



# Public-private lands connections

Lynn Huntsinger, UC Berkeley















# Mobility



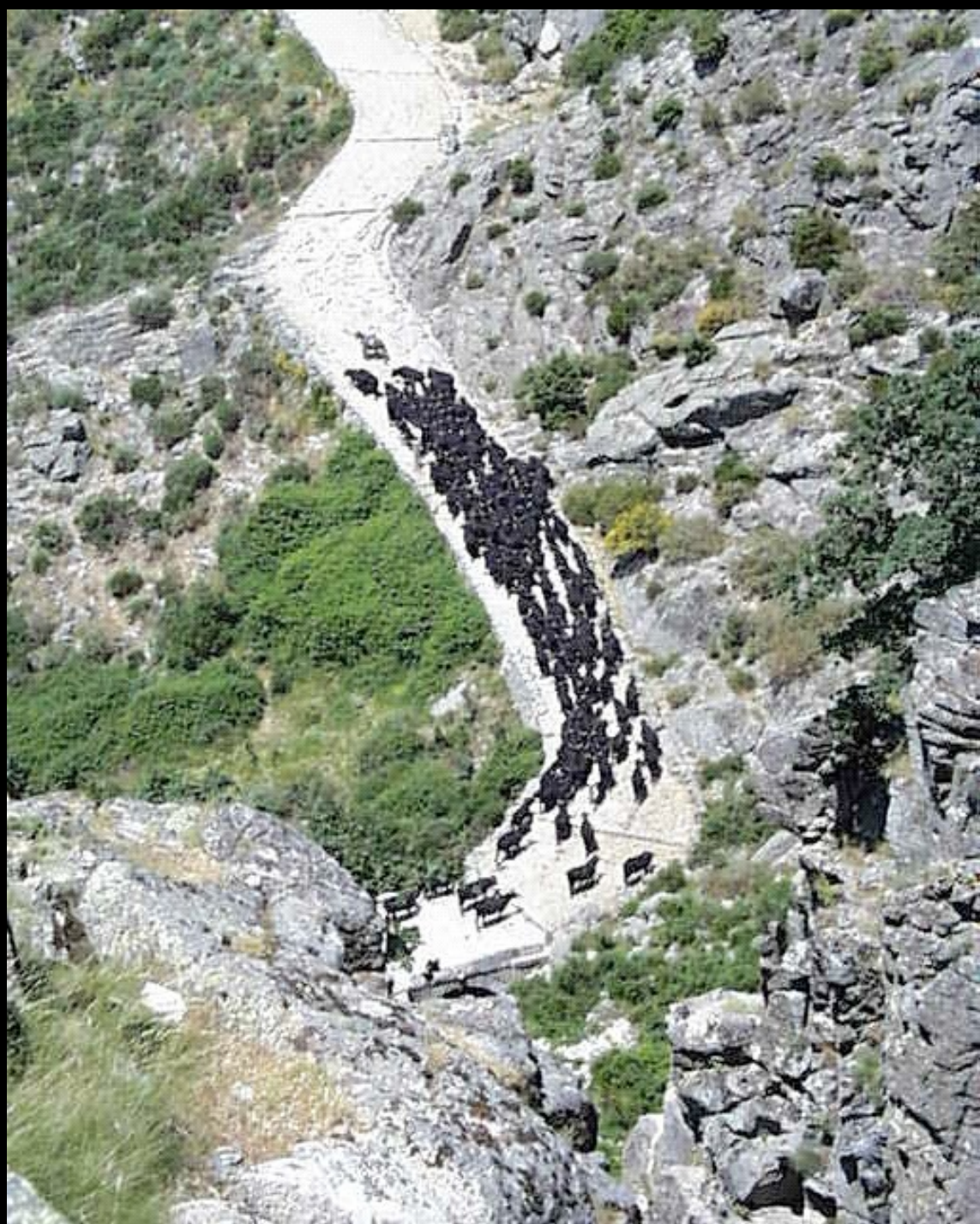
















Stock driveways





Junta de  
Castilla y León



# Cañada Real de La Plata



VÍA PECUARIA

## Hundreds of Sheep Driven Through Downtown Madrid in Ecological Protest

Sunday, November 12, 2006

Associated Press

[E-MAIL STORY](#) | [PRINTER FRIENDLY VERSION](#)



AP

Nov. 12: Hundreds of sheep are driven through downtown Madrid in a protest to protect rural grazing paths from urban sprawl.



**MADRID, Spain** — Farmers led a flock of sheep through **Madrid Sunday** in an annual protest urging the protection of ancient grazing routes threatened by urban sprawl.

Around 700 of the animals meandered along major thoroughfares in downtown Madrid, bleating and tinkling bells in a pungent-smelling parade that also featured donkeys, horses and humans in old-fashioned garb from rural areas of Spain.

The protest, now in its 14th year, calls on authorities to protect Spain's 78,000 miles of paths used for seasonal movement of livestock — from cool, highland pastures in summer to lower-lying ones in winter.

Some of them are 800 years old. Madrid lies along two of the north-south routes.

One of these dates back to 1372, and at least on paper it runs through the **Puerta del Sol** — the bustling plaza that is Madrid's equivalent of New York City's Times Square.

The routes are protected under Spanish law but in practice housing developments, highways and railways have nibbled away at the time-honored paths, said Jesus Garzon, a former farmer and rural activist who is the brains behind an initiative to preserve the practice known as transhumance — the seasonal movement of livestock. In Spain it involves a million animals — sheep, cattle and other creatures.

