2010 Native Grass Study Progress report on five sites: Ashley, Dixie, Fishlake, and Manti LaSal National Forests, and the Nephi BLM sites within the Colorado Plateau.

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Timeline of Major Events

• 2005-06 --- Discuss the feasibility of an Adaptability Study within The Region Four Forests, decide on how many sites and how many plants and what species. Indian ricegrass, muttongrass, needle and thread grass, junegrass, squirreltail, and Sandberg bluegrass were chosen.

•2007-08 --- Contracted a Seed Collector to collect target species within the four major forest regions.

•2008 --- Selected from the collections to a manageable number, by using elevation, soil type, plant associations, etc. Selected four sites, one on each Forest, Ashley, Dixie, Fishlake, Manti, and used the site at Nephi as a BLM sponsored site. Sites were two acres in size and were mowed and fenced. Seed was cleaned and taken to a grower to produce 200 transplants of each accession.

Timeline of Major Events

•2009 --- Spring, Applied herbicide to all plots in two applications and then began to plant in late May. Order was as follows, Nephi, Manti, Fishlake, Dixie, and Ashley. We finished planting by the end of June. Followed up with weeding by hand and some herbicide applications in the fall. Some watering was done at the Nephi plot but precipitation followed after all other planting for needed establishment.

•2010 --- Recorded survival for all plots, weeded as needed, recorded plants that flowered and bolted into seedheads, Measured for biomass and took photo records.

Activities

- Planting
- Weed whacking
- Measuring heights and crowns
- Identifying grasses

Ashley “Dutch John” site

Site Description
Elevation 6360 feet
Community- sagebrush, pinyon/juniper, native perennial bunchgrass and some introduced crested wheatgrass.

Junegrass

Origin	Elevation	collection ID	plant #	% survival
Manti/Moab	8355	MO15	46	23
Dixie	8316	D31	39	22
UP Project	7847	C2-03	55	21
Ashley	7919	A4	34	19
Dixie	8316	D23	40	19

Muttongrass

Origin	Elevation	collection ID	plant #	% survival
Dixie	9515	D24	66	30
Fishlake	7425	Pofe5	77	29
Fishlake	8163	FO3	75	28
Manti/Moab	6256	MO9	72	26
Manti/Moab	6820	MO2	74	25

Sandberg bluegrass

Note– Most of the Sandberg bluegrass appeared to be in a dormant stage the whole growth season of 2010. It will not begin evaluation until 2011

Squirreltail

Origin	Elevation	collection ID	plant #	% survival
Dixie	8607	Elel1	140	13
Ashley	5735	Orhy3	134	10
Dixie	9515	D24	141	10
Fishlake	8223	FO4	147	10
UP Project	8575	C7-05	154	10

Needle and Thread

Origin	Elevation	collection ID	plant #	% survival
UP Project	7944	Jacks Canyon	102	93
Manti/Moab	8299	MO14	93	88
Ashley	7425	Pofe5	85	87
UP Project	5924	Shavano	104	82
Ashley	7566	Stco6	82	80

Dixie “Slaughter Flat” site

Slaughter Flat Site Description
Elevation 7400 feet
Community- sagebrush, pinyon juniper, with native perennial bunchgrass and some introduced crested wheatgrass.

Junegrass

Origin	Elevation	collection ID	plant #	% survival
UP Project	7384	C2-03	55	60
Fishlake	10295	FO7	50	38
Manti/Manti	7414	Koma 5	45	38
Dixie	9598	Koma20	41	33
Dixie	8051	D30	38	25

Muttongrass

Origin	Elevation	collection ID	plant #	% survival
Dixie	9515	D24	66	60
UP Project		C6-05	81	53
Manti/Moab	6256	MO9	72	48
Fishlake	8880	FO2	77	48
Fishlake	7425	Pofe5	78	48

Sandberg bluegrass

Origin	Elevation	collection ID	plant #	% survival
Ashley	5167	Pose3	106	67
Released		High Plains	133	60
Manti/Manti	10355	Pose5	117	58
Manti/Moab	7833	MO17	120	55
UP Project	7125	C1-03	127	55

Squirreltail

Origin	Elevation	collection ID	plant #	% survival
Dixie	9515	D24	141	35
Manti/Manti	7951	MO16	145	30
UP Project		Rim Road	155	28
Ashley	5735	Orhy3	134	25
Ashley	7919	Koma4	137	20

Needle and Thread

Origin	Elevation	collection ID	plant #	% survival
Ashley	7566	Stco6	82	80
Manti/Moab	6363	MO5	92	80
UP Project	5924	Shavano	104	80
Ashley	7425	Pofe5	85	70
UP Project	7944	Jacks Canyon	102	70

Fishlake “Paradise Flat” site

Site Description
Elevation 7800 feet
Community- sagebrush, needle and thread grass, blue grame and some introduced crested wheatgrass.

