

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](mailto: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.

# Grazing on the Santa Rita Experimental Range

## Planned Livestock Grazing on the Santa Rita Experimental Range

01 November 2020 - 31 October 2021

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 2020 - 31 October 2021, and extended beyond October 2021 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. Significant changes in the schedule will be announced on the list serve [srer@list.cals.arizona.edu](mailto: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](mailto:gruyle@cals.arizona.edu)) or Mitch McClaran ([mcclaran@u.arizona.edu](mailto:mcclaran@u.arizona.edu)).

### Plan Update 31 October 2021

SRER Large Herd (Herd 1 on map)

Plan Update: 31-Oct-2021

		Projected					Actual				
Pasture (acres)		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
2020	<b>Canoa S (5513)</b>						388	01-Nov	04-Nov	4	0.3
	<b>Canoa N *</b>										
	<b>State (2778)</b>						466	04-Nov	11-Nov	08	1.3
	<b>12C (1886)</b>	470	2-Nov	16-Nov	15	3.7	416	12-Nov	22-Nov	11	2.4
	<b>12A (995)</b>	470	17-Nov	18-Nov	2	0.9	437	21-Nov	26-Nov	06	2.6
	<b>2S (1389)</b>	375	19-Nov	8-Dec	20	5.4	355	20-Dec	09-Jan	21	5.4
	<b>2N (4585)</b>	375	9-Dec	7-Jan	30	2.5	355	10-Jan	08-Feb	30	2.3
2021	<b>6E (910)</b>	375	8-Jan	18-Jan	11	4.5	320	09-Feb	22-Feb	14	4.9
	<b>6A (2686)</b>	375	19-Jan	17-Feb	30	4.2	347	21-Feb	19-Mar	27	3.5
							290	20-May	24-May	5	0.5
							290	04-Jul	28-Jul	5	0.5
							290	05-Jul	24-Jul	20	? **
	<b>Forest (North)*</b>						290	25-May	11-Jun	18	
	<b>North Hdqtrs*</b>						290	12-Jun	03-Jul	22	
	<b>6D (1978)</b>	375	18-Feb	19-Mar	30	5.7	290	05-Apr	11-Apr	07	1.0
	<b>15 (4217)</b>	375	20-Mar	13-Apr	25	2.2	290	12-Apr	27-Apr	16	1.1
	<b>5N (2025)</b>	375	14-Apr	26-Apr	13	2.4					
	<b>6B (1677)</b>	375	27-Apr	16-May	20	4.5	290	28-Apr	19-May	22	3.8
	<b>15 (4217)</b>	375	17-May	28-May	12	1.1					
	<b>6D (1978)</b>	375	29-May	7-Jun	10	1.9					
	<b>6A (2686)</b>	375	8-Jun	17-Jun	10	1.4					
	<b>6E (910)</b>	375	18-Jun	27-Jun	10	4.1	290	29-Jul	08-Aug	11	3.5
	<b>2N (4585)</b>	375	28-Jun	7-Jul	10	0.8	290	09-Aug	22-Aug	14	0.9
	<b>2S (1389)</b>	375	8-Jul	17-Jul	10	2.7	303	23-Aug	05-Sep	11	2.4
<b>3 (4104)</b>	325	18-Sep	11-Oct	24	1.9	325	06-Sep	05-Oct	30	2.4	
<b>5S (4699)</b>	325	12-Oct	08-Nov	28	1.9	325	06-Oct	31-Oct	26	1.8	
<b>5 Mid (3448)</b>	325	09-Nov	27-Dec	49	4.6						
2022	<b>5N (2025)</b>	325	28-Dec	18-Jan	22	3.5					
	<b>12A (995)</b>	375	18-Jul	19-Jul	2	0.8					
	<b>12C (1886)</b>	375	20-Jul	29-Jul	10	2.0					
	<b>State* (2778)</b>	375	30-Jul	30-Aug	32	4.3					
	<b>Canoa S (5513)</b>	375	31-Aug	1-Nov	63	4.3					

Canoa N\*

375

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

\*\* Unknown location between Pasture 6A and 10 because fences were down

SRER Small Herd (Herd 2 on map)

Plan Update: 31-Oct-2021

	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
2020	<b>1 (782)</b>	75	1-Nov	30-Nov	30	2.9	74	10-Nov	06-Jan	21	2.0
	<b>8 (815)</b>	75	1-Dec	19-Jan	50	4.6	68	13-Jan	10-Mar	57	4.8
2021	<b>11C (214)</b>	75	20-Jan	29-Jan	10	3.5	68	30-Mar	06-Apr	08	2.5
	<b>4 (670)</b>	75	30-Jan	20-Mar	50	5.6	68	07-Apr	25-May	49	5.0
	<b>Forest Service Ranger Pasture*</b>	75	21-Mar	19-May	60		68 68	07-Jan 26-May	12-Jan 25-Jul	6 61	
	<b>Private Pasture</b>	75	20-May	11-Jun	23		73	01-Nov 11-Mar	13-Dec 29-Mar	47	
	<b>11B (212)</b>	75	12-Jun	15-Jun	4	1.4	68	26-Jul	30-Jul	5	1.6
	<b>UA-A (549)</b>	75	16-Jun	5-Jul	20	2.7	68	31-Jul	12-Aug	13	1.6
	<b>UA-C (365)</b>	75	6-Jul	15-Jul	10	2.1	68 22	13-Aug 06-Oct	23-Aug 20-Oct	11 15	2.0 0.9
	<b>UA-H (453)</b>	75	16-Jul	25-Jul	10	1.7	68	24-Aug	06-Sep	14	2.1
	<b>UA-G (441)</b>	75	26-Jul	4-Aug	10	1.7	68	07-Sep	20-Sep	14	2.2
	<b>UA-F (336)</b>	75	5-Aug	14-Aug	10	2.2					
	<b>UA-D (357)</b>	75	15-Aug	24-Aug	10	2.4	68	21-Sep	05-Oct	15	2.9
	<b>UA-E (156)</b>	75	25-Aug	29-Aug	5	2.4	22	21-Oct	31-Oct	11	1.6
	<b>Private Pasture</b>	75	30-Aug	12-Sep	14						
	<b>1 (782)</b>	75	13-Sep	17-Oct	35	3.4					
<b>8 (815)</b>	75	18-Oct	11-Dec	55	5.1						

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



