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Table A-1. 2010 Impaired Waterbodies, Impairment Causes, Impaired Uses, and Impairment Cause Status in the Landusky TPA

Waterbody &	Waterbody ID	Impairment Cause	TMDL Pollutant	Impaired Use(s)	Impairment Cause Status
Location Description			Category		
ALDER GULCH,	MT40E002_050	Cadmium	Metals	Aquatic Life	Addressed by Cadmium TMDL
headwaters to mouth				Warm Water Fishes	
(Ruby Creek)		Copper	Metals	Aquatic Life	Addressed by Copper TMDL
				Warm Water Fishes	
		Lead	Metals	Aquatic Life	Addressed by Lead TMDL
				Warm Water Fishes	
		Mercury	Metals	Aquatic Life	Addressed by Mercury TMDL
				Warm Water Fishes	
		Selenium	Metals	Aquatic Life	Addressed by Selenium TMDL
				Warm Water Fishes	
		Zinc	Metals	Aquatic Life	Addressed by Zinc TMDL
				Warm Water Fishes	
		рН	pH/Acidity/Caust	Aquatic Life	Addressed by cadmium TMDL
			ic Conditions	Warm Water Fishes	
		Alteration in stream-side or	Non-pollutant	Aquatic Life	Not yet addressed by a TMDL or
		littoral vegetative covers		Warm Water Fishes	restoration plan
BEAVER CREEK,	MT40M001_011	Cadmium	Metals	Aquatic Life	Not impaired based on updated
headwaters to Fort				Warm Water Fishes	assessment
Belknap Reservation		Iron	Metals	Aquatic Life	Not impaired based on updated
boundary				Warm Water Fishes	assessment
		Lead	Metals	Aquatic Life	Addressed by Lead TMDL
				Warm Water Fishes	

Table A-1. 2010 Impaired Waterbodies, Impairment Causes, Impaired Uses, and Impairment Cause Status in the Landusky TPA

Waterbody &	Waterbody ID	Impairment Cause	TMDL Pollutant	Impaired Use(s)	Impairment Cause Status
Location Description			Category		
BIG HORN CREEK, SOUTH FORK,	MT40I001_030	Aluminum	Metals	Aquatic Life, Cold Water Fishes	Addressed by Aluminum TMDL
Zortman Mine to Fort Belknap Reservation boundary		Arsenic	Metals	Aquatic Life Cold Water Fishes Drinking Water	Addressed by Arsenic TMDL
		Cadmium	Metals	Aquatic Life, Cold Water Fishery	Not impaired based on updated assessment
		Nickel	Metals	Aquatic Life Cold Water Fishes Drinking Water	Addressed by Nickel TMDL
		Zinc	Metals	Aquatic Life Cold Water Fishes	Addressed by Zinc TMDL
KING CREEK, headwaters to Fort	MT40I001_040	Selenium	Metals	Aquatic Life, Cold Water Fishery	Not impaired based on updated assessment
Belknap Reservation boundary		Alteration in stream-side or littoral vegetative covers	Non-pollutant	Aquatic Life, Cold Water Fishery	Not yet addressed by a TMDL or restoration plan
		Physical substrate habitat alterations	Non-pollutant	Aquatic Life, Cold Water Fishery	Not yet addressed by a TMDL or restoration plan
LODGE POLE CREEK, headwaters to Fort	MT40I001_050	Cadmium	Metals	Aquatic Life, Cold Water Fishery	Addressed by TMDL
Belknap Reservation boundary		Mercury	Metals	Aquatic Life, Cold Water Fishery Drinking Water	Addressed by Mercury TMDL
		Cause Unknown	Non-pollutant	Aquatic Life, Cold Water Fishery	Addressed by Cadmium TMDL

Table A-1. 2010 Impaired Waterbodies, Impairment Causes, Impaired Uses, and Impairment Cause Status in the Landusky TPA