*(Story continues below)*









NEVADA SHEEP RANCH

X 38

7000 SHEEP

Mursey Photo

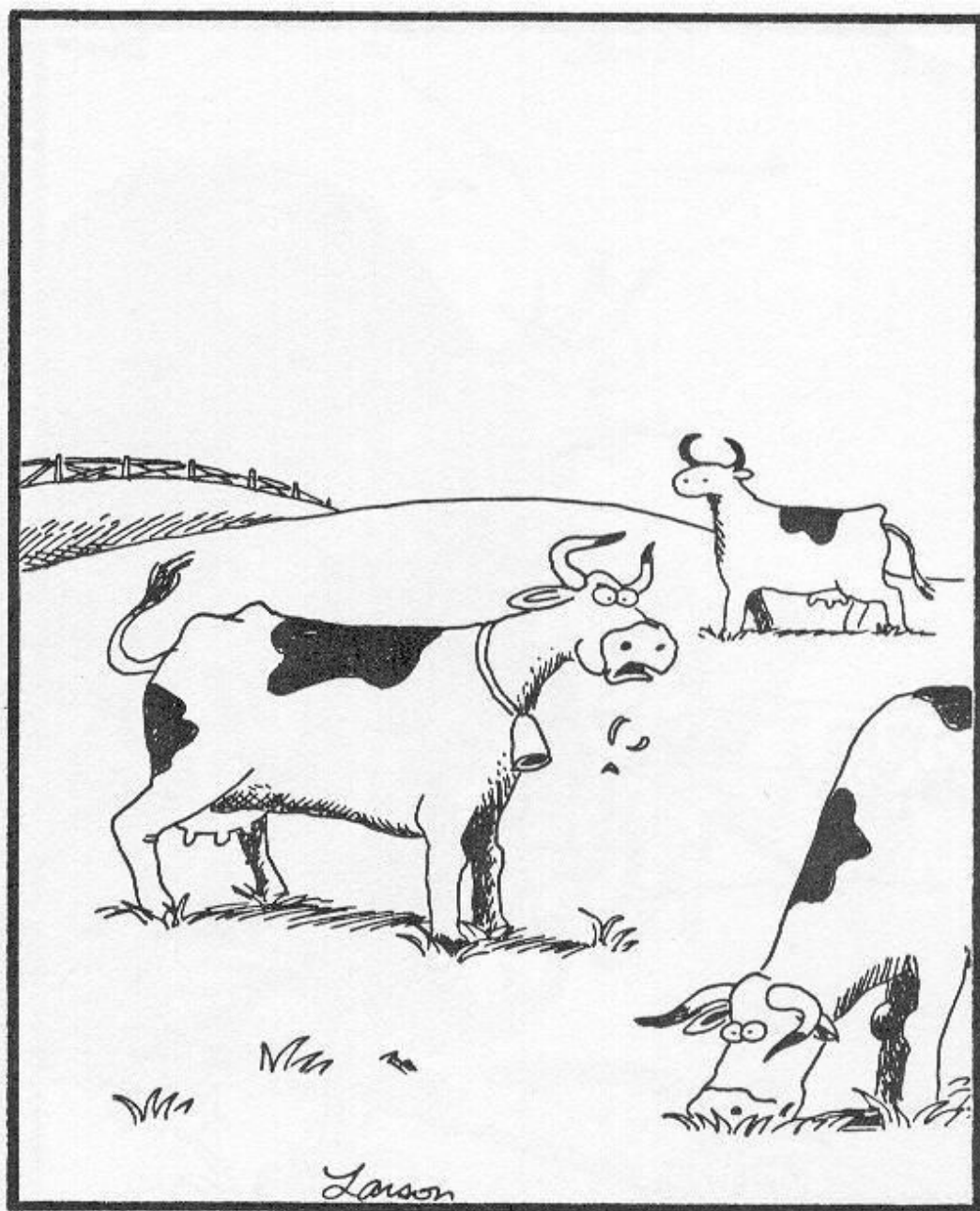




**SHEEP TRAILING  
ROUTES  
ACROSS NEVADA  
1865-1890**

after Hochmuth and Wentworth





"Hey, wait a minute! This is grass! We've been eating grass!"













# Transhumance











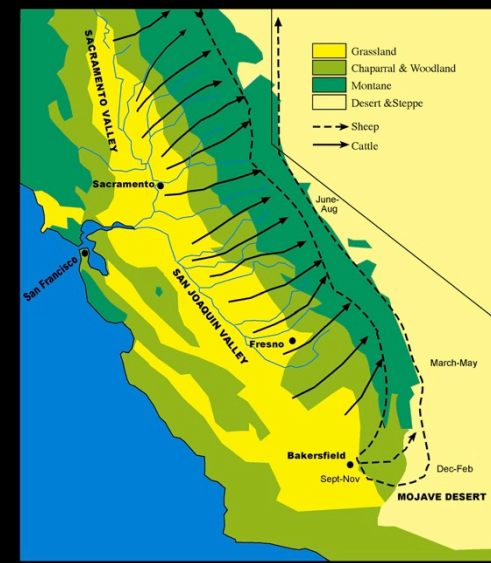
# Forage supply comes from several sources

