

LONE STAR HEALTHY STREAMS

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October 24, 2011
TSSWCB Annual Meeting of SWCD Directors






BACKGROUND

- More than **50%** of impairments in Texas are due to excess bacteria levels.

WATER QUALITY LAW

- Clean Water Act
- Water bodies not meeting water quality standards for designated uses are placed on CWA 303(d) List.
 - 295 water bodies listed for bacteria in 2008 report
- Texas has 13 years from time of listing to complete a Total Maximum Daily Load (TMDL).
 - 100+ bacteria TMDLs completed by August 2009

SOURCES OF BACTERIA



Sources of Bacteria

LONE STAR HEALTHY STREAMS

- Protection of Texas waterways from bacterial contamination originating from:
- Funding provided from CWA 319 funds from the TSSWCB and EPA to AgriLife Extension Service.

BEEF CATTLE



DAIRY CATTLE



HORSES



FERAL HOGS



POULTRY



BEST MANAGEMENT PRACTICES

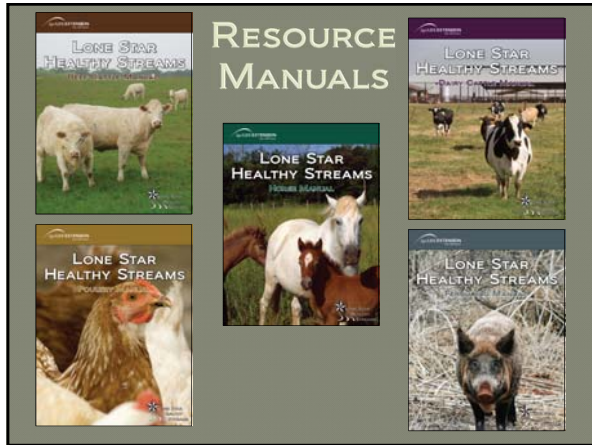
- Top BMPs for each animal category were selected and prioritized.
- BMPs organized by categories:
 - Grazing management
 - Runoff management
 - Riparian area protection & management
 - Manure management
 - Mortality management

PRIORITY BMPs

BMP CATEGORY	BEEF CATTLE (GRAZING)	DAIRY CATTLE		HORSES	POULTRY	FERAL HOGS
		CONFINED	GRAZING			
GRASSLAND MANAGEMENT	Prescribed grazing (225A)	x	Prescribed grazing (225A)		x	x
RUNOFF MANAGEMENT	Filter strips (NRCS Code 310)	x	Filter strips (NRCS Code 310)	Filter strips (NRCS Code 310)	Filter strips (NRCS Code 310)	x
	Pasture buffers (NRCS Code 310)	x	Pasture buffers (NRCS Code 310)	Buffering practices	Pasture buffers (NRCS Code 310)	x
	Grassed waterways	x	Grassed waterways	Roof runoff structure (NRCS Code 318)	Grassed waterways	x
	Roof runoff structure (NRCS Code 318)	x	Roof runoff structure (NRCS Code 318)	Water harvesting catchment (NRCS Code 318)	Roof runoff structure (NRCS Code 318)	x
	Roof runoff structure (NRCS Code 318)	x	Roof runoff structure (NRCS Code 318)	Roof runoff structure (NRCS Code 318)	Roof runoff structure (NRCS Code 318)	x
WATERWAY PROTECTION & MANAGEMENT	Stream structures (NRCS Code 317)	x	Stream structures (NRCS Code 317)	Stream structures (NRCS Code 317)	x	x
	Stream crossing (NRCS Code 318)	x	Stream crossing (NRCS Code 318)	Stream crossing (NRCS Code 318)	x	x
	Wetland facility (NRCS Code 614)	x	Wetland facility (NRCS Code 614)	Wetland facility (NRCS Code 614)	x	x
	Fence, rail, and/or mineral locations	x	Fence, rail, and/or mineral locations	Access control (NRCS Code 422)	x	x
	Fence, rail, and/or mineral locations (NRCS Code 565)	x	Fence, rail, and/or mineral locations (NRCS Code 565)	Fence, rail, and/or mineral locations (NRCS Code 565)	x	x
	Toxins, herbicides, pesticides	x	Toxins, herbicides, pesticides	Toxins, herbicides, pesticides	x	x
	Fencing (NRCS Code 382)	x	Fencing (NRCS Code 382)	Fencing (NRCS Code 382)	x	x
	Access control (NRCS Code 422)	x	Access control (NRCS Code 422)	Access control (NRCS Code 422)	x	x
	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal
	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal	Proper carcass disposal
WASTEWATER MANAGEMENT	Manure treatment system (NRCS Code 312)	x	Manure treatment system (NRCS Code 312)	Manure storage structure (NRCS Code 312)	Manure storage structure (NRCS Code 312)	x
	Manure storage structure (NRCS Code 312)	x	Manure storage structure (NRCS Code 312)	Manure storage structure (NRCS Code 312)	Manure storage structure (NRCS Code 312)	x
	Soil testing & nutrient management (NRCS Code 310)	x	Soil testing & nutrient management (NRCS Code 310)	Soil testing & nutrient management (NRCS Code 310)	Soil testing & nutrient management (NRCS Code 310)	x
	Water treatment (NRCS Code 422)	x	Water treatment (NRCS Code 422)	Composting (NRCS Code 317)	Composting (NRCS Code 317)	x
	Composting (NRCS Code 317)	x	Composting (NRCS Code 317)	Composting (NRCS Code 317)	Composting (NRCS Code 317)	x
ETHICAL TECHNIQUES (veal tags only)	x	x	x	x	x	Shipping, Handling and Shipping
WELFARE TECHNIQUES (veal tags)	x	x	x	x	x	Fencing
TOTAL BMPs	11	11	11	14	10	5

