Feed Budgeting and Drought Management

2018 California Cattle Grazing School

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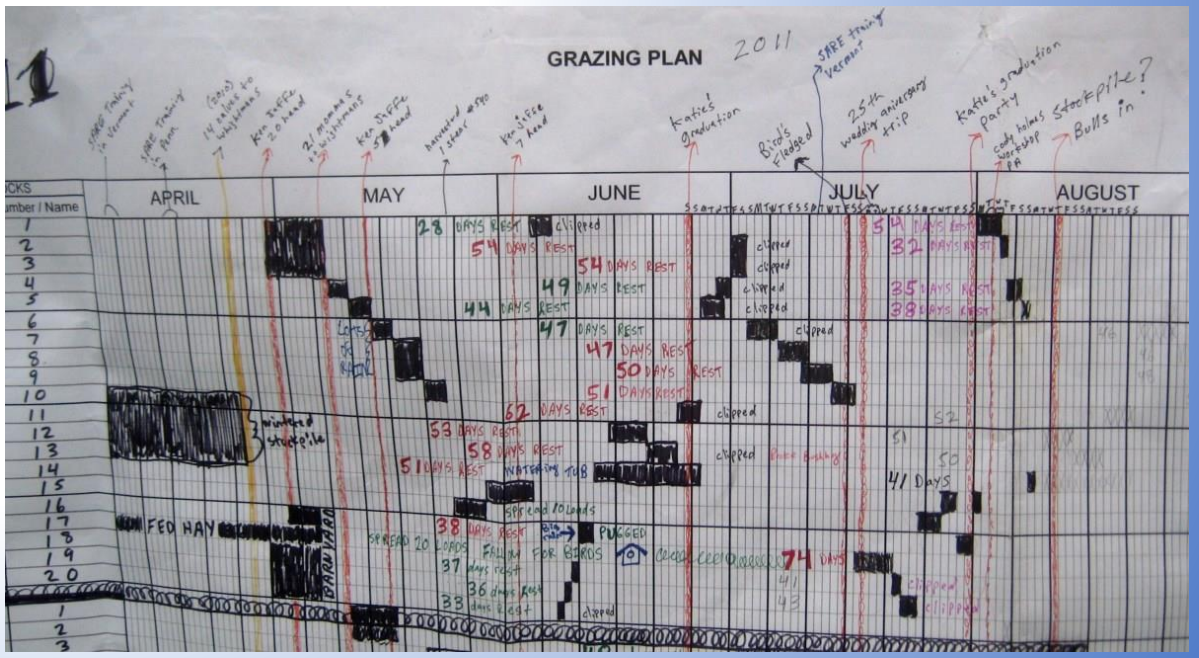
UCCE – Placer/Nevada/Sutter/Yuba

Overview

- What is a feed budget?
- Estimating supply and demand
- Tracking consumption
- Drought Planning



What is a feed budget?

- Looking behind
  - Forage consumption
- 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!*
  - Recovery rate
    - Rapid vs. slow growth

What is a feed budget?

