



Feed Budgeting & Grazing Planning

2018 California Sheep & Goat Grazing School

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UCCE – Placer/Nevada/Sutter/Yuba



What is a feed budget?



- Looking behind
 - Forage consumption
 - Recovery rate in previous paddocks
- Looking ahead
 - Expected forage production
 - Precipitation or irrigation
 - Temperature (air and soil)
 - Photo period
 - *Each of these impact growth – need to have all 3 for rapid growth!*
 - Changes in forage demand
 - Recovery rate
 - Rapid vs. slow growth

What is a feed budget?

Forage Supply & Quality

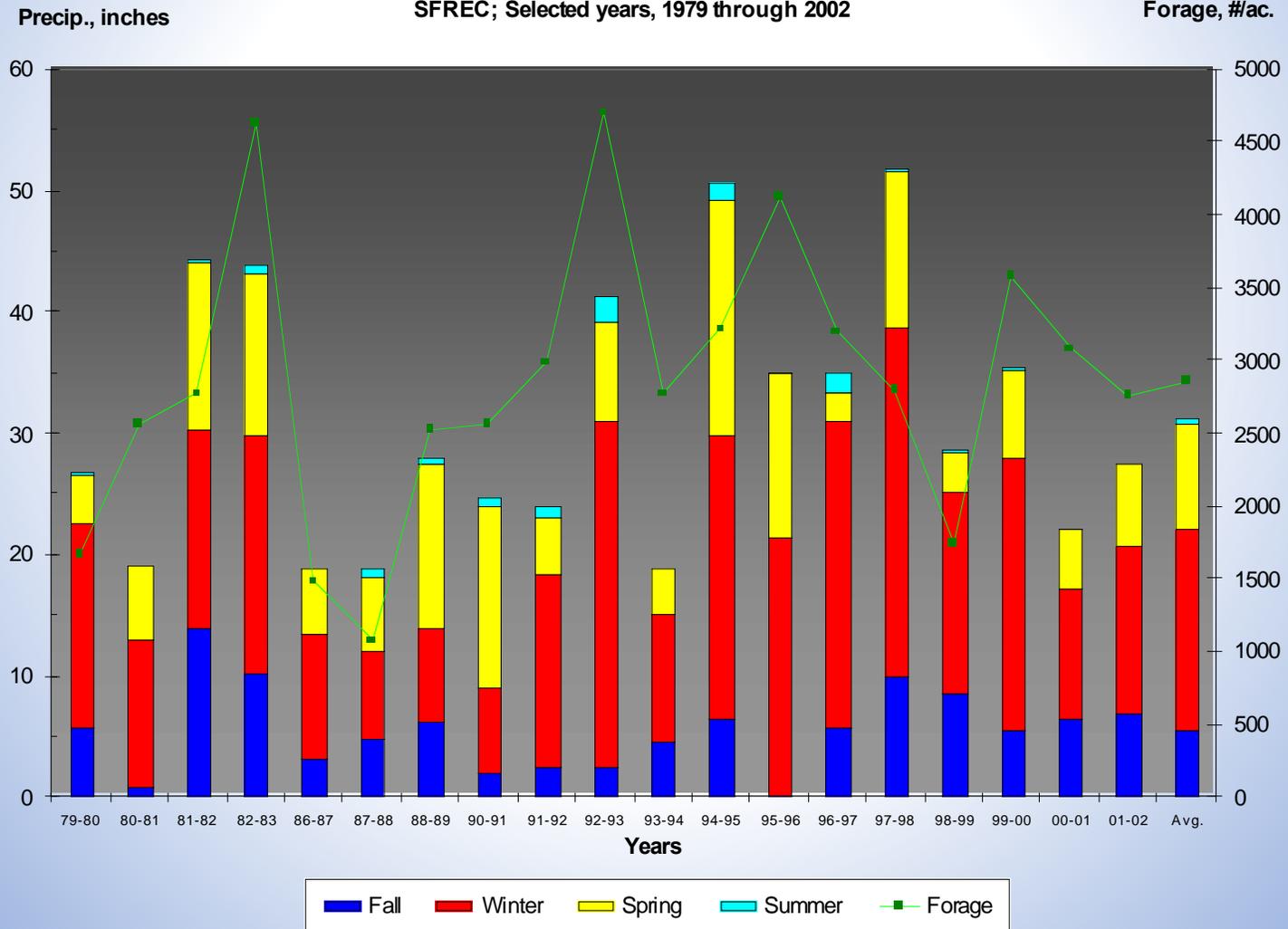
- Rangeland
 - Annual vs. perennial
 - Palatability
 - Quality
 - Recovery rate (rest)
- Irrigated Pasture
 - Species (warm season vs. cool season, grass vs. legumes, etc.)
 - Recovery rate

Forage Demand

Critical: Track inventory by class of animal and stage of production by month!

