

Livestock Grazing Management & Research Activities

Beginning in November 2006, a new livestock grazing management scheme was implemented on the Santa Rita Experimental Range (Santa Rita) under the supervision of Dr. George Ruyle, School of Natural Resources and the Environment (gruyle@cals.arizona.edu) and in cooperation with Andrew McGibbon who owns the livestock. This new management replaces the “Santa Rita Grazing System” experiment that was in place since 1972 (Martin and Severson. 1988. J. Range. Man. 41:291-295, and Mashiri et al. 2008. Rangeland Ecol. Manage. 61:368-379).

The new scheme applies adaptive grazing management principles to establish expected dormant season grazing capacity based on summer forage production, and summer grazing periods of only 10 days to avoid the re-grazing of plants in the summer growing season (Noelle et al. 2021. Frontiers in Veterinary Science, section Animal Behavior and Welfare. 7, 1023. <https://doi.org/10.3389/fvets.2020.600734>). The adaptive management elements include 1) use of summer production values to re-adjust stocking rates each fall, 2) start and duration of the summer growing season to determine when livestock should be moved between pastures, and 3) flexible pasture use to support the variety of research projects being performed on the Santa Rita.

Currently, there are two herds moving through multiple pastures to consolidate livestock handling activities and more precisely manage grazing use. The large herd of ~500 animals will move through a combination of 21 pastures, 15 are located on the Santa Rita, and 3 on the Coronado National Forest, and 3 on Arizona State Lands. The small herd, ~70 animals, will move through 11 pastures all but two are on the Santa Rita. Herd size was reduced this year (2020-21) because the summer growing season in 2020 was extremely dry and hot, and resulted in very little grass production.

Dr. Ruyle and associates are measuring forage production and utilization, livestock movement patterns, and developing methods to forecast forage availability and likelihood of re-grazing plants in the summer growing season.

Researchers, instructors, and other interested parties are advised to consult the accompanying tables and maps to learn the specific location, timing and number of livestock expected in each pasture; as well as the actual use in those areas. Be aware that 1) some animals may appear in pastures outside these expected periods because of handling problems, 2) livestock use of unintended pastures is not shown in the report below, and 3) adjustment to timing and numbers can be made to accommodate research and instruction needs.

Since November 2008, a new practice has been implemented by opening pasture gates 1-2 days before the official start date for grazing in the new pasture. Typically, the gates will open 1 day earlier, but the 2-day window will be common when there are frequent moves (every 10 days) during the summer growing season. This practice is being adopted to reduce the separation of calves from cows during the move between pastures.

Planned Livestock Grazing on the Santa Rita Experimental Range

01 November 2021 - 31 October 2022

Below are the projected livestock grazing days for the “large herd” and “small herd” of livestock on the Santa Rita Experimental Range for the grazing year 01 November 2021 - 31 October 2022, and extended beyond October 2022 for planning purposes. Projected grazing use is based on our current best estimates of available forage and the commencement of summer rains. The projected dates and herd size may change as forage conditions change and monitoring data are analyzed.

Both large and small herd plans are followed by a figure comparing the cumulative projected and actual grazing days on the SRER throughout the grazing season. Grazing Days for a month is the sum of the number of cattle present each day for that month, and Cumulative Grazing Days is the sum of all months before and including the current month. Projected Grazing Days are based on the grazing plan starting on November 1st. Actual Grazing Days are reported monthly by the Santa Rita Ranch. Cumulative grazing days consider only pastures on the SRER. Private, Forest Service, and State pastures outside the SRER are not included.

Significant changes in the grazing schedule will be announced on the list serve srer@list.cals.arizona.edu. Assume accuracy of projected dates to increase as those dates get closer. See the Grazing Management Map (below) for spatial details. Direct questions to George Ruyle (gruyle@cals.arizona.edu) or Mitch McClaran (mcclaran@u.arizona.edu).

