

Using cattle grazing as a tool to control invasive dicot weeds

Elizabeth Reikowski

December 8, 2021



San Benito County Weed Management Area
20th Annual Continuing Education Seminar for Ranchers

Willow Creek Land and Cattle

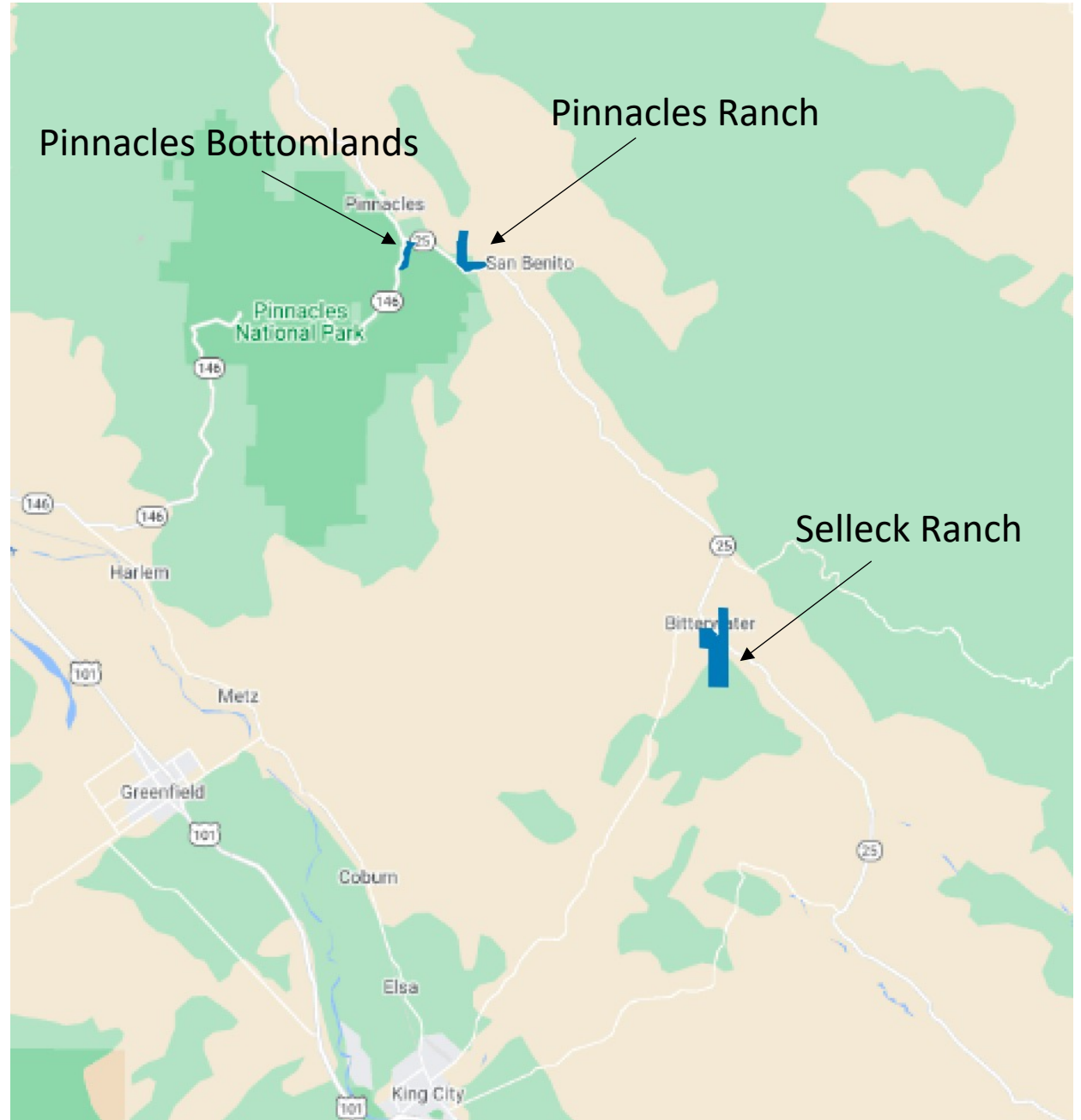
- Graze two leased ranches in south San Benito County
- Grazing contract at Pinnacles National Park



Matt Reikowski



Audra Devoto



Common
dicot
(broadleaf)
weeds in
San Benito
County

Mustards

- Cabbage family (Brassicaceae)
- Annuals and perennials
- Cover crops/biofumigants
- Introduced from Eurasia

