Climate Friday
Town Hall

The Power and Potential of Regenerative Ranching.

-Wendy Millet, TomKat Ranch
Regenerative Agriculture can provide ~18% of total GHG extraction we need by 2050.

Cattle: ~47 GT CO2e
  9- Silvopasture 31.19 GT
  19- Managed grazing 16.34 GT

Crops: ~52 GT CO2e
  11- Regenerative Ag 23.15 GT
  16- Conservation Ag 17.35 GT
  24- Improved Rice Cultivation 11.34 GT
Regenerative agriculture for food and climate

Rattan Lal

Figure 1
Basic tenets of regenerative agriculture designed to draw carbon dioxide from the atmosphere. Specific packages of practices depend on site-specific biophysical environments and the human dimensions. INM = integrated nutrient management. IPM = integrated pest management. SRI = system of rice intensification.

Conservation Agriculture
1. No-till
2. Residue mulch
3. Cover cropping
4. Complex rotation
5. INM
6. IPM
7. Aerobic direct seeded rice/SRI
8. Drip fertilization

Integration of Crops and Trees with Livestock
9. Managed grazing
10. Agroforestry
11. Ley farming
12. Fodder trees
13. Silvo-pasture
14. Live fences

Restoration of Soil Health
15. Land degradation neutrality (LDN)
16. Afforestation of denuded hills
17. Wetland restoration
18. Conservation Reserve Program/set aside land

Re-carbonation of the Terrestrial Biosphere
19. Soil carbon sequestration (biochar)
   1. Organic
   2. Inorganic
20. Biomass carbon sequestration

doi:10.2489/jswc.2020.0620A
1. HEALTH & WELLNESS
2. WATER
3. SOCIAL JUSTICE
4. SOIL
5. FOOD SECURITY
6. BIODIVERSITY
7. ANIMAL WELFARE
8. LOCAL AUTONOMY
9. CLIMATE STABILITY
10. RURAL OPPORTUNITY
Regenerative ranching incorporates grazing animals into ecosystem processes which...

- Photosynthesis drives the system
- Annual grasses have shallow roots
- Perennial grasses have deep roots that allow water to move deep into the soils and produce more food for microbes and fungi
- Trampling covers bare ground keeping soil moist
- Cow dung

Supports healthy wildlife habitat, builds soil carbon, stimulates the microbial lifecycle, and increases soil water-holding capacity.
THE TRUE COST OF BEEF. VALUING THE WHOLE SYSTEM

-$3.03 / lb
INDUSTRIAL BEEF
(Negative Impact)

+$6.97 / lb
REGENERATIVE BEEF
(Positive Impact)

For more details and supporting documents regarding this analysis, see https://tomkatranch.org/2018/08/06/accessing-the-total-impact-of-tomkat-ranch-research-and-methodologies/.
REGENERATIVE BOTTOM LINE. GROWING NET PROFIT.

KNOWN BENEFITS

INCREASES INCOME

- Reduce Labor Time
- Reduce/Eliminate External Feed Costs
- Reduce Land Management and Upkeep Costs
- Increase Resilience to Extreme Conditions and Weather

REDUCES COSTS

- Increase Stocking Rate
- Access Premium Prices
- Create New Enterprises
- Increase Health and Value of Land
- Improve Livestock Health and Performance
- Win Desirable Leases, Grants, and Incentives

These, and many other, economic benefits have been observed and documented in the Profiles in Land and Management Series at www.RegenerativeRanching.org
INSPIRING A RURAL RENAISSANCE

**OLD MODEL**
- Extraction
- Commodities
- Concentrating Opportunity
- Market-Driven
- Labor/Capital
- Insular
- Nature as Opponent
- Focused on Single Generation
- Urban Dwellers as Owners or Adversaries
- Government as Regulator/Subsidizer
- Brittle

**REGENERATIVE MODEL**
- Regeneration
- Healthy Food and Ecosystem Services
- Creating Opportunity
- Values-Driven
- Knowledge/Wisdom
- Open and Diverse
- Nature as Ally
- Inclusive and Multi-Generational
- Urban Dwellers as Customers and Investors
- Government as Supporter and Technical Assistance Provider
- Resilient
Carbon footprint breakdown per kg of White Oak Pastures’ beef

Enteric emissions

Manure emissions

29

Soil carbon

5

Veg carbon

Other farm activities

1

Slaughter and transport

0.2

Net total emissions

-3.5

Conventional beef US*** (33)

Pork CA* (9)

Chicken US* (6)

Beyond Burger™ ** (4)

Soybean US* (2)

*Value for comparison taken from the World Food LCA Database v. 3.3

**Value for comparison taken from Beyond Meat’s LCA

***Value for comparison calculated based on Rotz, 2013. Assumes no C loss or storage in cow-calf stage

All numbers shown are Kg CO2-eq emissions per Kg fresh meat

Quantis
Presence of Native Perennial Grasses on TomKat Ranch after Implementing Planned Livestock Grazing*

RANCH DATA PROJECT. CHANGES AT TOMKAT RANCH.
TomKat Ranch is home to over 100 migratory and year-round bird species.

Some species, such as Swainson’s Thrush and Song Sparrow, have increased on the ranch despite an observed decline across Coastal California.
67% of points meet or exceed NRCS goals.
**Between 2015-18, bulk density on the ranch improved on average.**

- 36 monitoring sites infiltrate at 5 minutes or faster per inch of precipitation.
- Ranch average infiltration is 9.8” per hour. A 100-year storm in SF is 1.32” per hour.

- **Average soil carbon on ranch 4%.**
- **During intense drought 46% of monitoring sites still gained soil carbon at 0-10 cm, 10-40 cm, or both.**
A VISION FOR THE FUTURE.

**REGENERATIVE RANCHING**

Demonstrate the practices and benefits of regenerative rangeland management and support the tools that speed its adoption.

**FORK TO FARM**

Influence the way society eats in order to accelerate adoption of regenerative agriculture.

**GATHERING FOR ACTION**

Bring people together for meaningful conversations and collaborations that catalyze the transition to a regenerative agriculture system.
POTENTIAL. WHY RANGELANDS?
PLEASE JOIN US.

Please email us at Reachout@TomKatRanch.org with any questions or comments.