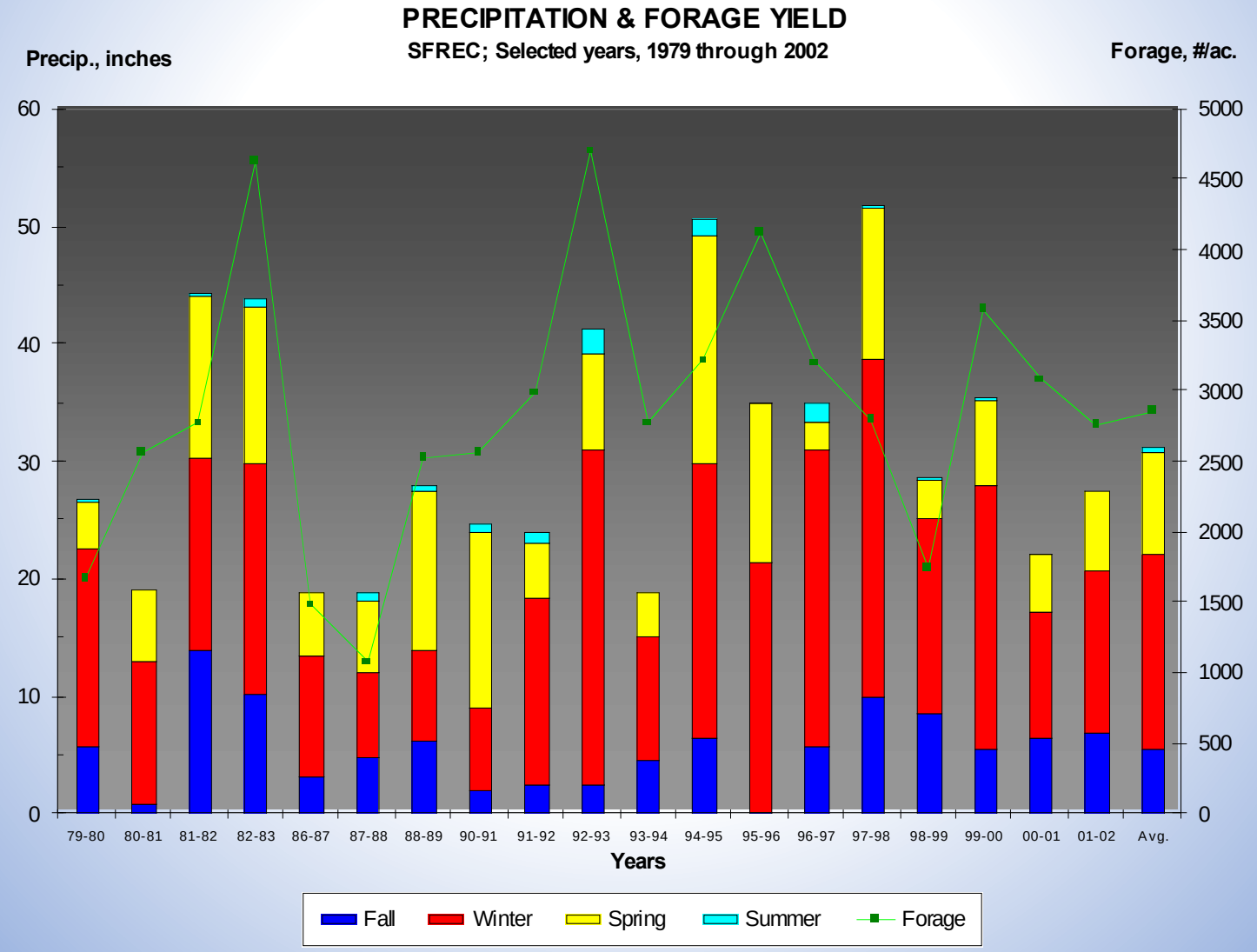
Forage Supply

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

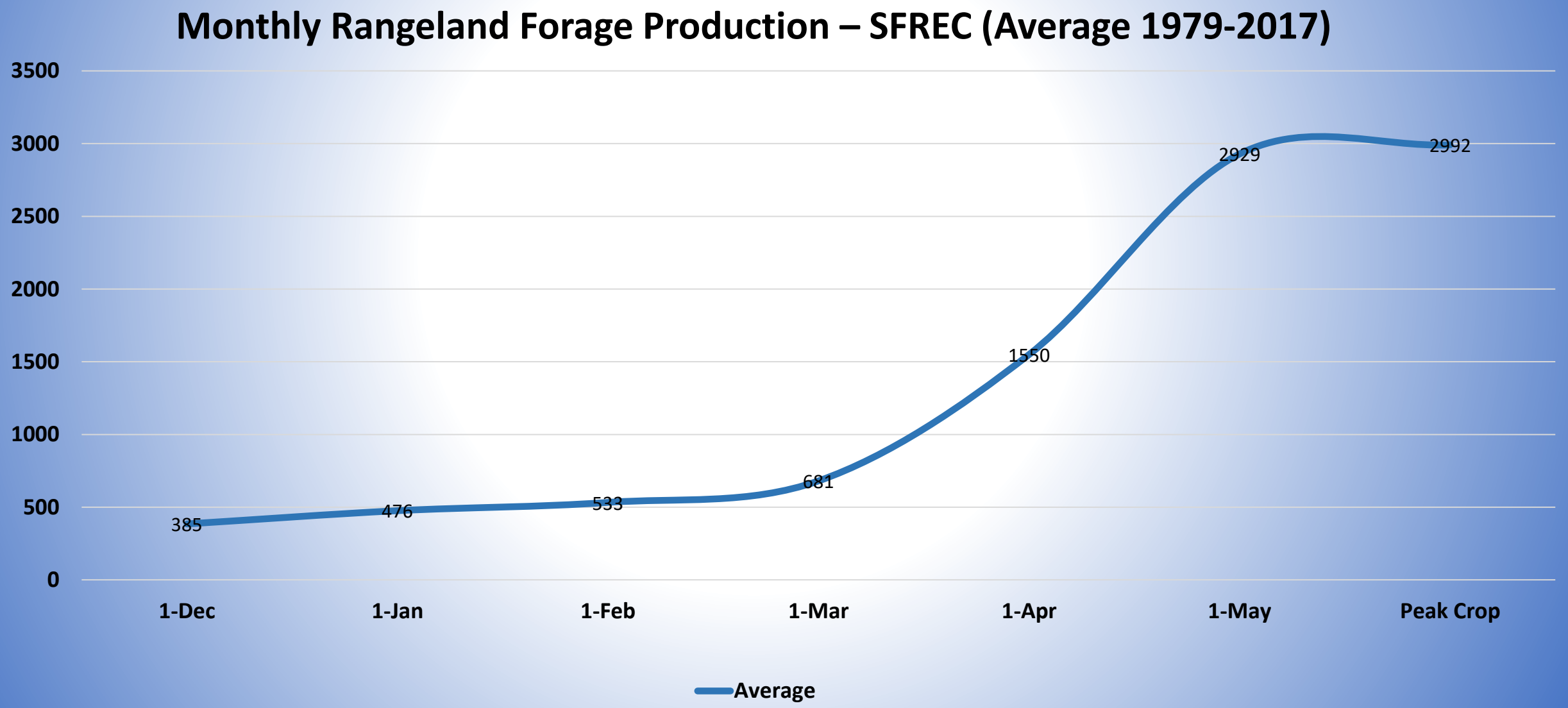
Forage Demand

- Species and class of livestock
  - Cows vs. heifers vs. steers
  - Weaned calves vs. yearlings
- Production calendar/system
  - Lactating cows vs. dry cows
  - Stockers
  - Finishing grass-fed steers
- **Critical: Track inventory by class of animal and stage of production by month!**

