

Irrigated Pasture & Native Meadow Strategies



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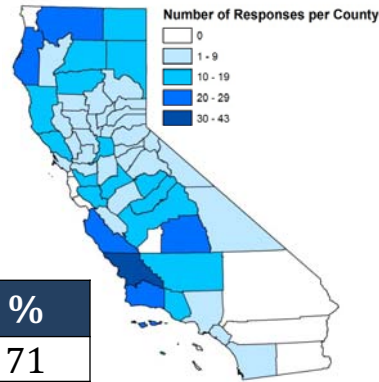
The 2014 Summer Growing Season

Some assumptions to work from

- Available surface irrigation water will be substantially limited.
- Surface irrigation water may not be available for mid (Jul) and late (Aug) season use.
- Some pastures may not be irrigated at all.
- Forage production substantially below normal.
- This may be an early forage year (Apr-May).
- May be limited opportunity for regrowth following grazing - mowing.
- Late frosts? We hope not.

Survey of 509 CA Ranchers - 2011

What aspect of your ranching operation was impacted more severely than you expected by the last drought?



Impact	%
Lost grazing capacity	71
Reduced forage availability	57
Lost profit	51
Lower calf weaning weights	40
Reduced reproduction rates	18
Livestock drinking water	4

The Upper Feather River

Irrigation Sources, Pasture Types, and Harvest Methods

- Ranchers in the Upper Feather have a mixture of irrigation sources – surface, well, or both.
- Different rights and constraints associated with water sources on each ranch.
- A range of irrigation technology.
- Mixture of native range and meadows, improved forage pastures, alfalfa, etc.
- Harvest by bovine, bail it, bail it then bovine it, etc.
- Explore all opportunities for adaptation within and between ranches to create the “best” solution for this season.

Make Every Drop Grow Forage

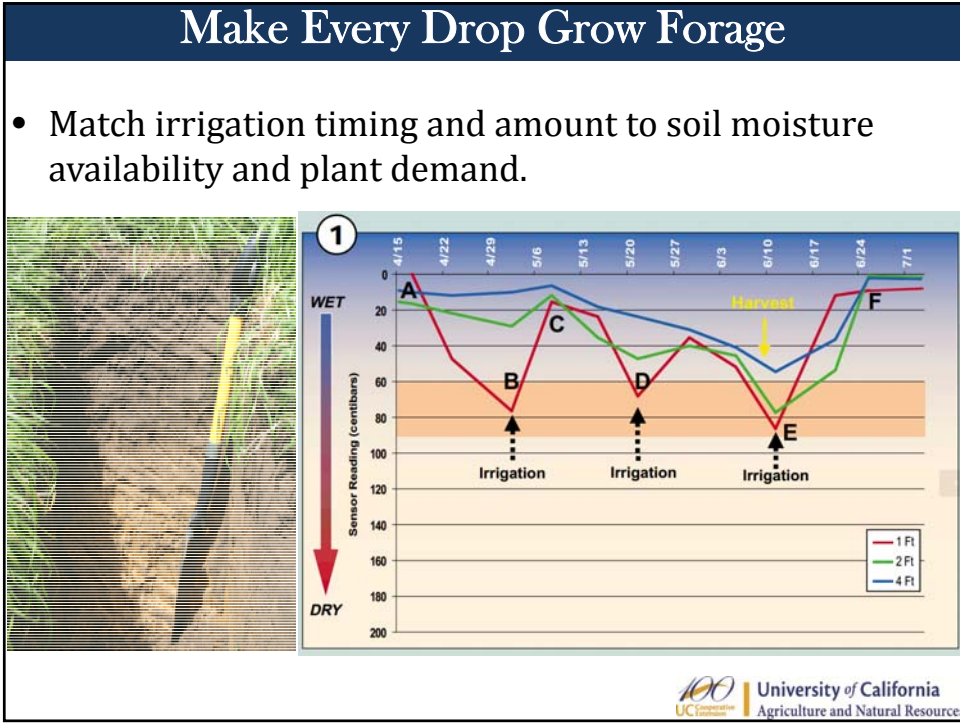
Optimizing Irrigated Meadow and Pasture Management

- Maintain irrigation system – no leaks, no wasted water, clean ditches, etc.



