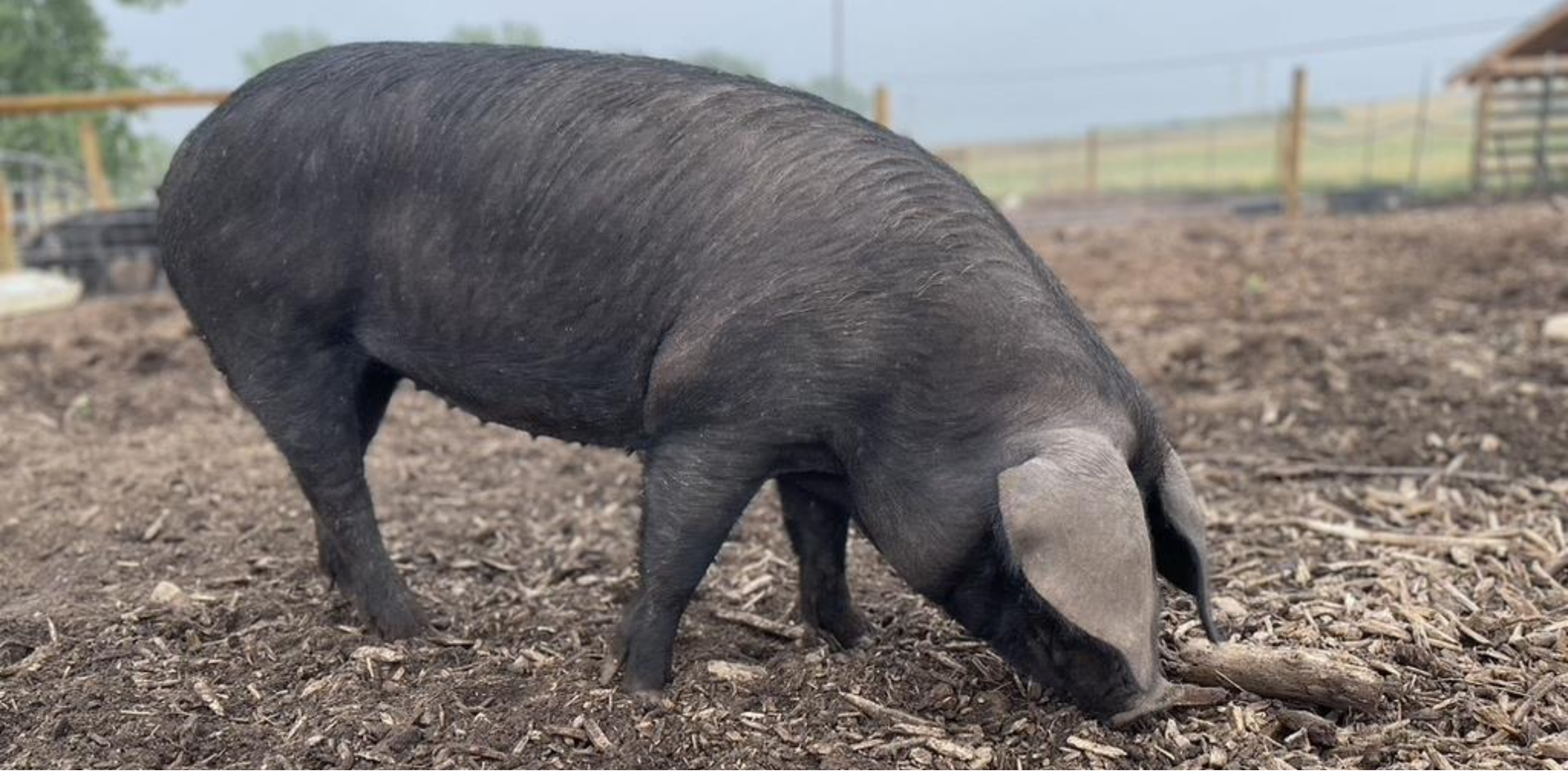

Rigden Farm - Hog Treatment (FC City Council)

ALOTERRA

ALOTERRA

By valuing and respecting the processes of our natural world (and the impacts of people) we can restore our environment through mastery of our craft and the usage of time-honored practices.

City Council Meeting - July 21, 2026

Why are we here today?

Presentation Summary and Relationship to the values of Fort Collins

Species Diversification

Our current options are Bluegrass turf or Kochia weed monocultures. Both are limiting

Sustainable Treatments

2027 could see significantly higher water prices. How do we build a greener, sustainable park system across Rigden?

Anticipating Challenges

Spring rainfall has been going up since 2000. Our existing weed bank is *more* likely to germinate - therefore, seeding is critical

Aligning with the warmer weather

In poorer soils, with warmer weather, weeds have a marked advantage against natives. We need a plan for dealing with this.

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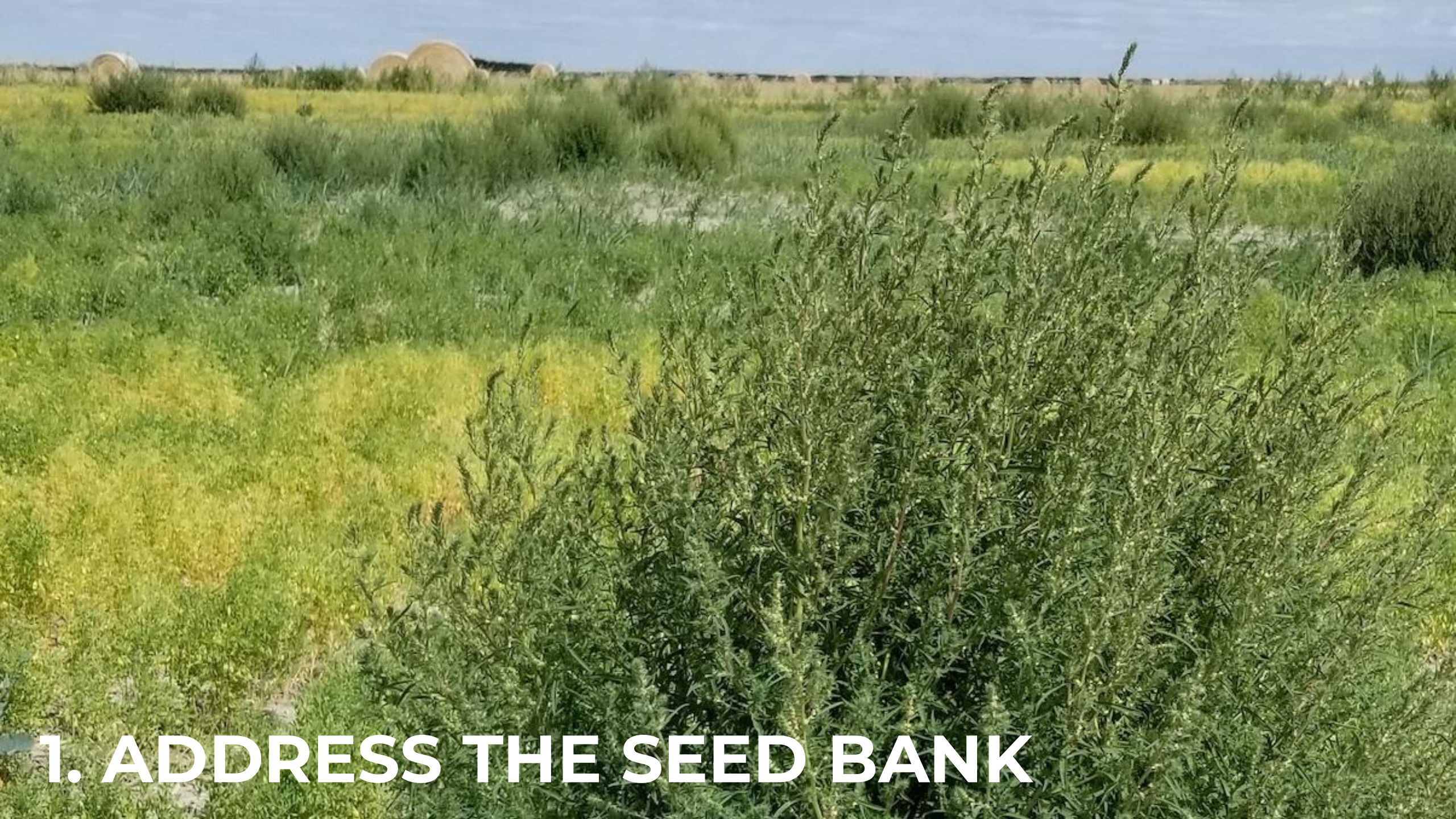
By valuing and respecting the processes of our natural world (and the impacts of people) we can restore our environment through mastery of our craft and the usage of time-honored practices.

RESTORATION PRINCIPLES:

1. **ADDRESS THE SEED BANK**
2. **REDUCE WATER USE**
3. **DESIGN PERMANENT SOLUTIONS**

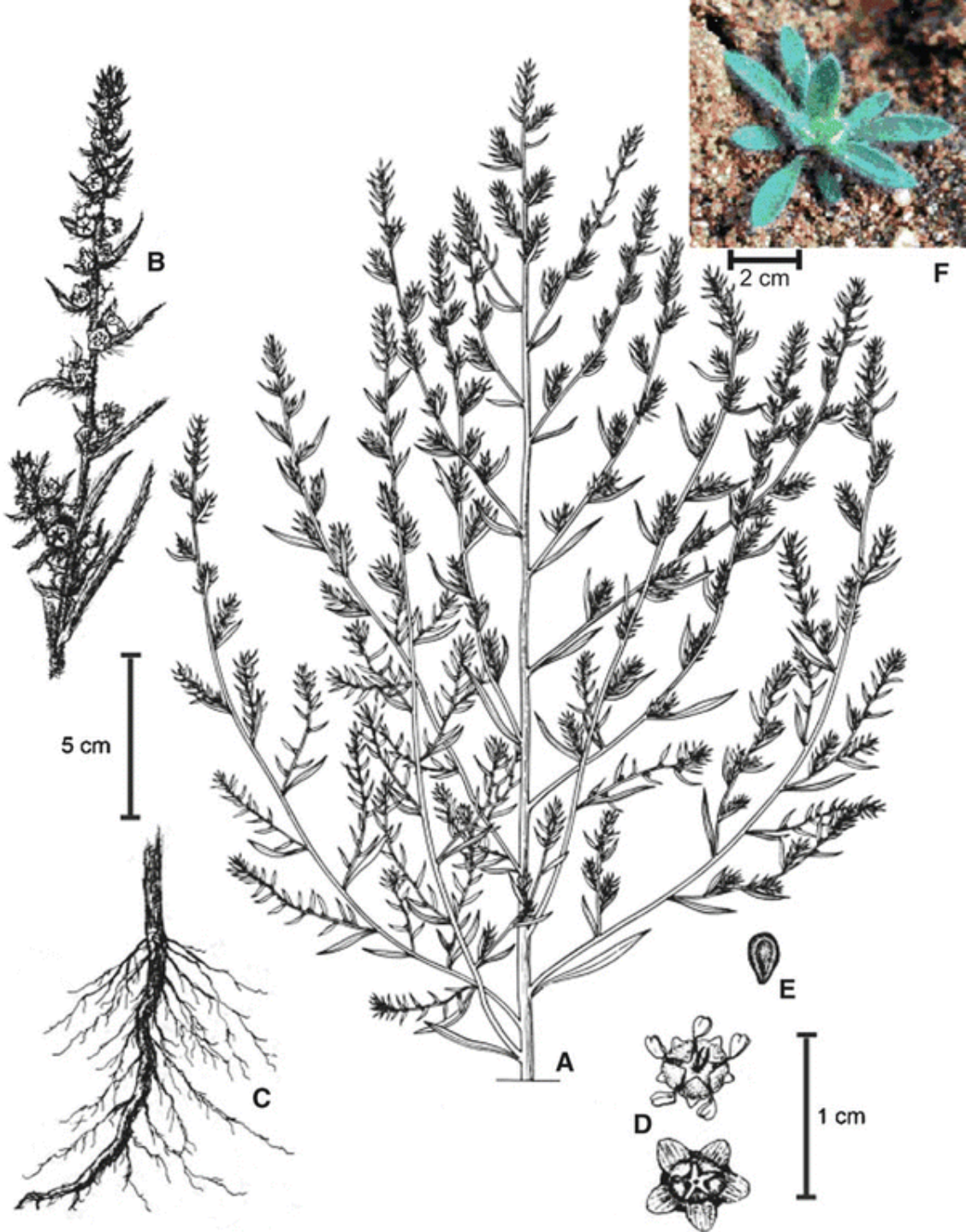


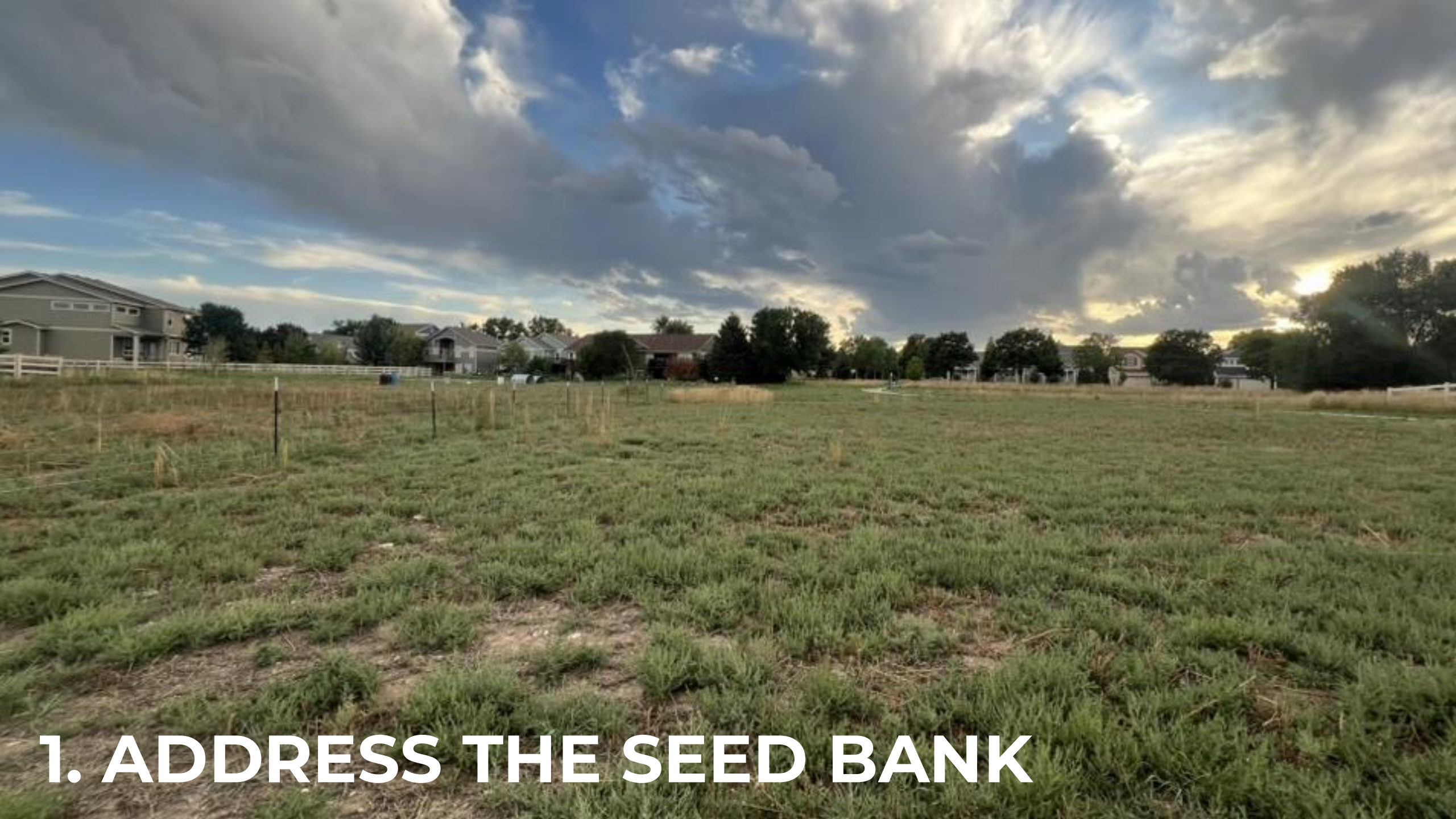
1. ADDRESS THE SEED BANK

1. ADDRESS THE SEED BANK

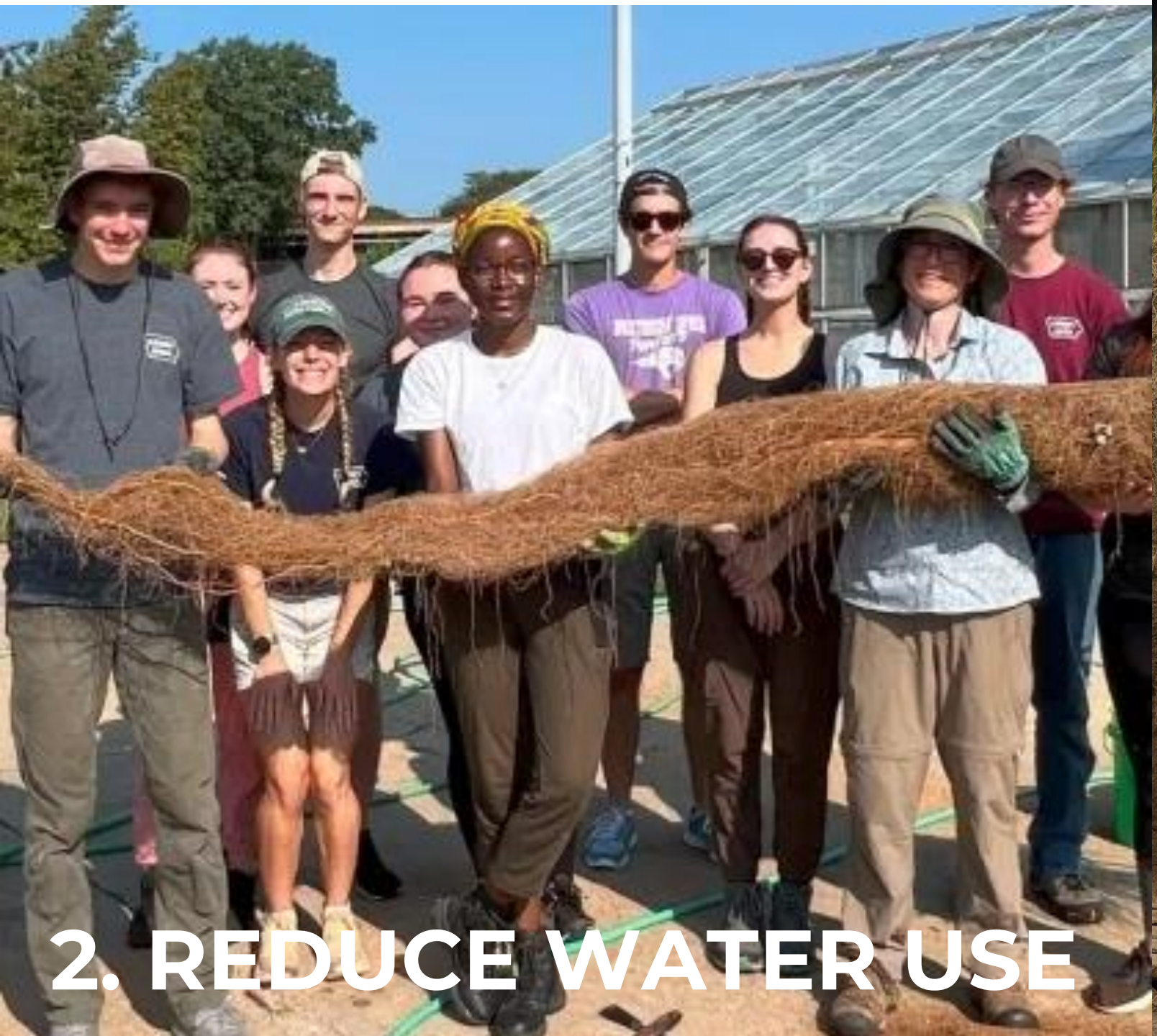
(a) (b)

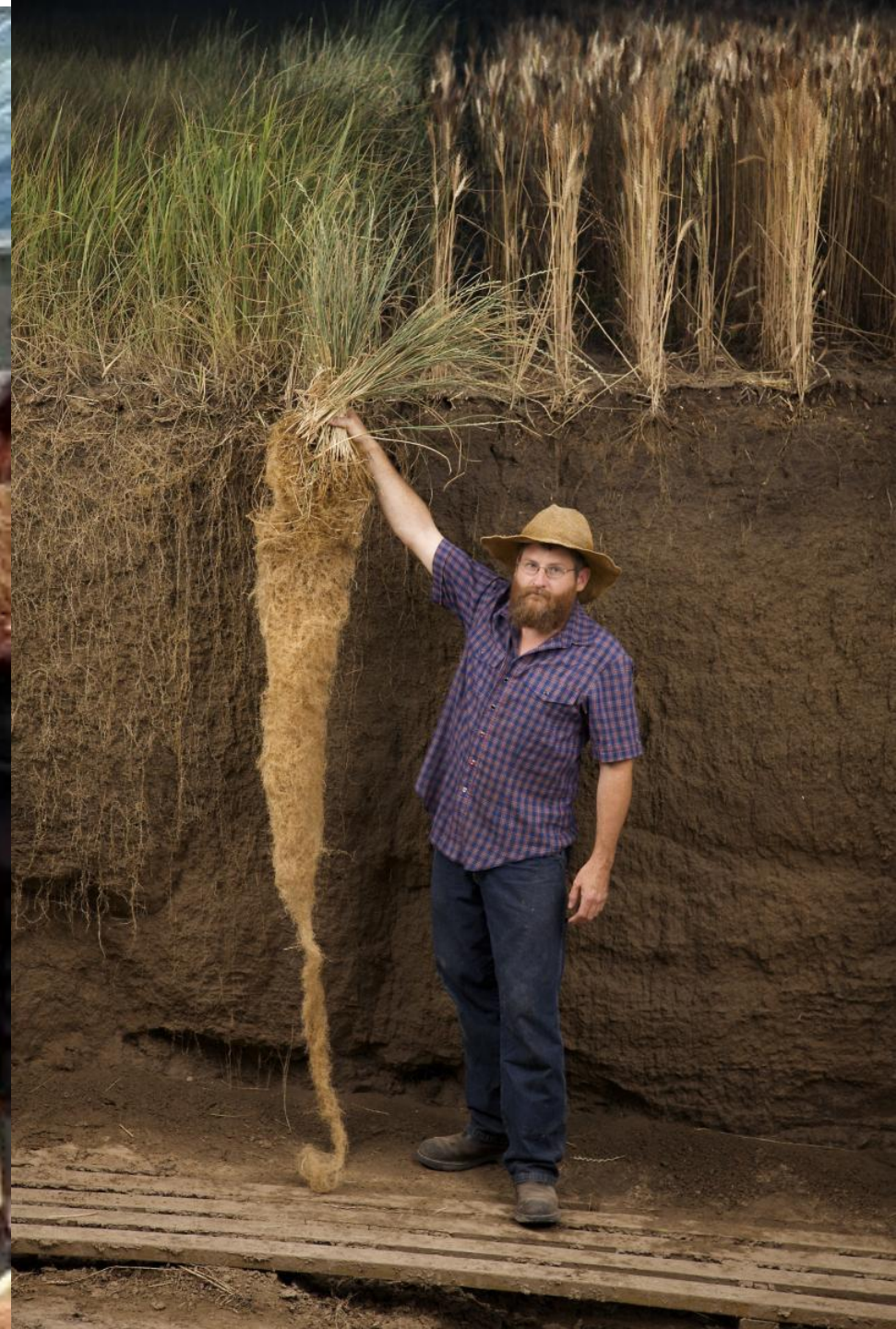
- >14,000 viable seeds per year per mature plant
- 14,520 plants per acre
- >101m seeds per year for our test area
- More than 1B seeds distributed so far