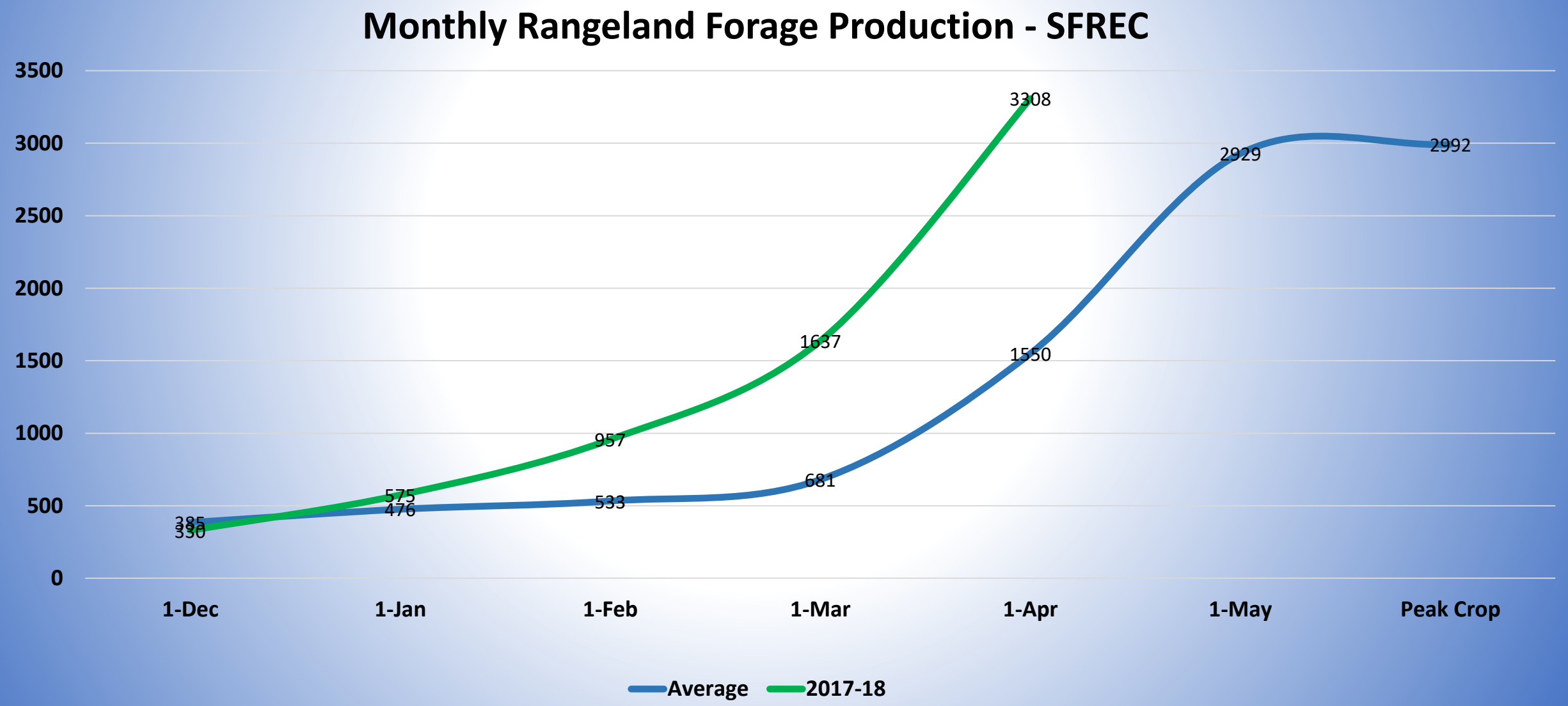
Forage Supply - SFREC



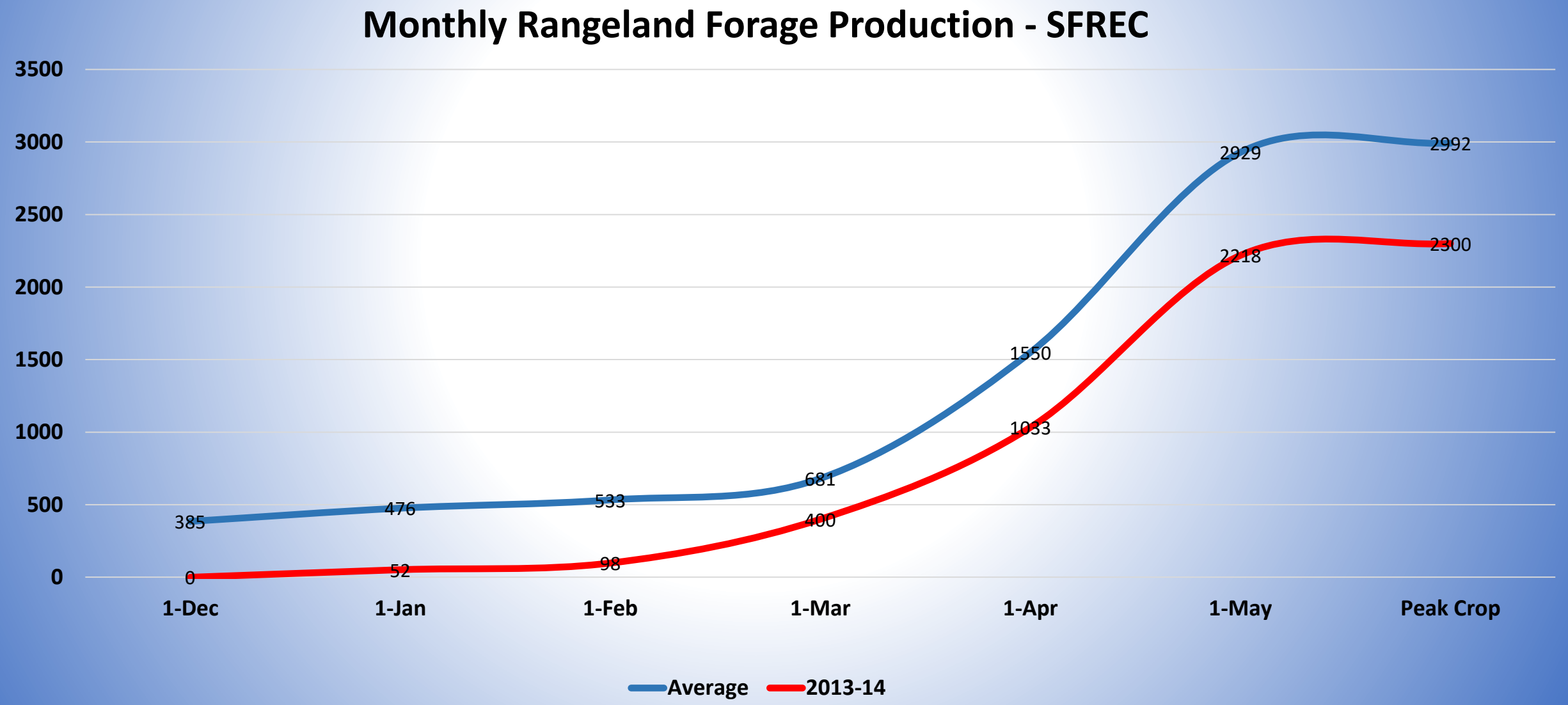
Forage Supply - SFREC



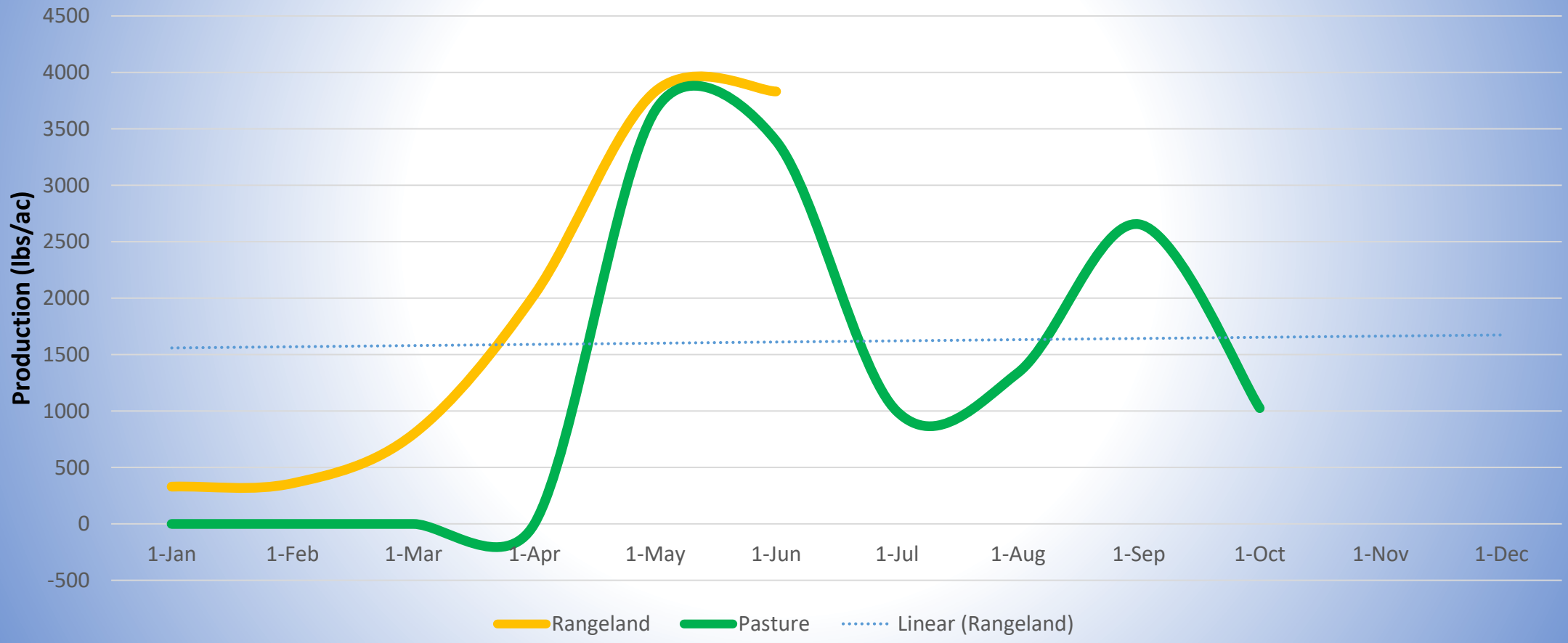
Forage Supply - SFREC



Forage Supply - SFREC



Rangeland and Irrigated Pasture – SFREC (2015-16)



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!

Estimating forage demand

- Size, class and stage of production matter!
  - A lactating cow will need more forage than a dry cow!
- Forage quality matters, too!

Estimating forage demand – Aussie Style!

Class of Livestock	DSE Rating[1]	Daily Intake (lbs DM/day)
660 lb Steer gaining ~ 2 lbs/day	10	22 lbs DM / day
1,100 lb Cow with New Calf	16	35 lbs DM / day
1,100 lb Dry Cow	13	29 lbs DM/day

This means that a pasture that would support 100 dry cows for 30 days would support 100 lactating cows for about 25 days! In other words, stocking rate varies with changes in animal class and stage of production!

