

# Agroforestry in Napa with Truffles



## Truffle Cultivation as Agroforestry Practice in Napa

Prepared for the WICC Board

Robert Chang

Managing Director

American Truffle Company



# Truffle Cultivation is Real & Progressing in Napa

- Traina property

- 3.5 acres truffle orchard right next to Napa River in Yountville
- Truffle orchard project dovetails with grading and restoration of Napa River bank immediately adjacent to the orchard location
- Extension of the “Managed Forest/Retreat” concept
- Truffle cultivation as agroforestry concept is real and being actively pursued

- Others in Napa

- Mt. Veeder Road
- Country Lane





# Traina Truffle Orchard in Yountville



FIGURE 29  
FIGURE 28

## Legend

- Project Boundary
- Property Line
- ☁ Protected Existing Trees
- ▨ Transitional Riparian & Upland Planting
- ▭ Flood Bench or Alcove
- ▨ Biotechnical Stabilization
- Roughness Boulders
- ⊕ Large Wood Structure Complex
- Willow Buffer

## Site Summary

Project Boundary:	18: 16.8 Acres, 18: 2.4 Acres	Vineyard Removed:	18: 8.6 Acres, 18: 1.2 Acres
Grading Footprint:	18: 16.3 Acres, 18: 2.0 Acres	Vineyard Replanted:	18: 3.5 Acres, 18: 0.0 Acres
Grading Volume (2d/Fill):	18: 111,800/7,700, 18:13,300/4,100 CY	Trees Removed (>12"):	18: 35, 18: 6 Acres

## Notes

1. All disturbed areas will receive comprehensive erosion control measures & native revegetation.
2. Property line locations are approximate and do not represent an official Record of Survey.
3. All non-graded areas within the project boundary will be treated to remove arundo & other non-native plant species.
4. All native trees greater than 16" DBH removed from sites will be used in constructing large wood structures.
5. Impacts to existing trees are approximate and based on field measurements.
6. Grading volumes are approximate and based on preliminary topographic data.
7. Managed Retreat Boundary: Estimated corridor width to support sustainable and resilient physical processes.



# Truffle Cultivation: Triple-Win for Napa



Environmental win

Economic win



Strategic win



# Truffle Cultivation: Environmental Win

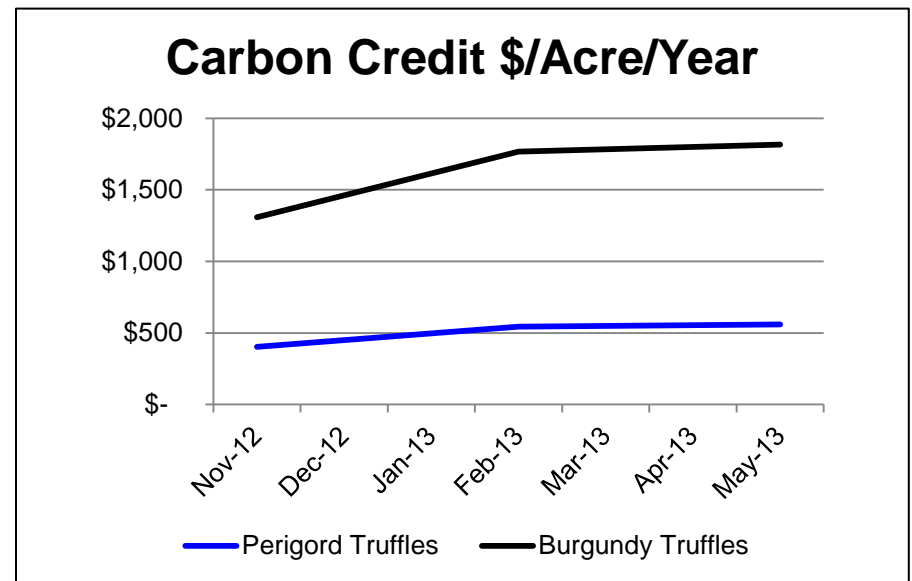
- Riparian managed forests: accepted best management practice in conservation
- Truffles: native oak species as host trees, e.g. valley oak (*Quercus lobata*)
- Carbon Sequestration
- Air Quality Improvements
- Water Quality Improvements
- Erosion Control/Bank Stabilization
- Wildlife Corridors/Biodiversity Conservation
- Rain Water Interception/Reduce Peak Flows



