

Sage-Grouse Seasonal Movements and Utah's SGMAs

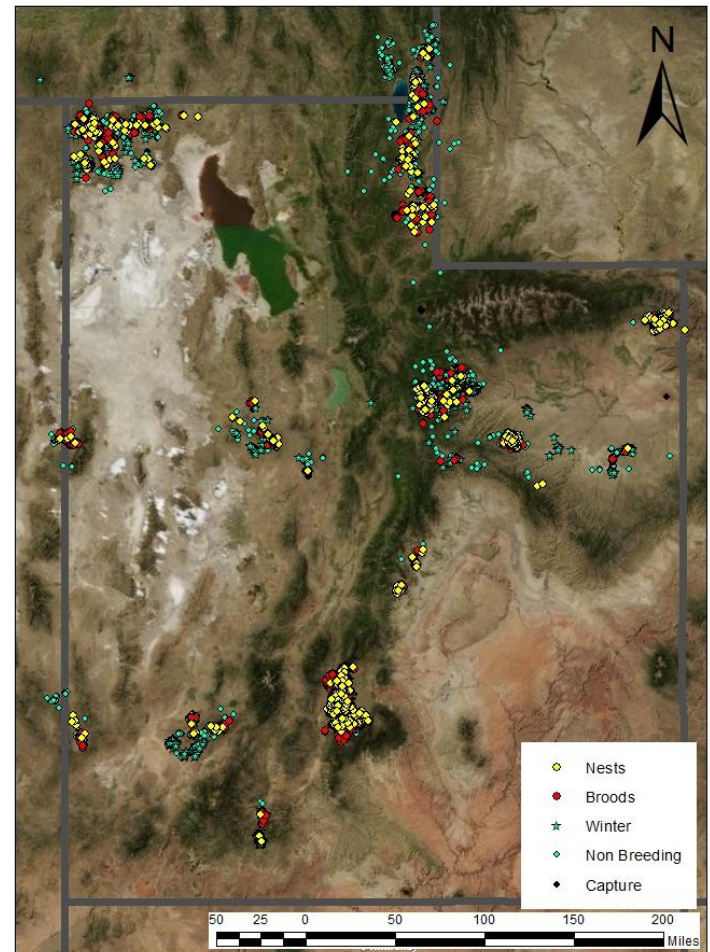
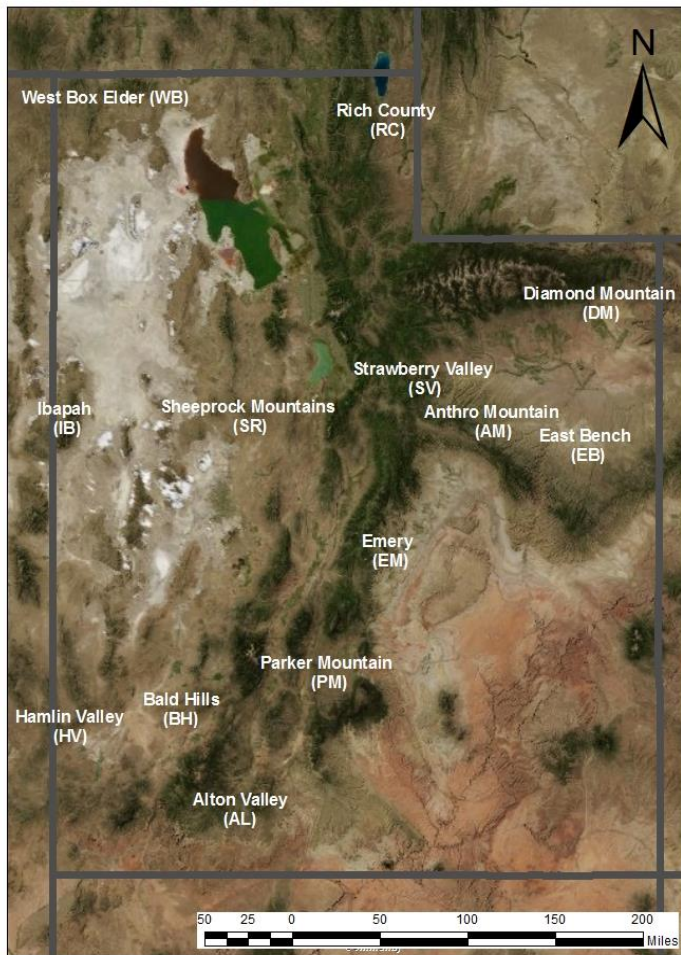
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Past Research 1997-2013