[1]DSE: 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.

Estimating Graze Periods

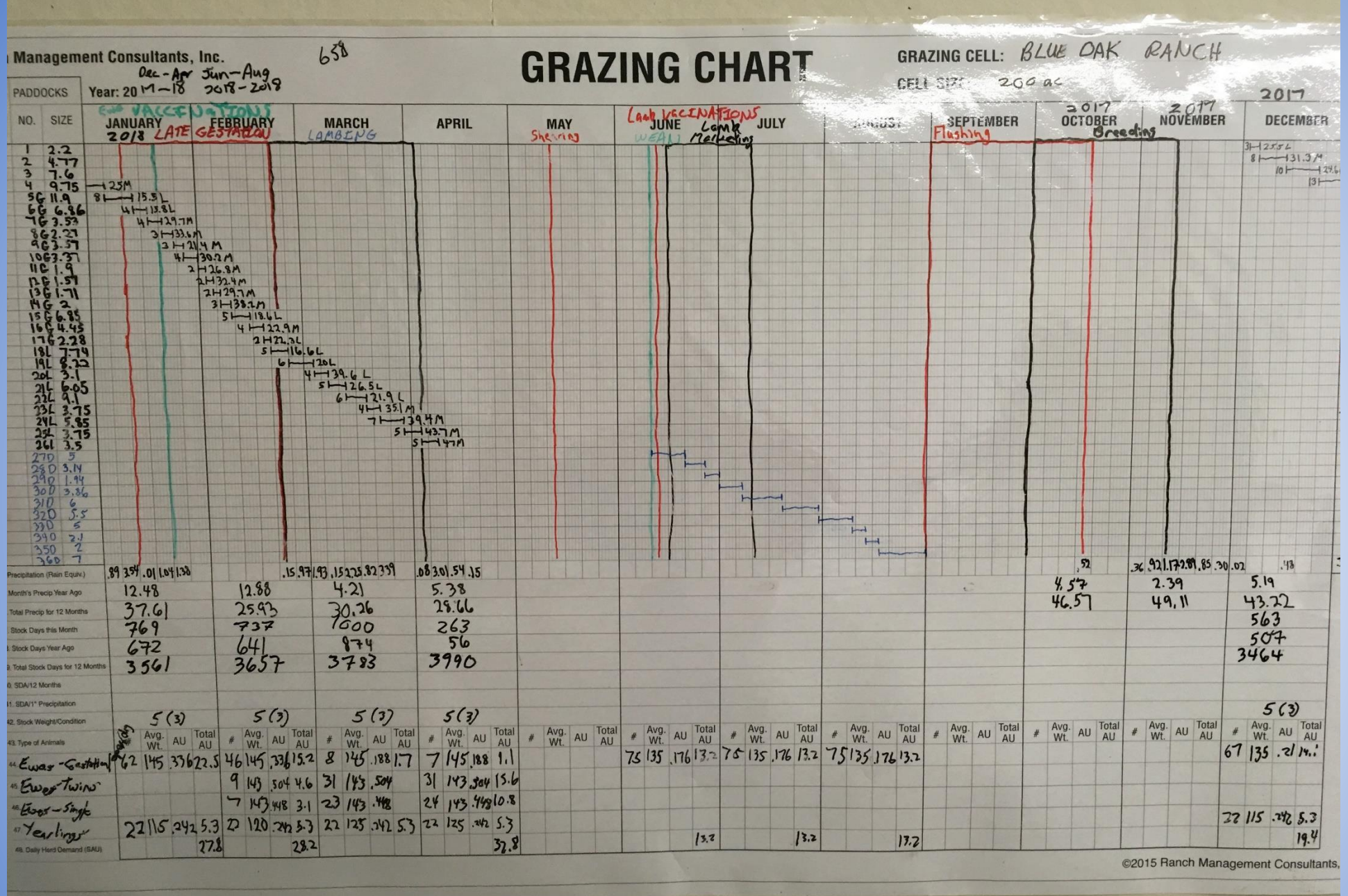
Paddock	L x W (1 Stock Day)	Square Yards	Stock Days / Acre (1 Ac = 4840 sq yds)	Paddock Size (Acres)	Animal Days / Paddock	Number / Class of Animals	Stock Day Adjustment	Graze Period
Home	10 yds x 10 yds	100 sq yds	48.4 stock days / ac	20 ac	968 stock days	100 dry cows	1.0	9.68 days
Hill	10 yds x 9 yds	90 sq yds	53.7 stock days / ac	40 ac	2,148 stock days	100 lactating cows	1.3	16.5 days

Note: Determine what your Stock Day represents in your operation (e.g., dry cows, pairs, etc). Adjust the graze period based on this equivalent.