1. ADDRESS THE SEED BANK

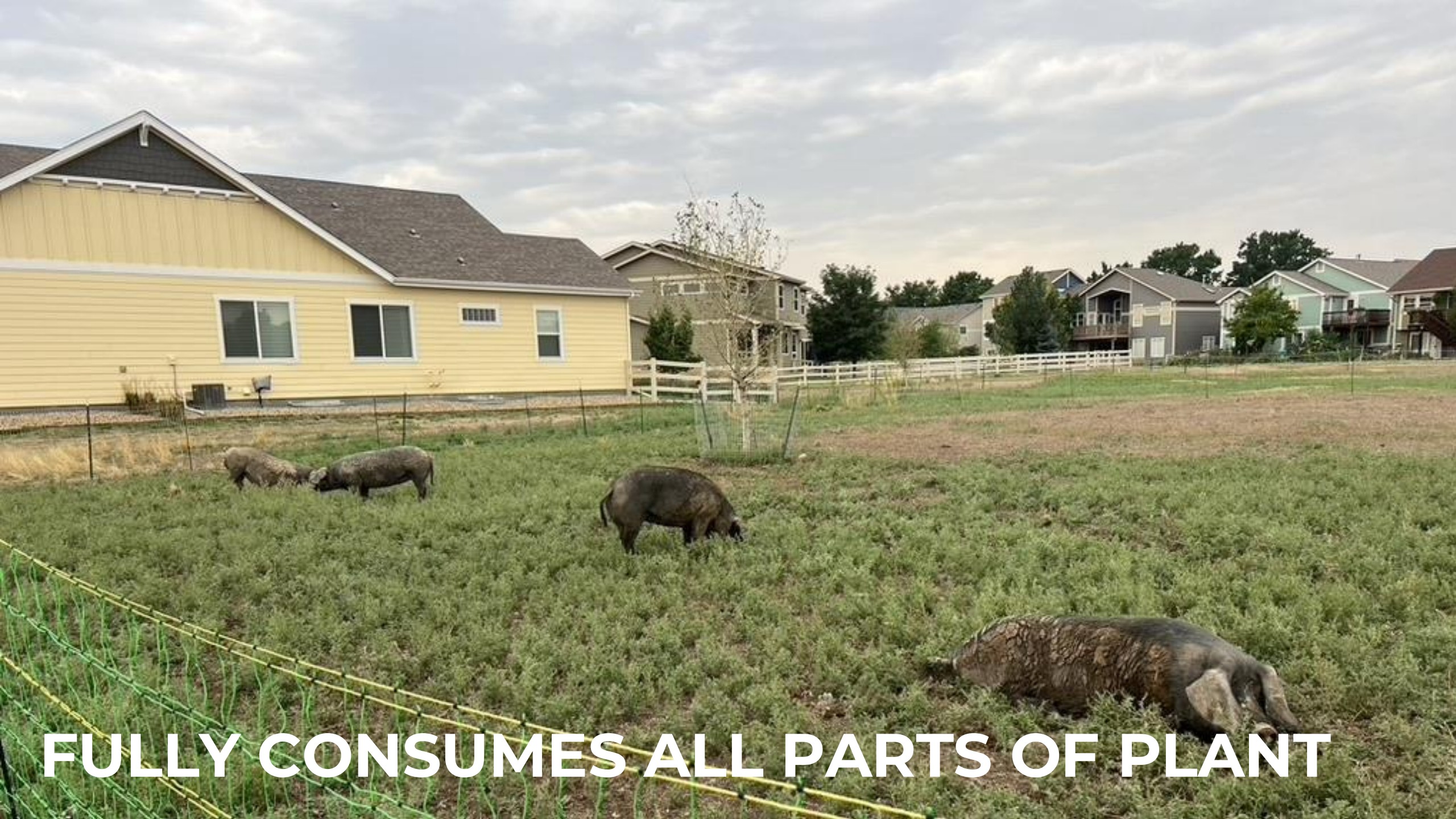


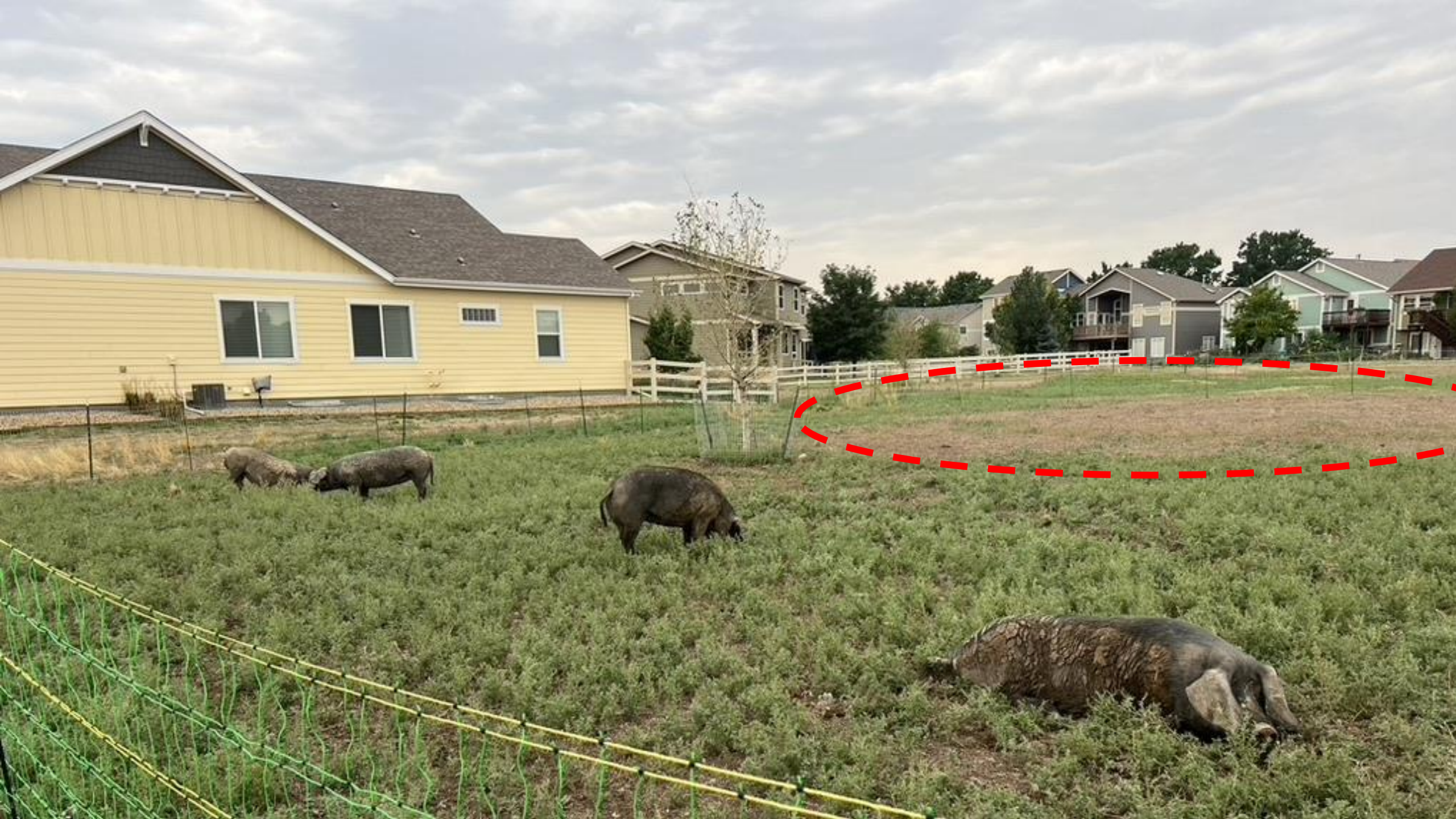


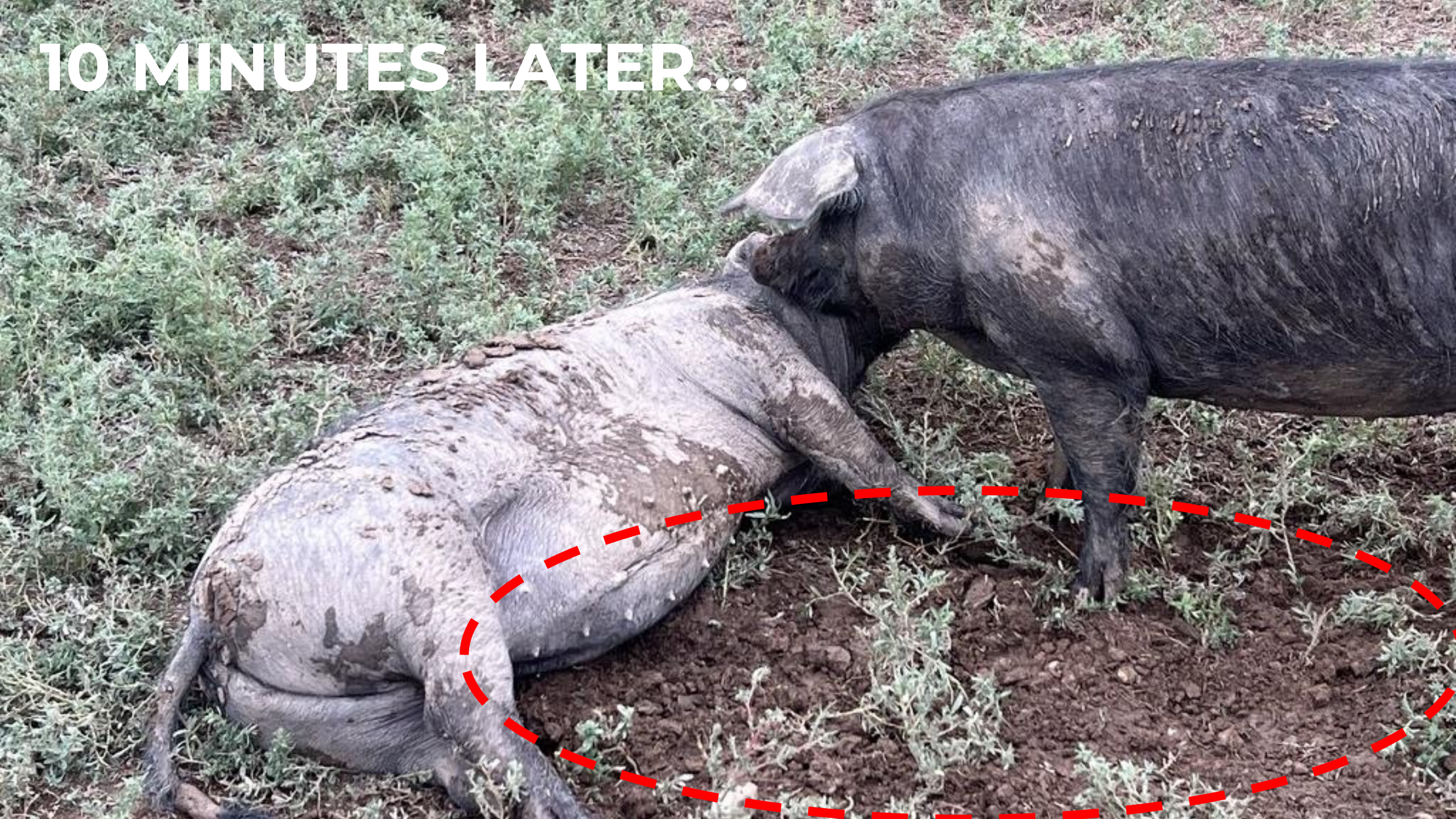
2. REDUCE WATER USE

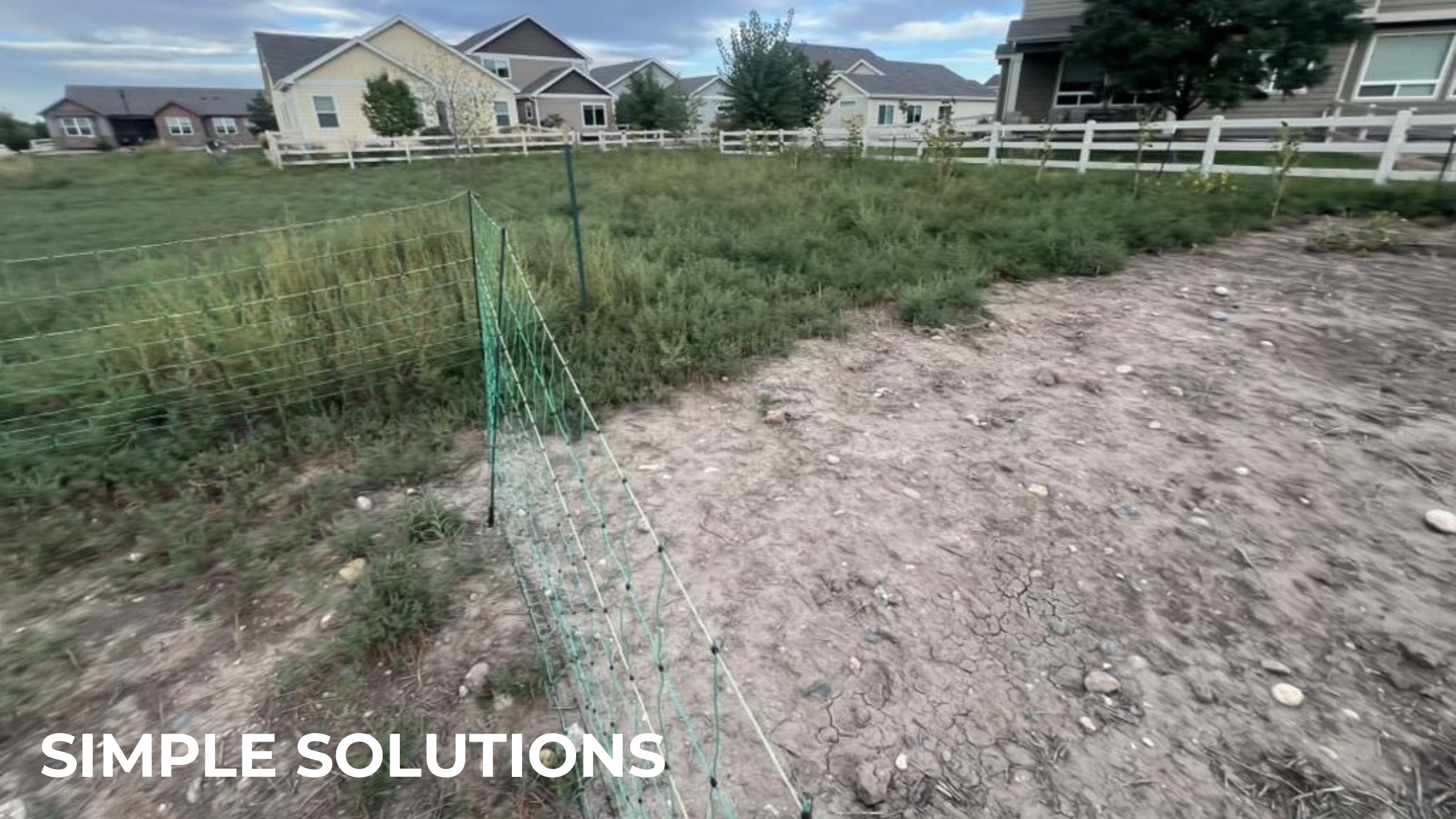
3. DESIGN PERMANENT SOLUTIONS

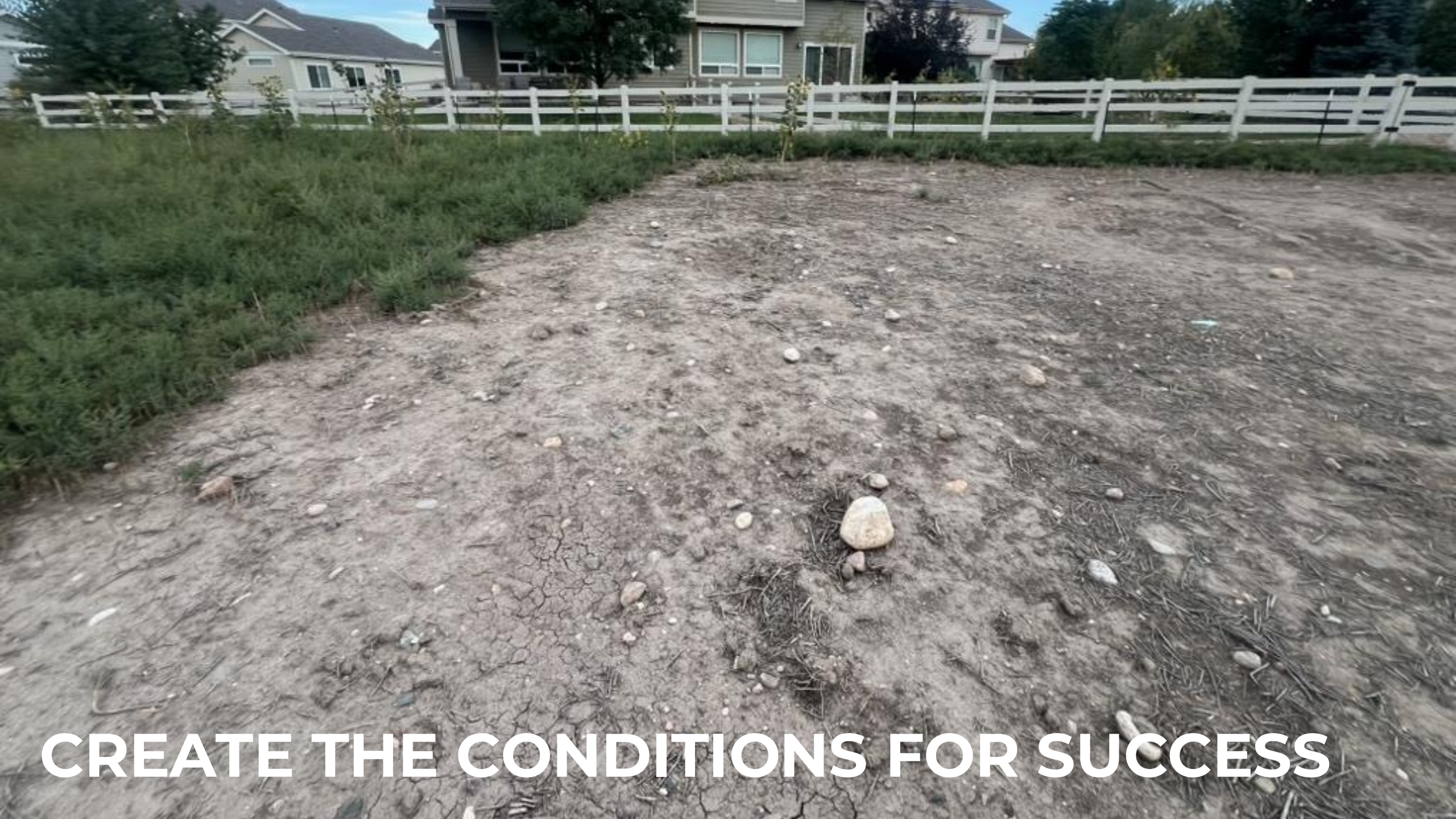