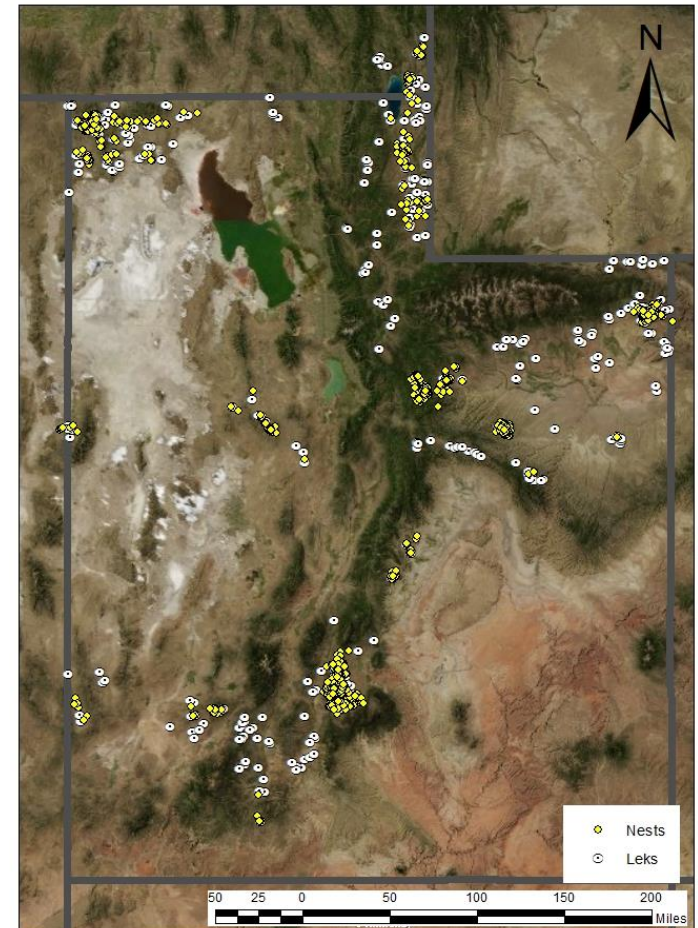
Lek to Nest



Table 1. Distances (km) of female sage-grouse nest site locations to nearest lek location by study area, 1998-2013, Utah, USA. Reported statistics include: n = number of individual bird-year observations per study area; p5 = 5th percentile; p90 = 90th percentile; and p95 = 95th percentile.

Study Area	n	Mean	SE	Median	Min.	Max.	p5	p90	p95
AL	5	1.16	0.34	0.81	0.79	2.53	0.79	1.87	2.20
AM	105	1.35	0.09	1.15	0.14	3.99	0.25	2.78	3.17
BH	11	1.89	0.32	1.49	0.10	3.64	0.63	3.03	3.33
DM	85	1.40	0.13	1.10	0.33	8.98	0.38	2.46	3.10
EB	3	0.64	0.05	0.60	0.59	0.73	0.59	0.71	0.72
EM	23	2.00	0.46	1.41	0.20	9.11	0.22	2.93	7.23
HV	6	2.95	0.75	2.28	1.13	5.28	1.22	5.27	5.27
IB	8	4.11	0.48	4.33	1.51	5.93	2.12	5.45	5.69
PM	245	2.54	0.13	1.77	0.09	9.76	0.45	6.06	7.38
RC	86	2.34	0.17	2.06	0.11	6.13	0.49	4.62	5.57
SR	27	1.68	0.25	1.23	0.23	5.83	0.48	3.02	4.49
SV	210	2.66	0.16	1.89	0.23	11.91	0.43	6.54	7.97
WB	117	1.96	0.17	1.10	0.04	7.85	0.24	5.37	6.09
Total	931	2.19	0.06	1.52	0.04	11.91	0.34	5.05	6.59

AL = Alton Valley, AM = Anthro Mountain, BH = Bald Hills, DM = Diamond Mountain, EB = East Bench, EM = Emery County, HV = Hamlin Valley, IB = Irapah, PM = Parker Mountain, RC = Rich County, SR = Sheeprock Mountains, SV = Strawberry Valley, WB = West Box Elder