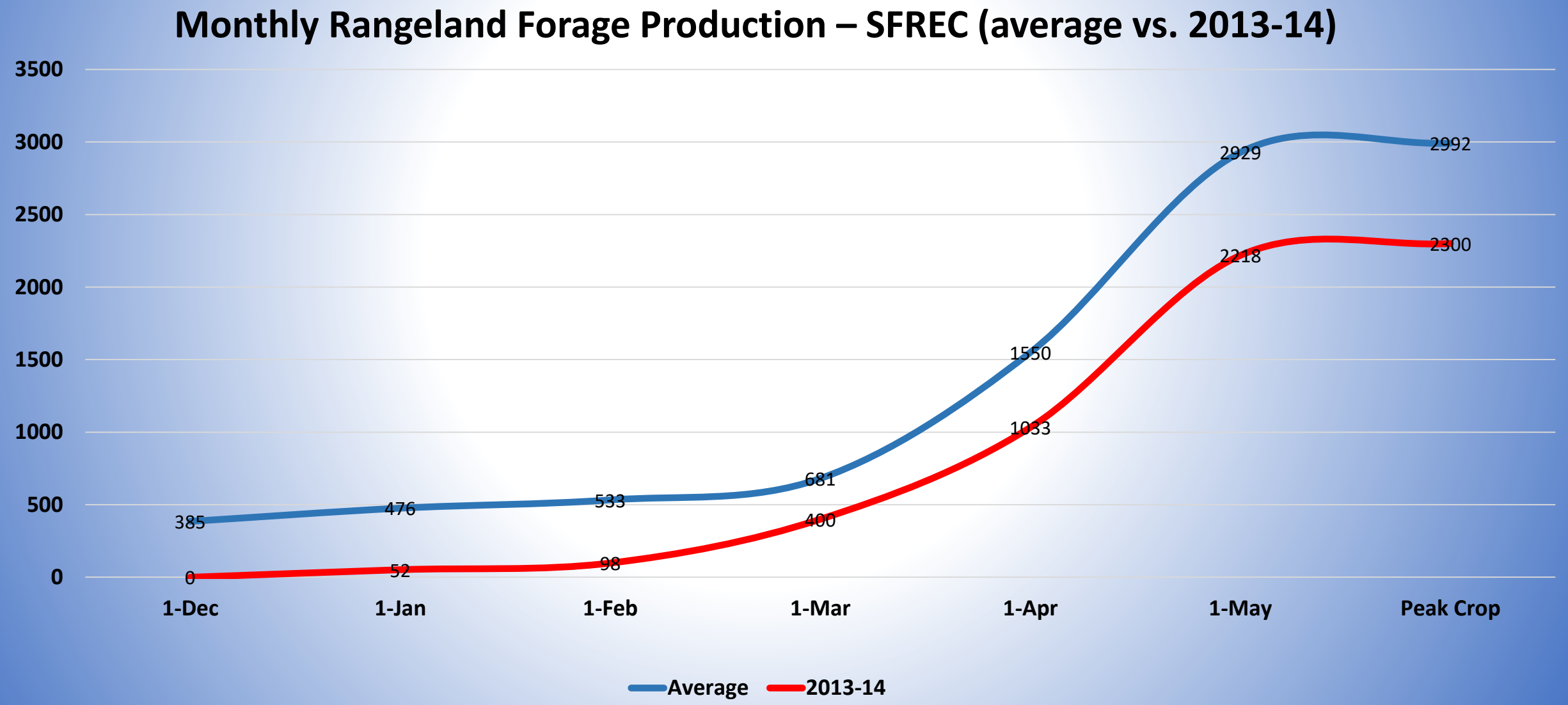
Keeping Track!

Paddock	Acres	Estimated Stock Days / Acre	Predicted Graze Period	Actual Graze Period	Number / Class of Animals	Stock Day Adjustment	Actual Stock Days / Acre
Home	20 ac	48.4 SD/ac	9.68 days	12 days	100 dry cows	1.0	60 SD/ac
Hill	40 ac	53.7 SD/ac	16.5 days	10 days	100 lactating cows	1.3	32.5 SD/ac

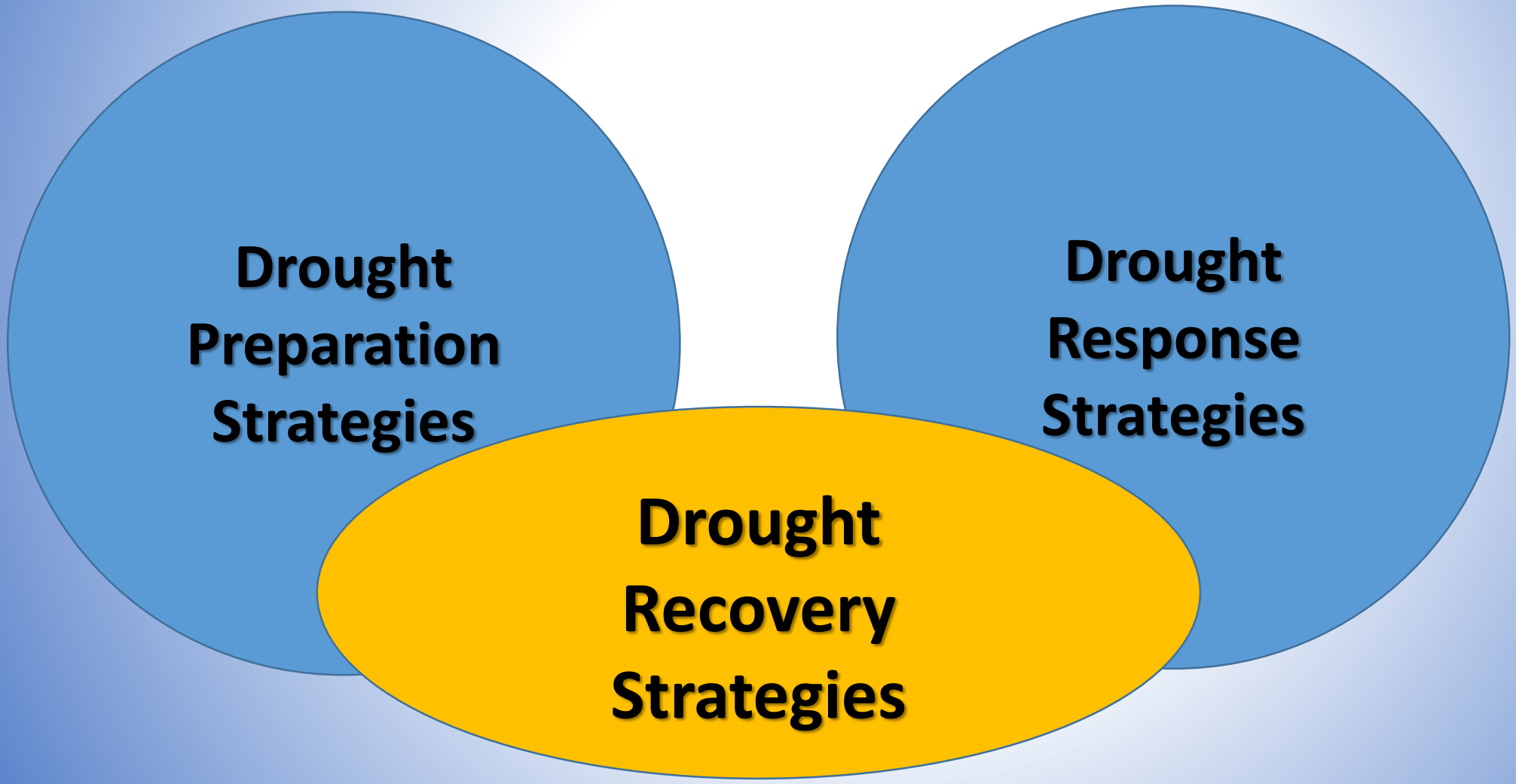
What would these numbers be telling you?!