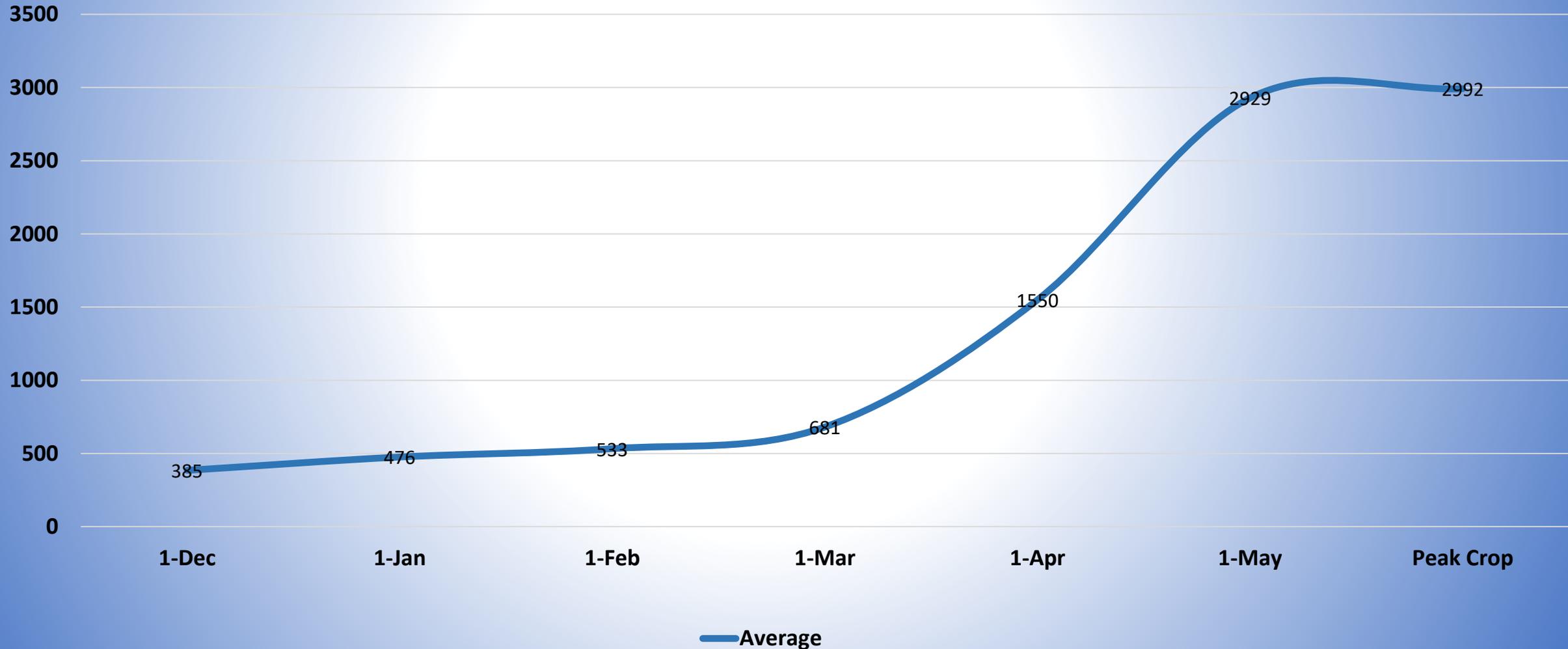
Forage Supply - SFREC

PRECIPITATION & FORAGE YIELD
SFREC; Selected years, 1979 through 2002



Forage Supply - SFREC

Monthly Rangeland Forage Production – SFREC (Average 1979-2017)