Junegrass

Origin	Elevation	collection ID	plant #	% survival
Manti	7414	Koma5	45	40
Fishlake	8962	FO6	50	40
Ashley	6173	A3	33	35
Fishlake	10,295	FO7	50	35
Manti/Moab	8355	MO21	46	33

Muttongrass

Origin	Elevation	collection ID	plant #	% survival
Manti/Moab	6256	MO9	72	43
Dixie	9515	D24	66	35
Ashley	7768	Pofe7	63	32
Ashley	8557	Pofe8	59	32
Fishlake	9043	Pofe2	79	30

Sandberg bluegrass

Origin	Elevation	collection ID	plant #	% survival
High Plains			133	93
VNS			133B	93
Dixie	7562	Pose4	115	75
Fishlake	10,087	FO9	126	75
Dixie	7554	Pose 9	113	73

Squirreltail

Origin	Elevation	collection ID	plant #	% survival
UP Project	5712	C2-03	152	23
Dixie	7977	D29	139	23
Ashley	6283	Koma2	135	15
Ashley	7198	Orhy4	136	15
Manti	7951	MO16	145	10

Needle & thread grass

Origin	Elevation	collection ID	plant #	% survival
UP Project	5922	Shavano	104	60
Ashley	7566	Stco6	82	58
Escalante G.S.	4643	K1	100	55
Ashley	8314	Stco3	86	51
Ashley	6882	Stco7	83	50

Manti "Joe's Valley" Site

Site Description
Elevation—6900 feet
Community---sagebrush, grass, mostly crested wheatgrass and some native grasses.
This is the only site that had survival of all species in the study.

Junegrass

Origin	Elevation	collection ID	plant #	% survival
Manti/Moab	9862	MO19	47	98
Fishlake	8882	Koma19	52	95
Ashley	8061	FE10	36	93
Dixie	8352	D23	40	93
Fishlake	10060	Koma18	51	93
UP Project	7847	C2-03	55	93

Muttongrass

Origin	Elevation	collection ID	plant #	% survival
UP Project	7000	C6-05	81	90
Manti/Moab	7224	Pofe 3	71	83
Dixie	8067	D4	67	80
Fishlake	7425	Pofe5	78	80
Dixie	9521	D20	64	75

Sandberg bluegrass

Origin	Elevation	collection ID	plant #	% survival
Ashley	5360	Pose4	107	93
Dixie	9515	D24	112	90
Released		High Plains	133	88
		VNS	133B	88
Fishlake	10060	Koma18	124	85

Squirreltail

Origin	Elevation	collection ID	plant #	% survival
Dixie	9515	D24	141	93
Manti/Moab	7951	MO16	145	83
UP Project	5848	C3-04	153	83
Escalante	5954	ES1	150	80
UP Project		Rim Road	155	80

Needle & thread grass

Origin	Elevation	collection ID	plant #	% survival
Ashley	6882	Stco7	83	100
UP Project	6748	Sawmill	105	100
Fishlake	6971	FO1	94	97
Ashley	7417	07P5	87	90
Manti/Manti	7086	Stco3	91	80

Nephi “BLM”Site

Site Description
Elevation—5253 feet
Community---This site is the Utah State Extension Service Agricultural Farm located south of Nephi about 2.5 miles, it has been under dryland farming for numerous years and is basically a weed free site.

Junegrass

Origin	Elevation	collection ID	plant #	% survival
UP Project	7436	C4-03	57	35
Ashley	7919	A4	34	35
Ashley	6285	A2	32	33
Ashley	8061	FE10	36	25
Dixie	9598	Koma20	41	25

Muttongrass

Origin	Elevation	collection ID	plant #	% survival
Ashley	8061	Pofe10	60	58
Ashley	6331	Pofe2	61	53
Ashley	8556	Pofe8	59	48
Fishlake	7425	Pofe5	78	43
Manti	8273	Pofe2	69	35

Sandberg bluegrass

Origin	Elevation	collection ID	plant #	% survival
High Plains			133	95
Ashley	5360	Pose4	107	85
Ashley	7056	Pose10	108	75
Ashley	7768	Pose7	109	75
Dixie	7555	Pose5	114	75

Squirreltail

Origin	Elevation	collection ID	plant #	% survival
Manti	6333	Elel1	142	90
Manti	6516	Elel3	143	85
Dixie	7867	07P3	138	80
Fishlake	7883	Stco2	149	78
Fishlake	8223	FO4	147	68

Needle & thread grass

Origin	Elevation	collection ID	plant #	% survival
Manti/Moab	6363	MO5	92	95
Dixie	7417	07P5	87	66
Escalante G.S.	5126	ES2	99	63
Escalante G.S.	4643	K1	100	56
Fishlake	6971	FO1	94	41

Summary of All Plots, Top Five of Each Specie

Species		Origin	Elevation	Collection #	Plant #	% Survival
Koma	1	UP Project	7847	C2-03	55	47.8
	2	Dixie	9598	Koma20	41	43.2
	3	Manti	7414	Koma4	45	42.2
	4	Fishlake	10295	FO7	50	40.6
	5	Manti/Moab	8355	MO15	46	38.8
Pofe	1	Fishlake	7425	Pofe5	78	54.4
	2	UP Project	7000	C6-05	81	52.6
	3	Dixie	9515	D24	66	52.3
	4	Ashley	8557	Pofe8	59	47.6
	5	Manti/Moab	6256	MO9	72	46.2

Species		Origin	Elevation	Collection #	Plant #	% Survival
Pose	1	High Plains			133	84
	2	Manti	10,355	Pose5	117	73.5
	3	VNS			133B	70.5
	4	Ashley	7056	Pose10	108	67.25
	5	Dixie	9515	D24	115	65.75
Stco	1	Dixie	7417	07P5	87	64.6
	2	Manti/Moab	6363	MO5	92	63.6
	3	UP Project	7944	Jacks Canyon	102	62.2
	4	Escalante G.S.M.	4643	K1	100	60.4
	5	UP Project	5924	Shavano	104	59.2
Elel	1	Manti/Moab	7951	MO16	145	37.8
	2	Fishlake	8223	FO4	147	34.8
	3	Dixie	9515	D24	141	33.8
	4	Dixie	7867	07P3	138	32.4
	5	Fishlake	7883	Stco2	149	32.2