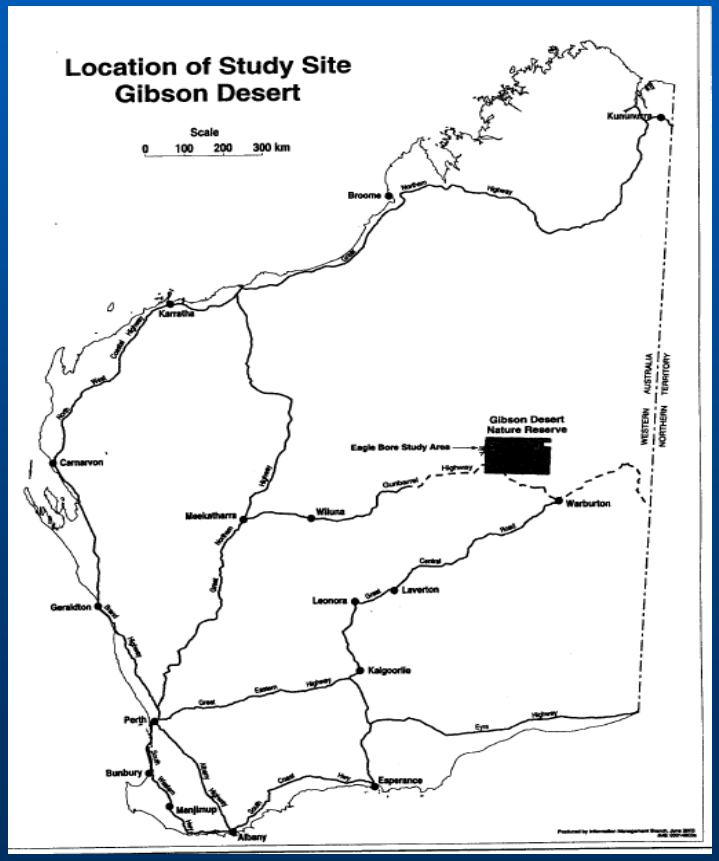
Fire Ecology of Vascular Plants in the Gibson Desert

Bruce Ward and Dr Tom Bragg

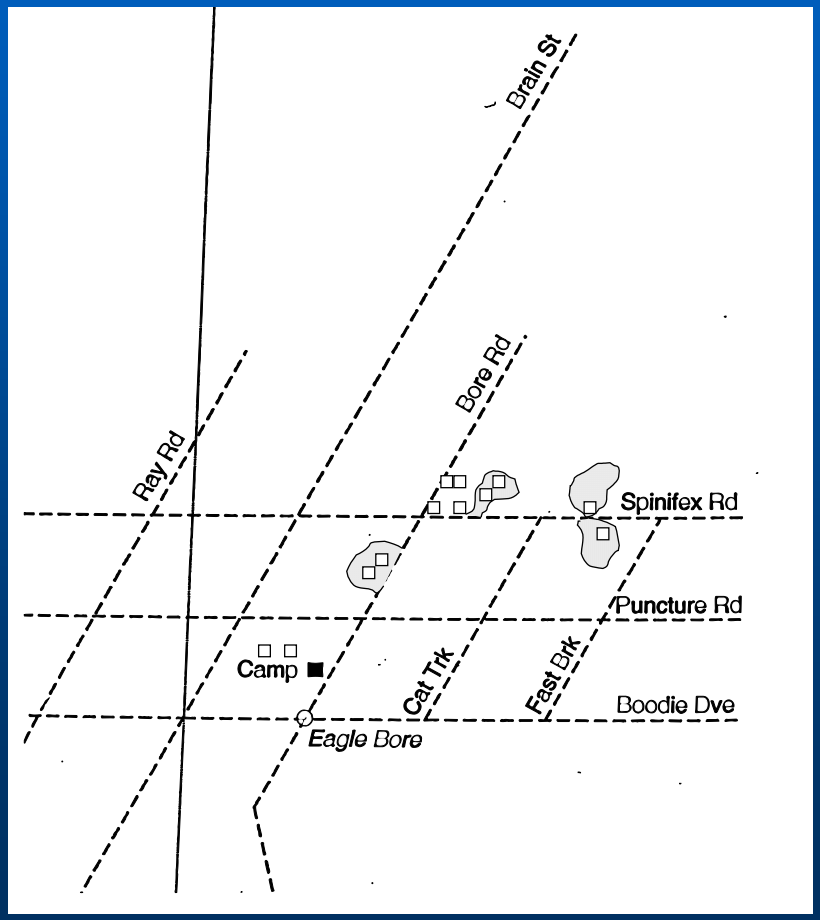
Project Goals

- **Measure post fire changes in species richness**
- **Determine the time taken for system to reach a stable condition**
- **Determine changes in functional groups with time since fire**