Oak woodland ranch

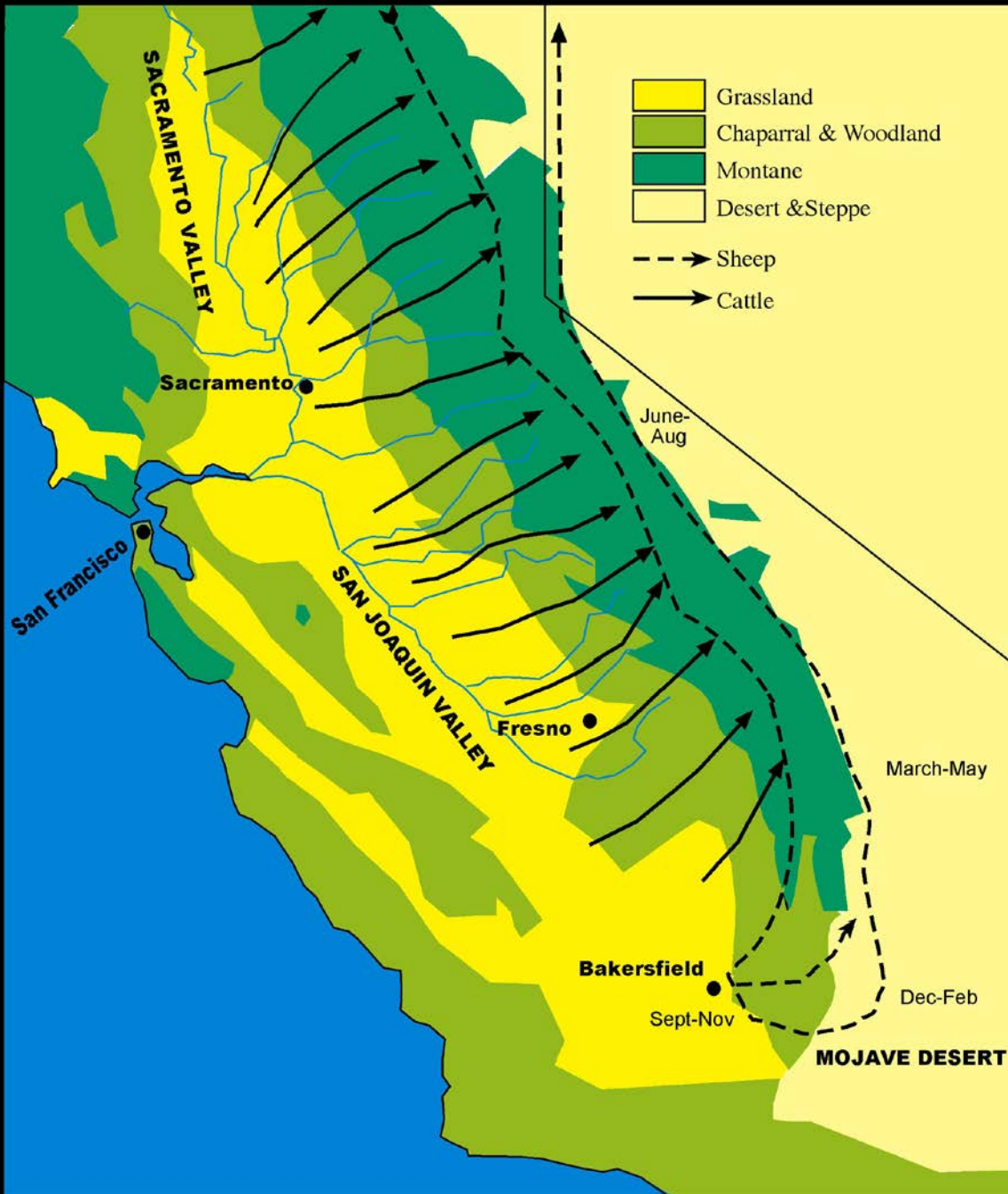
Winter Range

Feed and Supplements

Summer montane range





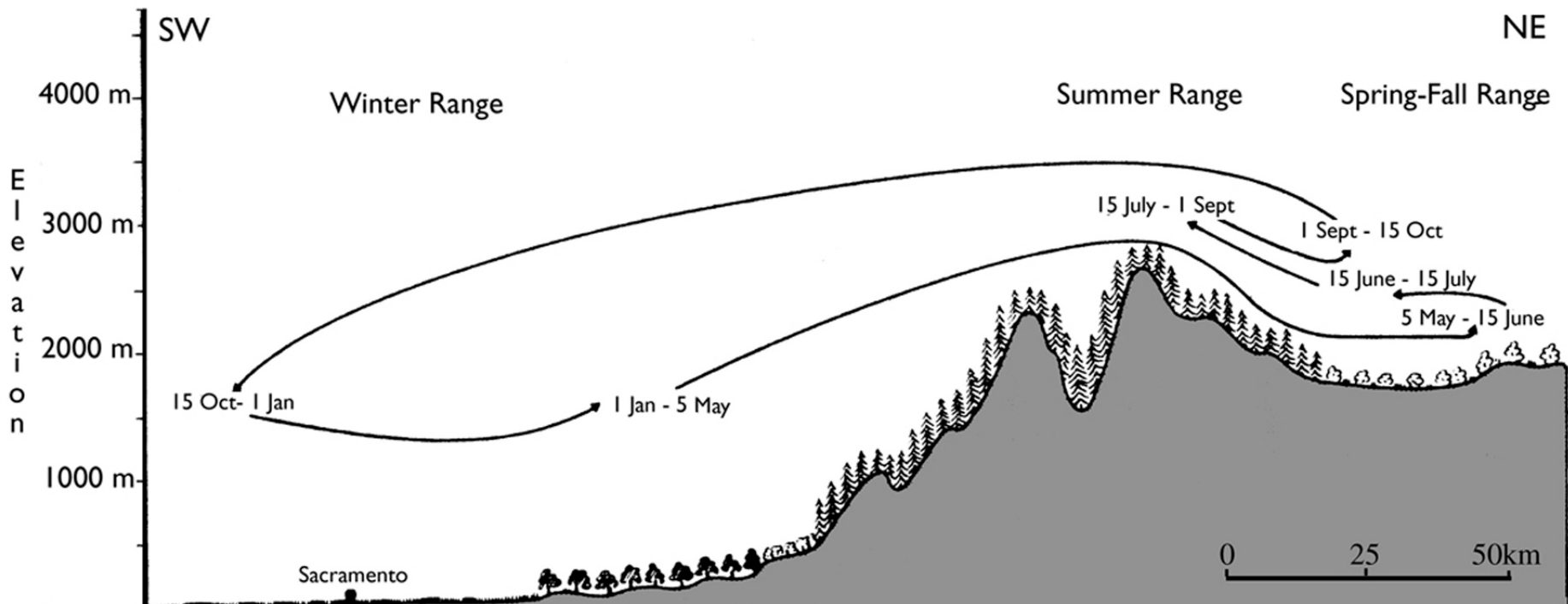


“Transhumance”  
use of Sierran  
meadows.



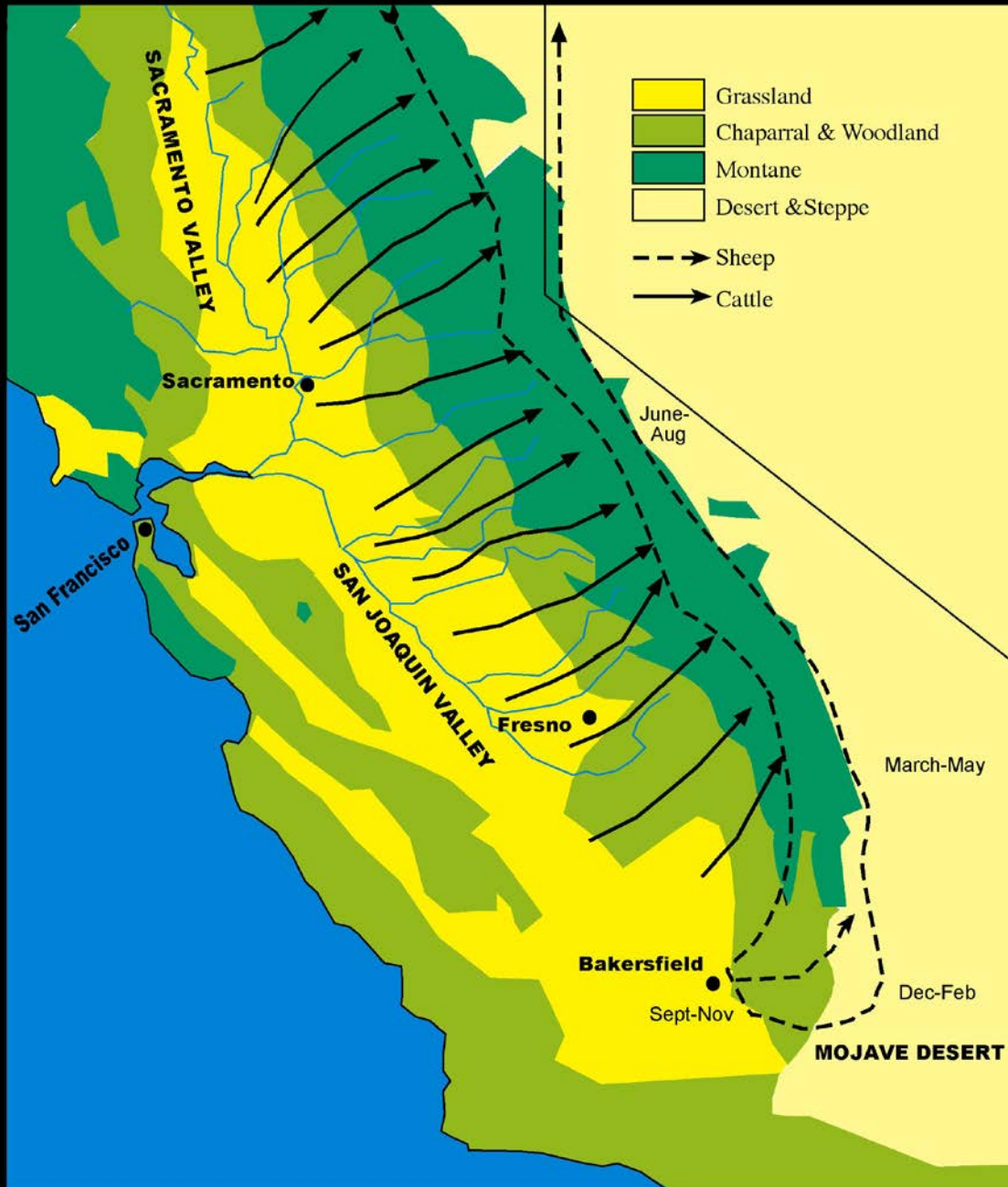
**Grasslands,  
woodlands, and  
savanna, +80% private**

**Mountains and  
deserts, +80% public**



Location	SACRAMENTO VALLEY	FOOTHILLS	SIERRA NEVADA	EAST SLOPE
Vegetation Type	Annual grassland	Chaparral/ oak woodland	Conifer forests and meadows	Sagebrush Steppe
Ownership	Private land	Private land	National Forest	Bureau of Land Management











UNITED STATES DEPARTMENT OF AGRICULTURE  
 BUREAU OF PLANT INDUSTRY, W. A. TAYLOR, CHIEF  
 FOREST SERVICE, W. B. GRESLEY, FORESTER