Lek to Nest



Photo by Todd Black



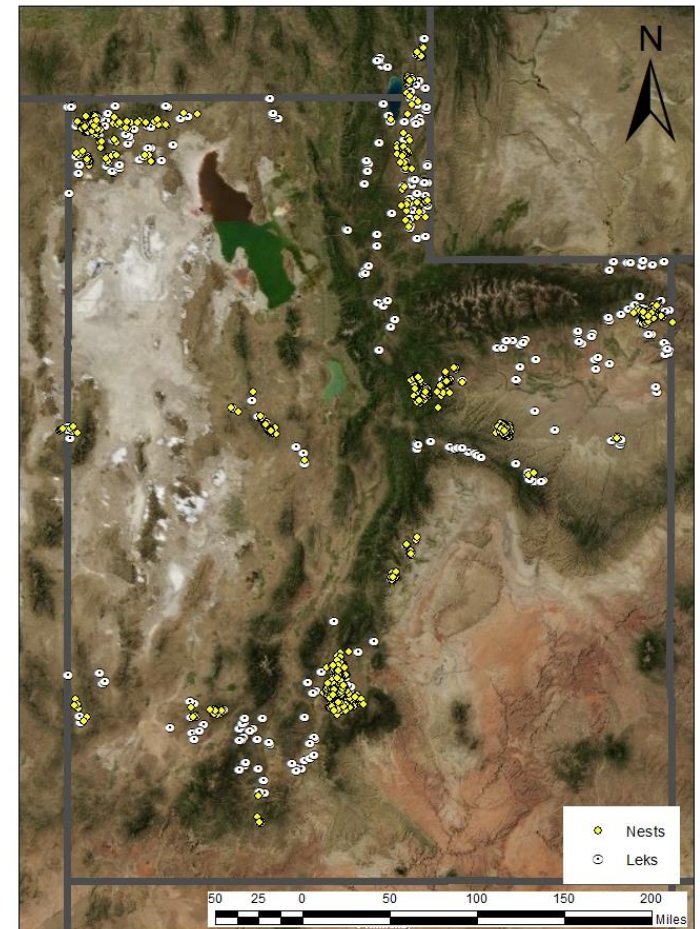
$N = 927$

MEAN = 2.20 km

MIN = 0.04 km

Max = 11.91 km

90th = 5.06 km



Lek to Summer



Photo by Les Flake



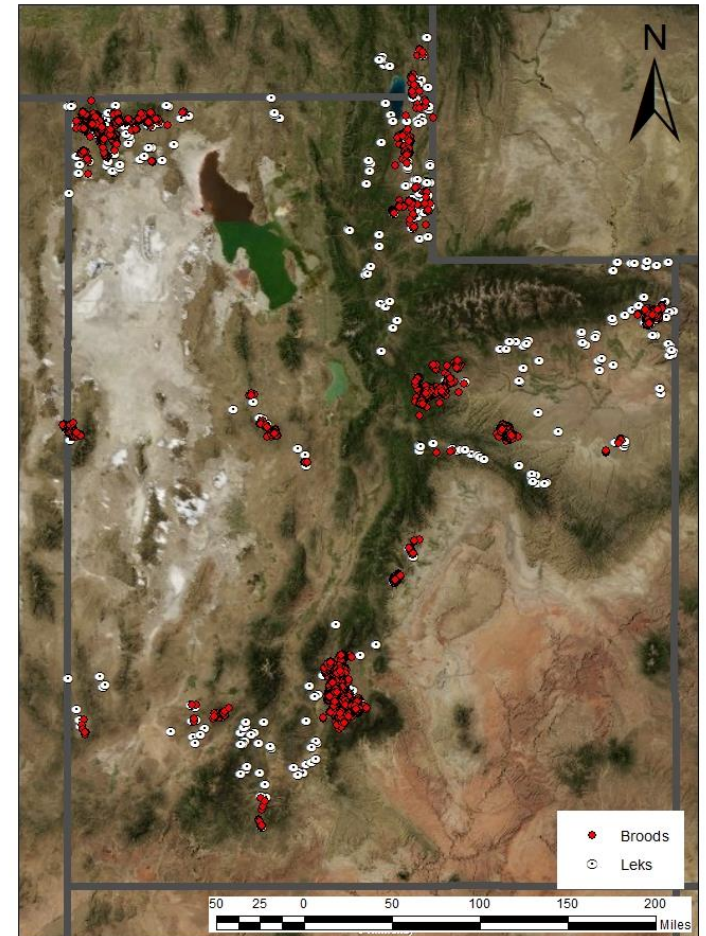
$N = 1292$

MEAN = 3.93 km

MIN = 0.07 km

Max = 24.54 km

90th = 8.45 km



Nest to Summer



