



**Carbon Sink Demonstration Project  
Pauma Tribal Farms/Solidarity Farm**



# Photosynthesis



## Sink Carbon With...

- reduced tillage
- Pasture rotation
- Cover crops
- Compost mulch
- Permanent crops
- resilient seeds





**KEEP  
CALM  
AND  
HUG A  
FARMER**

Existing agricultural mitigation approaches could shoulder up to 25% of the climate change challenge to keep warming under 2°C. More than any other single solutions studied!



# **CARBON FARMING**

## **(or climate-smart agriculture)**

is a set of farming and ranching practices that build soil carbon, turning carbon pollution in the atmosphere into the forms of carbon that build and nourish living things.

### **THERE ARE OVER 30 CARBON FARMING PRACTICES.**

#### **Examples include:**

- Permanent crops such as orchard trees, bushes, and vines
- Compost application to croplands and rangelands
- Riparian restoration with perennials
- Windbreaks and hedgerows
- Mulching
- Cover cropping
- No-till or low-till row crops
- Silvo-pasture, or grazing lands that include trees









# Cover Crop ROI

<u>Metrics Forecast</u>	1	2	3	4	5	6	7	8	9	10
soil organic matter %	0.5	1	1.5	2	2.5	3	3.5	4	4	4
# of trees to replace	630	525	420	367.5	315	262.5	210	105	52.5	52.5
gallons of water needed	977553	896090	814628	733165	651702	537654	439899	325851	325851	325851
<u>Costs</u>										
Seeds, Brome + Mix	\$10,300	\$3,605	\$3,605	\$3,605	\$3,605	\$3,605	\$3,605	\$3,605	\$3,605	\$3,605
Water for cover crop	\$6,843	\$6,273	\$5,702	\$5,132	\$4,562	\$3,764	\$3,079	\$2,281	\$2,281	\$2,281
Equipment Rental / Time	\$2,000	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Farmer time - organizing and coordinating	\$360	\$360	\$360	\$180	\$180	\$180	\$180	\$180	\$180	\$180
Soil Testing	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Tractor time, mowing, seeding	\$1,296	\$1,296	\$1,296	\$1,296	\$1,296	\$1,296	\$1,296	\$1,296	\$1,296	\$1,296
Mowing cost, fuel	\$101	\$101	\$101	\$101	\$101	\$101	\$101	\$101	\$101	\$101
Mowing cost, equipment	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Cost</b>	<b>\$23,200</b>	<b>\$12,635</b>	<b>\$12,065</b>	<b>\$11,314</b>	<b>\$10,744</b>	<b>\$9,946</b>	<b>\$9,262</b>	<b>\$8,463</b>	<b>\$8,463</b>	<b>\$8,463</b>
<u>Benefits</u>										
Reimbursement, NRCS	\$1,517	\$1,517	\$1,517	\$1,517	\$1,517	0	0	0	0	0
Reimbursement, Healthy Soils	\$3,793	\$3,793	\$3,793	0	0	0	0	0	0	0
Reduced water to orchard	0	\$570	\$1,140	\$1,711	\$2,281	\$3,079	\$3,764	\$4,562	\$4,562	\$4,562
Carbon sequestered in the soil	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90
Reduced tree loss / replacement	0	840	1680	2100	2520	2940	3360	4200	4620	4620
labor change	0	472.5	945	1181.25	1417.5	1653.75	1890	2362.5	2598.75	2598.75
<b>Total Benefits</b>	<b>\$5,400</b>	<b>\$7,282</b>	<b>\$9,165</b>	<b>\$6,598</b>	<b>\$7,825</b>	<b>\$7,763</b>	<b>\$9,104</b>	<b>\$11,214</b>	<b>\$11,871</b>	<b>\$11,871</b>
<b>Net Change</b>	<b>-\$17,800</b>	<b>-\$5,352</b>	<b>-\$2,899</b>	<b>-\$4,716</b>	<b>-\$2,919</b>	<b>-\$2,183</b>	<b>-\$158</b>	<b>\$2,751</b>	<b>\$3,407</b>	<b>\$3,407</b>

There are still too many unanswered questions:

- Which carbon sequestration practices are most viable in our bio-region?
- What is my return on investment?
- How do I find time to write, manage, and report on my projects...when I am already too busy?
- How do I afford the up front investments when grants are reimbursable?



# Where do we go from here.

**Farmers:** Step into leadership, keep learning with an open mind and sharing what you know.

**Technical Advisors:** Invest time, energy and resources in farmer-led research projects. Push back against State and Federal Programs that limit flexibility. Understand local costs, availability of appropriate tools/seeds, and equipment needs in order to provide effective advice.

**Planners and Officials:** Find and share loopholes to help farmers pilot carbon farming strategies (such as on farm composting). Write lots of Carbon Farm Plans.

**Policy makers and funders:** Reduce regulatory barriers, funnel funds to farmers with Carbon Farm Plans ASAP.

# Next Steps



1) Join the Carbon Farming Task Force:  
April 2nd 12pm Farm Bureau

1) Schedule a farmer-to-farm consult with  
Carbon Sink Farms:

Email: [carbonsinkfarms@gmail.com](mailto:carbonsinkfarms@gmail.com)

Text: 619-581-2490

1) Consider applying for Healthy Soils or  
EQIP:

Schedule consultation with Esther or  
Martina