

# Implementing soil health and regenerative ag practices in the most arid state in the U.S

Alfalfa, Corn, Hemp, and Cows



#### My Story

- Family farming conventionally in Nevada for 5 generations; 165 years
- Alfalfa, silage corn, small grains, hemp
- Primarily flood irrigation, but also sprinklers and drip.
- I am a farmer, former crop duster, corporate pilot, and soil health advocate.
- Began my conversion to regenerative agriculture out of necessity in 2015

#### Member of EOV

EOV is Ecological Outcomes Verification

It is a part of the Savory Institute

We have 25 short term and 5 long term monitoring sites

Short term we look at every year

Long term is every 5 years

Quantify diversity, ground cover, litter, dung decomposition, water infiltration rates, soil samples, soil biology, etc.

# This is what I used to be proud of.





#### My Progression Into Regenerative Ag

Started with minimum tillage

Progressed to no-till

Incorporated cover crops

Allowed and encouraged diversity

Integrated Livestock

#### Progressed to No Till No Till Planting Hemp into alfalfa









### Truly Integrated Cover Crops



# Corn with winter cover crop roller crimped

# Teff and Sorghum Interseeded into Alfalfa



The Kids Loved the Diversity in the Pastures

#### Grazing

- With prescriptive, adaptive, and intensive grazing we are able to do a lot of things:
- Control noxious weeds
- Increase soil health, which leads to increased water quality
- Increase animal health
- Protect riverbanks and manage riparian areas



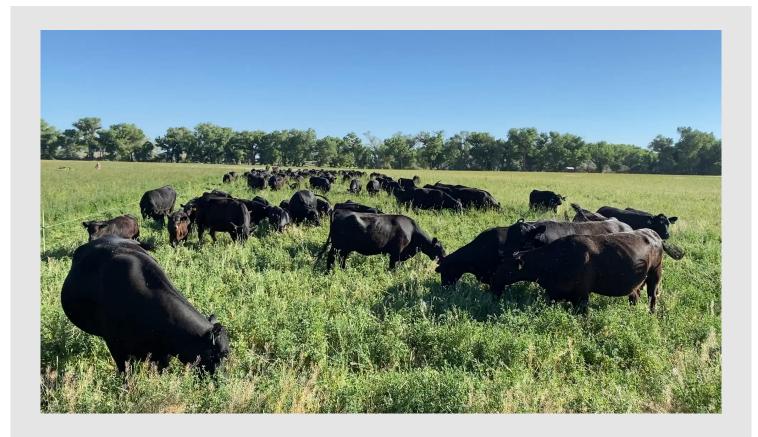
#### Strip Grazing and Haying Teff, Sorghum, and Alfalfa Blend







### Future Plans



- Evolve from a hay and corn farmer to a diverse perennial species grower and grazer
- Add more pollinator strips
- Continue to eliminate fertilizer and pesticides
- Start a grass-fed beef operation
- Greatly expand the chicken operation
- Allow the beavers to flourish and see the benefits in the fields
- Start a vermicompost program to add biology to the land

# "There is not enough water in Nevada to grow cover crops".

- This was a statement from the former Director of the Nevada Department of Agriculture last year
- Convincing growers that winter covers are possible has been a battle for us in Nevada
- To me this is like saying you don't have time to get the oil changed in your car...
- If we don't have enough water, it is because we have destroyed soil health and loose water to evaporation.
  The Carson Valley is a great example of this as are most remote Nevada ranches.
- In reality, cover crops conserve water and build soil health, and increase water quality
- I actually start cover crops without irrigation in the driest spot in Nevada, which is one of the dries spot in the United States.
- We need to change this mindset. Not only do cover crops do everything previously stated, they give the producer options.

#### what are your options here:

Marka Arta

Torner Strike



# **Producers Must Change Their** Mindset Conventional Mindset

- What can this ground give me now with minimal inputs
- NPK is all I need
- The more inputs, the more yield
- Super size it. We need more tonnage

- Regenerative Mindset
- Not about quantity
- It's about quality
- Not a competition with neighbors
- It is about profit and longevity

#### Producers Point of View Needs a 180° Change

- No longer linear, straight edges, weed free, manicured, etc.
- Must learn to see beauty in diversity, this may mean welcoming "weeds" into your field.
- Not always look to a prescribed bottle or bag of something from the farm supply store to fix everything
- Best to integrate livestock into the operation.



## Work With Nature, Not Against

- Constantly spraying field edges
- Spraying weeds out instead of letting them help
- Introduce other seeds to control what you don't want
- Something grown that is not intended is Mother Nature telling you something is wrong. Listen!



### Producers and Educators Need to Keep An Open Mind

- If you don't think it will work, it won't
- Be intentional about how we teach, and recommendations we make.
- Baby steps are important in getting producers to change habits.
- They need to be successful on the first attempt.
- Throw out the old rulebook of "this is how we always do it"
- The calendar has no place in nature. We need to farm with the conditions instead of with the calendar.