

Supporting Information Tables S1 & S2

Table S1 List of taxa examined in this study, voucher numbers from personal collections and NCBI accession numbers for all genes and taxa

Taxa	Tissue source/Genbank gi numbers			
	<i>ITS</i>	<i>matK</i>	<i>ndhF</i>	<i>rbcL</i>
<i>Schizachyrium scoparium</i>	Genbank/ DQ005072	Genbank/ HE586094	Genbank/ HE577873	Genbank/ HE577863
<i>Andropogon gerardii</i>	Genbank/ DQ005015	Genbank/ AF144577	Genbank/ AF117391	Genbank/ AJ784818
<i>Sorghastrum nutans</i>	Genbank/ DQ005079	Genbank/ FR821326	Genbank/ AF117421	Genbank/ EF125121
<i>Panicum virgatum</i>	Genbank/ DQ005062	Genbank/ EU434294	Genbank/ U21986	Genbank/ EF125135
<i>Panicum oligosanthes</i>	-	YU:EJForre stel34/ KJ740971	YU:EJForre stel34/ KJ740987	YU:EJForre stel34/ KJ740993
<i>Bouteloua gracilis</i>	Genbank/ GU359285	Genbank/ HE575865	Genbank/ HE575771	Genbank/ JX848489
<i>Bouteloua curtipendula</i>	Genbank/ GU359281	Genbank/ AF144578	Genbank/ EF422911	Genbank/ JN681654
<i>Sporobolus compositus</i>	-	-	CSU:94198/ KJ740988	CSU:94198/ KJ740996
<i>Sporobolus heterolepis</i>	-	Genbank/ AF164429	YU:EJForre stel41/ KJ740989	YU:EJForre stel41/ KJ740997
<i>Eragrostis spectabilis</i>	-	Genbank/ HE577884	Genbank/ HE577868	Genbank/ HE577858
<i>Poa pratensis</i>	Genbank/ HQ600540	Genbank/ HQ600012	Genbank/ AY589101	Genbank/ HQ600433
<i>Koeleria pyramidata</i>	Genbank/ DQ336827	Genbank/ EF137505	-	Genbank/ AJ784825
<i>Aristida junciformis</i>	Genbank/ GQ924183	Genbank/ HE586078	Genbank/ HM346965	Genbank/ HE575817

<i>Elionurus muticus</i>	Genbank/ AF190758	YU:EJForre stel103/ KJ740978	YU:EJForre stel103/ KJ74084	Genbank/ FN870812
<i>Cymbopogon nardus</i>	Genbank/ AF190755	YU:EJForre stel171/ KJ740973	YU:EJForre stel171/ KJ740982	YU:EJForre stel171/ KJ740992
<i>Cymbopogon caesius</i>	Genbank/ AF190752	YU:EJForre stel174/ KJ740972	YU:EJForre stel174/ KJ740981	YU:EJForre stel174/ KJ740991
<i>Diheteropogon amplexans</i>	-	YU:EJForre stel190/ KJ740975	YU:EJForre stel 190/ KJ740983	Genbank/ JN560738
<i>Themeda triandra</i>	Genbank/ DQ005083	Genbank/ HE574429	Genbank/ FR821358	Genbank/ FN870939
<i>Heteropogon contortus</i>	Genbank/ DQ005055	Genbank/ FR821324	Genbank/ HE573490	Genbank/ HE575844
<i>Hyparrhenia hirta</i>	-	Genbank/ AF164417	Genbank/ AM849124	Genbank/ AM849351
<i>Setaria nigrirostris</i>	-	-	Genbank/ ACI32627	-
<i>Setaria pumila</i>	Genbank/ HQ600500	Genbank/ HM850575	Genbank/ EF189984	Genbank/ KC164338
<i>Setaria sphacelata</i>	Genbank/ HM347033	Genbank/ HE586090	Genbank/ HE577882	Genbank/ HE577880
<i>Melinis nerviglumis</i>	-	YU:EJForre stel173/ KJ740974	-	YU:EJForre stel173/ KJ740994
<i>Panicum maximum</i>	Genbank/ AY129712	Genbank/ HE574152	Genbank/ AY029649	Genbank/ AM849390
<i>Brachiaria serrata</i>	-	YU:EJForre stel183/ KJ740977	YU:EJForre stel183/ KJ740980	YU:EJForre stel183/ KJ740990
<i>Alloteropsis semialata</i>	-	Genbank/ -	Genbank/ -	Genbank/ -

		HE574026	AM849123	AM849345
<i>Panicum aequinerve</i>	-	YU:EJForre stel191/ KJ740976	YU:EJForre stel191/ KJ740986	YU:EJForre stel191/ KJ740995
<i>Tristachya leucothrix</i>	Genbank/ DQ005088	Genbank/ HE574003	Genbank/ AM849195	Genbank/ AM849384
<i>Eustachys paspaloides</i>	Genbank/ GU359312	Genbank/ AF144587	Genbank/ GU359740	Genbank/ AM235058
<i>Microchloa caffra</i>	Genbank/ GU359155	Genbank/ AF164425	Genbank/ GU359746	Genbank/ EF125102
<i>Eragrostis racemosa</i>	Genbank/ DQ655823	YU:EJForre stel181/ KJ740979	-	-
<i>Eragrostis curvula</i>	Genbank/ GU359306	Genbank/ HE586097	YU:EJForre stel180/ KJ740985	Genbank/ HE577857
<i>Eragrostis capensis</i>	Genbank/ DQ655826	Genbank/ HE573970	Genbank/ AM849209	Genbank/ U31104

Table S2 Analysis of similarity percentage results for each site. Species that contribute to the top 90% of dissimilarity in percent cover between different fire treatments are presented for each comparison.

	Konza		Ukulinga	
Contrast	Species	Contribution	Species	Contribution
Unburned- Annual	<i>P. pratensis</i>	0.28	<i>A. junciformis</i>	0.23
	<i>A. gerardii</i>	0.16	<i>T. triandra</i>	0.14
	<i>S. nutans</i>	0.06	<i>H. contortus</i>	0.11
			<i>D. amplexens</i>	0.11
			<i>T. leucothrix</i>	0.07
			<i>C. nardus</i>	0.05
			<i>C. caesius</i>	0.03
			<i>H. hirta</i>	0.03
			<i>E. curvula</i>	0.03
			<i>M. nerviglumis</i>	0.02
		<i>E. capensis</i>	0.02	
Unburned- Intermediate	<i>P. pratensis</i>	.23	<i>A. junciformis</i>	0.14
	<i>A. gerardii</i>	.03	<i>T. triandra</i>	0.12
	<i>P. oligosanthos</i>	.02	<i>C. nardus</i>	0.10

			<i>D. amplectens</i>	0.09
			<i>E. muticus</i>	0.03
			<i>H. hirta</i>	0.03
			<i>C. caesius</i>	0.03
			<i>S. nigrirostris</i>	0.02
Intermediate – Annual	<i>A. gerardii</i>	0.21	<i>A. junciformis</i>	0.14
	<i>S. nutans</i>	0.08	<i>T. triandra</i>	0.12
	<i>P. pratensis</i>	0.03	<i>C. validus</i>	0.11
	<i>P. oligosanthos</i>	0.02	<i>D. amplectens</i>	0.09
			<i>H. contortus</i>	0.08
			<i>E. curvula</i>	0.07
			<i>T. leucothrix</i>	0.06
			<i>E. muticus</i>	0.03
			<i>H. hirta</i>	0.03
			<i>C. excavatus</i>	0.03
			<i>S. nigrirostris</i>	0.02