TREATING KOCHIA WITH PIGS


FULLY CONSUMES ALL PARTS OF PLANT




10 MINUTES LATER...


SIMPLE SOLUTIONS


CREATE THE CONDITIONS FOR SUCCESS

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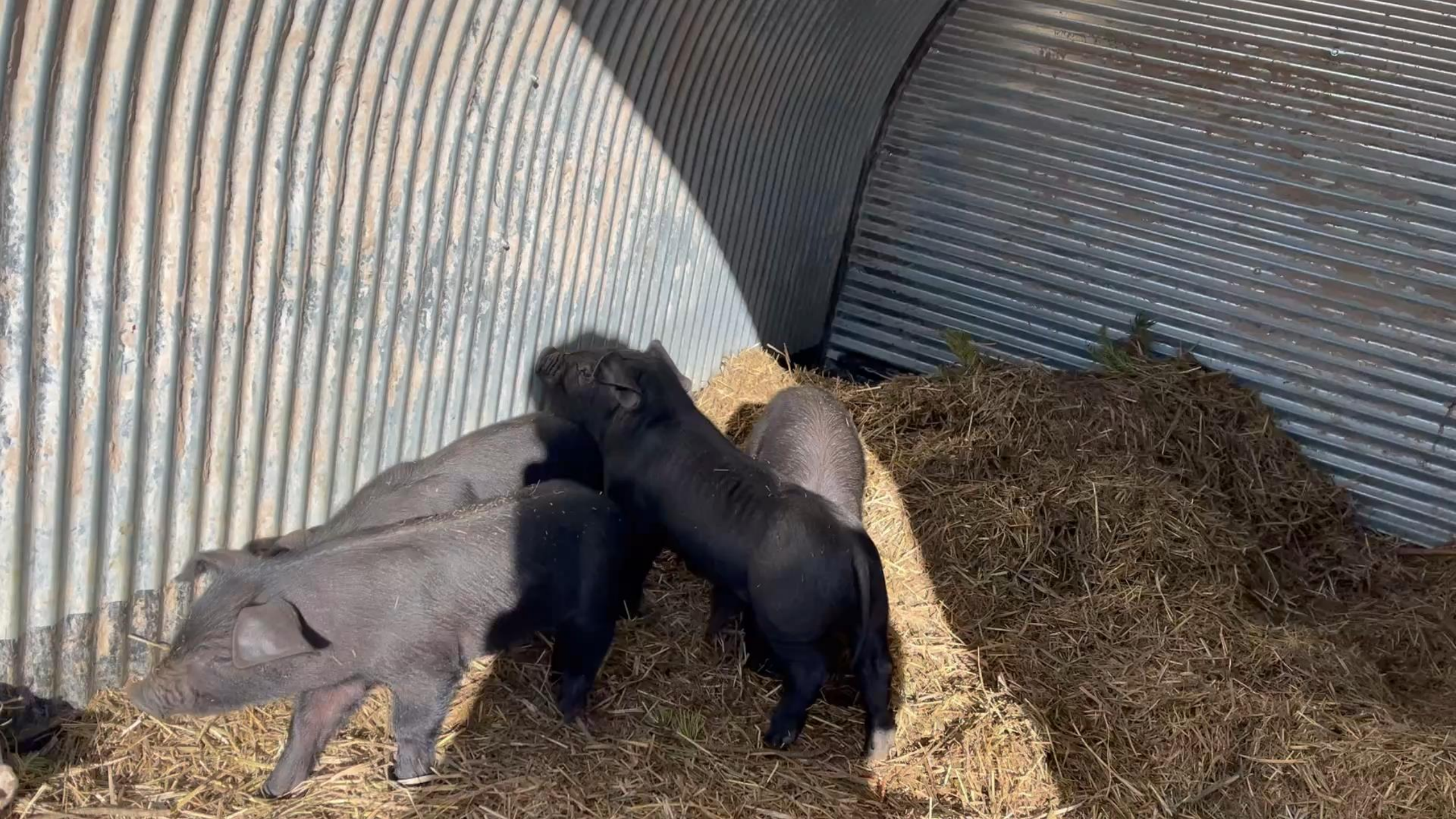
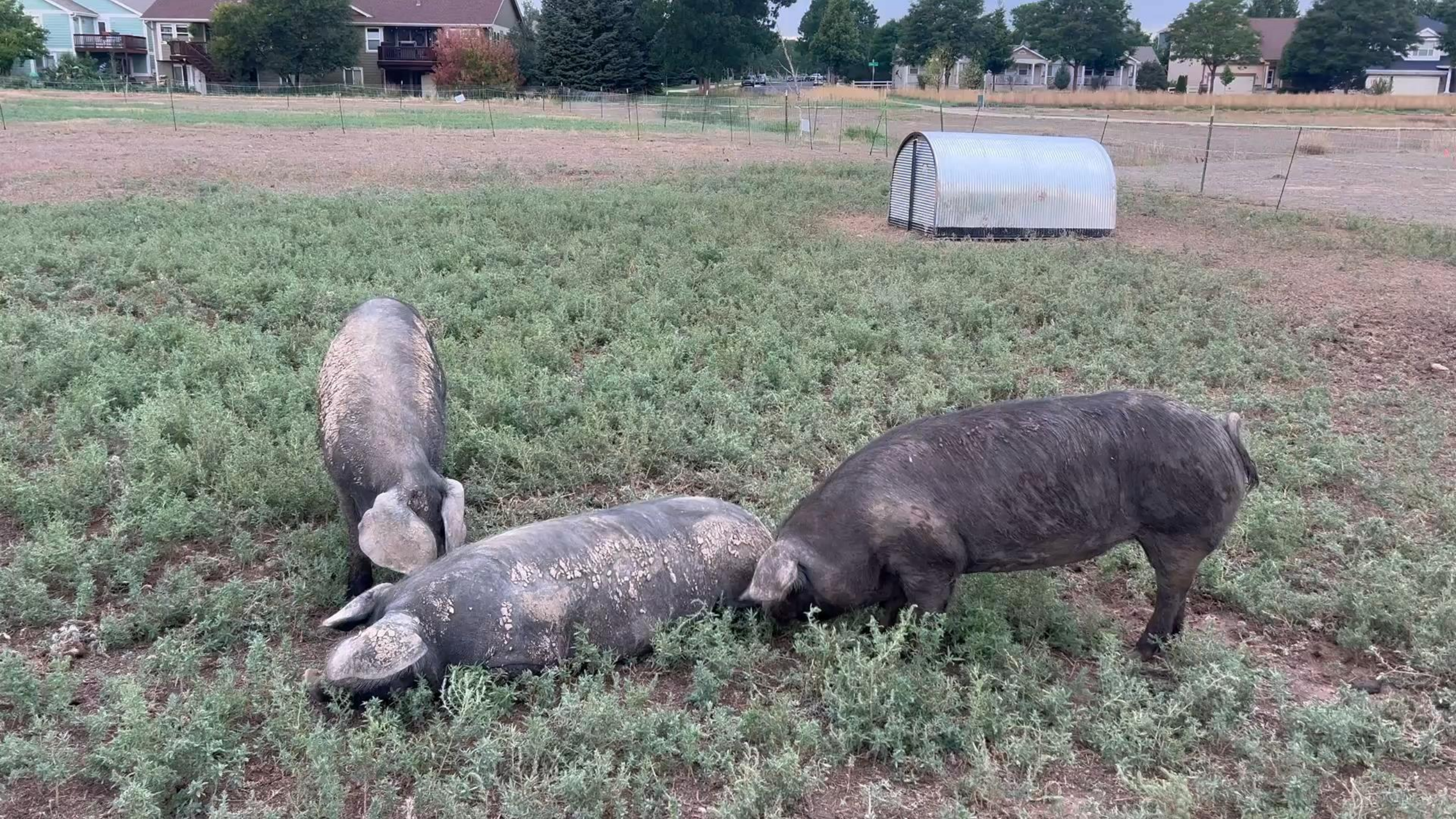