Site Location



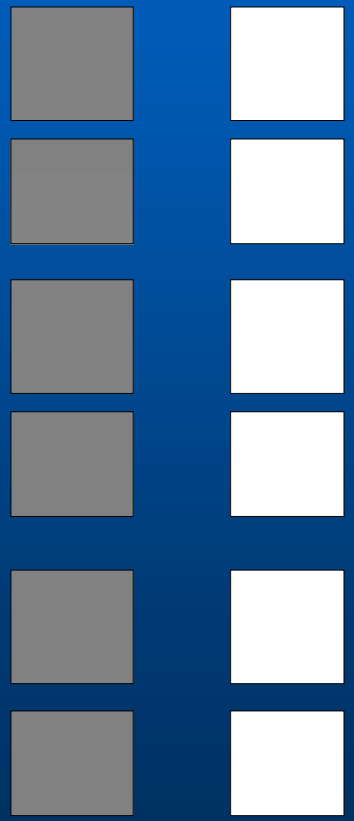
Plot Location



- Triodia basedowii sandplain
- Triodia schinzii sandplain
- Mulga belt

Plot Design

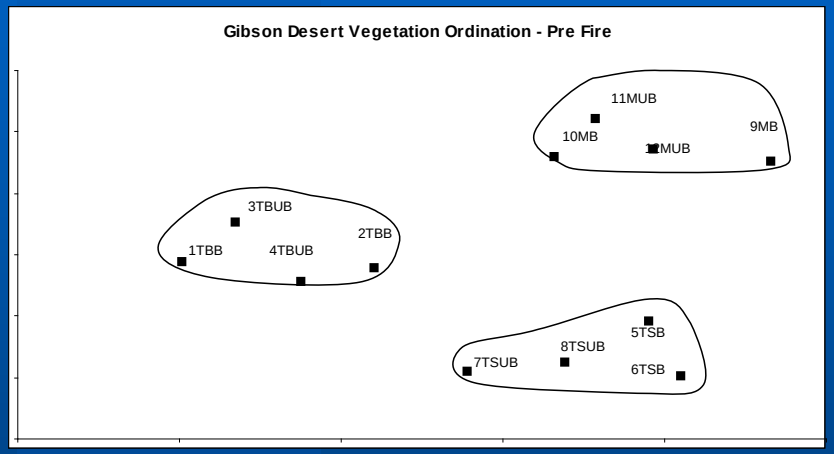
- **Triodia basdowii**
- **Triodia schinzii**
- **Mulga**