Plan Update 31 Oct 2022

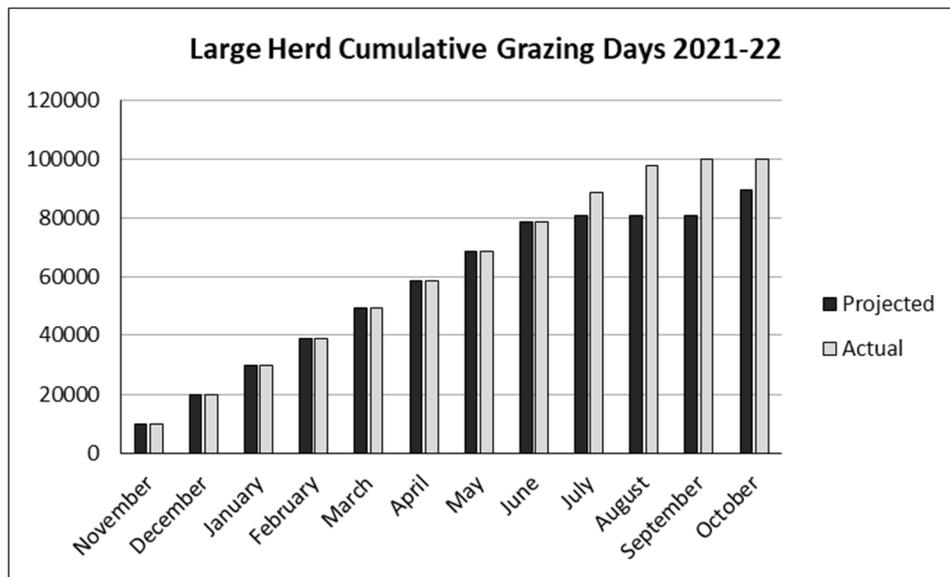
SRER Large Herd (Herd 1 on map)

Plan Update:

31-Oct-2022

	Pasture (acres)	Projected					Actual				
		Herd Size (AU's)	Start Date	End Date	Days	Animal Days per Acre	Herd Size (AU's)	Start Date	End Date	Days	Animal Days per Acre
2021	5S (4699)	325	12-Oct	08-Nov	28	1.9	325	06-Oct	11-Nov	37	2.6
	5 Mid (3448)	325	09-Nov	27-Dec	49	4.6	319	19-Nov	06-Jan	49	4.5
	5N (2025)	325	28-Dec	18-Jan	22	3.5	324	06-Jan	28-Jan	23	3.7
2022	6B (1677)	325	19-Jan	07-Feb	20	3.9	310	29-Jan	18-Feb	21	3.9
							94	22-Mar	20-Apr	30	1.7
	15 (4217)	325	08-Feb	09-Mar	30	2.3	313	18-Feb	15-Mar	26	1.9
	6D (1978)	325	10-Mar	29-Mar	20	3.3	256	15-Mar	23-Mar	9	1.2
	6A (2686)	325	30-Mar	18-Apr	20	2.4	303	08-Apr	12-May	35	3.9
	6E (910)	325	19-Apr	03-May	15	5.4	325	13-May	02-Jun	21	7.5
	2N (4585)	325	04-May	02-Jun	30	2.1	317	03-Jun	10-Jul	38	2.6
	2S (1389)	325	03-Jun	17-Jun	15	3.5	324	10-Jul	31-Jul	22	5.1
	12B (1610)	325	18-Jun	27-Jun	10	2.0	241	04-Aug	31-Aug	28	4.2
	12E (2562)	325	28-Jun	07-Jul	10	1.3	290	24-Aug	08-Sep	16	1.8
	Canoa S* (5513)	325	08-Jul	05-Sep	60	3.5	325	08-Sep	31-Oct	54	3.2
	Canoa N*	325									
	State*(2778)	325	06-Jun	05-Oct	30	3.5					
	12C (1886)	325	06-Oct	19-Oct	14	2.4					
	12A (995)	325	20-Oct	21-Oct	2	0.7					
3 (4104)	325	08-Oct	01-Nov	25	2.0						
5S (4699)	325	02-Nov	21-Nov	20	1.4						

*These pastures are not part of the Santa Rita Experimental Range; and Canoa pastures not yet split.



Comparison of Projected and Actual Cumulative Grazing Days for the Large Herd in 2021-22. In this grazing year, cattle were Projected to be on the Santa Rita pastures for 275 days, and through October 2022, they were actually on for 309 days.