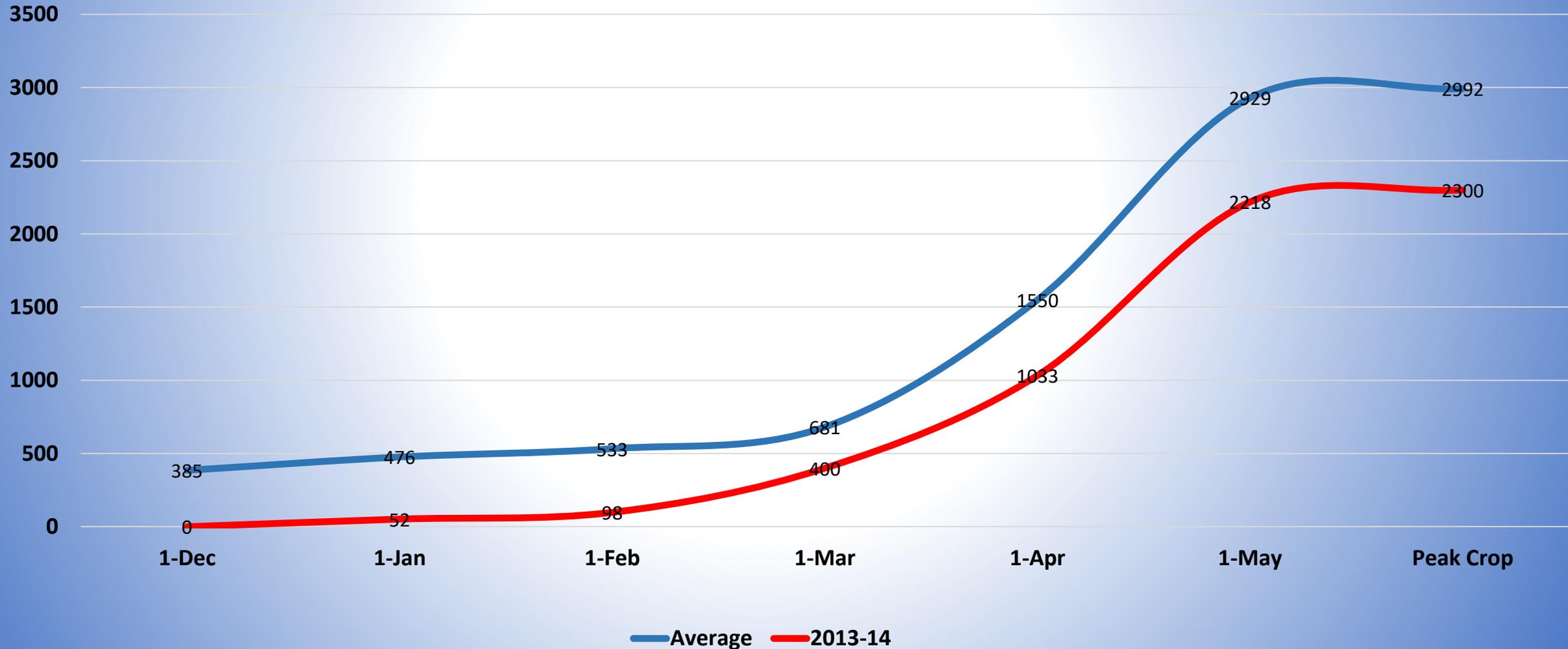
Forage Supply - SFREC

Monthly Rangeland Forage Production - SFREC

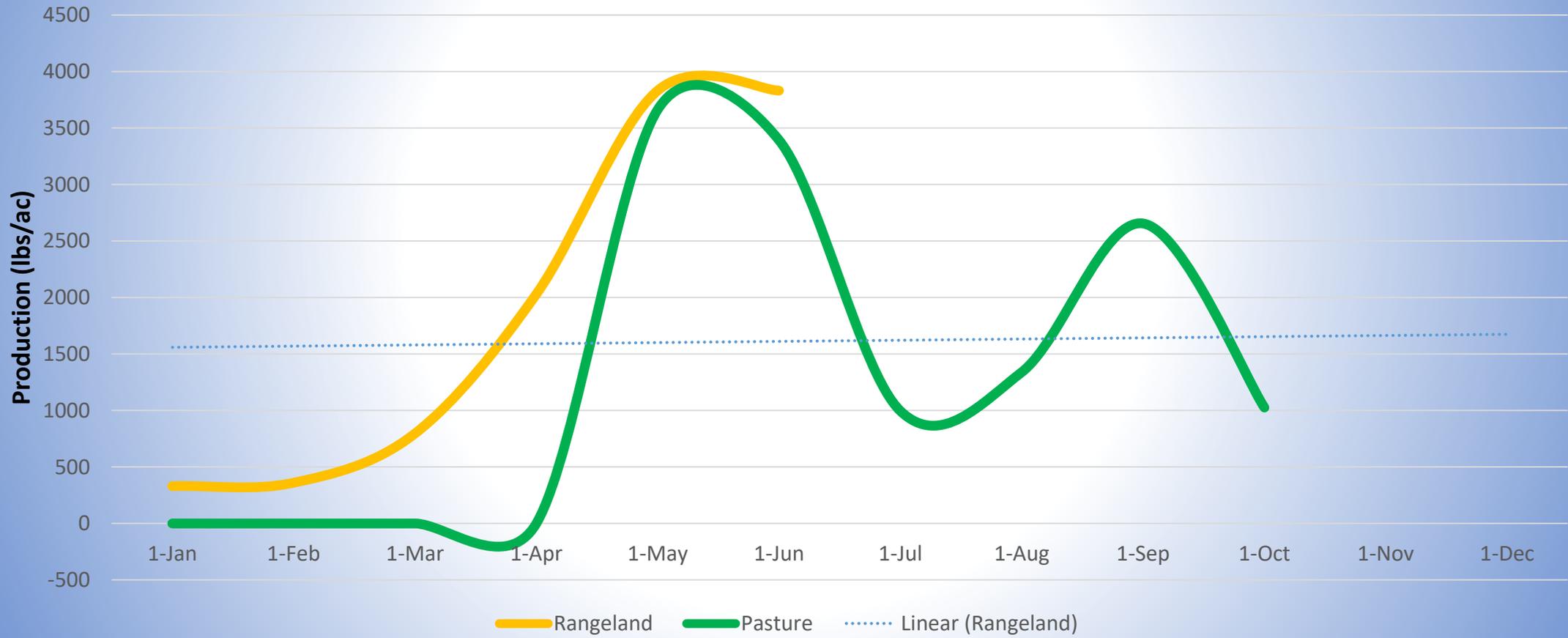


Forage Supply - SFREC

Monthly Rangeland Forage Production - SFREC



Rangeland and Irrigated Pasture – SFREC (2015-16)