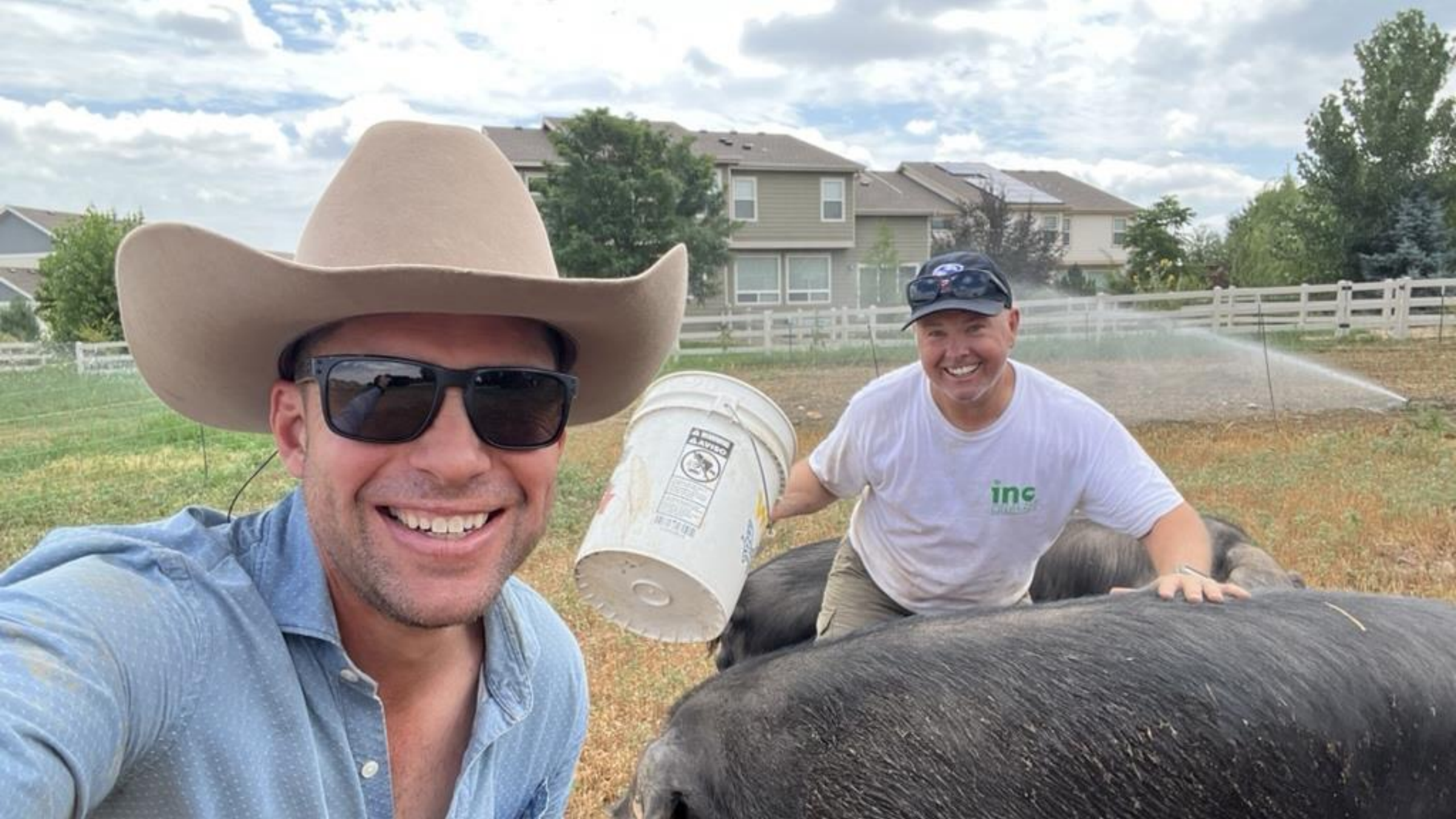
By valuing and respecting the interconnections of our natural world and the impacts of people we can treat the restoration process with intentionality through our growing mastery of our trade and best practices for successful outcomes.

DEALING WITH CONCERNS:

