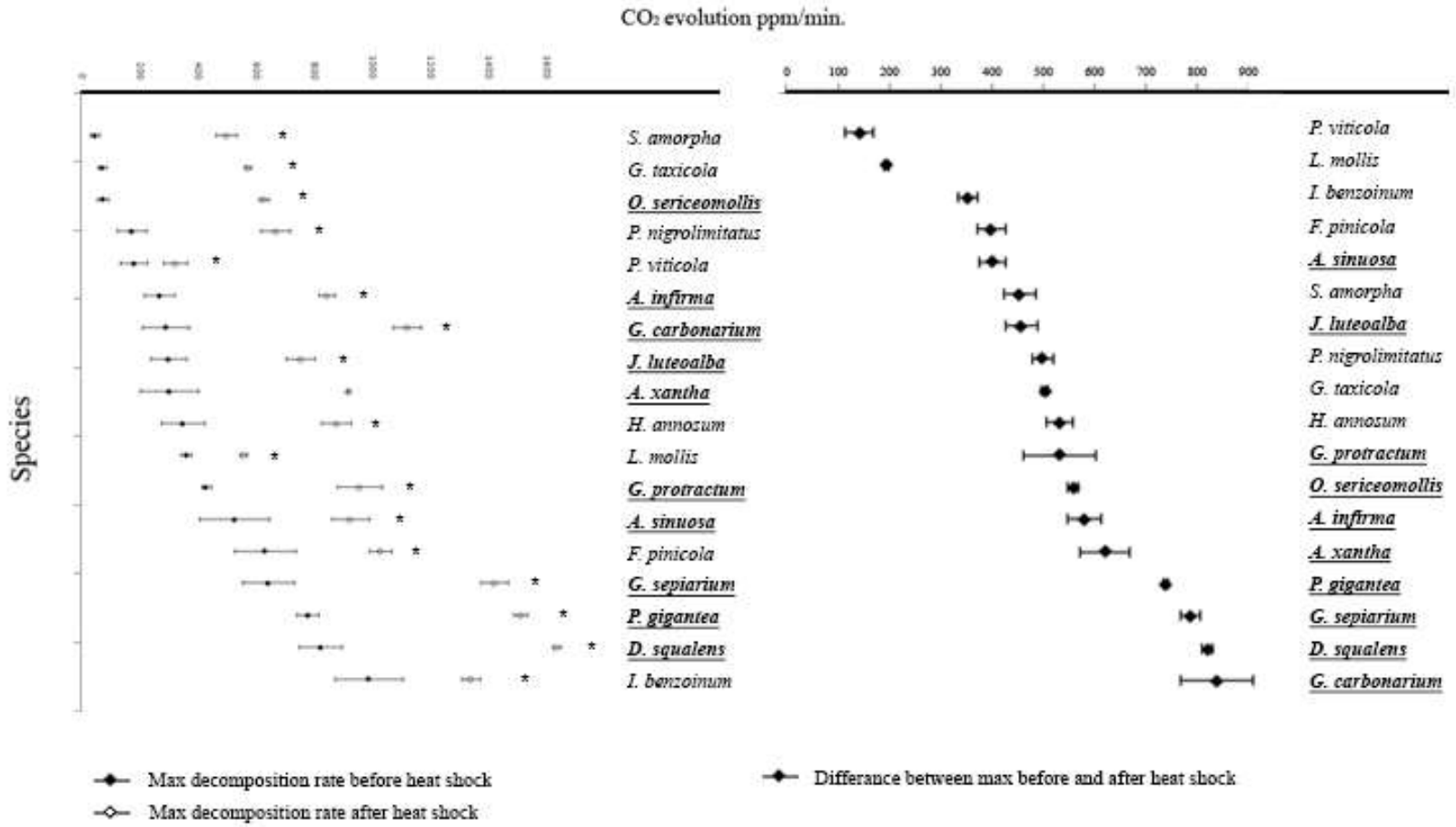
1.(A) *G. protractum*
2.(A) *P. gigantea*
3.(A) *D. squalens*
4.(A) *A. sinuosa*
5.(A) *J. luteoalba*
6.(A) *A. infirma,*
7.(A) *O. sericeomollis*
8.(A) *G. sepiarium*
9.(N) *S. amorpha*
10.(N) *I. benzoinum*
11.(N) *F. pinicola*
12.(N) *P. pini*
13.(N) *A. serialis*
14.(N) *P. ferrugineofuscus*
15.(N) *P. centrifuga*