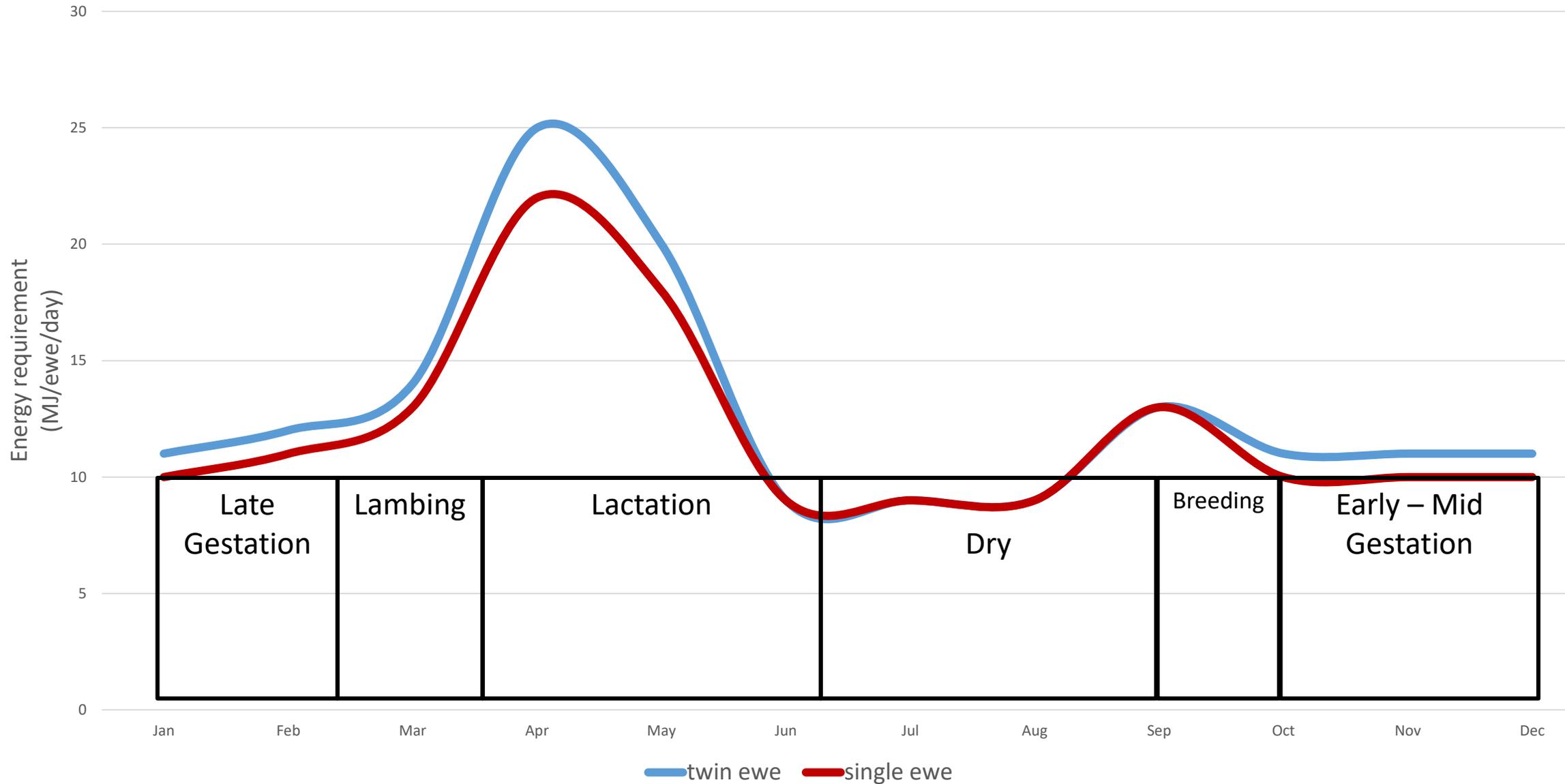


Grazing Principle #5

*Adjust stocking rate
to seasonal and
annual changes in
carrying capacity.*