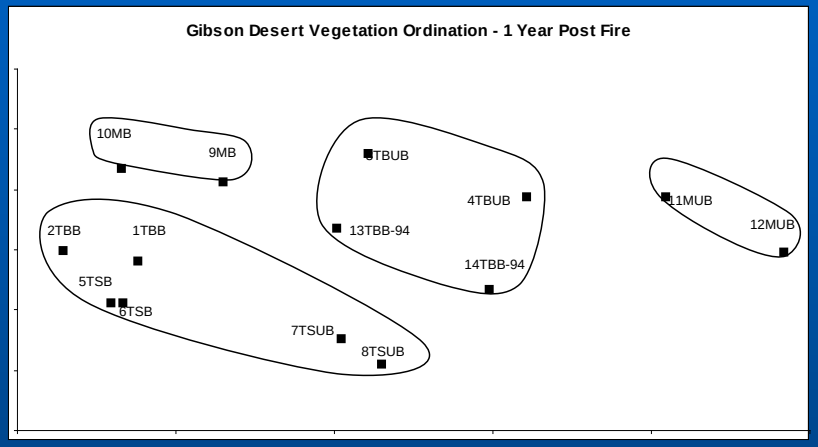


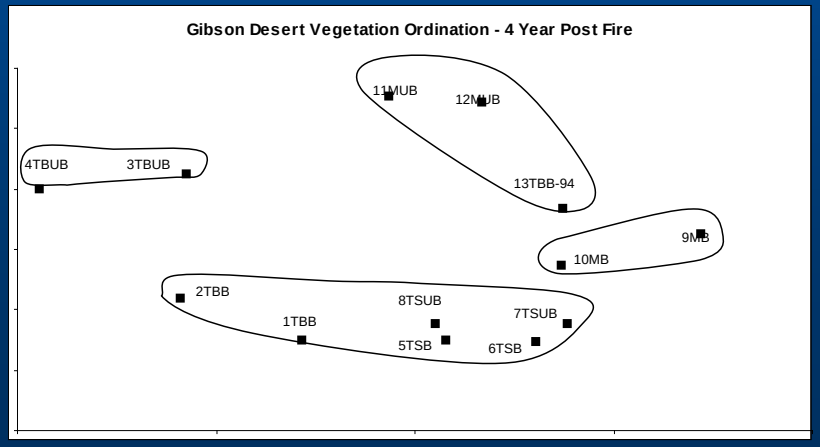
Results

- **Test controls - ANOVA, CAP tests.**
- **Ordination - multi dimentional scaling (PATN) Pattern Analysis Package**

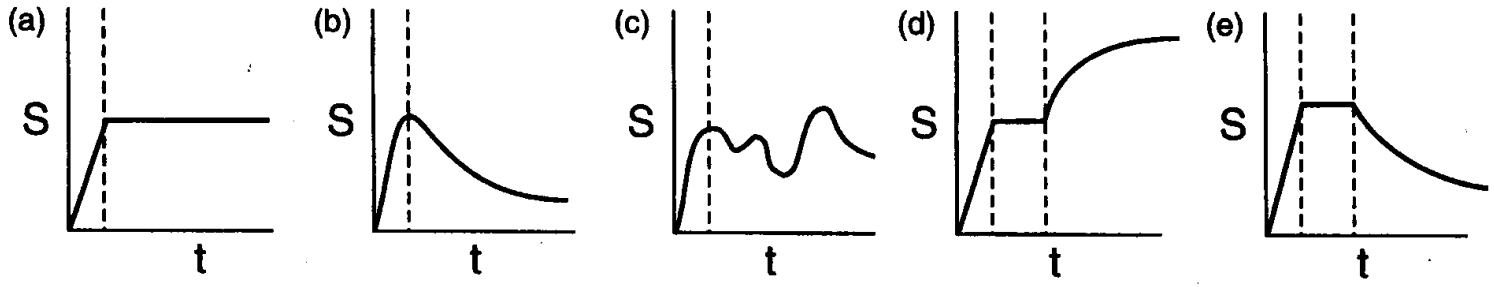
Ordination


Gibson Desert Vegetation Ordination - Pre Fire
11MUB
10MB
12MUB
9MB
3TBUB
2TBB
1TBB
4TBUB
5TSB
8TSUB
7TSUB
6TSB

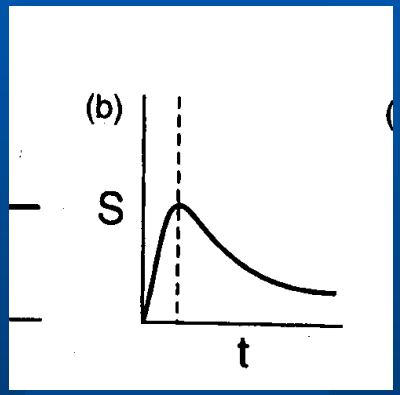

Gibson Desert Vegetation Ordination - 1 Year Post Fire
10MB
9MB
3TBUB
4TBUB
11MUB
12MUB
13TBB-94
2TBB
1TBB
14TBB-94
5TSB
6TSB
7TSUB
8TSUB