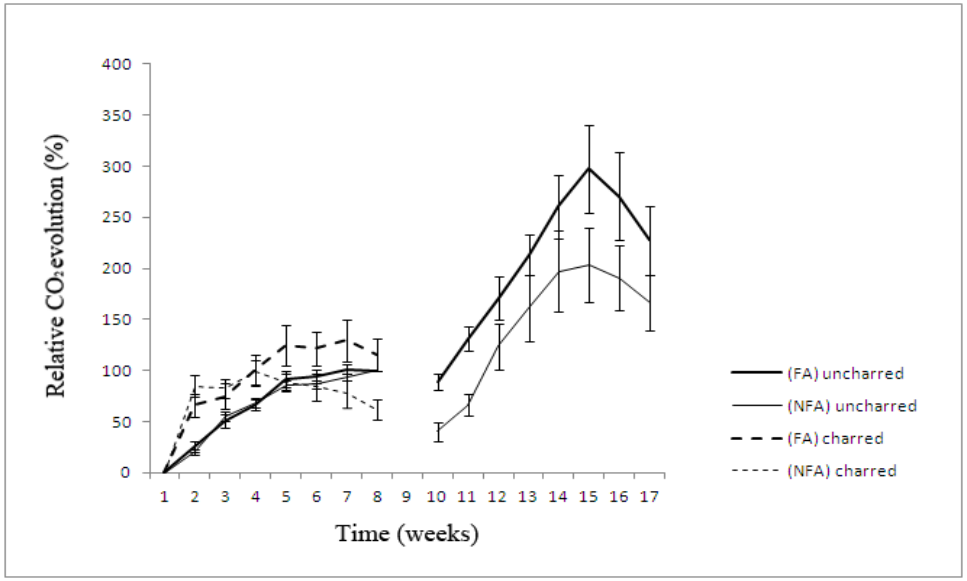

60
50
40
30
20
10
0
Temperature (C)
0
10
20
30
40
50
60
70
Time (min.)
11 cm
9 cm
7 cm
5 cm
3 cm

Competition


Percentage area covered of total
100
90
80
70
60
50
60
70
80
90
100
F. pinicola
P. pini
I. benzoinum
F. pinicola
P. pini
I. benzoinum
F. pinicola
P. pini
I. benzoinum
D. squalens
D. squalens
D. squalens
G. sepiarium
G. sepiarium
G. sepiarium
P. gigantea
P. gigantea
P. gigantea
Non adapted species
Fire adapted species
Heated for 25 min at 100 °C
Control

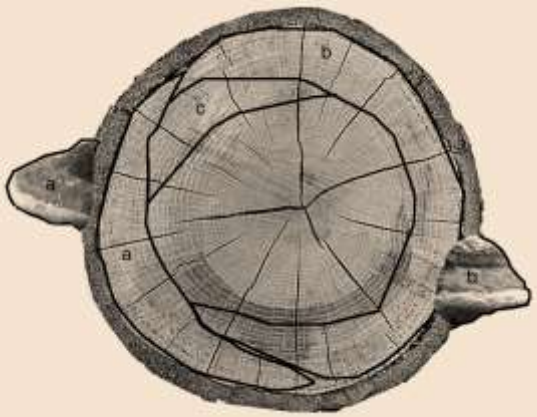
Decomposition


CO2 evolution ppm/min.
0
100
200
300
400
500
600
700
800
900
Species
S. amorpha
G. taxicola
O. sericeomollis
P. nigrolimitatus
P. viticola
A. infirma
G. carbonarium
J. luteoalba
A. xantha
H. annosum
L. molliz
G. protractum
A. sinuosa
F. pinicola
G. sepiarium
P. gigantea
D. squalens
I. benzoinum
P. viticola
L. molliz
I. benzoinum
F. pinicola
A. sinuosa
S. amorpha
J. luteoalba
P. nigrolimitatus
G. taxicola
H. annosum
G. protractum
O. sericeomollis
A. infirma
A. xantha
P. gigantea
G. sepiarium
D. squalens
G. carbonarium
Max decomposition rate before heat shock
Max decomposition rate after heat shock
Differance between max before and after heat shock


Relative CO_2 evolution (%)
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Time (weeks)
(FA) uncharred
(NFA) uncharred
(FA) charred
(NFA) charred


A
1
0
5
15
0
5
15

COMPETITON



CONCLUSIONS

The fire-associated species has increased competetive strength after heat stress.

Even though the temperatures are not lethal to the non fire-associated the event causes their antagonists to gain the upper hand.

This could be the reason why some species are more common after a forest fire.

The fire associated species used in the presented study WILL BE favoured by a forest fire.