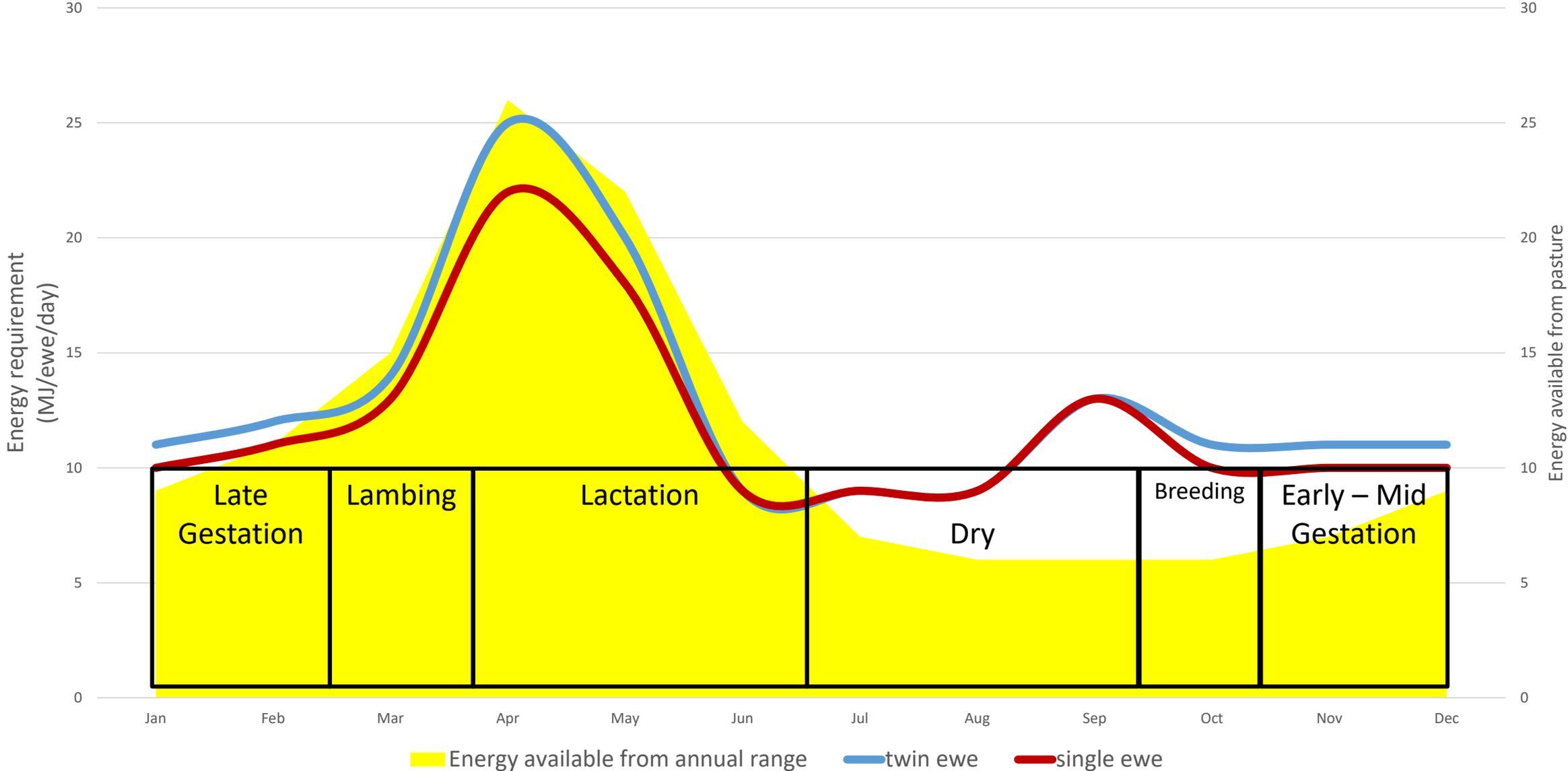
Our Forage Calendar

Matching feed requirements of lambing ewes and annual range/irrigated pasture availability.