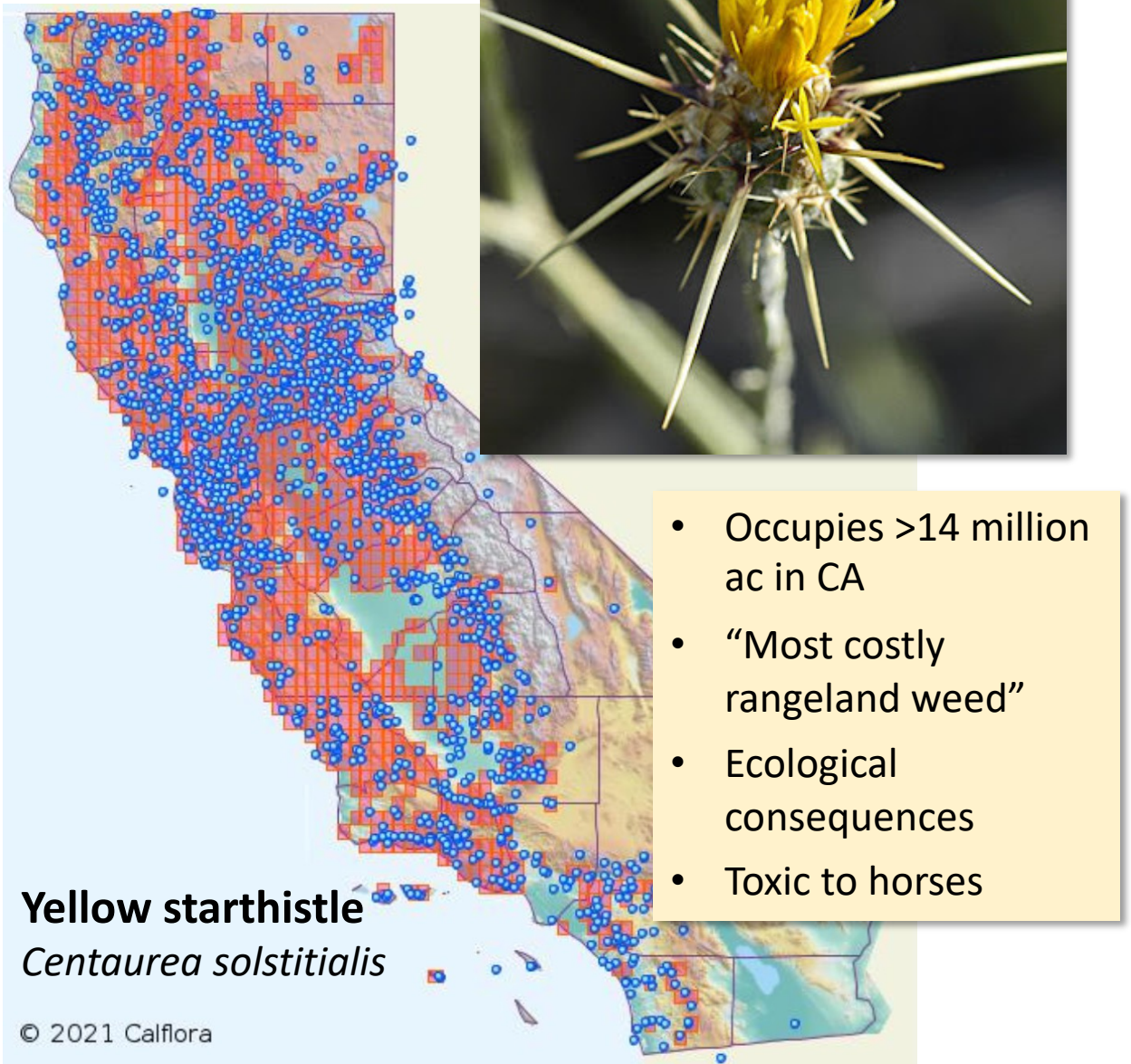
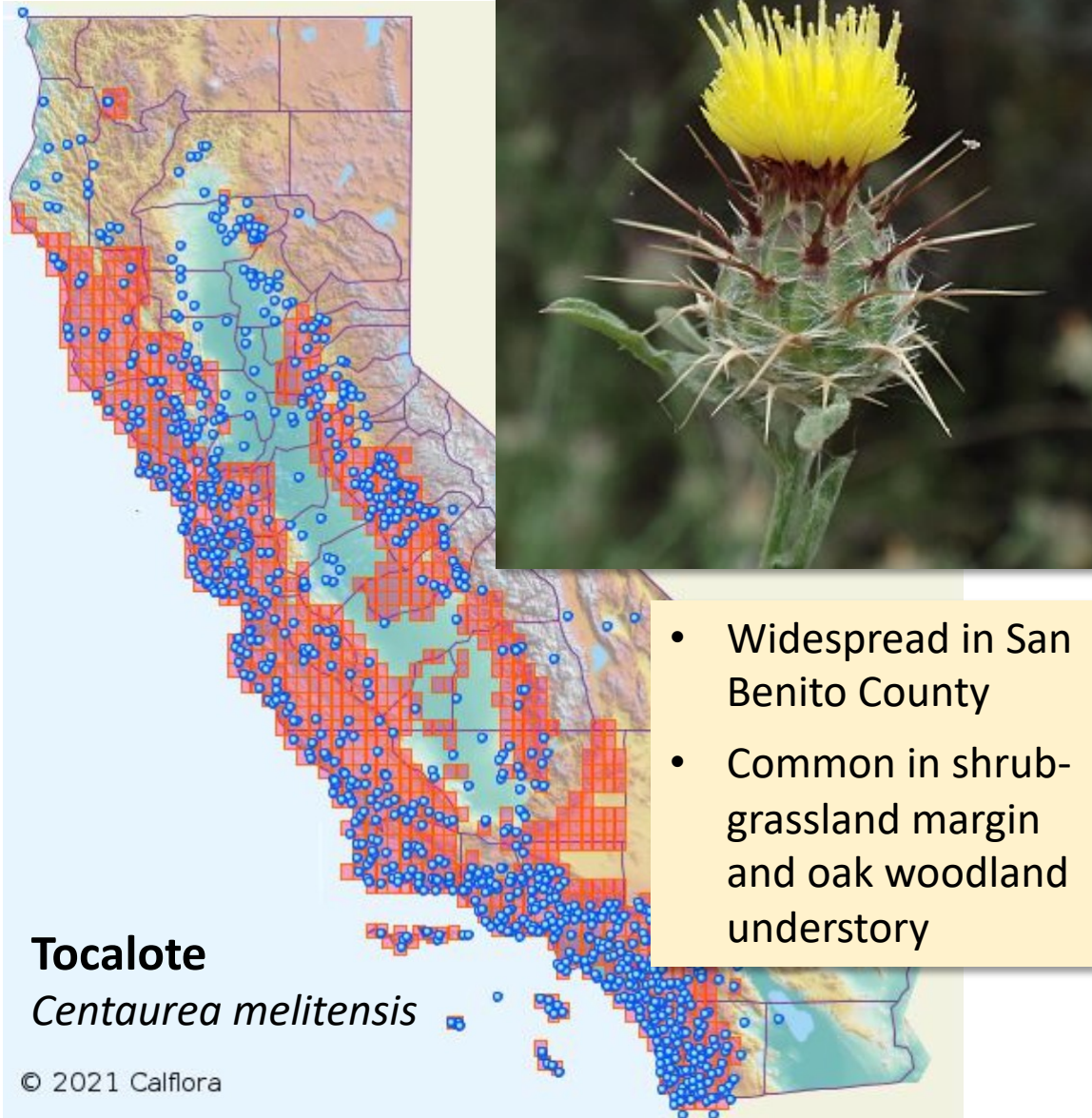