Waterbody & Location Description	Waterbody ID	Impairment Cause	TMDL Pollutant Category	Impaired Use(s)	Impairment Cause Status
•	MT40E002_100	Copper	Metals	Aquatic Life Drinking Water Warm Water Fishes	Addressed by Copper TMDL
		Mercury	Metals	Aquatic Life Drinking Water Warm Water Fishes	Addressed by Mercury TMDL
		Lead	Metals	Aquatic Life Drinking Water Warm Water Fishes	Not impaired based on updated assessment
		Selenium	Metals	Aquatic Life Warm Water Fishes	Addressed by Selenium TMDL
		рН	pH/Acidity/Caust ic Conditions	Agriculture Aquatic Life Industrial Primary Contact Recreation	Addressed by Copper TMDL
		Alteration in stream-side or littoral vegetative covers	Non-pollutant	Aquatic Life Warm Water Fishes	Not yet addressed by a TMDL or restoration plan
MONTANA GULCH, headwaters to mouth	MT40E002_010	Arsenic	Metals	Aquatic Life Warm Water Fishes	Addressed by Arsenic TMDL
(Rock Creek)		Cadmium	Metals	Aquatic Life Warm Water Fishes	Addressed by Cadmium TMDL
		Copper	Metals	Aquatic Life Warm Water Fishes	Not impaired based on updated assessment
		рН	pH/Acidity/Caust ic Conditions	Aquatic Life Warm Water Fishes	Addressed by Cadmium TMDL

Table A-1. 2010 Impaired Waterbodies, Impairment Causes, Impaired Uses, and Impairment Cause Status in the Landusky TPA

Waterbody & Location Description	Waterbody ID	Impairment Cause	TMDL Pollutant Category	Impaired Use(s)	Impairment Cause Status
ROCK CREEK,	MT40E002_090	Cadmium	Metals	Aquatic Life	Addressed by Cadmium TMDL
headwaters to mouth	W1140E002_090	Cadilliulii	IVIELAIS	Warm Water Fishes	Addressed by Cadillidili Tivibl
(Missouri River)		Copper	Metals	Aquatic Life	Addressed by CopperTMDL
(IVIISSOUTI NIVEL)		Соррег	ivietais	Warm Water Fishes	Addressed by Copper HVIDE
		Mercury	Metals	Aguatic Life	Addressed by Mercury TMDL
		Wiercury	IVICIAIS	Warm Water Fishes	Addressed by Mercury TMDL
		Lead	Metals	Aguatic Life	Addressed by Lead TMDL
		Leau	IVICIAIS	Warm Water Fishes	Addressed by Lead TWIDL
		Selenium	Metals	Aquatic Life	Addressed by Selenium TMDL
		Selemani	IVIELAIS	Warm Water Fishes	Addressed by Selemani Tivible
		Zinc	Metals	Aquatic Life	Addressed by TMDL
		Ziric	IVICIAIS	Warm Water Fishes	Addressed by TWIDE
		рН	pH/Acidity/Caust	Aquatic Life	Addressed by Cadmium TMDL
		PIT	ic Conditions	Warm Water Fishes	Addressed by Cadmidin Tivible
		Alteration in stream-side or	Non-pollutant	Aquatic Life	Not yet addressed by a TMDL or
		littoral vegetative covers	Non-pollutarit	Warm Water Fishes	restoration plan
RUBY CREEK, un-	MT40E002 060	Aluminum	Metals	Aguatic Life	Addressed by Aluminum TMDL
named tributary T25N	1011402002_000	Aldillilalli	IVICIAIS	Warm Water Fishes	Addressed by Aldmindin Tivibl
R25E S21 to mouth		Cadmium	Metals	Aguatic Life	Addressed by Cadmium TMDL
(CK Creek)		Cadillalli	Wictais	Warm Water Fishes	Addressed by Cadmidin Tivibe
(Cit Circcity		Copper	Metals	Aquatic Life	Addressed by Copper TMDL
		Соррег	Wictais	Warm Water Fishes	Addressed by Copper Tivibe
		Mercury	Metals	Aquatic Life	Addressed by Mercury TMDL
		Wiercury	Wictais	Warm Water Fishes	Addressed by Weredry TWDL
		Lead	Metals	Aquatic Life	Addressed by Lead TMDL
		Lead	Wictais	Warm Water Fishes	ridaressed by Ledd TivibL
		Selenium	Metals	Aguatic Life	Addressed by Selenium TMDL
		Sciemani	Wictais	Warm Water Fishes	ridaressed by Scientani Tivibe
		Zinc	Metals	Aguatic Life	Addressed by Zinc TMDL
				Warm Water Fishes	7.55.55560 07 2.115 11152
		рН	pH/Acidity/Caust	Aquatic Life	Addressed by Cadmium TMDL
		F	ic Conditions	Warm Water Fishes	Tissue social by saaman miles