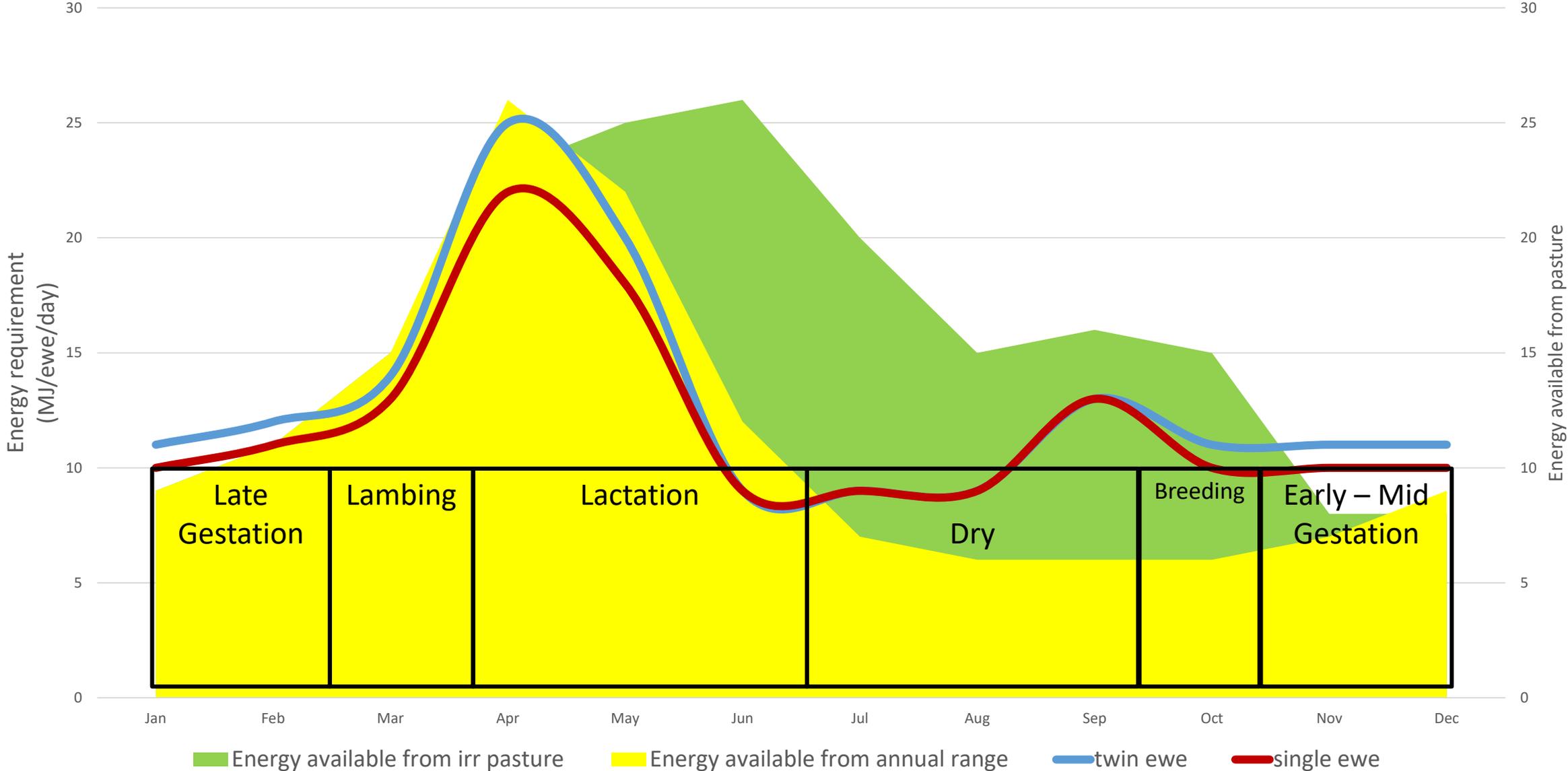
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Our Forage Calendar

Matching feed requirements of lambing ewes and annual range/irrigated pasture availability.