Management Consultants, Inc.
658
GRAZING CHART
GRAZING CELL: BLUE OAK RANCH
CELL SIZE: 200 ac
Year: 2017–18 Dec–Apr Jun–Aug 2018–2018
PADDOCKS
NO. SIZE
VACCINATIONS
JANUARY 2018 LATE GESTATION
FEBRUARY
MARCH LAMBING
APRIL
MAY Shearing
Lamb VACCINATIONS
JUNE WEAN
Lamb Marketing
JULY
AUGUST
SEPTEMBER Flushing
2017 OCTOBER Breeding
2017 NOVEMBER
2017 DECEMBER
Precipitation (Rain Equiv.)
Month's Precip Year Ago
Total Precip for 12 Months
Stock Days this Month
Stock Days Year Ago
Total Stock Days for 12 Months
SDA/12 Months
SDA/1" Precipitation
Stock Weight/Condition
Type of Animals
Ewes - Gestation
Ewes - Twins
Ewes - Single
Yearlings
Daily Herd Demand (SAU)
5 (3)
Avg. Wt. AU Total AU
©2015 Ranch Management Consultants,

Let's go back: Forage Supply - SFREC



Drought Strategies



Lessons from the Last Drought:

Drought Preparation Strategies

Strategy	% Adoption	Perceived Effectiveness 1 (not effective) → 5 (highly effective)
Incorporate pasture rest into grazing plan	91%	4.25
Identify animals that would be sold in case of drought	79%	3.94
Stockpile forage	76%	3.89
Conservative stocking rate	67%	4.33
Purchase forage insurance	42%	3.84
Use 1-3 month forecasts	37%	3.06
Graze multiple classes of livestock	27%	4.08

N = 48 rangeland cattle, sheep and goat producers

Lessons from the Last Drought:

Drought Response Strategies

Strategy	% Adoption	Perceived Effectiveness 1 (not effective) 5 (highly effective)
Purchased feed	83%	4.38
Applied for government assistance	74%	3.47
Weaned early	63%	4.03
Reduced herd size	61%	4.07
Changed irrigation practices	61%	3.47
Sold retained females	58%	3.96
Developed/hauled stockwater	56%	4.44

N = 48 rangeland cattle, sheep and goat producers

Recovering from Drought

What are your Drought Recovery Strategies?