1. NON DANGEROUS
2. NON SMELLY
3. NON EXPENSIVE
4. NON TOXIC
5. VERY CUTE







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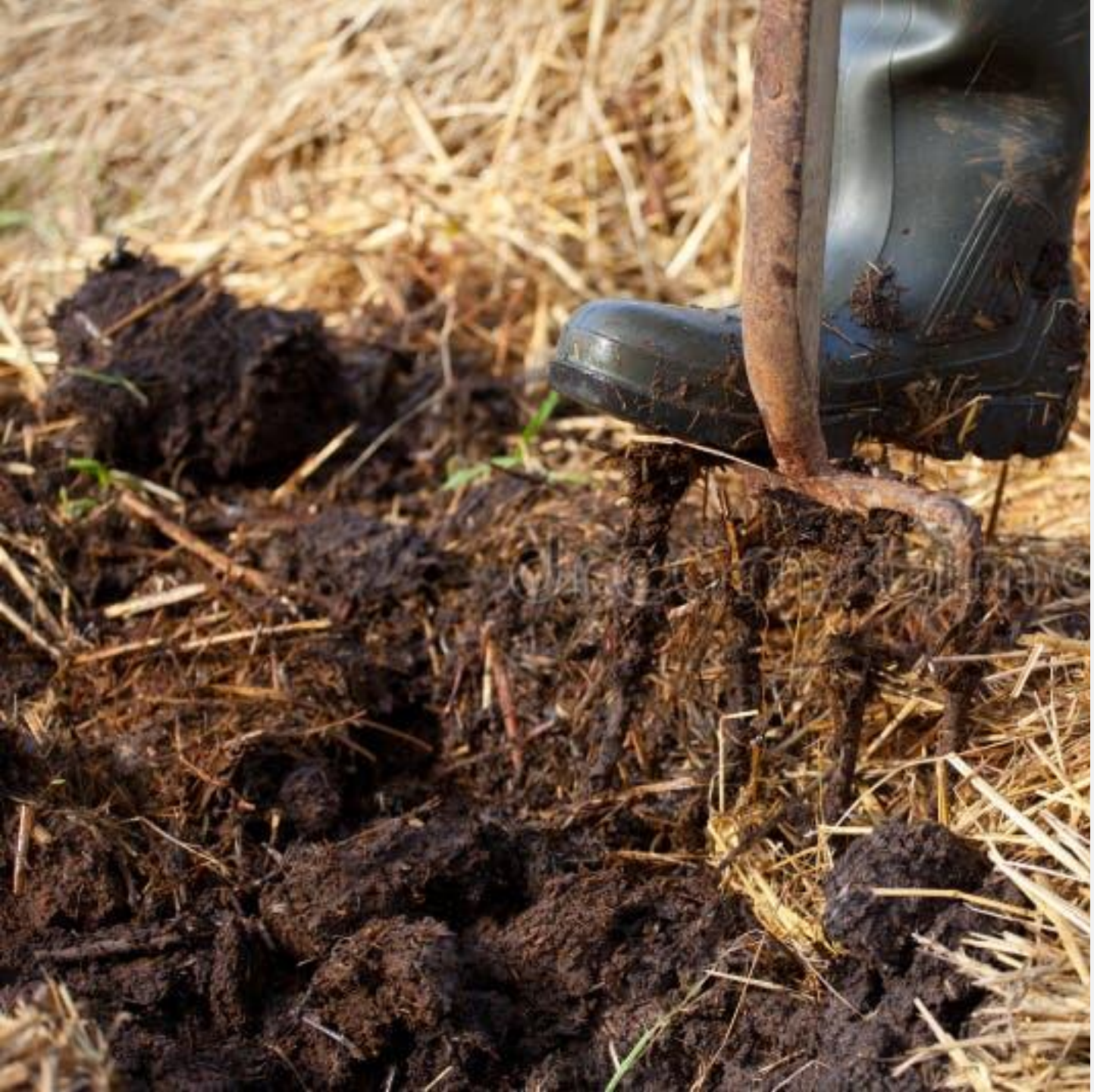
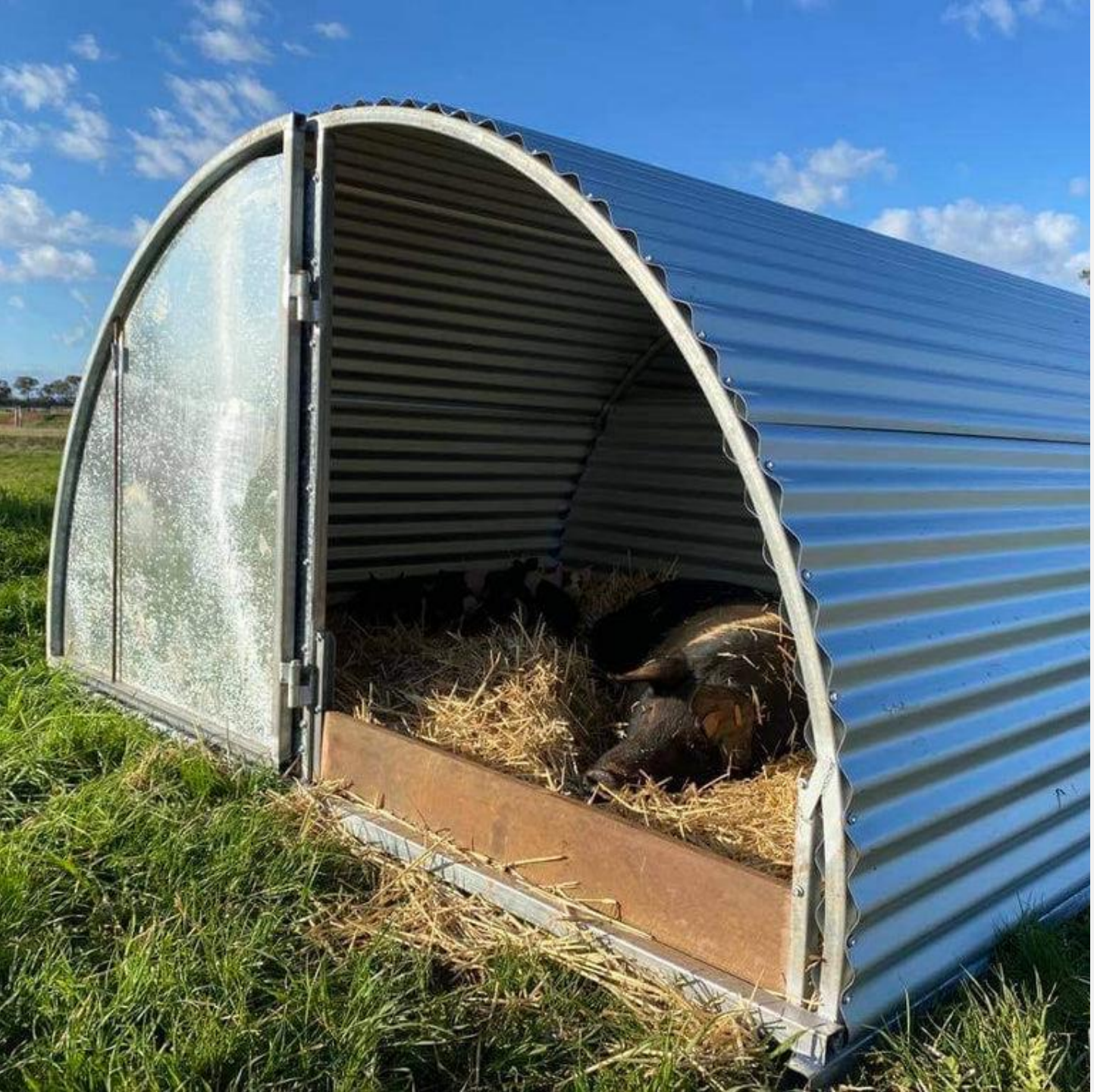
Changes proposed through this public process

1. **Odor mitigation**
2. **Noise mitigation**
3. **Project completion**
4. **Dust mitigation**
5. **Food storage**
6. **Public health**
7. **Animal removal**



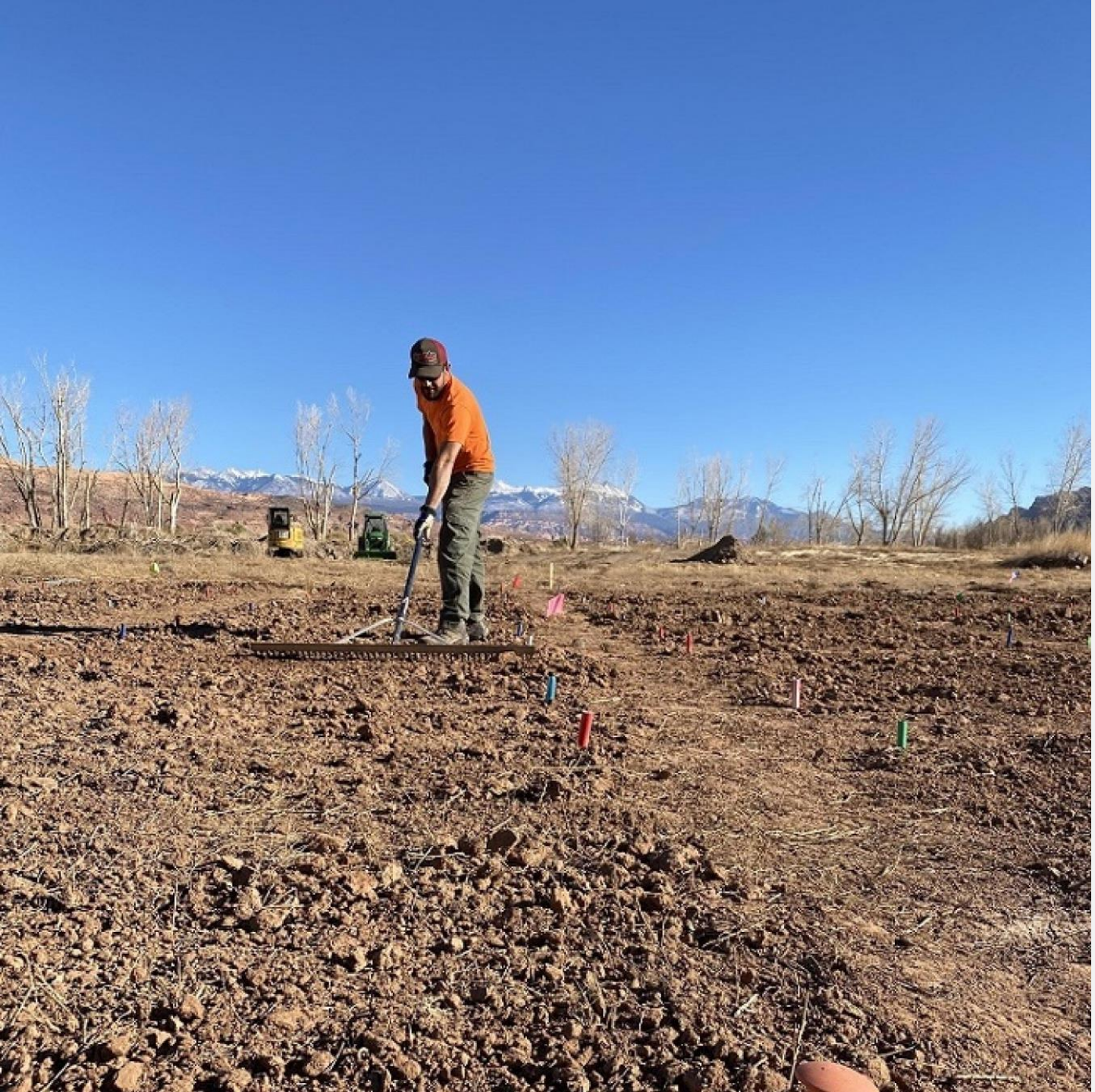
1. Odor mitigation

- Cover manure with straw and re-seed each small area after pigs are rotated to a new paddock
- Cap pig density: no more than 15 pigs per year



2. Noise mitigation

- Provide pigs with sound-dampening shelters for sleeping at night
- Reducing stress and boredom
- Increase grass buffer zone
- Limit # of male boars to 1 (necessary for herd protection)



3. Project Completion

- Once the invasives are down to 12.5% - 15% coverage (ocular estimation) we will plant the permanent seed mix (see following slide)
- Thereafter, we will spot spray invasives and interseed bare areas until the site reaches “significant completion” or only small patches of weeds that are manageable with hand removal or spot spraying