Table A-1. 2010 Impaired Waterbodies, Impairment Causes, Impaired Uses, and Impairment Cause Status in the Landusky TPA

Waterbody &	Waterbody ID	Impairment Cause	TMDL Pollutant	Impaired Use(s)	Impairment Cause Status
Location Description			Category		
RUBY GULCH,	MT40E002_070	Cadmium	Metals	Aquatic Life	Addressed by Cadmium TMDL
headwaters to				Warm Water Fishes	
confluence of Alder		Chromium	Metals	Aquatic Life	Addressed by Chromium TMDL
Gulch				Warm Water Fishes	
		Copper	Metals	Aquatic Life	Not impaired based on updated
				Warm Water Fishes	assessment
		Mercury	Metals	Aquatic Life	Addressed by Mercury TMDL
				Warm Water Fishes	
		Lead	Metals	Aquatic Life	Addressed by Lead TMDL
				Warm Water Fishes	
		Selenium	Metals	Aquatic Life	Addressed by selenium TMDL
				Warm Water Fishes	
		Zinc	Metals	Aquatic Life	Addressed by Zinc TMDL
				Warm Water Fishes	
		рН	pH/Acidity/Caust	Aquatic Life	Addressed by Cadmium TMDL
			ic Conditions	Warm Water Fishes	
SULLIVAN CREEK,	MT40E002_110	Alteration in stream-side or		Aquatic Life	Not yet addressed by a TMDL or
headwaters to mouth		littoral vegetative covers		Primary Contact	restoration plan
(Rock Creek)				Recreation	
				Warm Water Fishes	
		Fish-Passage Barrier	Non-pollutant	Aquatic Life	Not yet addressed by a TMDL or
				Primary Contact	restoration plan
				Recreation	
				Warm Water Fishes	
		Other flow regime	Non-pollutant	Aquatic Life	Not yet addressed by a TMDL or
		alterations		Primary Contact	restoration plan
				Recreation	
				Warm Water Fishes	
		Physical substrate habitat	Non-pollutant	Aquatic Life	Not yet addressed by a TMDL or
		alterations		Primary Contact	restoration plan
				Recreation	
				Warm Water Fishes	

Table A-1. 2010 Impaired Waterbodies, Impairment Causes, Impaired Uses, and Impairment Cause Status in the Landusky TPA

Waterbody &	Waterbody ID	Impairment Cause	TMDL Pollutant	Impaired Use(s)	Impairment Cause Status
Location Description			Category		
SWIFT GULCH CREEK,	MT40I002_010	Aluminum	Metals	Aquatic Life,	Addressed by Aluminum TMDL
headwaters to mouth				Cold Water Fishes	
(South Big Horn		Arsenic	Metals	Drinking Water	Addressed by Arsenic TMDL
Creek)		Cadmium	Metals	Aquatic Life,	Addressed by Cadmium TMDL
				Cold Water Fishes	
				Drinking Water	
		Copper	Metals	Aquatic Life,	Addressed by Copper TMDL
				Cold Water Fishes	
		Cyanide	Metals	Aquatic Life,	Addressed by Cyanide TMDL
				Cold Water Fishes	
		Iron	Metals	Aquatic Life,	Addressed by Iron TMDL
				Cold Water Fishes	
		Lead	Metals	Aquatic Life,	Not impaired based on updated
				Cold Water Fishes	assessment
		Nickel	Metals	Aquatic Life,	Addressed by Nickel TMDL
				Cold Water Fishes	
				Drinking Water	
		Selenium	Metals	Aquatic Life,	Not impaired based on updated
				Cold Water Fishes	assessment
		Thallium	Metals	Drinking Water	Addressed by Thallium TMDL
		Zinc	Metals	Aquatic Life,	Addressed by TMDL
				Cold Water Fishes	
				Drinking Water	
		рН	pH/Acidity/Caust	Aquatic Life,	Addressed by Cadmium TMDL
			ic Conditions	Cold Water Fishes	