Estimating forage supply

- How can we estimate our forage supply?
 - Clipping
 - Visual estimation
 - Past records
- Units of measurement
 - Pounds per acre
 - Stock-days per acre
- Keeping records will train your eye!



Quantity vs. Quality



- Forage quality also varies during the course of the year
 - Do we have enough protein and energy to meet animal demands?
 - Do we need to supplement protein or energy?

Estimating carrying capacity

- **Pace off an area that you think has enough forage to feed 1 animal for 1 day**
- **Calculate the square yards**
- **Divide the square yards per acre by the square yards required per animal per day**
- **The result is the number of stock 1 acre can support for 1 day.**

Estimating carrying capacity - example

Question: How long will a 3.5 acre paddock last for 75 dry ewes?

Step 1: If we estimate 20 yds² will feed 1 ewe for 1 day

Step 2: 4840 yds²/ac ÷ 20 yds² = 242 sheep days/ac

Step 3: 3.5 ac paddock x 242 sheep days/ac = 847 sheep days

Step 4: 847 sheep days ÷ 75 ewes = ~11 days

Estimating forage demand



- **Size, class and stage of production matter!**
 - A lactating ewe or doe will need more forage than a dry female!
 - Stocking rate (demand) can change without a change in number of livestock!
- **Forage quality matters, too!**

Estimating forage demand – Aussie Style!

Class of Livestock	DSE Rating ¹	Daily Intake (lbs DM/day)
66 lb lamb gaining 0.11/lbs/day	0.9	1.98 lbs/day
132 lb dry ewe	1.2	2.64 lbs/day
132 lb ewe nursing twins	3.0	6.61 lbs/day
88 lb dry doe	0.75	1.65 lbs/day

This means that a pasture that would support 100 dry ewes for 30 days would support 100 lactating ewes with twins for about 12 days! In other words, stocking rate varies with changes in animal class and stage of production!

¹DSE: Dry Sheep Equivalent – 1 kg of pasture dry weight contains the energy required for a mature 50 kg wether or dry ewe to maintain bodyweight.

Tracking Grazing Use

Paddock	Size	#/Class	Graze Period	DSE/Day	DSE Total	Acres/Day	DSE/Ac
1 (Dec-17)	2.2 ac	67 mid-gestation ewes 22 yearling ewes	3 days	104.6	313.8	0.73 ac/day	142.6

Tracking Grazing Use

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3 (Dec-17)	7.6 ac	67 mid-gestation ewes 22 yearling ewes	10 days	104.6	1046	0.76 ac/day	137.6

Tracking Grazing Use

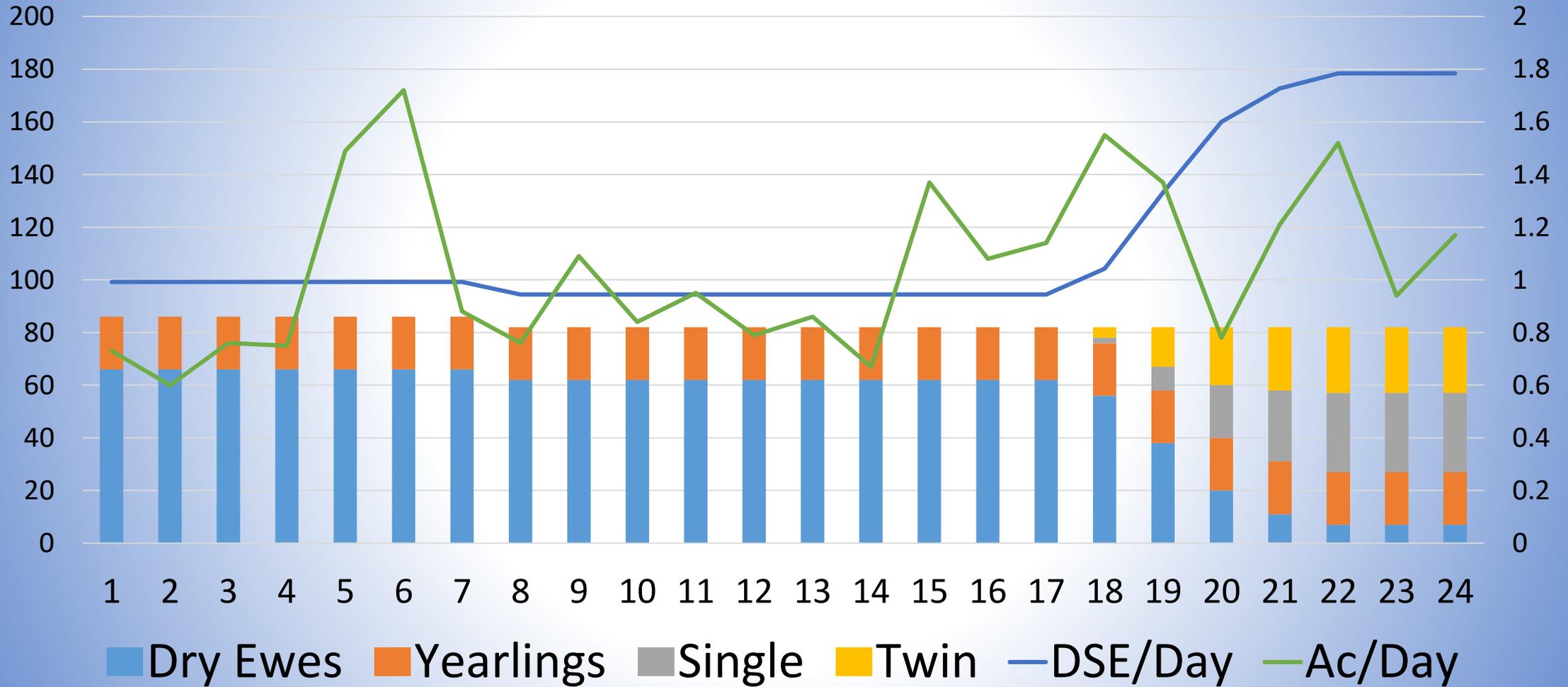
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9 (Jan-18)	3.57 ac	65 late-gestation ewes 22 yearling ewes	3 days	134.7	404.1	1.19 ac/day	113.1