Starthistles

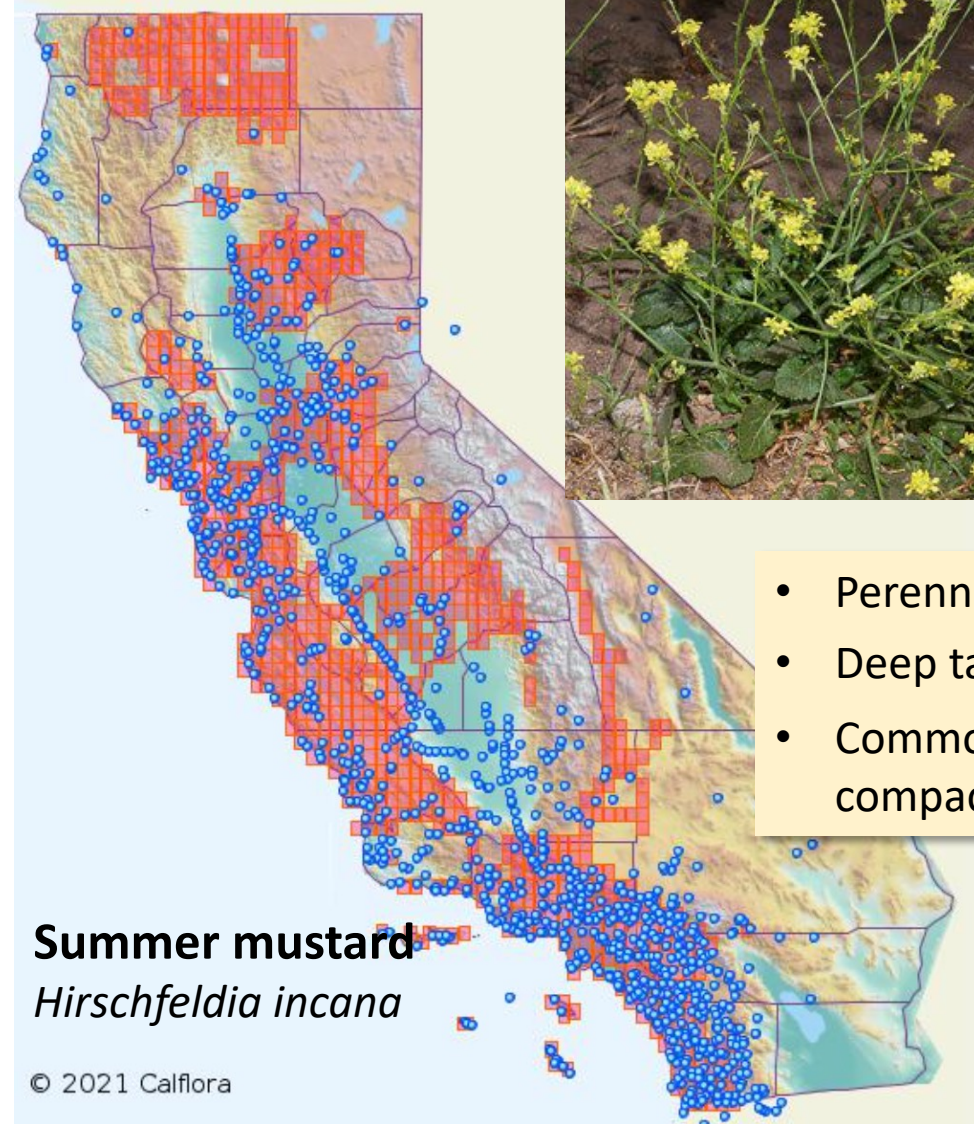
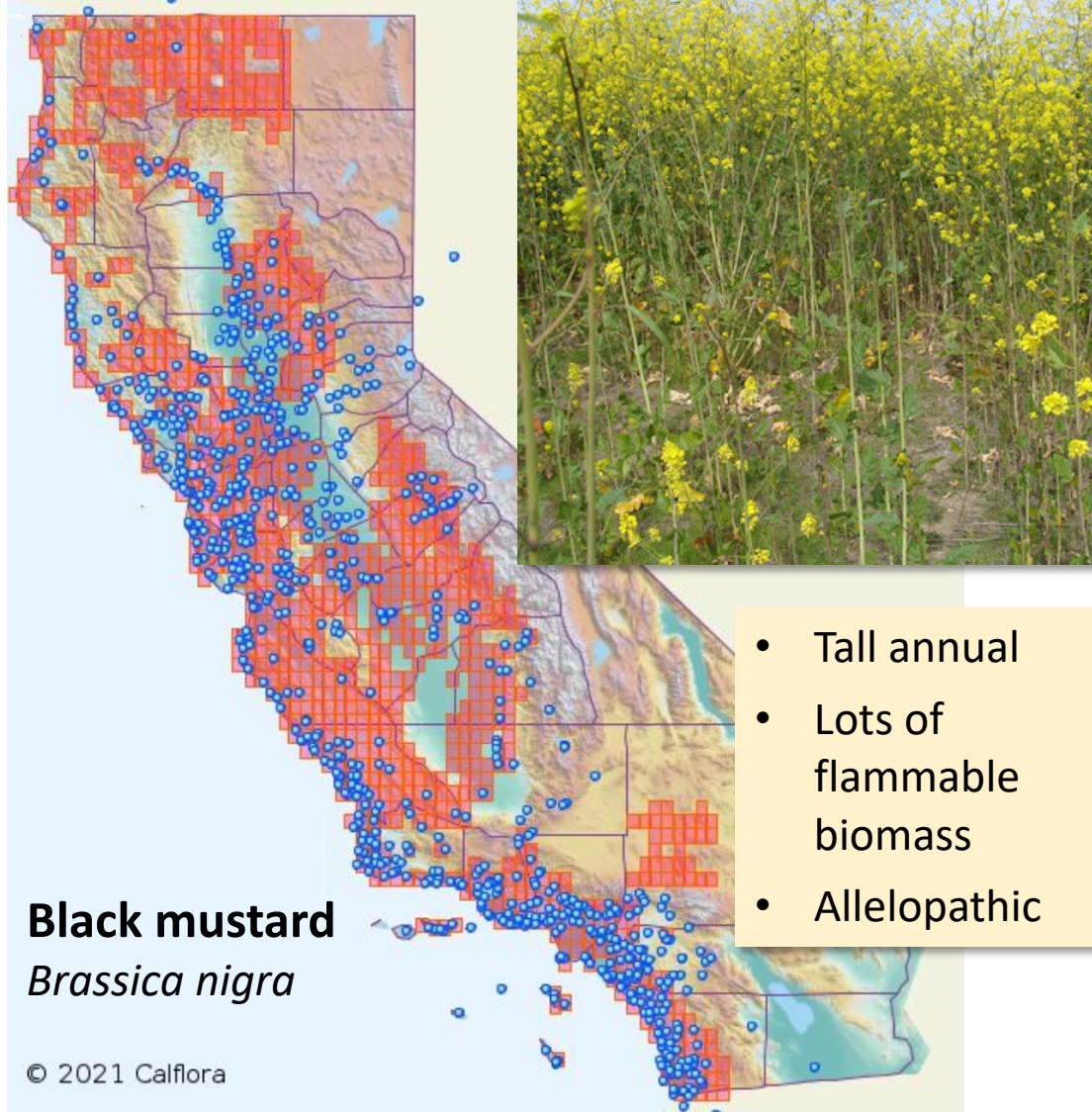
- Aster family (Asteraceae)
- Annuals
- Develop sharp spines prior to flowering
- Introduced from Eurasia



Starthistle (*Centaurea* species)



Mustards (Brassicaceae)



Common control methods

Tilling



Mowing



Herbicide



Grazing

- cost effective alternative
- Can be applied on larger scales

GRAZING

- **Which herbivore** will eat the plant?
- **When** is the plant most palatable?
- **When** is the plant most sensitive to grazing?
- **How to maximize impacts** on undesirable plants while minimizing impacts on desirable plants?