# NATURAL VEGETATION

GRASSLAND AND DESERT SHRUB - BY H. L. SHANTZ  
 FOREST VEGETATION - BY RAPHAEL ZON

WASHINGTON, D. C.  
 1923



### FOREST VEGETATION (WESTERN)

- |   |   |
|---|---|
| SPRUCE-FIR (NORTHERN CONIFEROUS FOREST) - - - - - [Red]               | YELLOW PINE-DOUGLAS FIR (WESTERN PINE FOREST) - - - - - [Orange]    |
| CEDAR-HEMLOCK (NORTHWESTERN CONIFEROUS FOREST) - - - - - [Light Blue] | YELLOW PINE-SUGAR PINE - - - - - [Yellow]                           |
| WESTERN LARCH-WESTERN WHITE PINE - - - - - [Light Green]              | YELLOW PINE-DOUGLAS FIR - - - - - [Light Orange]                    |
| PACIFIC DOUGLAS FIR - - - - - [Light Blue-Green]                      | LODGEPOLE PINE - - - - - [Light Green]                              |
| REDWOOD - - - - - [Dark Red]  | PIÑON-JUNIPER (S. W. CONIFEROUS WOODLAND) - - - - - [Dark Green]    |
|   | CHAPARRAL (S. W. BROAD-LEAVED WOODLAND) - - - - - [Dark Blue-Green] |

### GRASS VEGETATION

- |  |     |
|--|-----|
| TALL GRASS (PRAIRIE GRASSLAND) - - - - - [Light Orange]                  | 1.0 |
| SHORT GRASS (PLAINS GRASSLAND) - - - - - [Light Green]                   | 3.0 |
| HEMLOCK AND DESERT GRASS SAVANNA (DESERT SAVANNA) - - - - - [Light Blue] | 0.0 |
| BUNCH GRASS (PACIFIC GRASSLAND) - - - - - [Light Green]                  | 0.0 |
| ALPINE MEADOW (ALPINE GRASSLAND) - - - - - [Light Blue]                  | A   |
| MARSH GRASS (MARSH GRASSLAND) - - - - - [Light Green]                    | 0.0 |

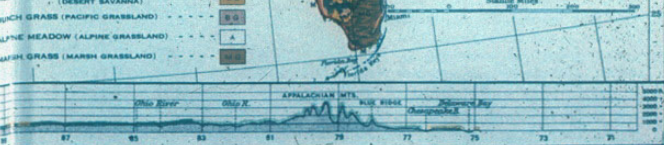
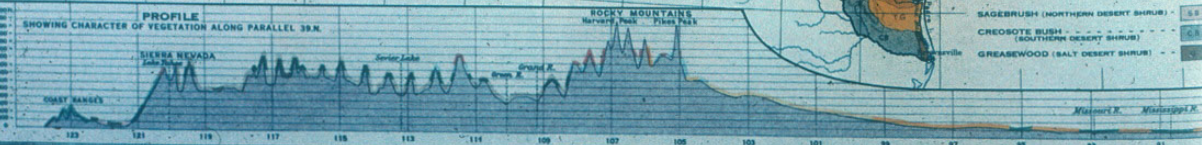
### DESERT SHRUB VEGETATION

- |   |     |
|---|-----|
| SAGEBRUSH (NORTHERN DESERT SHRUB) - - - - - [Light Orange]    | 0.0 |
| CREOSOTE BUSH (SOUTHERN DESERT SHRUB) - - - - - [Light Green] | 0.0 |
| GREASWOOD (SALT DESERT SHRUB) - - - - - [Light Blue]          | 0.0 |

### FOREST VEGETATION (EASTERN)

- |   |     |
|---|-----|
| SPRUCE-FIR (N. CONIFEROUS FOREST) - - - - - [Red]                               | 1.0 |
| JACK, RED, AND WHITE PINES (NORTHEASTERN PINE FOREST) - - - - - [Light Orange]  | 2.0 |
| BIRCH-BEECH-MAPLE-HEMLOCK (NORTHEASTERN HARDWOOD) - - - - - [Light Green]       | 0.0 |
| OAK (SOUTHERN HARDWOOD FOREST) - - - - - [Light Orange]                         | 0.0 |
| CHESTNUT-CHESTNUT OAK-YELLOW POPLAR - - - - - [Light Green]                     | 0.0 |
| OAK-HECORY - - - - - [Light Green]  | 0.0 |
| Oak-Pine - - - - - [Light Green]  | 0.0 |
| CYPRESS-TUPELO-RED GLIM (RIVER BOTTOM FOREST) - - - - - [Light Green]           | 0.0 |
| LONGLEAF-LOBBLY-SLASH PINES (SOUTHEASTERN PINE FOREST) - - - - - [Light Orange] | 1.0 |
| MANROVE (SUBTROPICAL FOREST) - - - - - [Dark Red]                               | 0.0 |

Scale: 1:8,000,000





# Acres of Non-Federal Grazing Land, 1997



M4971.MAP (Color Comp)



<i>Pastoralism characteristics</i>	<i>USA</i>	<i>Australia</i>	<i>Romania</i>	<i>Spain</i>	<i>France</i>	<i>Brazil</i>
Vertical transhumance	✓		✓	✓	✓	
Horizontal transhumance		✓				✓
Non-exclusive temporary access to pastures	✓	✓	✓	✓	✓	✓
Mobility declining and fragmentation	✓		✓			
Use of public grazing land	✓		✓	✓	✓	
Regular movement to high quality seasonal grazing	✓		✓	✓	✓	✓
Opportunistic movement to avoid drought	✓	✓				
Encroachment of farms	✓		✓	✓	✓	
Encroachment of parks, recreation, housing	✓			✓	✓	
Ageing or declining pastoral population	✓		✓	✓	✓	
Mostly large scale operations		✓				✓
Mostly medium or small scale operations	✓		✓	✓	✓	
Conservation benefits demonstrated	✓		✓	✓		✓
Tourism and niche products potential	✓			✓		✓

(Kerven & Behnke, 2010)