Key Elements of a Drought Plan

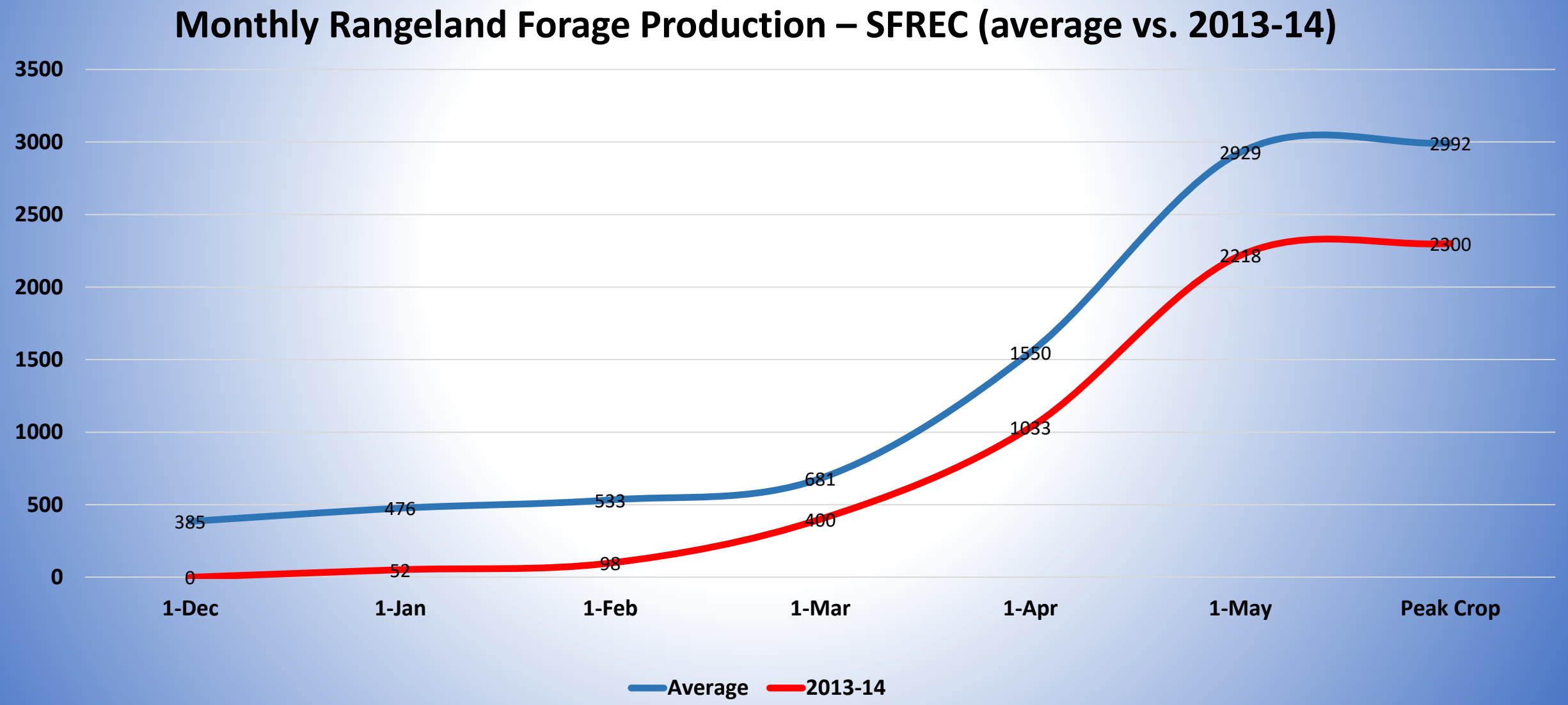
Preparation

- Identify key management strategies that provide flexibility in case of drought.
- Develop skillset and equipment that enhance flexibility.
- Track key predictive indicators (weather and forage).

Response

- Identify strategies, actions and critical dates for implementation.
- Compare the economic and ecological costs of specific strategies with the no action alternative.

What are YOUR critical dates?



Example: Flying Mule Farm Drought Plan

Preparation

1. Conservative stocking rate
2. Match management calendar to forage production
3. Plan grazing activities on monthly basis
4. Keep records on ewe productivity and forage production
5. Stockpile forage and rest pastures based on recovery rates
6. Track SFREC forage and long-range weather forecasts
7. Invest in portable fencing and stockwater systems
8. Investigate additional grazing leases and contracts

Example: Flying Mule Farm Drought Plan

Response

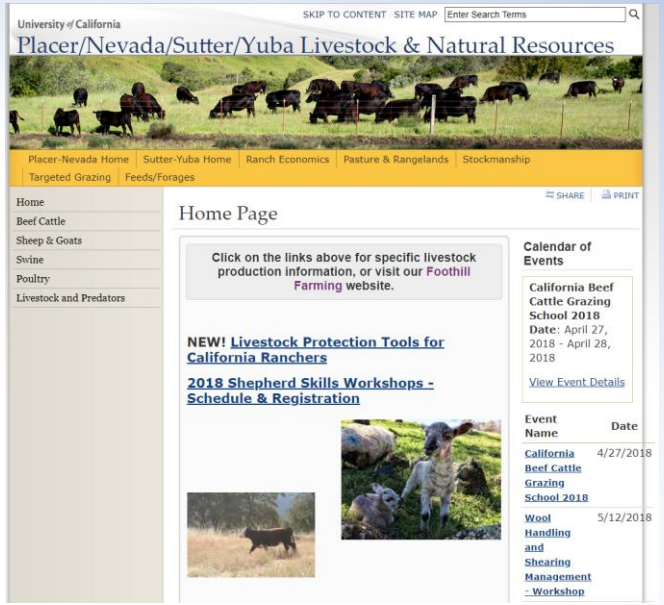
Strategy	Action	Critical Date Condition(s)
Reduce forage demand	Sell older ewes	Jun 1 if <50% forage @ peak Sep 1 if fall forage supply is limited Dec 1 if germination has not occurred
Supplemental feeding	Provide protein to bred ewes	Dec 1 if germination has not occurred
Additional labor	Plan for additional labor at lambing	Feb 1 if Jan forage is <50%
Reduce forage demand	Early wean lambs	May 10 (shearing) if Apr forage is <25%
Reduce irrigated forage demand	Early wean lambs	Jun 1 if irrigation water is <25%
Reduce irrigated forage demand	Sell replacements and feeders	Jul 1 if irrigation water is <50%

Example: Flying Mule Farm Drought Plan

Culling Criteria

1. Poor mothers
2. Behavior problems (e.g., lack of respect for electric fence)
3. Broken mouths and/or hard bags
4. Open for 2 consecutive years
5. Ewes > 8 years of age
6. Lower productivity ewes (typically have single lambs)
7. Replacement ewe lambs

Online Resources



http://ucanr.edu/sites/Livestock/

http://ucanr.edu/blogs/ranchinginthefoothills/

http://rangelands.ucdavis.edu/