Revegetation Seed Mix - Permanent

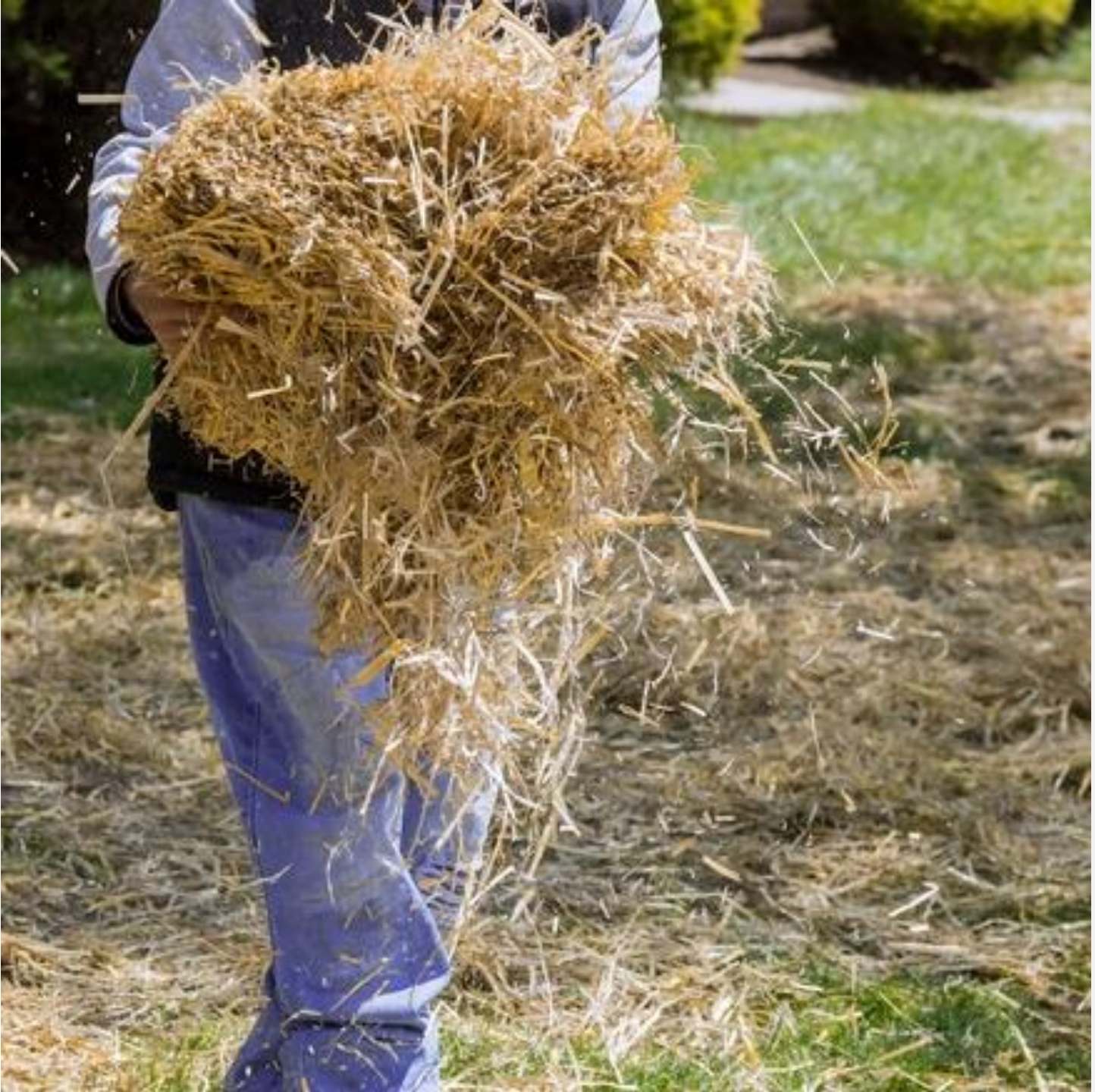
Upland Seed Mix

Scientific Name (USDA)	Common Name (USDA)	Cultivar or Ecotype	Life History	% Mix	Pounds PLS Needed
Achnatherum hymenoides	Indian ricegrass	Paloma	NPG-L	8	2.89
Adenolinum lewisii	Lewis flax	Maple Grove or CO ecotype	NPF	3	0.52
Artemisia frigida	prairie sagewort	CO Ecotype preferred	NPF	3	0.03
Bouteloua curtipendula	sideoats grama	Niner	NPG-L	8	2.15
Bouteloua gracilis	blue grama	Fremont CO ecotype	NPG-L	10	0.69
Buchloe dactyloides	buffalograss	Cody	NPG-L	8	7.28
Cleome serrulata	Rocky Mountain beeplant	CO Ecotype (or VNS)	NAF	4	1.80
Coreopsis tinctoria	plains coreopsis	CO Ecotype (or VNS)	NBF	3	0.11
Dalea candida	white prairie clover	CO Ecotype preferred	NPF	3	0.41
Elymus elymoides	squirreltail	Pueblo or Wapiti	NPG-L	5	1.33
Elymus trachycaulus	slender wheatgrass	Pryor	NPG-L	6	2.11
Gaillardia aristata	blanketflower	CO Ecotype (or VNS)	NPF	4	1.09
Helianthus annuus	common sunflower	CO Ecotype (or VNS)	NAF	3	1.33
Koeleria macrantha	prairie Junegrass	Sims Mesa	NPG-L	6	0.13
Monarda fistulosa	wild bergamot	CO Ecotype (or VNS)	NPF	3	0.11
Nassella viridula	green needlegrass	Cucharas	NPG-L	8	2.25
Pascopyrum smithii	western wheatgrass	Arriba	NPG-L	8	3.58
Machaeranthera tanacetifolia	tanseyleaf tansyaster	CO Ecotype (or VNS)	NBF	4	0.50
Ratibida columnifera	upright prairie coneflower	CO Ecotype (or VNS)	NPF	3	0.20

Revegetation Seed Mix - Temporary

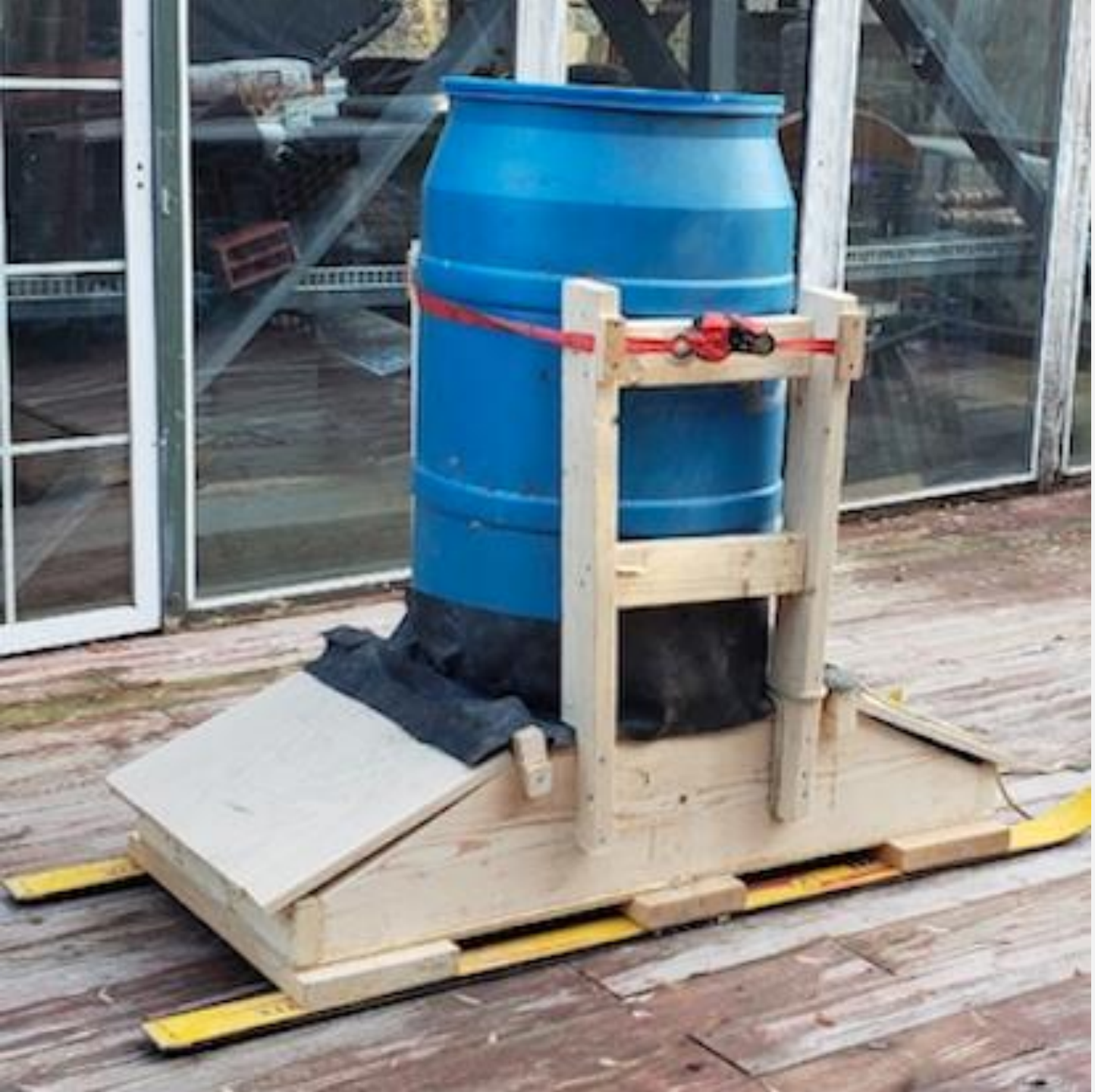
Upland Seed Mix

Scientific Name (USDA)	Common Name (USDA)	Cultivar or Ecotype	Life History	% Mix	Pounds PLS Needed
Quickguard	Quickguard	Quickguard	IAG-L	12	46.51
Bouteloua gracilis	blue grama	Fremont CO ecotype	NPG-L	25	1.72
Dalea purpurea	purple prairie clover	Kaneb or Stephanie	NPF	31	5.39
Dalea candida	white prairie clover	CO Ecotype preferred	NPF	31	4.22
Vicia americana	American vetch	CO Ecotype (or VNS)	NPF	1	1.55



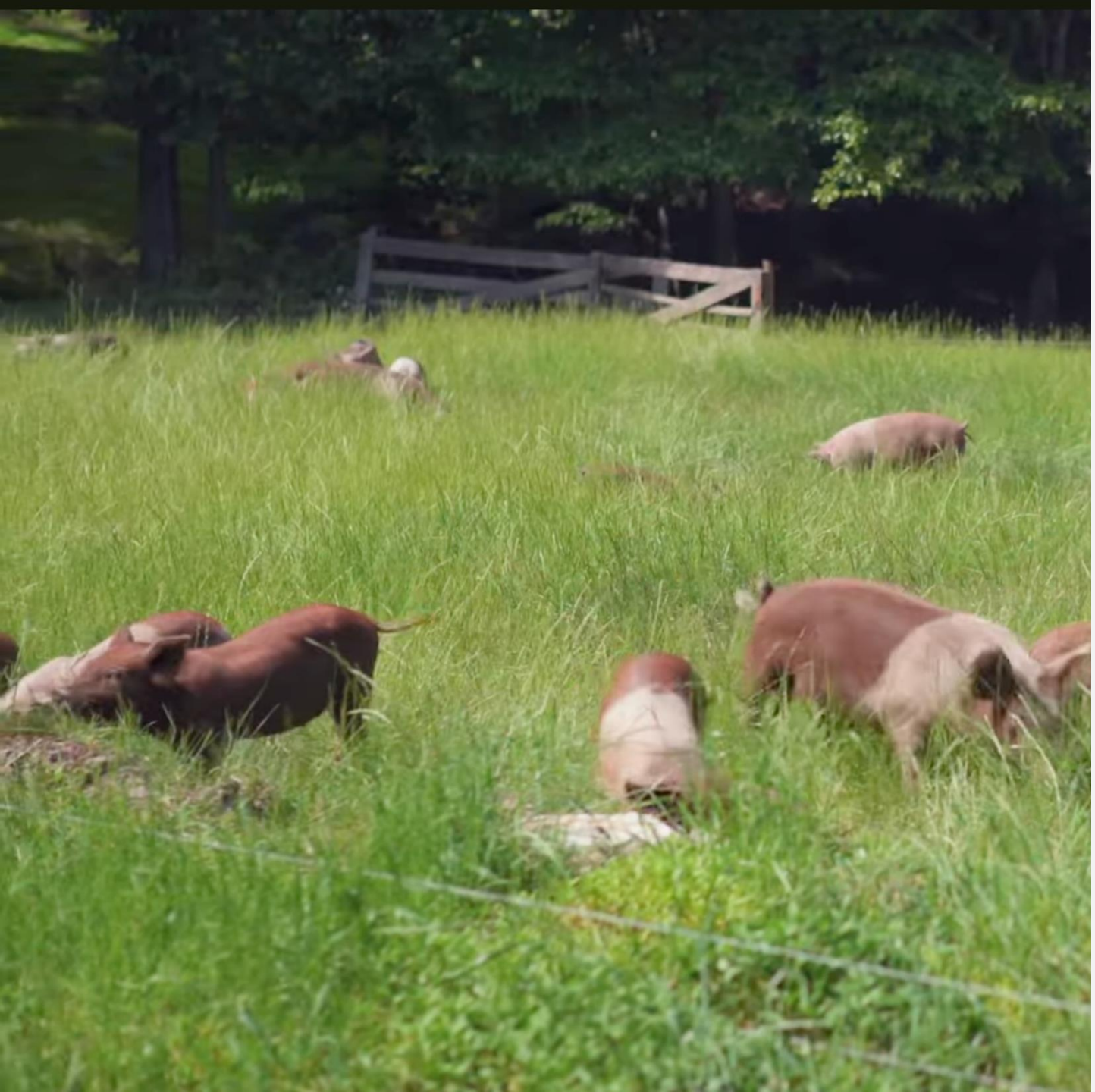
4. Dust mitigation

- Apply water to treatment area every other day
- Additionally, our new protocol (straw + seed immediately after rotation) will increase ground humidity and reduce dust