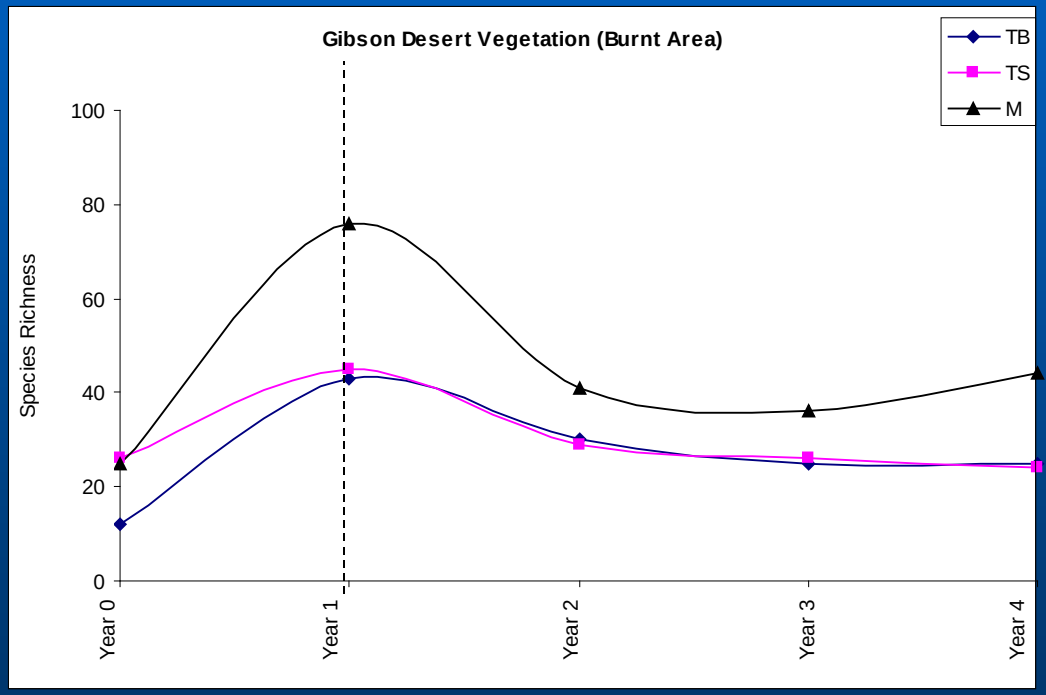

Gibson Desert Vegetation Ordination - 4 Year Post Fire
11MUB
12MUB
4TBUB
3TBUB
13TBB-94
9MB
10MB
2TBB
8TSUB
7TSUB
1TBB
5TSB
6TSB

Species richness.