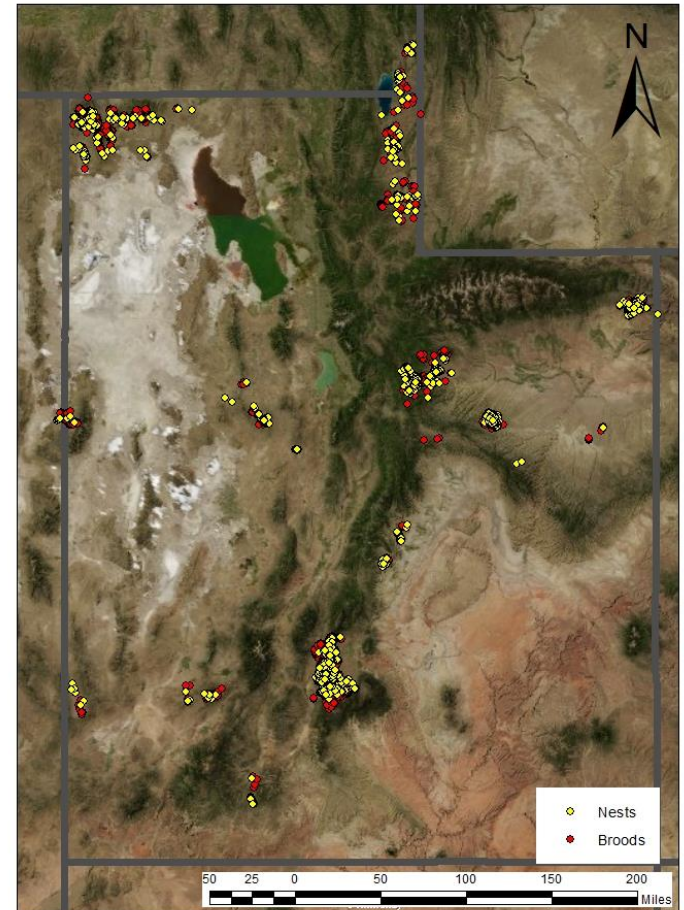
N = 545

MEAN = 5.55 km

MIN = 0.01 km

Max = 57.45 km

90th = 13.09 km



Nest to Brood



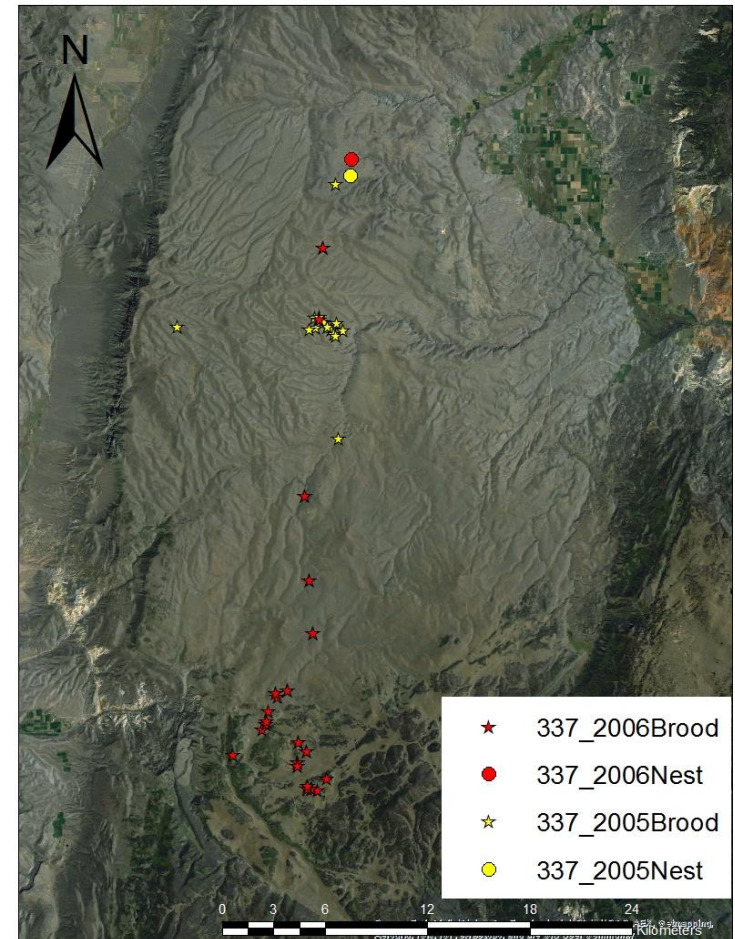
N = 388

MEAN = 5.48 km

MIN = 0.02 km

Max = 42.57 km

90th = 12.47 km



Summer to Winter

N = 382

MEAN = 14.79 km

MIN = 0.24 km

Max = 58.31 km

90th = 30.75 km



Usable Space !!!!