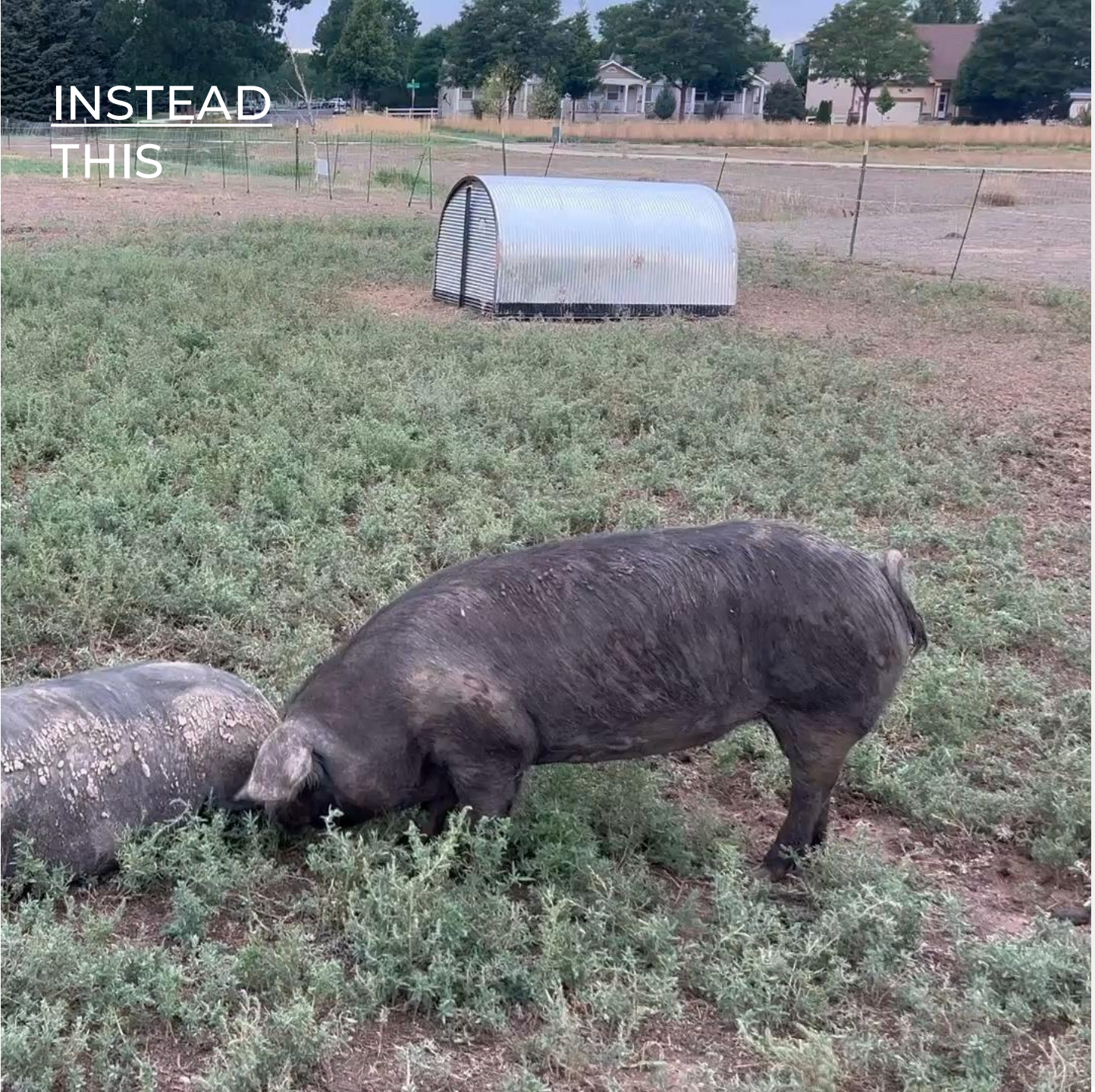
5. Food Storage

- Pig food comes from both herbaceous cover and locally-sourced fermented grain (barley, corn, triticale)
- Kept in 55 gallon drums (x2) that are sealed and protected by t-posts to ensure no animals can knock it over.
- Rodents cannot get into the containers



6. Public Health

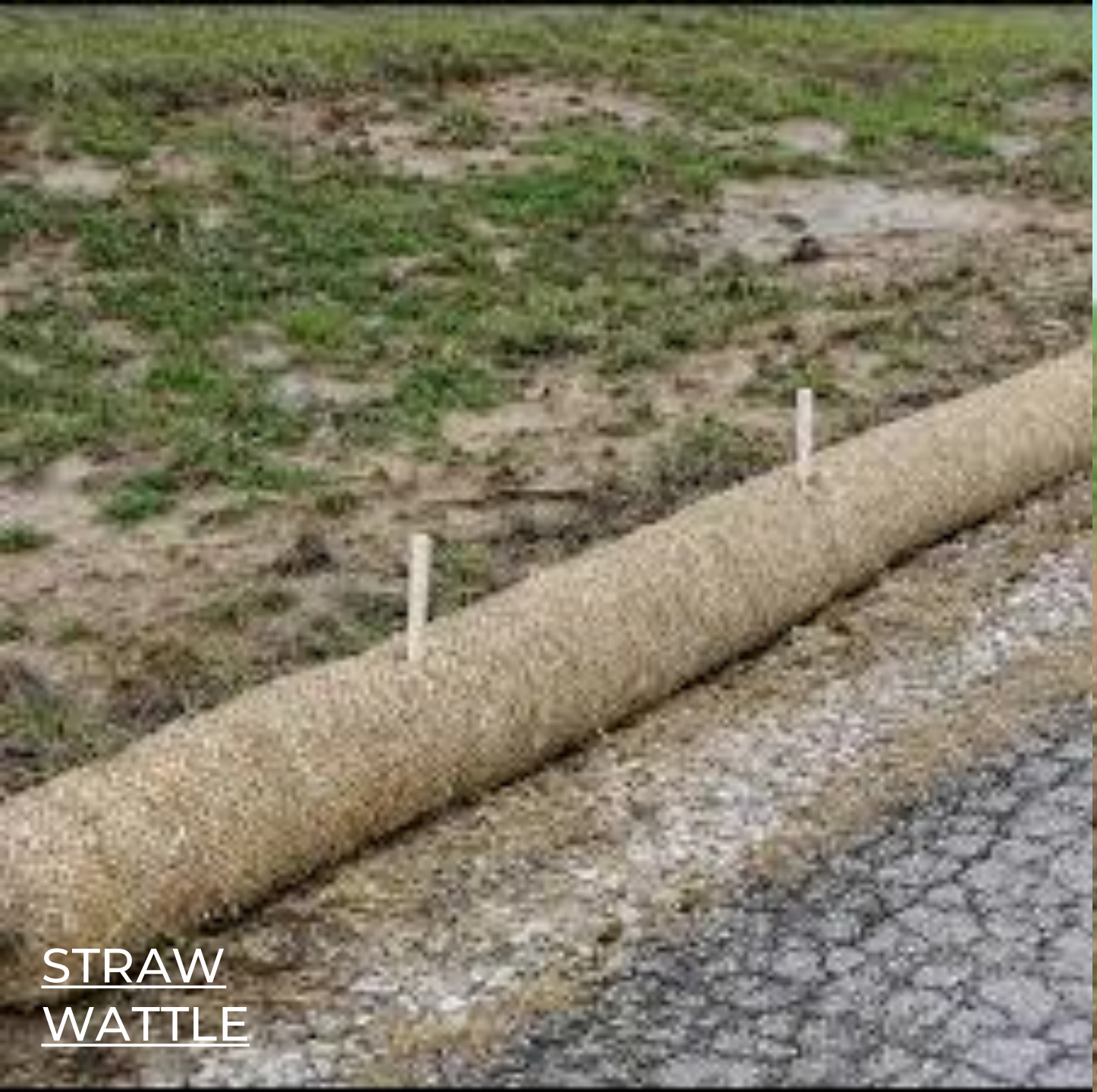
- Recent research on animal E.coli by researchers at CU Boulder, Cornell, and Stanford shows that animals fed fermented grain have significantly lower concentrations of harmful E.coli than otherwise
- Additionally, the amount of manure in this treatment area is **nowhere near** the amount typically viewed as a bio-hazard
- See Larimer County /Colorado state definitions of for concentrated animal feeding operation & animal point source pollution



6. Public Health

- In fact, there is a MUCH higher concentration of E.coli in pet waste flowing freely in gutters during a storm surge event
- That said, we are mitigating any possible contamination by pig manure in the following ways:

Straw wattle
Grass Buffer
Soil infiltration - enabled by freshly disturbed soil and low stocking density



STRAW
WATTLE

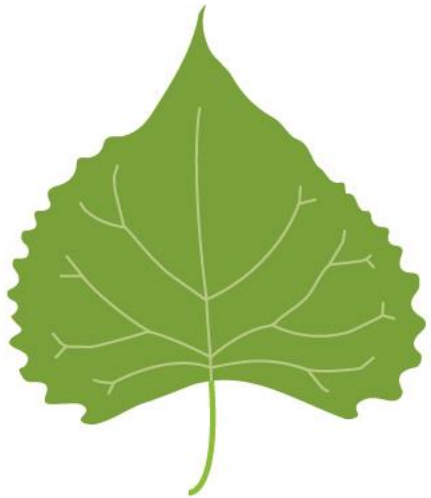
GRASS
BUFFER

7. Animal Removal

- In the event of an animal death, staff will be informed and Aloterra will address the removal the same day or by the next morning at the latest if not contacted by City staff when Aloterra does the pig check-ins

Alternatives Summary

1. **Status Quo:**
   - **Pro**: Cheap
   - **Con**: Does not address latent seed bank or existing weeds
2. **Strip and Haul Soil + Re-seed:**
   - **Pro**: Effective
   - **Con**: 3-4x more expensive, requires 4-5 years of maintenance
3. **Boom Spray + Re-seed:**
   - **Pro**: Action-oriented
   - **Con**: requires 4-5 years of maintenance, does not address seed bank. 50% more expensive



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ECOLOGICAL RESTORATION