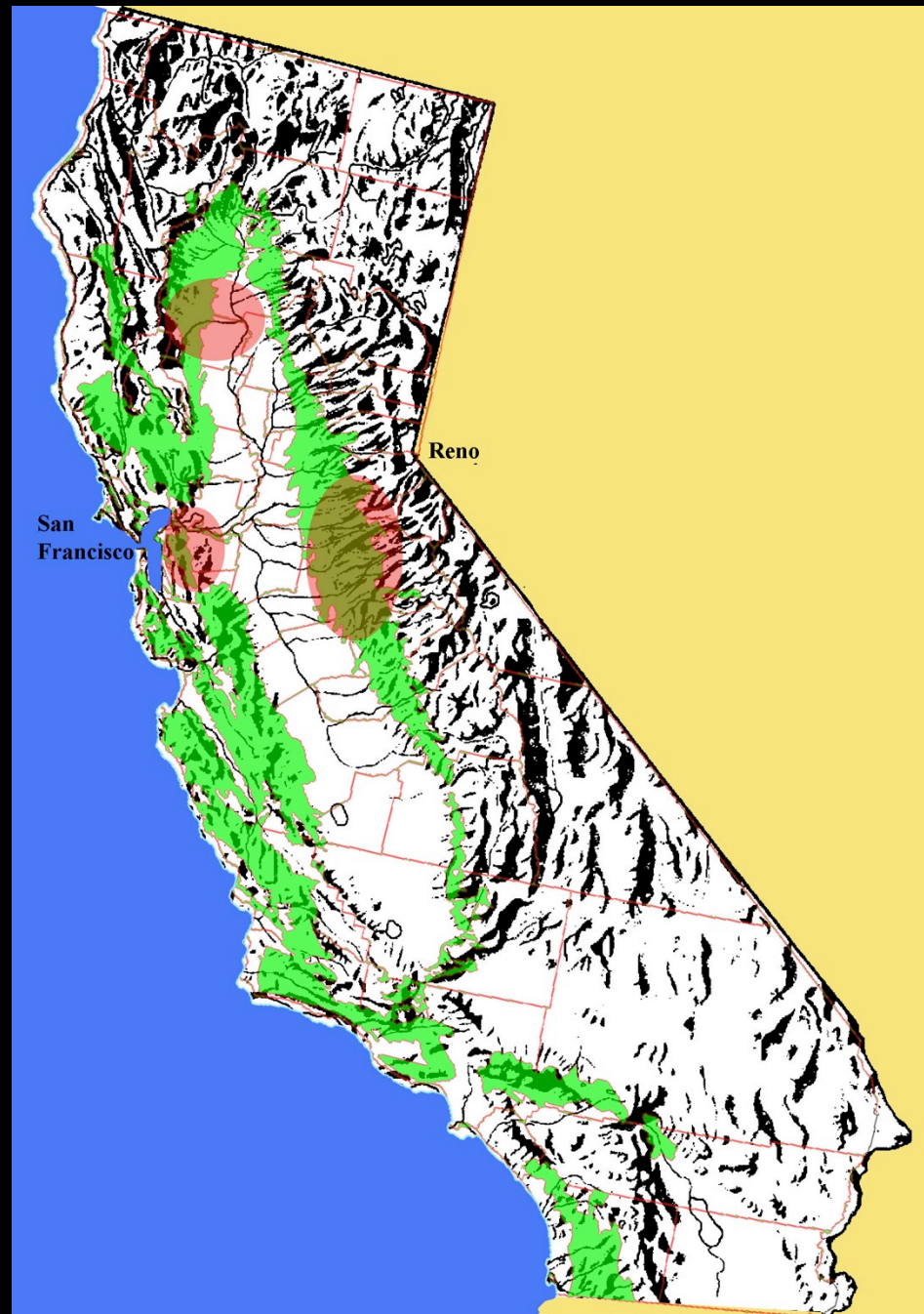


## Case Studies:

1. North  
Sacramento Valley  
(L. Forero)

2. Sierra Foothills  
(A. Sulak)

3. San Francisco  
Bay  
(A. Sulak)





# Letter from Shasta Trinity Forest Supervisor to local stockman during WWI





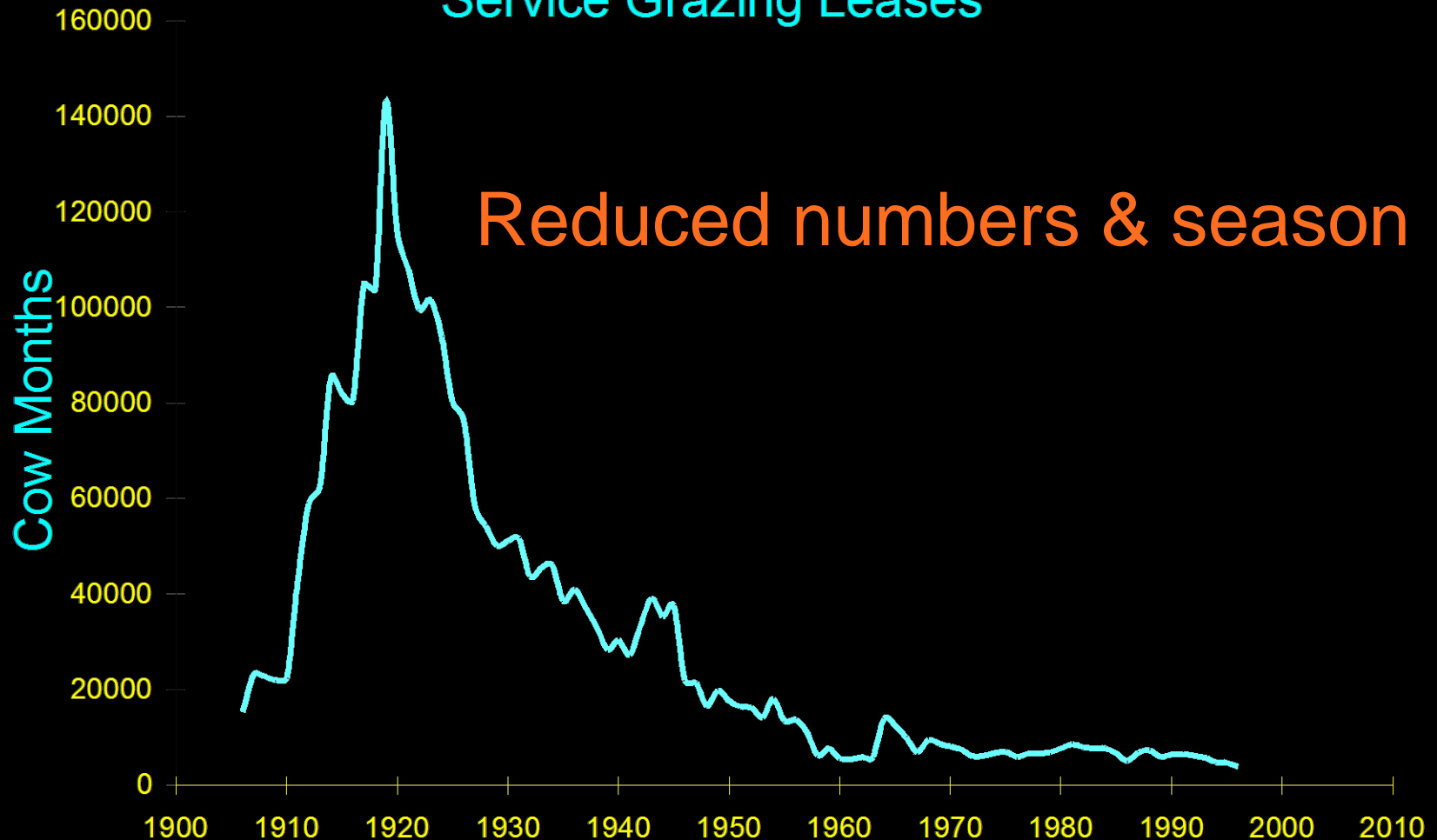
# Finding: Fire suppression reduced forage