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15 (Mar-18)	5.85 ac	23 lactating (singles) 31 lactating (twins) 8 dry ewes 22 yearlings	7 days	191.2	1338.4	0.83 ac/day	228.8

Sheep Forage Demand Winter 2017-18

Late Gestation thru Lactation



GRAZING CHART

Dec-Apr Jun-Aug
Year: 2017-18 2018-2019

PADDOCKS NO. SIZE	2018		2017		2017		2017		2017		2017	
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	DECEMBER
1 2.2												
2 9.77												
3 7.6												
4 9.75												
5 11.9	125M	153L										
6 6.36	41-188L											
7 3.53	47-1297M											
8 2.23	21-1336M											
9 3.57	31-284M											
10 3.57	41-1303M											
11 1.9	21-269M											
12 1.54	21-324M											
13 1.71	21-297M											
14 2	31-1383M											
15 6.85	51-126L											
16 4.45	41-229M											
17 2.28	21-223L											
18 7.74	51-1166L											
19 2.22	61-120L											
20 3.1	41-1396L											
21 6.05	51-265L											
22 1.7	61-219L											
23 3.75	41-1351M											
24 5.85	71-1394M											
25 3.79	51-487M											
26 3.5	51-147M											
27 3												
28 3.4												
29 1.14												
30 3.86												
31 3												
32 2.2												
33 2												
34 2												
35 7												
Precipitation (Rain Only)	89.29, 01.10, 13.0		15.97, 9.3, 15.23, 32.39	08.30, 54.15					52	20.92, 1.79, 29.85, 20.07		11
Months Precip. Year Avg	12.48	12.88	4.21	5.38					4.57	2.39		5.19
Total Precip for 12 Months	37.61	29.93	30.26	29.66					46.57	49.11		43.22
Stock Days this Month	769	737	1000	263								563
1 Stock Days Year Avg	672	641	874	56								507
2 Total Stock Days for 12 Months	3561	3657	3733	3990								3464
3 Stock/12 Months												
4 USAT Precipitation												
5 Stock Weight/Gain/loss	5(3)	5(3)	5(3)	5(3)								5(3)
6 Type of Animals												
7 Ewes - Gestating	42 145 336 22.5	46 145 336 15.2	8 145 188 1.7	7 145 188 1.1		75 135 176 13.2	75 135 176 13.2	75 135 176 13.2				67 135 211 16.1
8 Ewes - Twins		9 143 304 4.6	31 143 304	31 143 304 15.6								
9 Ewes - Single		7 143 148 3.1	23 143 148	24 143 148 10.8								
10 Yearlings	22 115 242 5.3	22 120 242 5.3	22 125 242 5.3	22 125 242 5.3		13.2	13.2	13.2				22 115 242 5.3
11 Cull Hand Demand (AUC)	72.8	28.2		37.8								19.4

Questions?