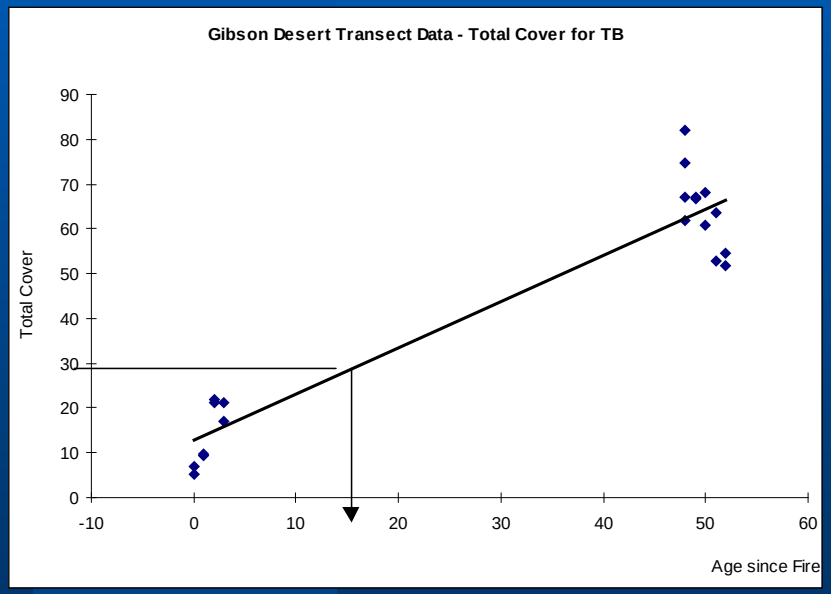


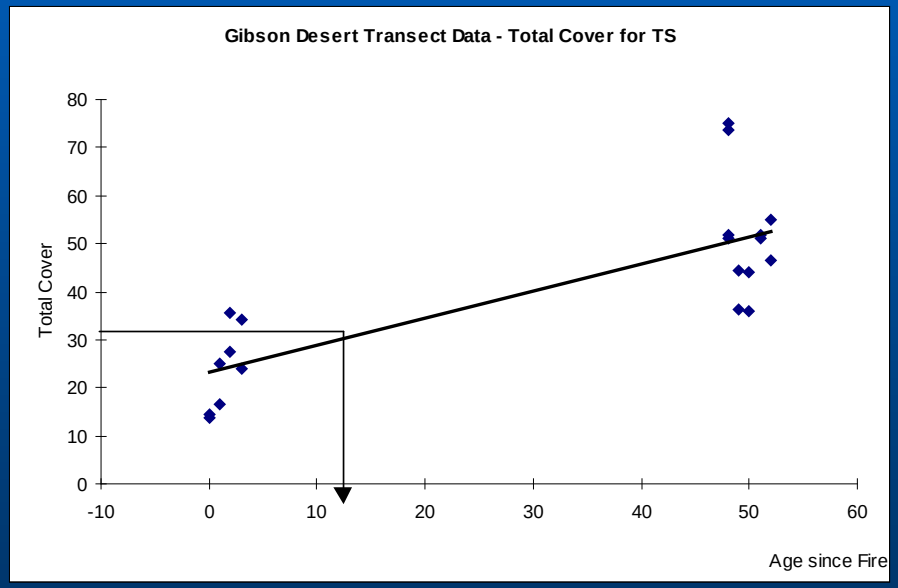
Species richness



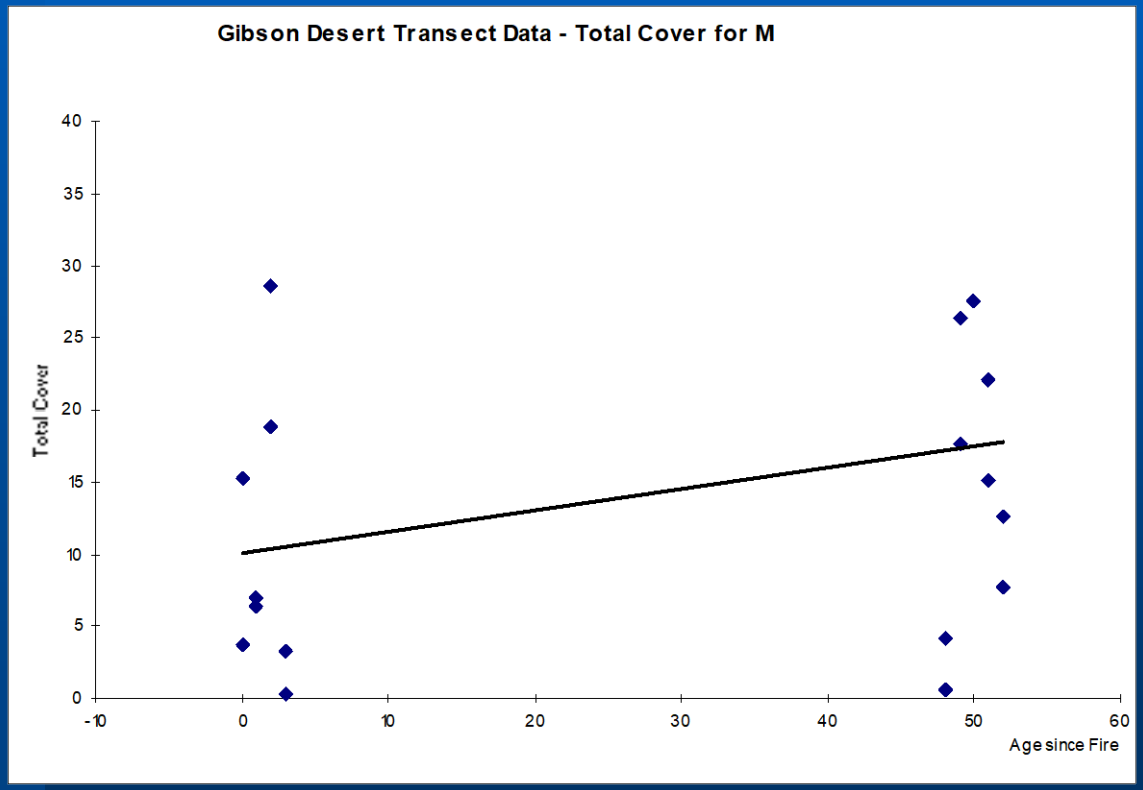


Recovery (30% cover)