Make Every Drop Grow Forage

- **If you get 50% of normal water delivery**
 - Don't try to irrigate 100% of ground with 50% water.
 - Issues of getting water across fields, deep enough in soil, adequate for long enough to support growth, etc.
- **Consider what to irrigate, and not, if insufficient water for all fields.**
 - Most productive fields?
 - Most efficient to irrigate?
 - Most important to overall drought/herd management/grazing management strategy?
 - Naturally "wet" – let them go this year?



Make Every Drop Grow Forage

Soil-Moisture Monitoring

A Simple Method to Improve Alfalfa and Pasture Irrigation Management

- Steve Orloff, Blaine Hanson & Dan Putnam -

University of California
Agriculture and Natural Resources

Make Every Drop Grow Forage

- Match irrigation timing and amount to soil moisture availability and plant demand.



Recommended Values at Which to Irrigate Alfalfa and Pasture for Different Soil Types

Soil Type	Moisture Reading (centibars)
Sand or loamy sand	40–50*
Sandy loam	50–70
Loam	60–90
Clay loam or clay	90–120

***Caution:** Soil moisture sensors may not be useful for very sandy soils with extremely low water holding capacity, as the sensors may not respond quickly enough to the rapid decline in soil moisture.

Note: These values were based on 50% depletion of available soil moisture for different soil types.

CA Irrigation Management Information System

CIMIS – coverage is poor for Upper Feather River Station 57 - Susanville

The image displays two screenshots of the California Irrigation Management Information System (CIMIS) web interface. The left screenshot shows the 'Northern District' map, where a red circle highlights the Susanville area and a red arrow points to it. The right screenshot shows the 'Central District' map, where a red arrow points to the Susanville area, which is not clearly visible on the map, indicating poor coverage for this station.

Graze Management to Optimize Every Drop

- Adjust stocking rates to the forage you can grow this season.
- Most forage will be grown in the first month of the growing season, perhaps the first 3 weeks.
- Can you put livestock on spring range, uplands during that period?
- Allowing that first, exponential flush of pasture/meadow growth to occur.
- It takes green leaf area to make more green leaf area – so be careful with keeping pastures grazed too short when they could be cranking forage.
- Some simple rotation (i.e., graze, rest, graze) could allow mid season regrowth on good pastures with a second irrigation.
- Make good use of healthy pastures this season, but be careful not to damage next season's productive capacity.


Fertilization

- It is not a very common practice in general for pastures in the area, nor other similar areas in CA.
- There is probably a reason for that.....
- In fields where you have had good experiences (profitable) responses over years.....
- If you have the water for the field to make full use of the application.....
- Soil test is key – what does the soil need?
- Definitely have an integrated grazing plan – rest and maintaining green leaf area.

<i>Survey of 509 CA Ranchers - 2011</i>		
Strategies to manage for drought impacts		%
Proactive	Employ conservative stocking rates	37
	Incorporate pasture rest into grazing system	25
	Incorporate both cow-calf and stockers for flexibility	23
	Grass bank/Stockpile forage	14
Reactive	Reduce herd size	76
	Purchase feed	75
	Apply for government assistance programs	43
	Wean early	43
	Rent additional pasture	28
	Move livestock to another location	26
	Earn off-ranch income	25
	Sell retained yearlings	24

UFRWG - 2014 ILRP Monitoring

- 2014 is one of the every 3rd year intensive compliance and trend monitoring years for Upper Feather River Watershed Group in the Irrigated Lands Regulatory Program (toxicity and pesticide).
- Low flow conditions naturally can provide low quality water (e.g., warmer, lower dissolved oxygen, less dilution of nutrients and microbial pollutants).
- Should be very observant of how much tail water is contributing to the outlet flows in Sierra, Indian, and American Valleys.
- Should have a conversation with water board and other stakeholders about the interpretation of this type of year in a compliance and trend analysis.





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