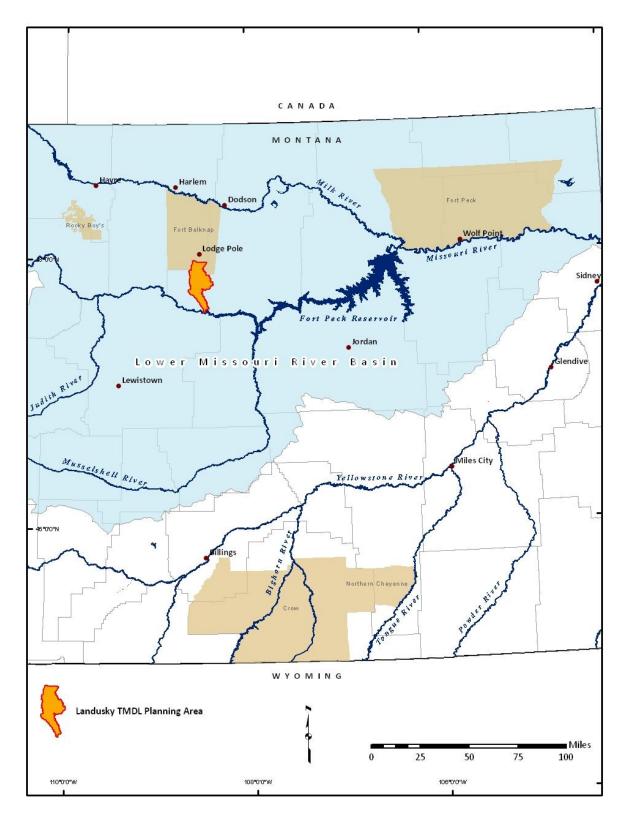


Figure A-1. Landusky TMDL Planning Area

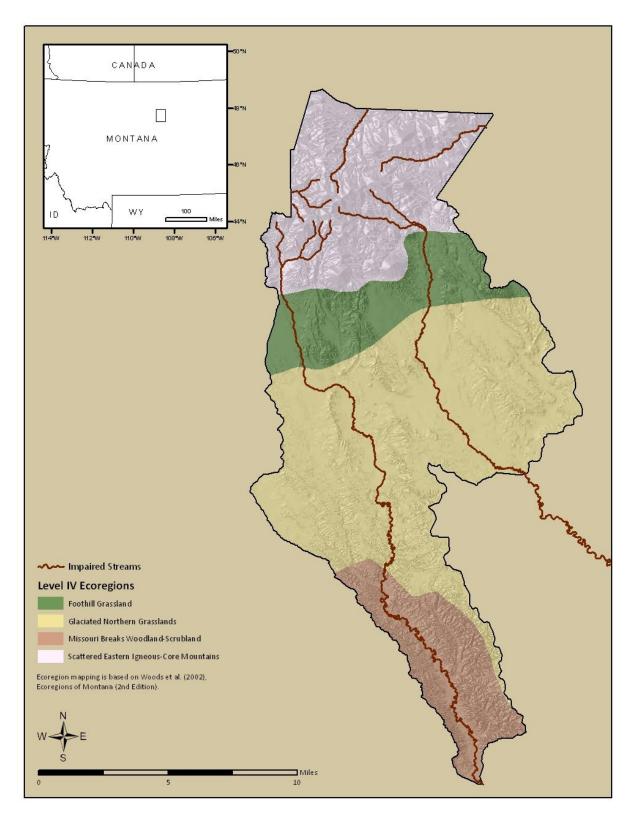


Figure A-2. Ecoregions