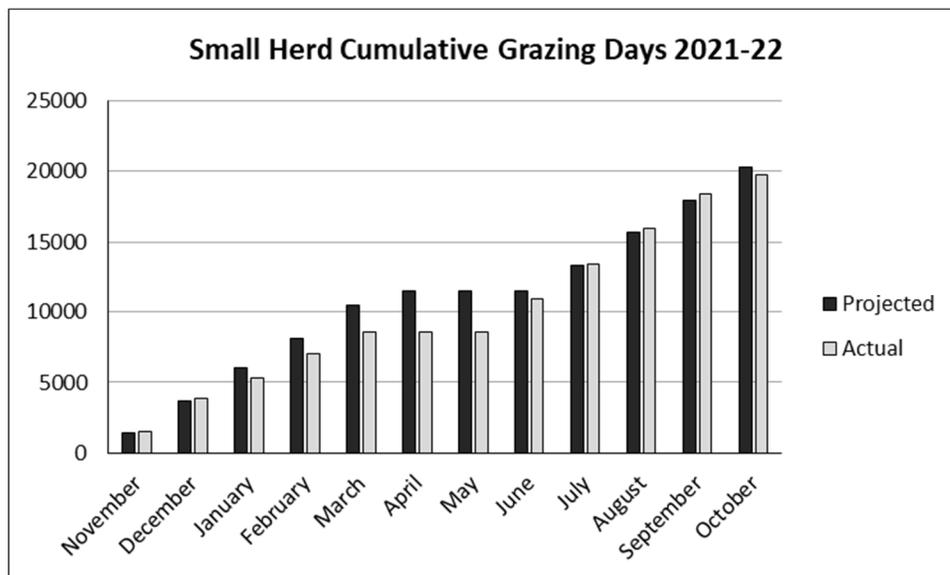
SRER Small Herd (Herd 2 on map)

Plan Update:

31-Oct-2022

	Pasture (acres)	Projected					Actual				
		Herd Size (AU's)	Start Date	End Date	Days	Animal Days per Acre	Herd Size (AU's)	Start Date	End Date	Days	Animal Days per Acre
2021	UA-E (156)	22	01-Nov	12-Nov	12	4.0	22	21-Oct	12-Nov	23	3.2
	1 (782)	75	16-Nov	25-Dec	40	3.8	49	15-Nov	30-Jan	77	4.8
	8 (815)	75	26-Dec	13-Feb	50	4.6	61	10-Jan	06-Mar	56	4.2
2022	11C (214)	75	14-Feb	23-Feb	10	3.5	58	07-Mar	18-Mar	12	3.2
	4 (670)	75	24-Feb	14-Apr	50	5.6	76	19-Mar	31-Mar	13	0.7
							82	01-Jun	21-Jun	21	2.6
	Forest Service Ranger Pasture*		15-Apr	13-Jun	60		72	25-Mar	01-Jun	69	
	Private Pasture		14-Jun	06-Jul	23		76	03-Jan	09-Jan	7	
							82	08-Oct	22-Oct	15	
	11B (212)	75	07-Jul	10-Jul	4	1.4					
	UA-A (549)	75	11-Jul	25-Jul	15	2.0	82	24-Jun	06-Jul	13	1.9
	UA-C (365)	75	26-Jul	09-Aug	15	3.1	82	07-Jul	17-Jul	11	2.5
	UA-H (453)	75	10-Aug	24-Aug	15	2.5	82	18-Jul	27-Jul	10	1.8
	UA-G (441)	75	25-Aug	08-Sep	15	2.6	82	28-Jul	11-Aug	15	2.8
	UA-D (663)	75	09-Sep	28-Sep	20	2.3	82	12-Aug	26-Aug	15	1.9
	UA-E (156)	75	29-Sep	08-Oct	10	4.8	82	27-Aug	10-Sep	15	7.9
	UA-F (336)	75	09-Oct	28-Oct	20	4.5	82	11-Sep	07-Oct	27	6.6
1 (782)	75	29-Oct	07-Dec	40	3.8	82	23-Oct	31-Oct	9	0.9	

*These pastures are not part of the Santa Rita Experimental Range. Forest Service Pastures include Ranger and Florida pastures.



Comparison of Projected and Actual Cumulative Grazing Days for the Small Herd in 2021-22. In this grazing year, cattle were Projected to be on the Santa Rita pastures for 279 days, and through October 2022, they were actually on for 278 days.

Map of Livestock Grazing Patterns for Two Herds on Santa Rita Experimental Range