Which herbivore will eat the plant?



Goats

- Shrubs/woody plants
- Not very selective



Sheep

- Forbs (leafy plants)
- Not good for tall weeds



Cattle

- Grasses
- Big trampling effect



Horses

- Grasses
- Most selective
- Should NOT graze starthistle

Other considerations:

- How hard is chosen herbivore to contain?
- Protection from predators
- Water requirements
- Nutritional demands



When is the plant most palatable?

- Nutrition tends to decline as plants get older
- Plants are protected from grazing during rosette lifestage

Yellow Starthistle Life Cycle



Seedling



Rosette

Best nutritional value
(Highest digestible protein)



Bolting Stage

Okay nutrition and more accessible to herbivores



Flowering

When is the plant most palatable?

- Nutrition tends to decline as plants get older
- Plants are protected from grazing during rosette lifestage

Yellow Starthistle Life Cycle



Seedling



Rosette



Bolting Stage

Best time to graze



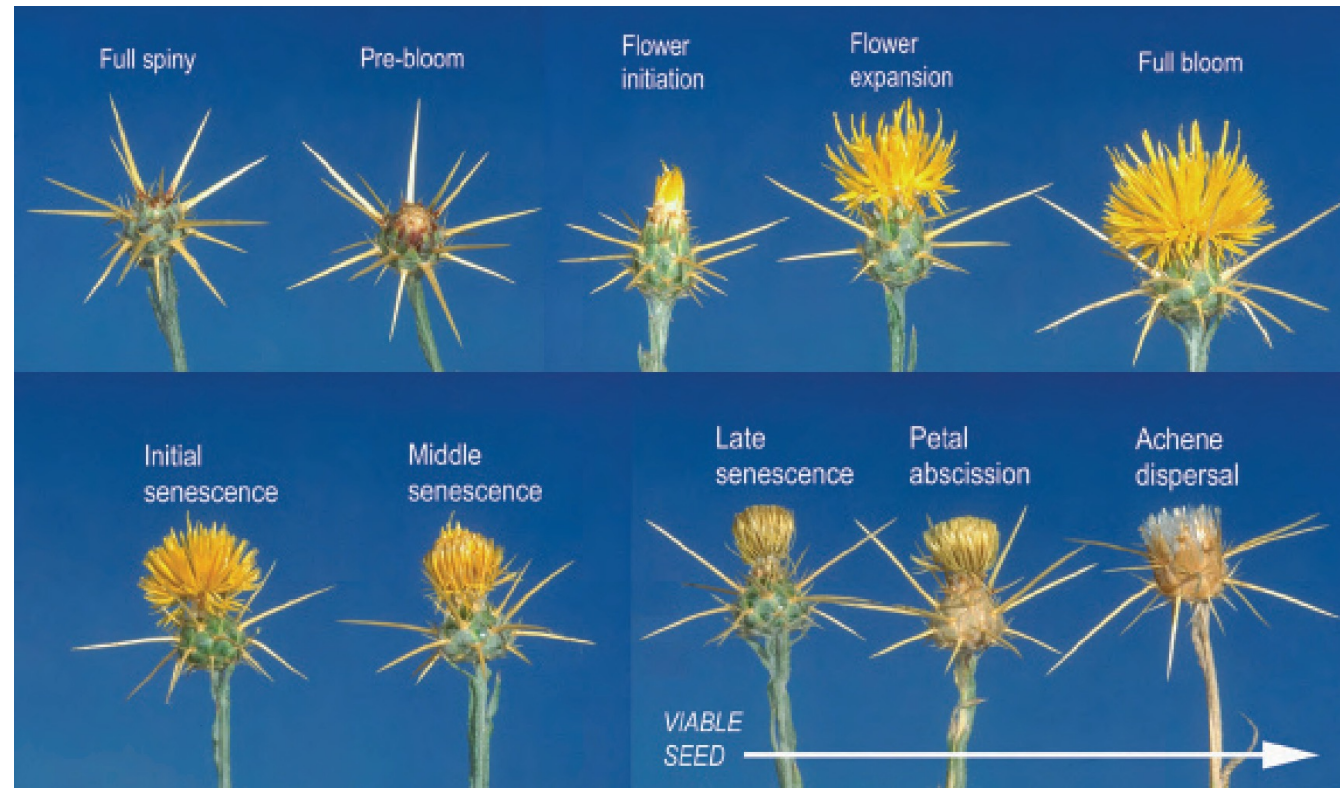
Flowering

Best nutritional value
(Highest digestible protein)

Okay nutrition and more
accessible to herbivores

When is the plant most sensitive to grazing?