Available habitat vs. Maximum nest-to-brood movement distances

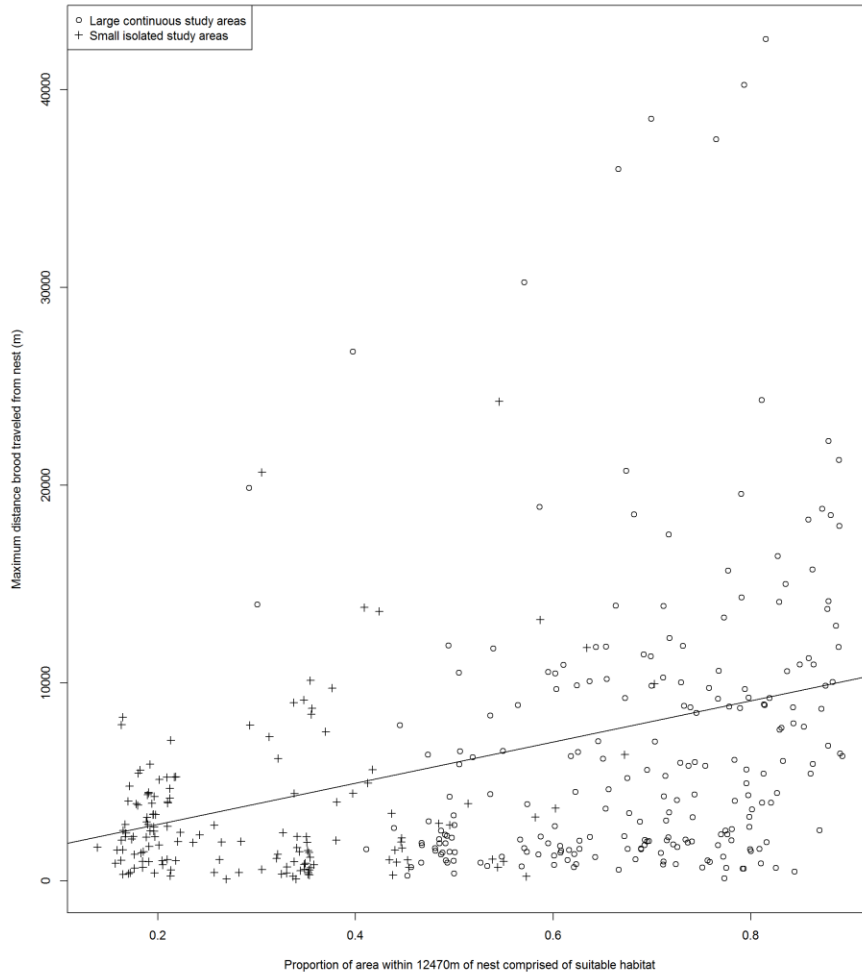


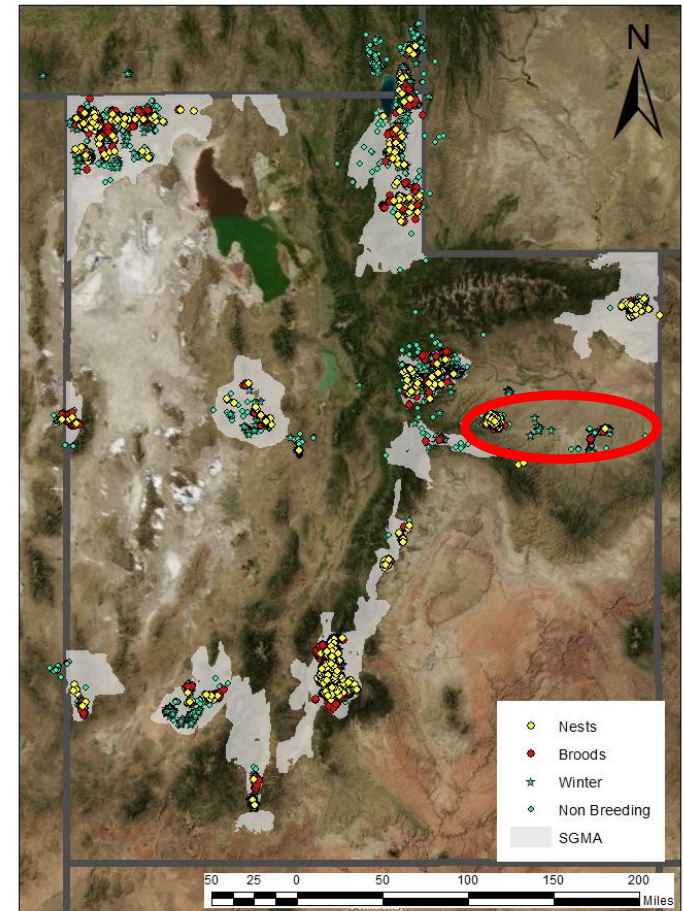
Photo courtesy of Bureau of Land Management

Photo courtesy of Bureau of Land Management

SGMA Evaluation

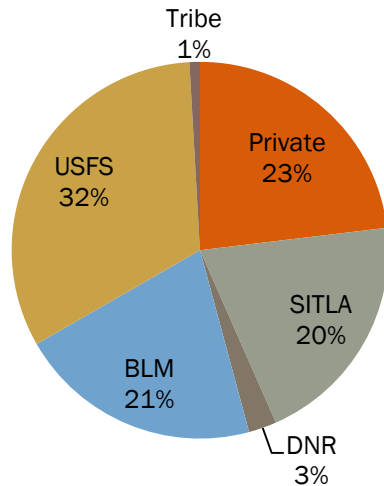
Study Area	Nest (n)	Nest Locations % in SMGA	Summer (n)	Summer Locations % in SGMA	Winter (n)	Winter Locations % in SGMA
AL	5	100	153	100	273	99.3
AM	108	0	1605	0.25	150	0.7
BH	11	100	433	100	125	100
DM	89	100	294	100	0	NA
EB	3	0	260	0	17	0
EM	24	100	204	99.5	0	NA
HV	6	100	64	100	7	100
IB	5	100	64	100	0	NA
PM	248	100	2114	100	143	100
RC	64	100	352	99.7	57	100
SR	31	96.8	295	92.2	32	96.9
SV	217	99.5	2147	98.5	704	98.6
WB	127	100	1384	100	132	100
Total	938	88 (97)	9369	80 (95)	1640	89 (96)

