

The Soil Health Task Group has been working to describe the relationship between desired ecosystem services, their potential beneficiaries, what leverage points should be considered, and what metrics might be used to relate those services to soil health. The table below captures the Soil Health Task Group’s thinking thus far and is not final or vetted.

Ecosystem Service	Beneficiaries	Leverage points for enhanced performance (practices?)	Dynamic metrics (Things we might measure)	Static/inherent metrics to account for
Flood mitigation - includes storage, etc (downstream flood damage reduction) Legislative mandate: increase stormwater storage capacity, reduce agricultural runoff to waters	Hyperlocal + Watershed (downstream)		Runoff volumes/rate, aggregate stability/infiltration/bulk density/compaction/structure/porosity, retention (available holding capacity, organic matter, surface cover, living roots), surface topography	Soil texture, restrictive layers (i.e., interflow and VSA hydrology); landscape position/connectivity/proximity, artificial drainage (tile and diversions), slope/slope shape
Water quality: reducing nutrient runoff/loss. Legislative mandate: increase stormwater storage capacity, reduce agricultural runoff to waters	watershed	Streambank stabilization, nutrient management	Soil test P, Phosphorus and nitrogen and exports in runoff water, including total and dissolved phosphorus loads in surface and subsurface runoff, as well as dissolved and total nitrogen loads in surface runoff, Phosphorus nutrient mass balance	Erodibility - texture, slope. Vulnerability to runoff and leaching - restrictive layers; preferential flow paths (with artificial drainage); cation exchange capacity/nutrient retention capacity
Water quality: reducing sediment export. Legislative mandate: increase stormwater storage capacity, reduce agricultural runoff to waters	watershed	Streambank stabilization	TSS load (Total Suspended Solids)	Erodibility - texture, slope. Vulnerability to runoff and leaching - restrictive layers; preferential flow paths (with artificial drainage)

<p>Water quality: reducing bacteria, pesticides, PCBs, etc. Legislative mandate: increase stormwater storage capacity, reduce agricultural runoff to waters</p>	<p>watershed</p>		<p>bacteria, pesticides, PCBs, etc.</p>	
<p>Biodiversity - Legislative mandate: improve soil health, enhance crop resilience, increase carbon storage</p>	<p>More “foundational” benefit rather than provisioning (Supporting ecosystem service)</p>	<p>Need further clarification from WG to establish what trying to achieve - if general ecosystem resilience or something more specific?</p>	<p>Niche diversity, species richness, soil profile vs agricultural field vs across a watershed? Insect populations for crop resilience? PFLA analysis? Beta-glucosidase and other enzymatic metrics? Ecoplate enzyme assay,</p>	
<p>Crop resilience (maybe not to include in price, but to track?)</p>	<p>farm</p>		<p>Aggregate stability, resilience to erosion, available water capacity, drought resilience</p>	
<p>Carbon storage and Climate regulation - Legislative mandate: improve soil health, enhance crop resilience, increase carbon storage</p>	<p>State, national, global, private</p>	<p>Include other on-farm opportunities to contain GHG emissions? (manure pit mgmt, feed rations, etc.).</p>	<p>Net equivalent MT CO₂e as metric. Soil carbon stocks - Organic carbon content and pools (labile/stable) & bulk density, GHG emissions from fields (N₂O, CH₄, CO₂) - photo acoustic gas analysis, models.</p>	