- Most sensitive during flowering
- Soil moisture available for regrowth declines in late spring
- Need to graze star thistle before spines emerge



Spiny life stages of yellow starthistle (Cal-IPC)



	January	February	March	April	May	June	July	August
Wild oats			Bolting	Flowering	Seed			
Black mustard				Bolting	Flowering	Seed		
Summer mustard					Bolting	Flowering	Seed	
Tocalote				Bolting	Flowering	Seed		
Yellow starthistle					Bolting	Flowering	Seed	

Best life-stages for grazing

Starthistle: Bolt



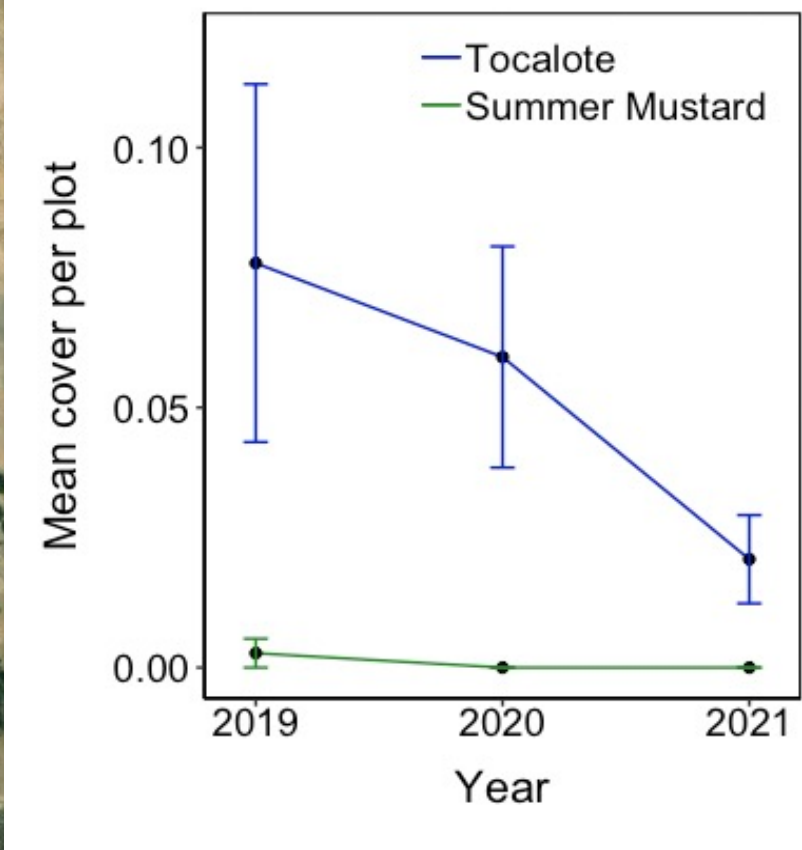
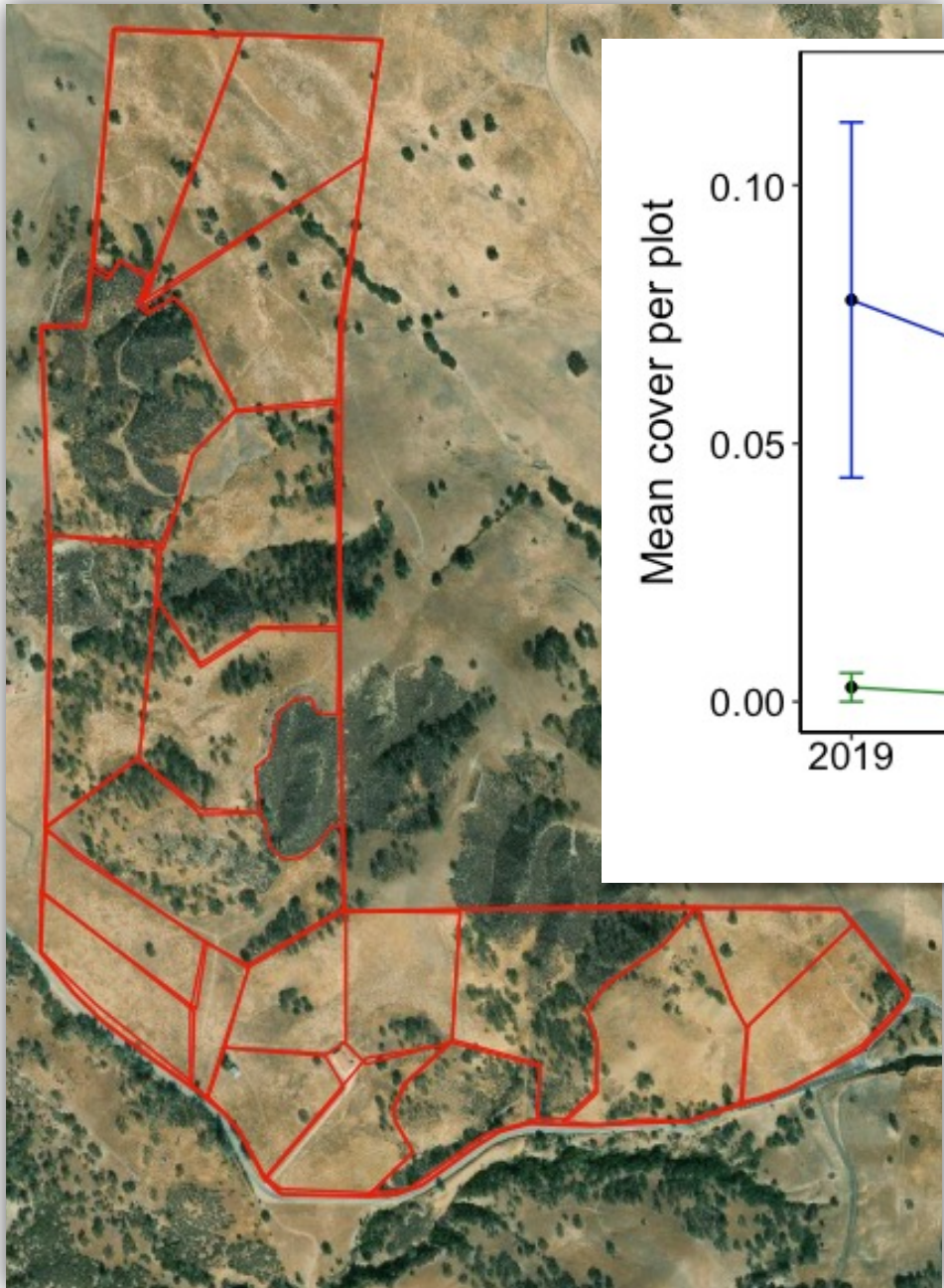
Mustard: Bolt or flower