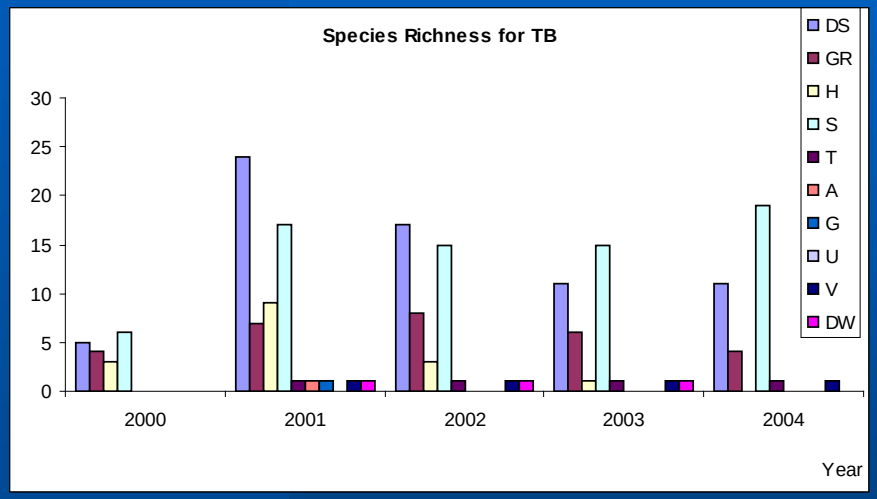


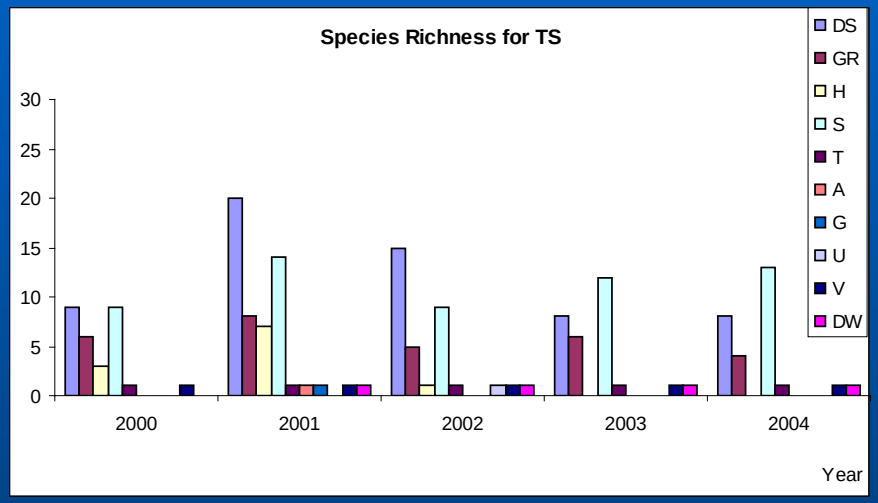


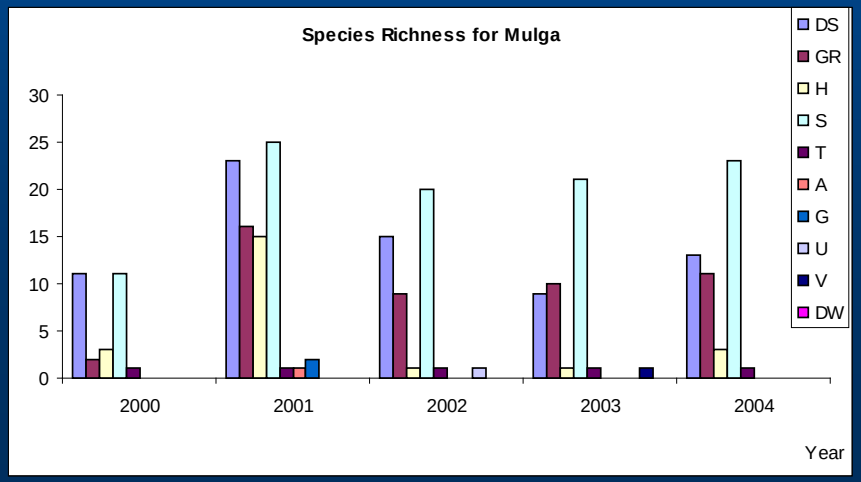
Recovery (30% cover)



