Developing Carbon Offsets for Biochar Products
Problem:
• Over fertilization
• Soil degradation
• Erosion
• Nitrate leaching
Water Quality:

- Blue Green Algae
- Water Temps 82 degrees
- High nutrient level, nitrogen and phosphorus in water
How soil can help water quality:

- Soil minerals are natural filters
- Mycorrhizae fungi grab ahold of nutrients like phosphorous
- Biochar retains nutrients and moisture
- Soil Organic Carbon (SOC) increase, improves water holding capacity
- Carbon Linking nutrients to plants increases yield.
How soil can be a carbon sink?

- Sequestered carbon in the form of biochar, is stable in soil, and will remain for centuries.
- Biochar provides home for soil microbes.
- Biochar retains nutrients and moisture.
- Biochar products (PermaMatrix) improve soil tilth and plant growth.
- With better nutrient delivery to plants, less is leached out of soil.
Awareness:

- Better methods for soil sustainability
- Problems with over fertilization
- Point source control for water quality
- Importance of soil
Opportunity:

• Million of acres in agriculture
• Biochar producers
• Biochar products
• Sustainable soils for future farmers
• Improved water quality for everyone
Incentive:

- For farmers and land managers
- Reduced inputs and cost
- Increased asset
- Improved yield
Developing Carbon Offsets

• Value to sequestered carbon.
• Value of reduced nitrate leaching into water bodies.
• Value of improved soil organic carbon
• Value of increased crop yield.
• Value of reduced inputs (less fertilizer, less herbicides)
**Precedence:**

- Chevrolet launched a five-year plan to purchase 8 million tons of reduced carbon emission for around $40 million in five years from several projects including 11 colleges.
- Chevrolet paid a price from $5 to $30 per ton of carbon emission depending on the quality.

**Challenges:**

- There is no carbon methodology for a particular agricultural soil sector built.
- Need more data on quality of carbon and value of sequestered carbon.
- Need more data on biochar amended soils and nutrient retention.
- Voluntary carbon offset market, raising awareness!
- Currently, the price of carbon credit ranges from $1 to $25 per ton in the voluntary market.
It all starts with Awareness!

Thanks