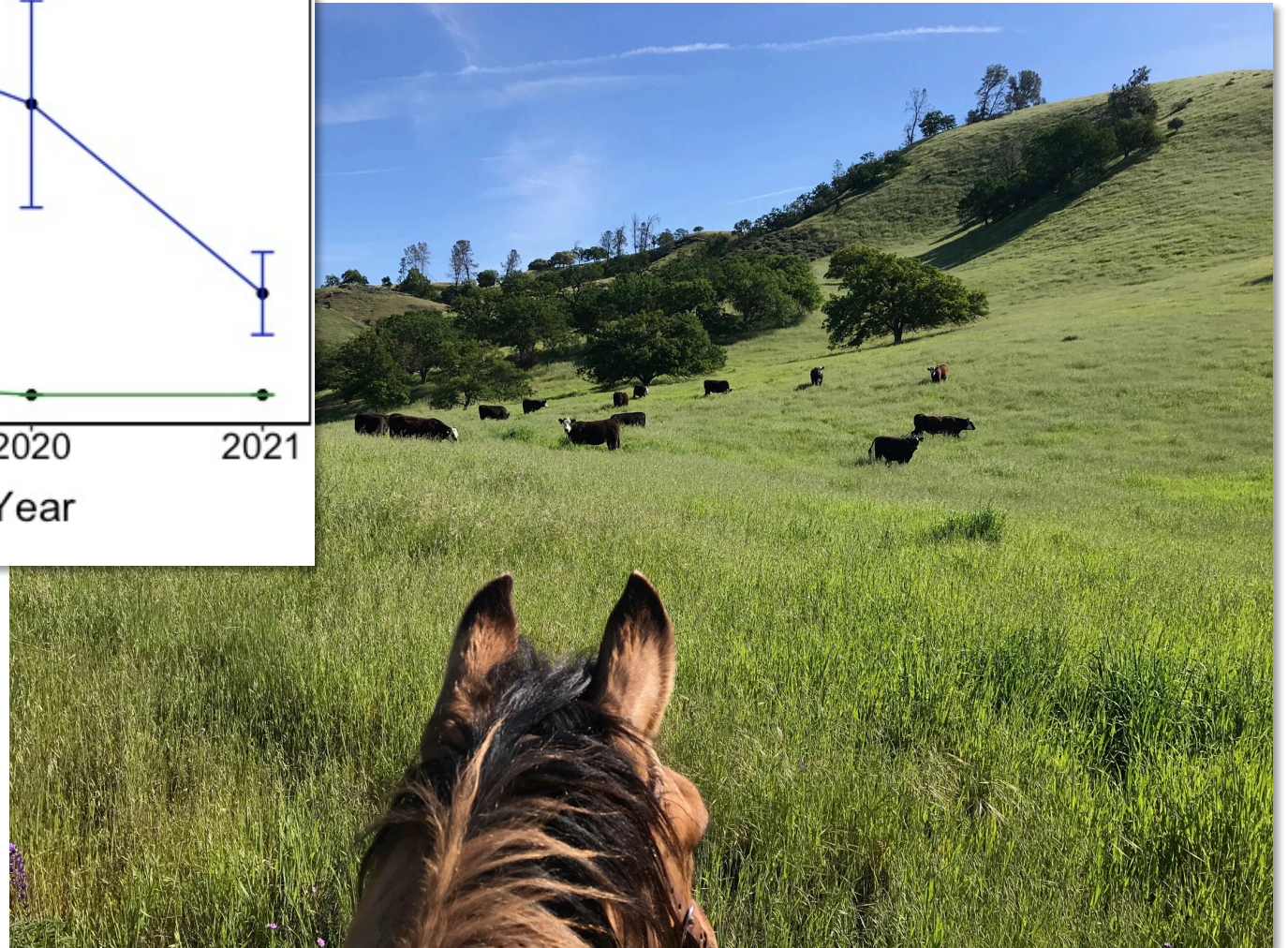
How to maximize impacts on undesirable plants while minimizing impacts on desirable plants?

