

Düsternbrook : fighting bush encroachment

1. Provisional report following September 2011 fire

Transect 1

Transect side	No	Species	Height	Notes	Observations 20/09/2011 (following September fire)
Left	1	<i>Dichrostachys cinerea</i>	3m	Marked with a pole	No effect
Left	2	<i>Acacia erubescens</i>	1.5m	Marked with a pole	No effect
Left	3	<i>Acacia erubescens</i>	4m	Marked with a pole	No effect
Left	4	<i>Dichrostachys cinerea</i>	3m	Marked with a pole	Slight charring, some nearby trees dead
Left	5	<i>Acacia erubescens</i>	5m	Marked with a pole (20 paces back)	No effect
Right	1	<i>Acacia erubescens</i>	2.5m	Marked with a pole	No effect
Right	2	<i>Acacia erubescens</i>	1.5m	Marked with a pole	Quite heavy damage, more ash around
Right	3	<i>Acacia erubescens</i>	1m	Marked with a pole	No effect
Right	4	<i>Dichrostachys cinerea</i>	2.5m	Marked with a pole	No effect
Right	5	<i>Dichrostachys cinerea</i>	3m	Marked with a pole (part of group of three)	Very slight damage

Overall at this transect damage has been minimal, with very little effect on the sample being monitored. It should be noted that this site was the closest to the water which could go some way to explain why the site didn't suffer too much. Also this site had a herbaceous yield of 1.68 t/ha so 16% under the ideal mass of 2t/ha.

Of those suffering damage *Dichrostachys cinerea* was affected on two out of four specimens, though the most damage was on an *Acacia erubescens* (however there were six of these in the sample site and five had no damage).

Travelling just a little way past the site of transect 1 (about an equal distance the other side of the power lines) there is a valley, marked by a stone beacon, where it was observed that there was significantly more damage. Substantially more ash could be seen changing the appearance from the track, with either side of the valley less affected and it was also noticeable that if you looked at the end of the valley as

the fire would have then made its way up the hill there was again less visible damage. So standing on the edge of the track looking straight at the valley, moving just 45 degrees to the left or the right led to a view much more like that seen at transect 1 of less ash and minimal damage to the bushes.



Acacia erubescens at Transect 1 (Left 3)

Photo taken: 20th September 2011

Transect 2

Transect side	No	Species	Height	Notes	Observations 20/09/2011 (following September fire)
Left	1	<i>Acacia erubescens</i>	2.5m	Marked with a pole	Medium damage, especially at base. Leaves are dry
Left	2	<i>Catophractes alexandri</i>	2m	Marked with a pole	Little effect mainly confined to leaf damage
Left	3	<i>Dichrostachys cinerea</i>	3m	Marked with a pole	Medium charring but not all the way up. Some green but mainly burnt leaves
Left	4	<i>Dichrostachys cinerea</i> / <i>Rhigozum trichotomum</i>	3m 1m	Both marked with one pole only	Medium to strong charring, no leaves
Left	5	<i>Acacia erubescens</i>	3m	Marked with a pole (12 paces back)	
Right	1	<i>Catophractes alexandri</i>	3m	Marked with a pole	Little to medium damage, more leaves left but they are dry
Right	2	<i>Dichrostachys cinerea</i>	4m	Marked with a pole	Medium to heavy damage, leaves are dry
Right	3	<i>Dichrostachys cinerea</i>	3m	Marked with a pole	Little to medium damage, leaves are dry
Right	4	<i>Acacia erubescens</i>	2m	Marked with a pole	Heavy damage, no leaves
Right	5	<i>Acacia erubescens</i>	4m	Marked with a pole	Medium to heavy damage, no leaves.

Compared to transect 1 there was greater damage at this site. It is worth noting that this site is further away from the water than transect 1, however the herbaceous yield was only 1.53 t/ha, a figure even lower than transect 1.

The strongest damage witnesses was on the smallest *Acacia erubescens*, as with transect 1, with the least damage seen on the two *Catophractes alexandri*

It was again noticeable around this transect how much greater the fire damage was when there were valleys in the landscape which will have acted as channels, so potentially containing the fire more within them, minimising the damage to either side of them.



Two photos taken at the same spot on Tuesday 20th September 2011. The photo of the left is at 45 degrees to the road whilst the one of the right is at 90 degrees. Notice how much damage there is on the right-hand photo, with an increased level of ash and damage in such valleys.

Transect 3

Transect side	No	Species	Height	Notes	Observations 20/09/2011 (following September fire)
Left	1	<i>Acacia reficiens</i>	3m	Marked with a pole	Heavy damage, no leaves
Left	2	<i>Catophractes alexandri</i>	1.5m	Marked with a pole	Heavy damage, no leaves
Left	3	<i>Dichrostachys cinerea</i>	3.5m	Marked with a pole	Very heavy damage
Left	4	<i>Acacia luederitzii</i>	2,5m	Marked with a pole	Quite heavy damage, lots of ash around, no leaves
Left	5	<i>Acacia erubescens</i>	3m	Marked with a pole (10 paces back)	Heavy damage, no leaves
Right	1	<i>Acacia reficiens</i>	1.5m	Marked with a pole	Little to medium damage, more leaves left but they are dry
Right	2	<i>Acacia reficiens</i>	5m	Marked with a pole	Heavy damage, no leaves, survival is questionable
Right	3	<i>Acacia erubescens</i>	3m	Marked with a pole	Heavy damage, no leaves
Right	4	<i>Acacia reficiens</i>	2.5m	Marked with a pole	Heavy damage, no leaves
Right	5	<i>Dichrostachys cinerea</i>	2.5m	Marked with a pole	Heavy damage, no leaves

Transect 3 had a very different appearance to the first two. There was substantially more damage all around and several of the remaining samples were hardly recognisable. This transect was the only one of the four to have a herbaceous yield of over 2t/ha (actual figure 2.37t/ha), the value deemed as a figure to surpass for a hot, effective fire against bush, and the observations seemed to confirm this.

Also worth noting is that this is the one transect where annual grasses only accounted for one-third of the herbaceous yield, whereas at the other sties this figure was two-thirds. Rather at transect 3 it was perennial grasses which had the highest share of the yield.

There doesn't seem to be any major observations to make over the species and their resistance at this site as one *reficiens* did relatively well whilst another was severely damaged.



Photograph of the level of damage at transect 3. Notice how much more damage there is at this site than at transect 1 for example.

Photo taken 20th September 2011