

## Soil Management

### Example goals and monitoring for soil management.

Goals relating to....	Potential monitoring....	Goals relating to....	Potential monitoring....
Control/prevent soil erosion	Turbidity (cloudiness) of runoff after heavy rainfall. Soil build-up after heavy rain- place timber across the slope at the bottom of an incline. Photo-points of eroded area with landmark for scale. Groundcover estimate- see below  <i>As well as protecting soil health, preventing erosion will improve the quality of water run-off.</i>	Reduce/prevent soil compaction	Penetrometer- e.g. a screwdriver or piece of wire or dig to observe hard layers. Plant root development- dig with a spade. Water infiltration- infiltration tube and water.  <i>Soil compaction can be reduced by controlling traffic and reducing soil disturbance. Improving soil structure will improve plant root development and water infiltration. Increasing organic matter and biological activity can help to improve soil structure.</i>
Increase ground cover  <i>Protects from erosion; increases soil biological activity; raises soil organic matter and carbon; improves soil water holding capacity; improves quality of water runoff and minimises opportunity for weed invasion.</i>	Estimate- % of groundcover, green plants and dead litter.	Control/ prevent soil salinity	Observe- Loss of desirable species, presence of salt tolerant species or bare ground. Record- area or photo-points with a landmark for scale. Soil tests- record over time.  <i>Maintaining groundcover with appropriate species will help to prevent or improve saline areas.</i>
Increase Organic matter/Organic carbon  <i>Improves soil water holding capacity, improves soil biology and nutrient cycling, protects the soil surface and improves soil structure.</i>	Soil test results- Organic Carbon x 1.65 = Organic Matter %	Improve soil biology	Counts of earthworms- record at different times of year Calico strip test- insert unbleached calico into the ground. Greater decay means more biological activity. Soil biodiversity tests  <i>Increasing soil biological activity reflects good soil health and is influenced by ground cover, soil organic matter and soil water holding capacity and pH, soil disturbance and chemical contamination. Results will also vary with seasonal conditions.</i>
Improve soil nutrient levels  <i>Appropriate levels of soil nutrients lead to improved soil health. Excessive levels lead to nutrient runoff or leaching and contamination of waterways.</i>	Soil test results	Better fertiliser management	Records and calculations- fertiliser use per unit of production.  <i>Applying nutrients according to soil test results will maximise production per unit of fertiliser applied and reduce the likelihood of nutrient runoff or leaching.</i>
Control/prevent soil acidity  <i>Increasing soil pH ensures more nutrients are available to plants.</i>	Soil test results-Topsoil testing (0-10 cm) and subsoil testing (10-60 cm) pH kit, test	References:	
Control/prevent soil sodicity  <i>Soils with a high sodium percentage are likely to be dispersive and poorly structured. Increasing organic matter will improve these soils. Gypsum is a short-term solution.</i>	Soil test- Exchangeable sodium percentage (ESP) Dispersion test	Northern Rivers Soil Health Card, Tuckombil Landcare Inc. and NSW Agriculture (2005) Soil Biology Basics- Soil Biology Testing, NSW DPI (2005) (Monitoring & recording sheets are available behind the 'Monitoring/Recording' tab of the folder and on the CD)	

Compile action plans behind the action planning tab in your folder.