- Timing
- Higher stocking density
 - Reduced selectivity
 - More trampling
- Recovery





Grazing at Pinnacles Ranch





Before grazing – high cover of black mustard

April 2019



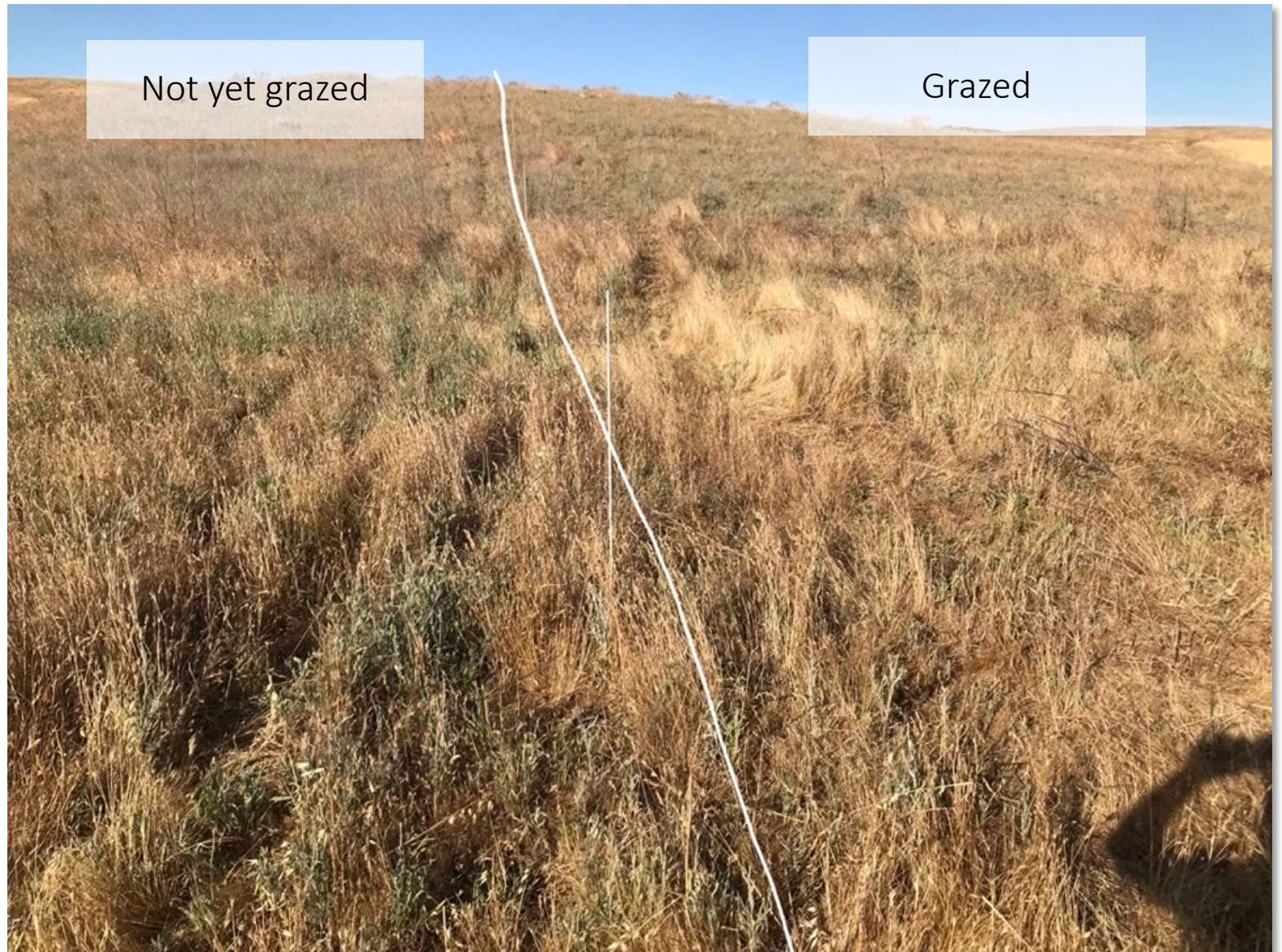
*After grazing – nearly 100% removal
flowering heads on black mustard*

May 2019



East field: Covered with black mustard and yellow starthistle

Grazing at the Selleck Ranch





Resilience against weeds

- Reduce seed production for weeds
- Avoid creating conditions where weeds thrive
 - Bare ground
 - Compacted soil
 - Low plant diversity
- Move cows regularly
- Change timing of grazing each year
- Keep an eye on places where you can't avoid bare ground (troughs, mineral)

Questions?

ereikowski95@gmail.com
(831) 902-9512