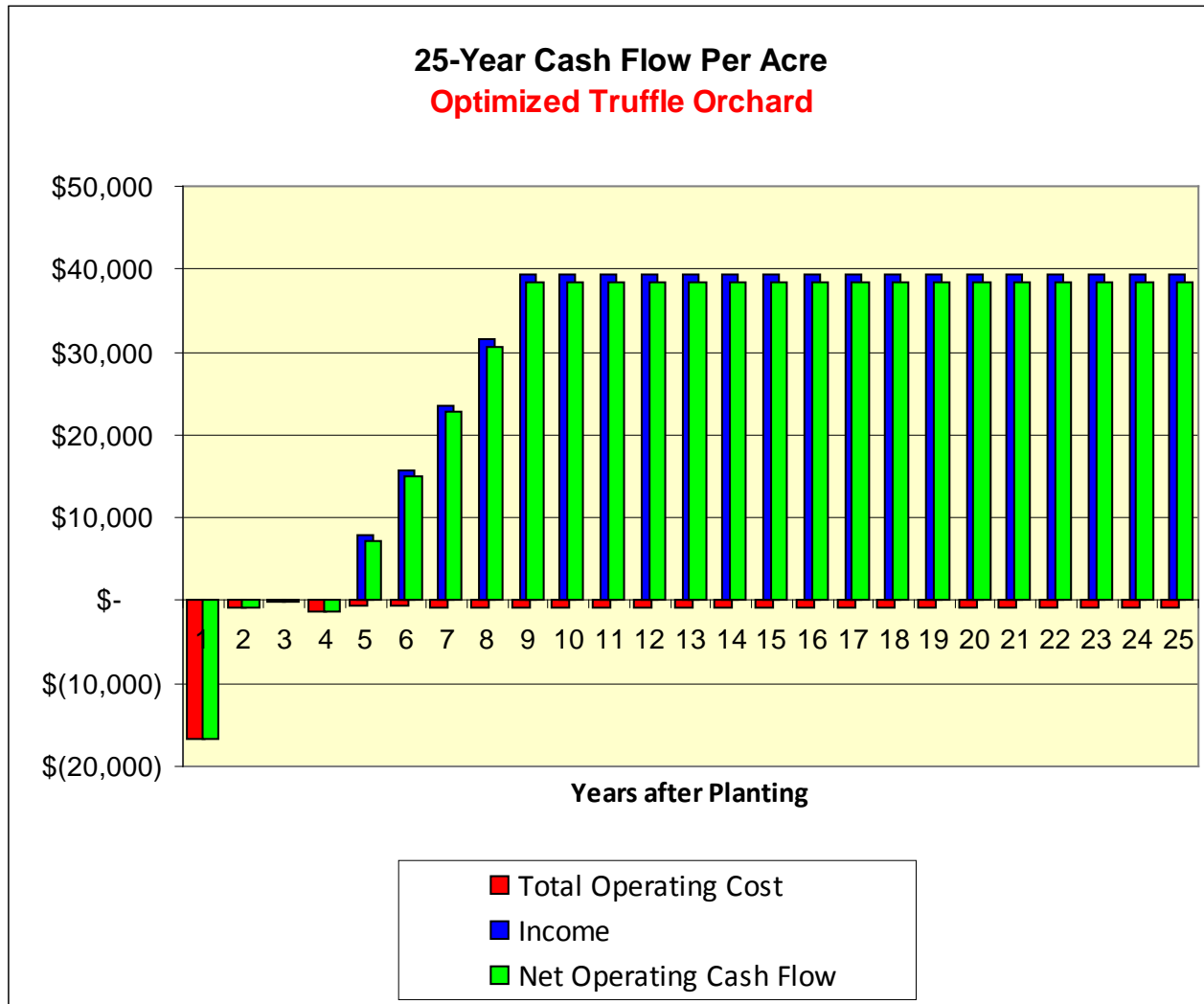


# Truffle Cultivation: Economic Win

- With truffle host trees, riparian managed forest can generate substantial revenue
- Revenue/acre from truffle cultivation can be much higher than grapes
- Giving up productive vineyard land for conservation now has a much stronger economic case
- Carbon sequestration = revenue from cap and trade, can offset orchard costs