AL = Alton Valley, AM = Anthro Mountain, BH = Bald Hills, DM = Diamond Mountain, EB = East Bench, EM = Emery County, HV = Hamlin Valley, IB = Ibapah, PM = Parker Mountain, RC = Rich County, SR = Sheeprock Mountains, SV = Strawberry Valley, WB = West Box Elder

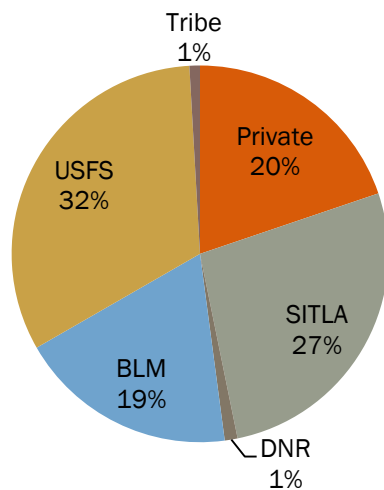


Landownership

Nest Site Land Ownership, UT



Brood Site Land Ownership, UT



Study Area	n	% change Land Ownership Nest to Brood locations
AL	8	100
AM	108	18.3
BH	12	50
DM	89	NA
EB	3	NA
EM	27	81.8
HV	6	100
IB	5	0
PM	248	47.9
RC	67	46.4
SR	31	60
SV	221	29.2
WB	127	50.8
Total	952	41.5

Conclusion

- ☞ Sage-grouse move large distances to meet seasonal habitat needs
- ☞ Lek buffers should be at least 5 – 8 km
- ☞ Not just nesting but all seasons
- ☞ SGMAs incorporate vast majority of Utah's SG Popn
- ☞ Multiple Landownerships Needed
- ☞ Usable Space – PJ Treatment