RESOURCE MANUALS

- Top BMPs will be framework for development of 5 resource manuals.
- Contents
 - Background
 - Water law/policy
 - Bacteria fate and transport
 - Best Management Practices (BMPs)
 - Description
 - Bacteria removal efficiency
 - Cost



PROGRAM DEVELOPMENT COMMITTEE

BEEF	DAIRY	HORSE	POULTRY	FERAL HOGS	TSSWCB	Extension Administration	TWRI
Larry Redmon	Ellen Jordan	Dennis Sigler	Mark Cochran	Jim Cathey	Aaron Wendt	Pete Gibbs	Kevin Wagner
Saqib Mukhtar	Sam Feagley	Saqib Mukhtar	Craig Coufal		Mitch Conine	Ronald Woolley	Brian VanDelist
	Todd Bilby	Joe Paschal	Daren Harmel		Mark Cochran	Monty Dozier	
	Saqib Mukhtar		Saqib Mukhtar			Galen Chandler	
						Marvin Ensor	

INDUSTRY GROUP PARTICIPATION

BEEF	DAIRY	HORSE	POULTRY	FERAL HOGS
Texas Farm Bureau	Texas Farm Bureau	Texas Farm Bureau	Texas Farm Bureau	Texas Farm Bureau
Texas Animal Health Commission	Texas Animal Health Commission	Texas Animal Health Commission	Texas Animal Health Commission	Texas Animal Health Commission
Texas and Southwestern Cattle Raisers Association	Texas Association of Dairymen	Texas H.O.R.S.E.	Texas Poultry Federation	Texas and Southwestern Cattle Raisers Association
				USDA-APHIS
				Noble Foundation
				TAMU Wildlife and Fisheries
				Texas Parks and Wildlife
				Texas Pork Producers
				Texas Wildlife Association

OTHER AVAILABLE RESOURCES

- Project website (<http://lshs.tamu.edu>)
- Project factsheet/brochure
- Research bibliography/database
- Voice-over PowerPoint presentation
- Online/interactive version of resource manuals (planned)

HOW CAN YOU HELP?

- Review of top BMPs for each animal category.
- Review of resource manuals once they become available.
- Industry endorsement.

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