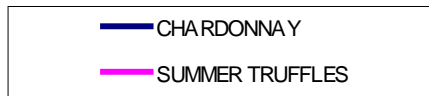
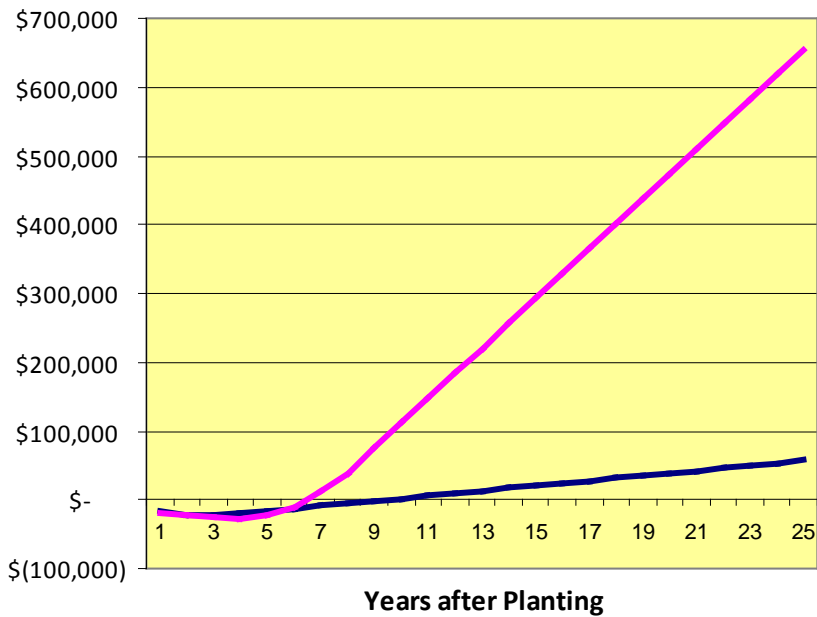


# Truffle Cultivation: Economic Win

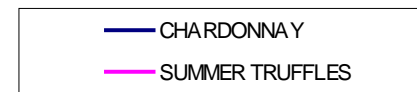
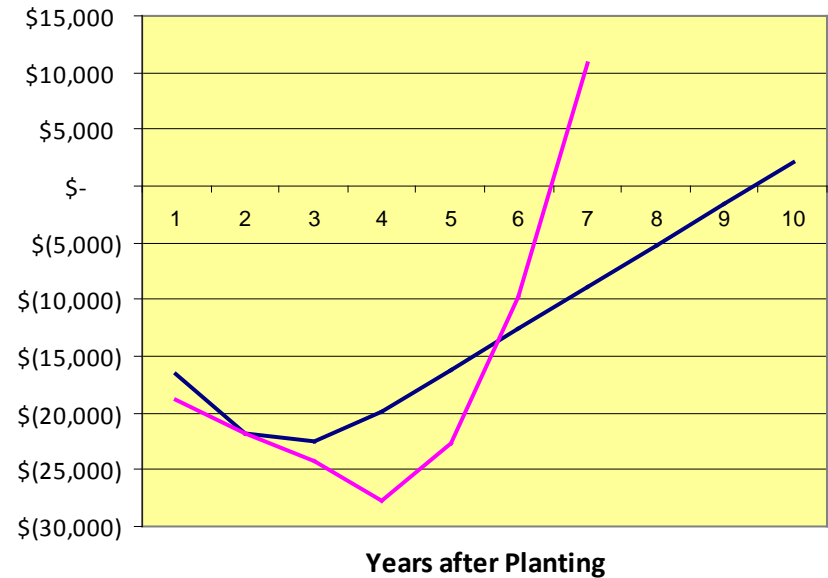