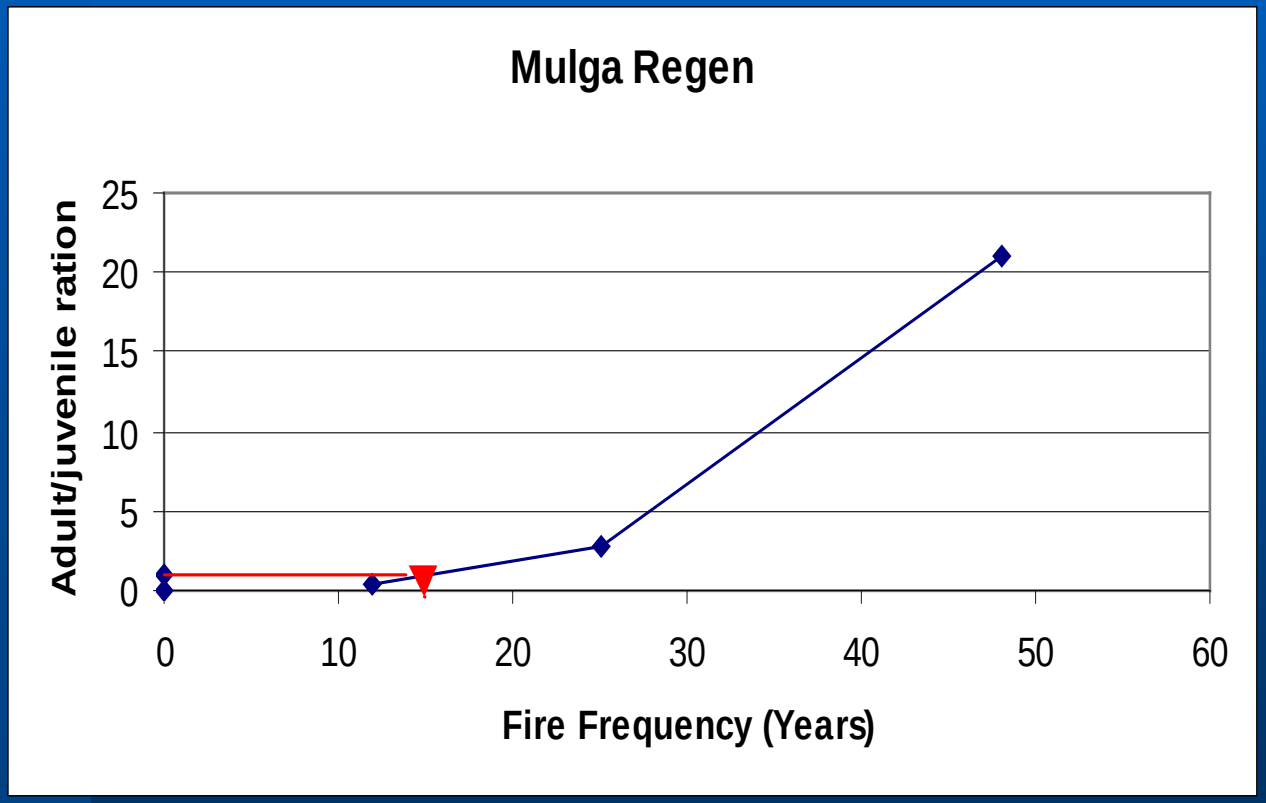
Lifeform


Species Richness for TB
DS
GR
H
S
T
A
G
U
V
DW
30
25
20
15
10
5
0
2000
2001
2002
2003
2004
Year


Species Richness for TS
DS
GR
H
S
T
A
G
U
V
DW
30
25
20
15
10
5
0
2000
2001
2002
2003
2004
Year


Species Richness for Mulga
DS
GR
H
S
T
A
G
U
V
DW
30
25
20
15
10
5
0
2000
2001
2002
2003
2004
Year

Mulga


Mulga Regen
Adult/juvenile ration
25
20
15
10
5
0
0
10
20
30
40
50
60
Fire Frequency (Years)

Further Study - recommendations

- **Continue monitoring - reduced frequency, 5 year intervals till age 15**
- **Reburn plots at age 15 - Do we get the same species?**
- **Relate animals/inverts to vegetation age - maximum number approach?**
- **Complete mulga regen/age sites to determine if adult/juvenile ratio dependent on fire frequency**

THE END