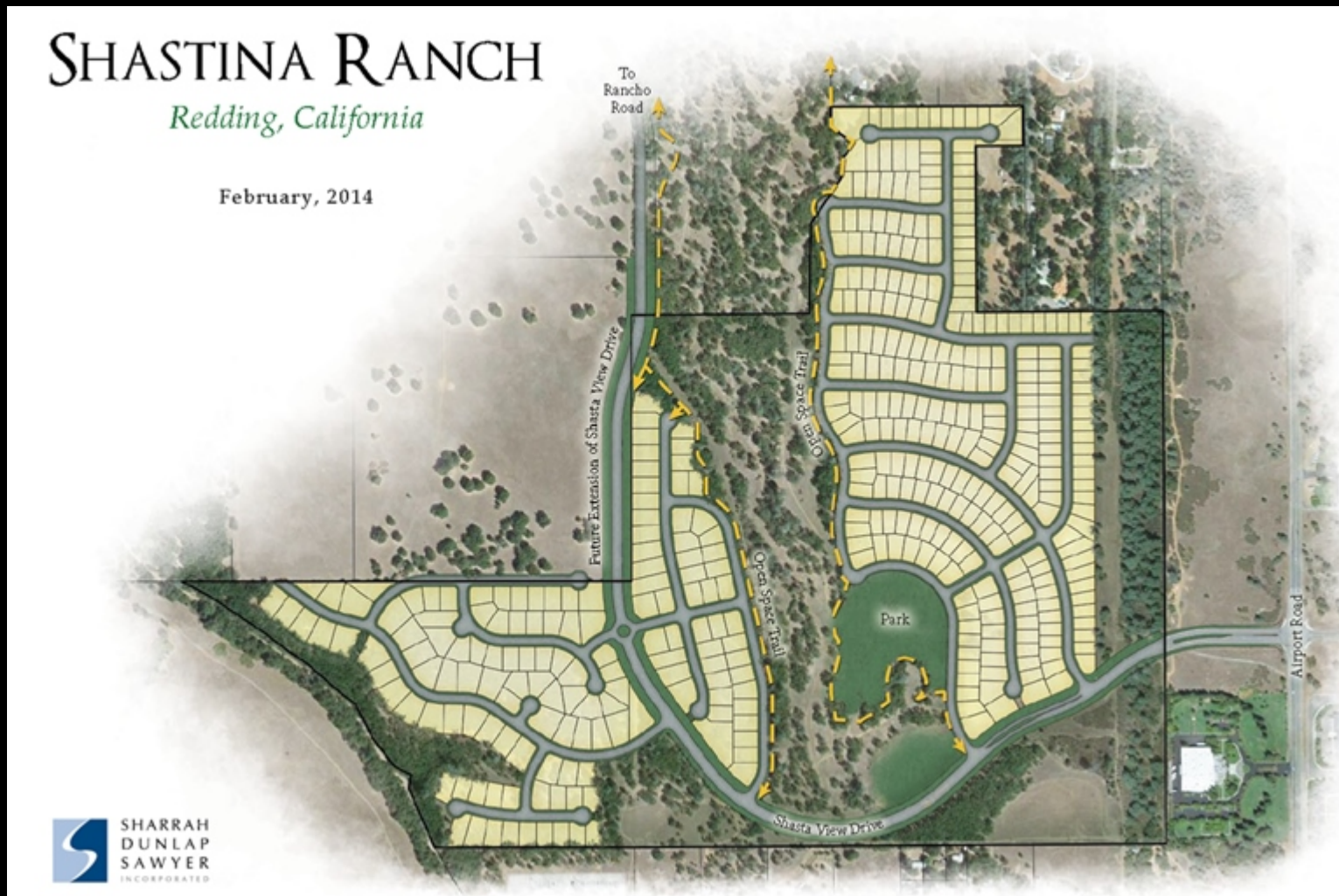
# Findings: North Sacramento Valley

Cow Months of Forage Harvested By Year, Forest Service Grazing Leases





# Findings: North Sacramento Valley



- Lost USFS permit made sale of private land more likely



# Why permittees quit

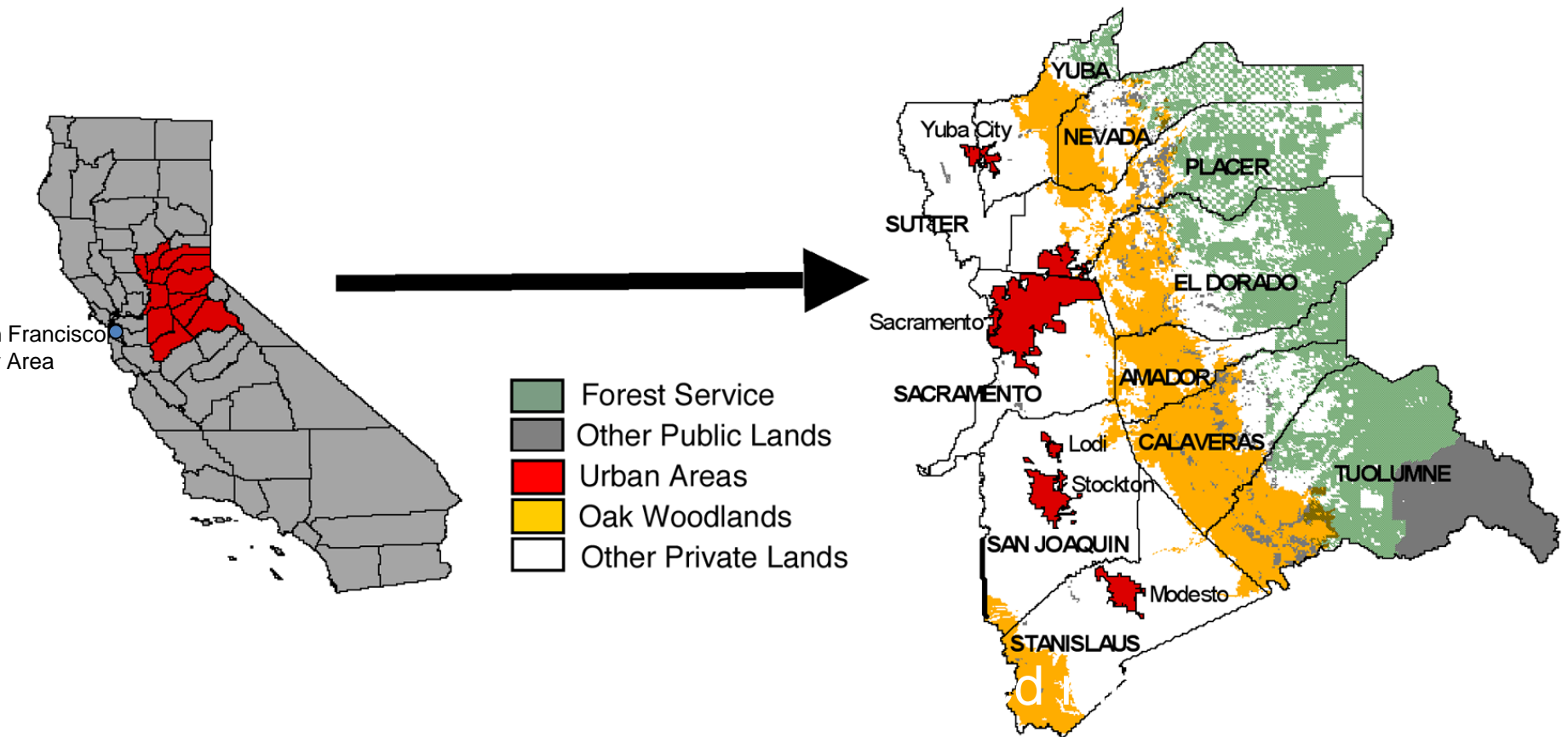
- “Hassle factor”
- More intensive use of private land
- Losses in mountains, low weaning weights
- Personal circumstances
- Vegetation change
- Labor (especially sheep)
- Industry economics



Ranches with permits were more stable  
during the 20th century.



# Case Study II: Sierran Foothills





# How important are the following reasons for using a Forest Service allotment?

## Ranked:

- 1 Green feed
- 2 Cost of alternatives is higher
- 3 Lack of another alternative
- 3 Makes the most economic sense
- 4 Lifestyle
- 5 Convenience





Sierran Ranchers	% permittees (n=23)	% non- permittees (n=14)	X <sup>2</sup>
Began ranching in the Sierra foothills before 1900	74	43	.06
The ranch has been in my family for generations and I maintain it to carry out that tradition	74	39	.04
Family considerations have an important impact on my ability to use summer range.	70	21	.01
Ranching makes me feel close to the earth	91	79	ns
I believe that ranching is a good way to make money	9	7	ns



Sierran Ranchers	% permittees (n=23)	% non- permittees (n=14)	$\chi^2$
Conflicts with other land users have an important impact on my ability to use summer range.	44	7	.00
The development of surrounding land is highly important in my management goals, decisions, and practices	65	31	.05
Management has been influenced by vegetation change	74	21	.00
Regulation and agency policy has an important influence on my operation	70%	14%	.02

# Findings: Sierra Foothills Permittees

- Permittees differ from non-permittees
- About a third would sell land if permit lost
- Permit  $\approx$  45% of income
- Vegetation change, urbanization, hits permittees more





