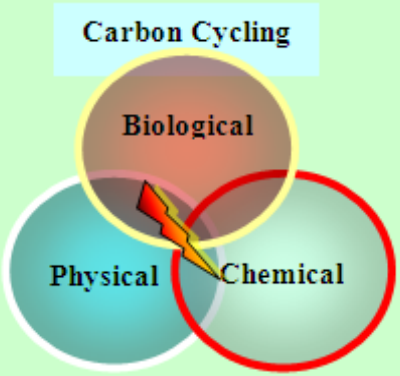
Section 1 of 22 (1 h - Soil Quality Considerations): i.e., is it Aggrading, Sustaining or Degrading

Assessing Soil Quality & Soil Health is a function of many complex interactions, inputs and management factors such as :

- Climate
- Crops & Yield (i.e., biomass produced)
- Soil type
- Water Quality/Supply
- Irrigation Water Management
- Tillage Operations
- Fertilizer & Pest Management
- Crop Rotations
- Residue Management
- Soil Amendments: Manure, mulch, effluent, gypsum, etc.
- Cover crops



Soil pH		Salinity Class (dS/m) $EC_{1:1}$	Micro-bial Response	Soil Respira-tion At optimum temp. & moisture	Lbs. CO_2-C/ac/day	Aggregate Stability (> 0.25 mm)				RUSLE2				
						% Organic Matter	% Water Stable Aggregates	% Clay	% Water Stable Aggregates	Soil Tillage Intensity Rating		Soil Conditioning Index (SCI)		
V. Strongly Alkaline	9.0													
		Strongly Saline > 6.07	Few halophilic organisms are active	Unus-ually High Soil Activity	> 64									
Slightly Alkaline	8.5													
	8.0	Moderately Saline 3.16 – 6.07	Salt tolerant microbes predomi-nate	Ideal Soil Activity	32 – 64									
Neutral	7.5													
	7.0			Med. Soil Activity	16 – 32									
Mod. Acid	6.5	Slightly Saline 1.71 – 3.16	Major microbial processes influenced			12	85	80	86	STIR is based on Field Operations (tillage) & its soil disturbing actions (Invert, Mix, Lift, Shatter, Aerate & Compaction).	Lower STIR values = reduced soil erosion	SCI = (OM x 0.4) + (FO x 0.4) + (ER x 0.2)	If the rating is (+), the system is predicted to have increasing soil OM	If the rating is (-), the system is predicted to have declining soil OM
	6.0			Mod. Low Soil Activity	9.5 – 16	8	81	60	82					
Very Strongly Acid	5.5	V. Slightly Saline 0.98- 1.71	Selected microbial processes affected			4	77	40	78					
	5.0			Very Low Soil Activity	< 9.5	2	75	30	74					
	4.5					1.2	70	20	70					
Ultra Acid	4.0	Non Saline 0 – 0.98	Few Organisms affected	No Soil Activity	0	0.8	66	10	65					
	3.5					0.4	53	5	60					

IMPORTANT!!! Use the Farm Record Form (Case Study) guide to assist in evaluating Soil Quality Trends: i.e., is Soil Quality Aggrading, Sustaining or Declining with current cropping system

OM = Organic Matter
FO = Field Operations
ER = Soil Erosion

(*References: NRCS Soil Quality Test Kit Guide & Soil Quality Guide: Assessment & Applications for Field Staff) rudy.garcia.2008

Agronomy Tech Note 76 (http://www.nm.nrcs.usda.gov/technical/handbooks/iwm/nmiwm.html)