# Truffles Generate Higher Returns More Quickly

## 25-Year Cumulative Total Cash Flow/Acre



## Break Even Analysis (Cumulative Total Cash)





# Truffle Cultivation: Strategic Win

- Truffle orchards are complementary to vineyards & wineries
  - **Operationally:** Equipment and resources can be shared. Excellent diversification vehicle for biodynamic practices.
  - **Marketing:** Truffles bring cachet to the vineyard and wine brand. Great story that extends and furthers the brand.
  - **Historically:** Many established vineyards and wineries in France often have truffle orchards right next to the vines.
- A sustainable and viable truffle industry can be created in Napa County
  - Upwards of 200-250 total acres possible
  - Creates even more prestige and value for Napa

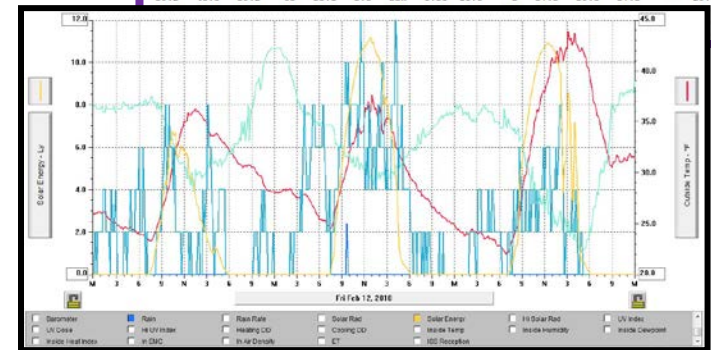


# ATC Brings World-Class Science to Ensure Success

- ATC brings the science to make large scale, commercial truffle production successful
- Bespoke for each client site
- Unique know-how based on substantial scientific data
- Ongoing research and active orchard experience
- Unique partnership structure – interests are aligned with orchard owner



Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Wind Speed	Hi Wind Dir	Wind Chill	Heat Index	TSM Index	TSM Index	Bar	Rain
31.9	31.7	93	30.1	0.0	---	0.00	0.0	---	31.9	31.9	31.8	---	29.723	0.00
31.9	31.8	93	30.1	0.0	---	0.00	0.0	---	31.9	31.8	31.8	---	29.717	0.00
32.1	31.9	92	30.0	0.0	---	0.00	0.0	---	32.1	32.0	32.0	---	29.716	0.00
32.4	32.1	93	30.6	0.0	NM	0.00	1.0	NM	32.4	32.3	32.3	---	29.710	0.00
32.8	32.4	92	30.7	0.0	NM	0.00	1.0	NM	32.8	32.7	32.7	---	29.710	0.00
32.8	32.8	93	31.0	0.0	---	0.00	0.0	---	32.8	32.7	32.7	---	29.700	0.00
32.9	32.7	93	31.1	1.0	NM	0.17	4.0	NM	32.9	32.8	32.8	---	29.690	0.00
33.4	32.9	93	31.6	3.0	SSE	0.50	6.0	SSE	30.9	33.3	30.8	---	29.687	0.00
33.9	33.4	92	31.9	2.0	SSE	0.33	5.0	S	33.2	33.8	33.0	---	29.684	0.00
35.2	35.2	92	33.1	3.0	SSE	0.50	9.0	SSE	32.9	35.1	32.8	---	29.682	0.00
37.4	37.4	90	34.7	3.0	SSE	0.50	10.0	SSE	35.4	37.3	35.3	---	29.677	0.01
39.0	39.0	87	35.5	3.0	SSE	0.50	9.0	SSE	37.2	38.8	37.0	---	29.676	0.03
39.2	39.3	86	35.4	4.0	S	0.67	9.0	SSE	36.4	39.0	36.2	---	29.671	0.04
40.0	40.0	85	35.9	3.0	SSE	0.50	8.0	S	38.4	39.8	38.2	---	29.674	0.02
40.0	40.0	85	35.9	5.0	S	0.83	11.0	NW	36.5	39.8	36.3	---	29.669	0.01
39.2	40.0	85	35.1	3.0	SSW	0.50	10.0	S	37.5	39.0	37.3	---	29.677	0.01



# Conclusion & Summary

- Truffle cultivation in Napa is real and ongoing
- Truffle cultivation is triple-win as conservation and diversification vehicle
  - Environmental win
  - Economic win
  - Strategic win
- A sustainable and viable truffle industry can be created in Napa County
- ATC brings world's best truffle cultivation science to ensure success, in a bespoke partnership approach