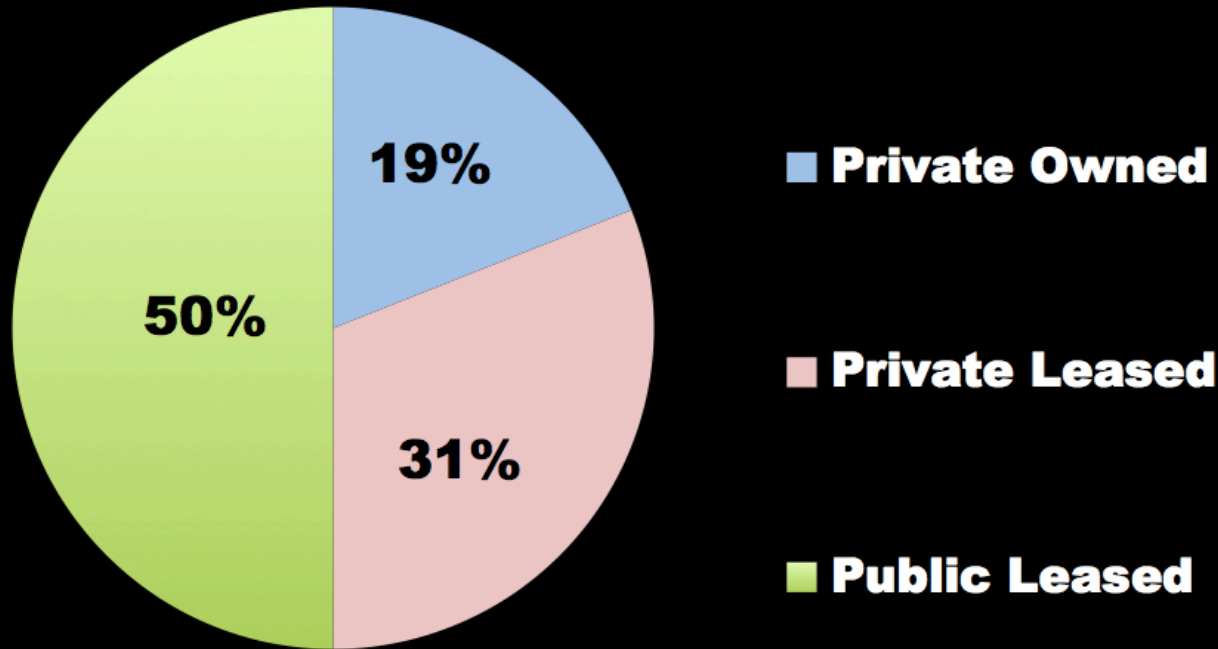
# Case Study III: East Bay



Connectivity

# A typical East Bay ranch

(Sulak 2007)



- Median date of establishment: 1890
- Competition for public leases as forage base shrinks.
- Used 4 private leases on average, one used 15 private and public



# If I lost my public leases...



- Would suffer a significant decline in income (41%).
- Would have to reduce herd size.
- Would like to buy or lease more land but it is increasingly difficult to find.
- 35% - 50% might sell the ranch.

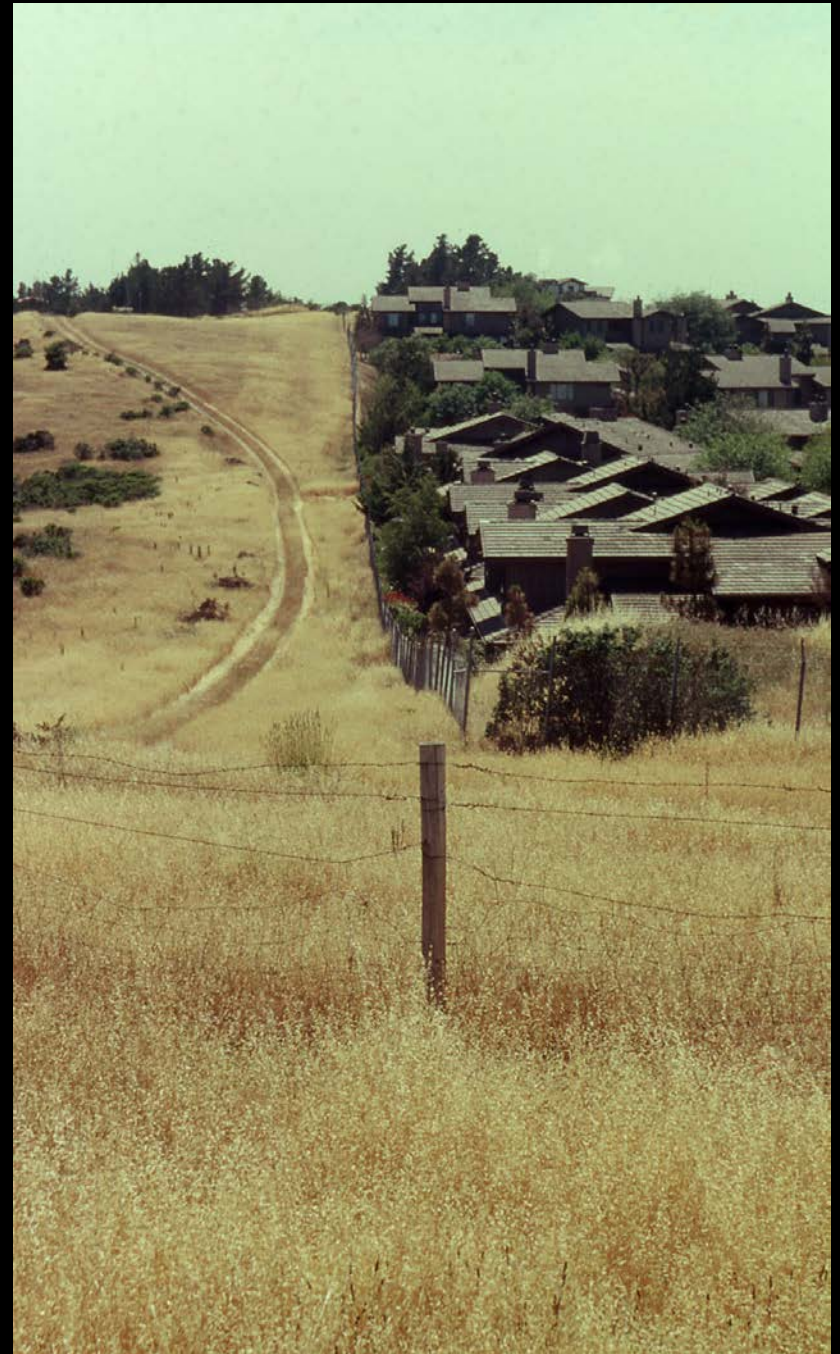
In the Bay Area....

Agencies have an impact in who the ranchers of the future will be.

