

MANITOBA ENVIROTHON  
2017 THEME OUTCOMES

Agricultural Soil and Water Conservation Stewardship

***NB: First page numbers shown are PDF pages. Information in parentheses is part of document itself.***

Outcome Cluster	Code	Manitoba Envirothon Outcomes	Resource Correlations
Functions and Benefits of Soil and Water	T1	Explain why soil and water conservation is of benefit to the environment, society and the economy.	Managing the Water's Edge; Caring For The Green Zone pg. 7-13;
	T2	List the indicators of soil quality.	NRCS Soil Quality Indicator Sheets
	T3	Describe the main functions of soil.	Soil Management Guide Chapter 1;
	T4	Describe the relationship between different indicators of soil quality and soil functions.	NRCS Soil Quality Indicator Sheets; Soil Management Guide Chapter 2;
	T5	Describe how to measure indicators of soil quality.	NRCS Soil Quality Indicator Sheets
	T6	Describe how soil dwelling wildlife, such as fungi or insects, can indicate soil quality.	NRCS Soil Quality Indicator Sheets (Biological Properties Section);
	T7	Describe how plants can be used as indicators for soil quality.	
	T8	List the indicators of water quality.	
	T9	Describe the relationship between different indicators of water quality and water functions.	Managing The Water's Edge

Outcome Cluster	Code	Manitoba Envirothon Outcomes	Resource Correlations
	T10	Describe how to measure indicators of water quality.	
	T11	Describe how soil-dwelling wildlife can be used as indicators for water quality.	
	T12	Describe how plants can be used as indicators for water quality.	Managing The Water's Edge; Caring For The Green Zone pg. 16;
	T13	Describe how soil and water management practices in agriculture influence forests, grasslands, and other plant communities.	
	T14	Describe how soil and water management practices in agriculture influence wildlife.	Caring For The Green Zone pg. 18, 19;
	T15	Describe how soil and water management practices in agriculture influence aquatic ecosystems.	Managing The Water's Edge; Caring For The Green Zone pg. 20-23, 27;
	T16	Describe various types of soil erosion.	Soil Management Guide Chapter 7; Wind Erosion (AAFC); Field Erosion & Surface Drainage Problems (AAFC);
Assessing and Managing Risks to Soil and Water	T17	Use different methods to predict soil erosion risk, including the RUSLE equation, aerial photographs, topographic maps, soil maps, the Canadian System of Soil Classification and soil surveys.	Soil Management Guide Chapter 2, Chapter 7;
	T18	Assess land use impacts resulting from soil erosion.	Soil Management Guide Chapter 7;

Outcome Cluster	Code	Manitoba Envirothon Outcomes	Resource Correlations
	T19	Explain economic and ecological reasons for the importance of land use planning in conserving soil and water in the agricultural context.	Soil Management Guide Chapter 10;
	T20	Describe the role of riparian areas in soil and water conservation	Managing The Water's Edge, Caring For The Green Zone pg. 2-3
	T21	Describe where to find a riparian area in an agricultural landscape.	Managing The Water's Edge, Caring For The Green Zone pg. 4-6;
	T22	Describe the key ecological functions of a healthy riparian area.	Managing The Water's Edge, Caring For The Green Zone pg. 7-11;
	T23	Describe the indicators of riparian health.	Managing The Water's Edge, Caring For The Green Zone pg. 16-24;
	T24	Describe how soil quality is affected by soil management in the agricultural context.	
	T25	Describe how water quality is affected by water management in the agricultural context.	
	T26	Describe the role of vegetation (type, presence and abundance) in soil and water conservation.	Managing The Water's Edge, Caring For The Green Zone pg. 16-20; Shelterbelts in Alberta; Planning Farm Shelterbelts
	T27	Explain how the quality of water used for irrigation affects soil quality.	
	T28	Explain how agricultural soil management affects sediment, pesticide, and nutrient content in runoff water and water bodies.	

Outcome Cluster	Code	Manitoba Envirothon Outcomes	Resource Correlations
	T29	Explain why the term <i>beneficial management practice</i> is preferable to <i>best management practice</i> .	
	T30	List beneficial management practices for soil and water conservation in agriculture.	GAEGS BMP Catalogue; Agri-Environmental Bulletin; Shelterbelts in Alberta; Soil Texture & Water Quality BMPs for Different Soil Textures;
	T31	Describe how different beneficial management practices in agriculture conserve soil and water.	GAEGS BMP Catalogue; South Tobacco Creek BMP Document;
	T32	Recommend beneficial management practices for soil and water conservation in specific agricultural situations.	GAEGS BMP Catalogue; South Tobacco Creek BMP Document; Soil Texture & Water Quality BMPs for Different Soil Textures;
	T33	Recommend beneficial management practices for improving the ability of riparian areas to conserve water quality.	GAEGS BMP Catalogue pg. 4-5; Managing The Water's Edge; Caring For The Green Zone pg. 37-39;
	T34	Describe how to implement beneficial management practices for soil and water conservation in agriculture.	GAEGS BMP Catalogue; Shelterbelts in Alberta; Planning Farm Shelterbelts;
	T35	Define conservation stewardship in the agricultural context.	
Roles of Conservation Stewardship Participants in Agricultural Soil and Water	T36	Describe how Manitoba agricultural producers contribute to the health of Manitoba watersheds.	Managing The Water's Edge; Caring For The Green Zone pg. 40-42;
	T37	Describe how agricultural producers balance environmental quality with their goals and of food production, job creation, economic stimulus, and their own quality of life.	Soil Management Guide Chapter 10;

Outcome Cluster	Code	Manitoba Envirothon Outcomes	Resource Correlations
Conservation	T38	Describe the role of consumers and the general public in balancing the quality of the environment with agriculture.	Soil Management Guide pg. 119;
	T39	Describe the role of the federal and the provincial governments in delivering conservation programs, education, and policies that benefit both agricultural producers and the environment.	Soil Management Guide pg. 119; South Tobacco Creek BMP Document;
	T40	Describe the roles of Manitoba's rural municipalities and conservation districts in delivering conservation programs, education, and policies that benefit both agricultural producers and the environment.	
	T41	Describe the role of non-governmental organizations in balancing the quality of the environment with agriculture.	