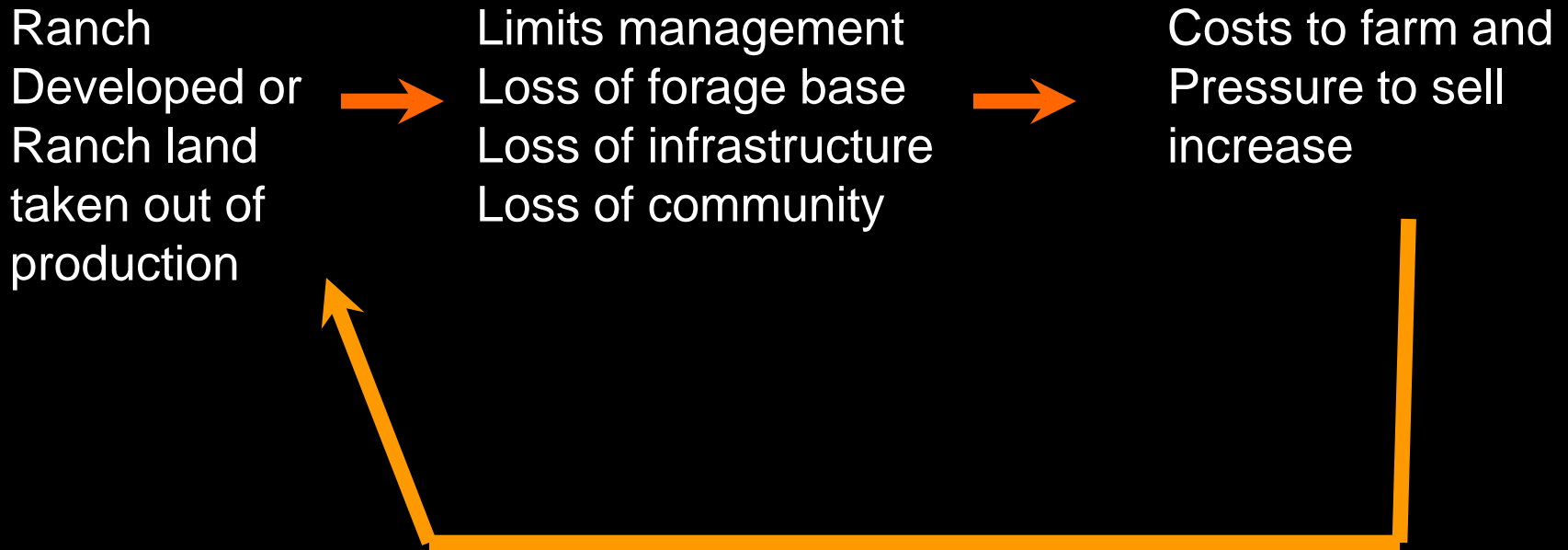
Ability to build relationships



Critical mass



# Landscape Scale: Feedbacks of development or exclusion



feedback loop: loss of ranches increases loss of ranches

(Sulak and Huntsinger 2007)





# Ranchers and public lands

***"They think we can put the cows on a shelf when they don't need them."***

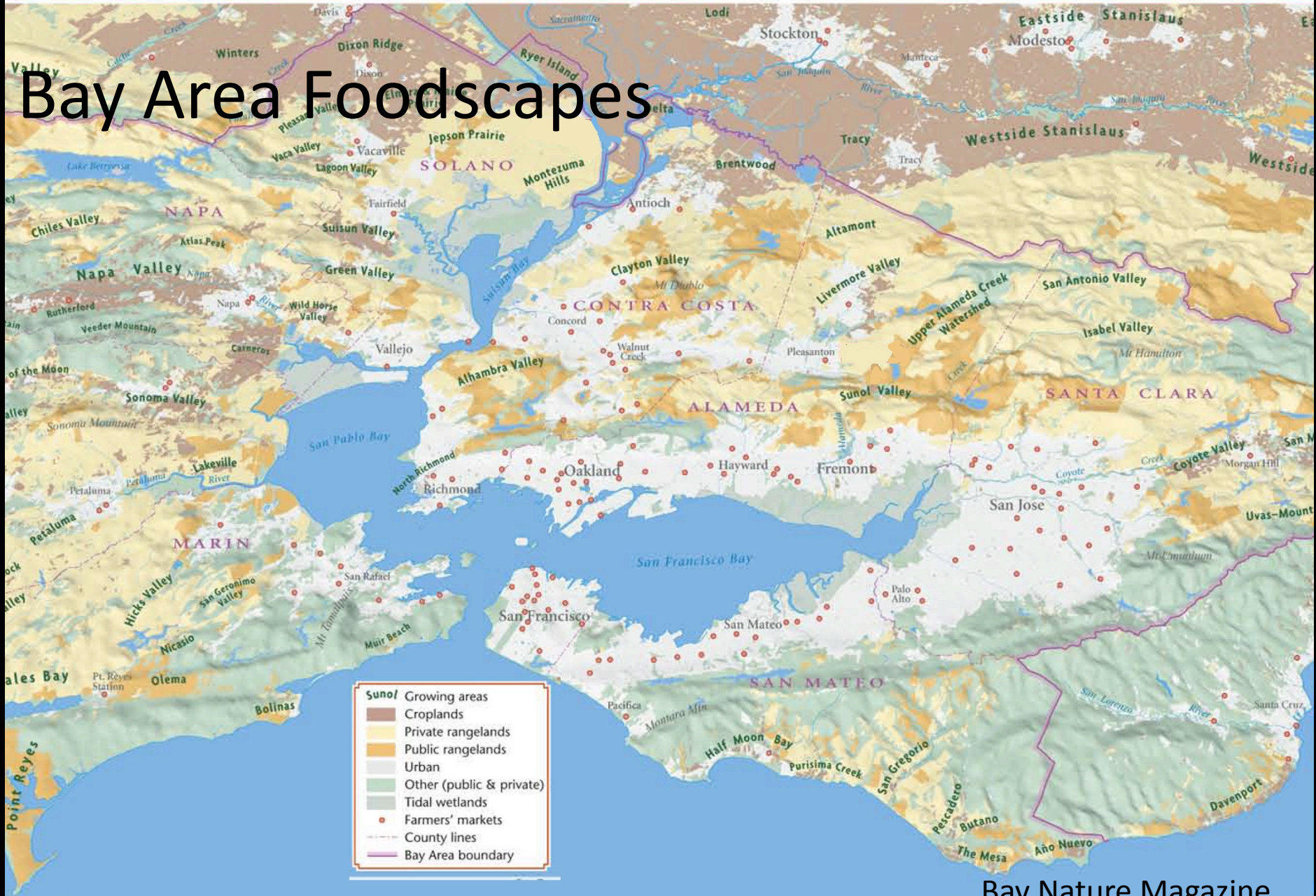






*“It’s not open space.”*

# Bay Area Foodscapes



Bay Nature Magazine







- Cows need a stable, year round, forage supply
- Cows are not plants: pastoralism world-wide makes use of mobility
- In California and the west, public lands are part of where cows need to roam.
- Connectivity=relationships





**Domenica**  
**2 Giugno 2013**

I Priori e gli "Amici di Castagnea",  
in collaborazione con l'agriturismo Oro di Berta,  
organizzano:



# 3<sup>a</sup> Camminata con le capre a Castagnea

non competitiva, con premi a sorteggio.

Lunghezza: 4,5 KM

Dislivello: 290 mt

Tempo previsto: 3h



Partenza alle **ore 10** dalla Piazza della Chiesa di Castagnea (Portula - BI)  
Consegna ticket di partecipazione a partire dalle **ore 9**.  
Punti di ristoro lungo il percorso e possibilità di pranzo all'arrivo.

**ISCRIZIONE:** Adulti: 5 €

Bambini (fino a 12 anni): gratuita



Per prenotazioni (entro il 30/5): 015 - 756174 Sig.ra Sandra

Regolamento e consigli sul sito [www.amicidicastagnea.it](http://www.amicidicastagnea.it).

In caso di maltempo la manifestazione sarà rinviata a data da destinarsi.

Responsabilità: l'Organizzazione considera con l'iscrizione l'idoneità fisica dei partecipanti e declina ogni responsabilità civile e penale per eventuali danni a persone o cose, prima, durante e dopo la partenza della camminata.