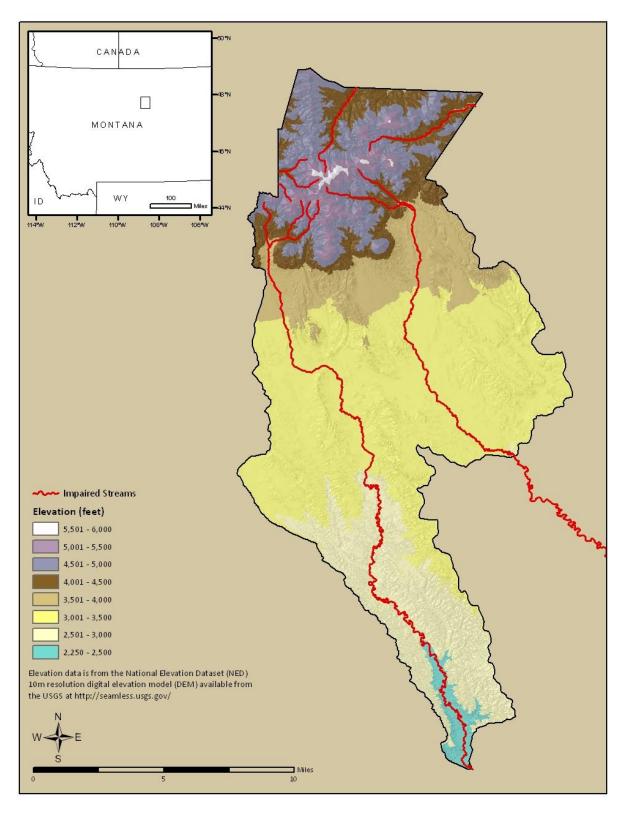


Figure A-3. Topography

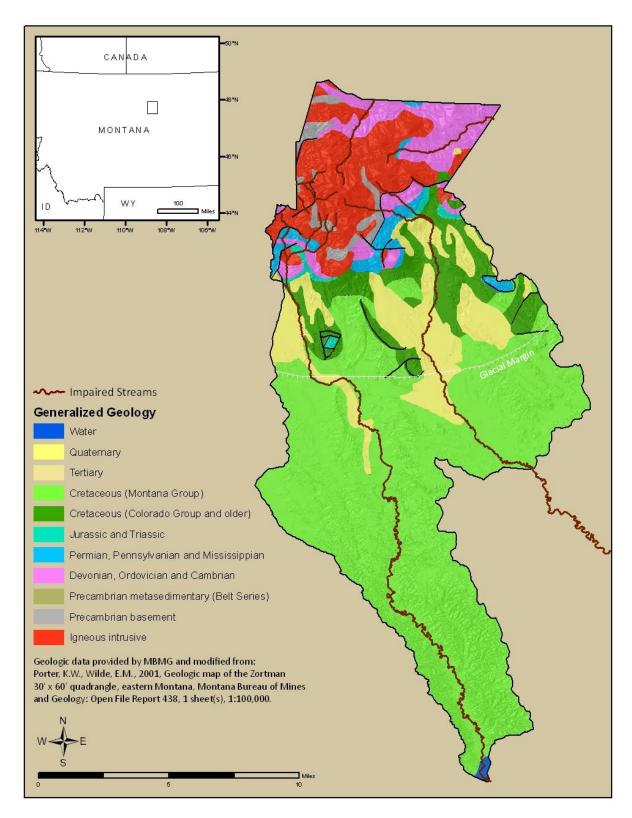


Figure A-4. Geology

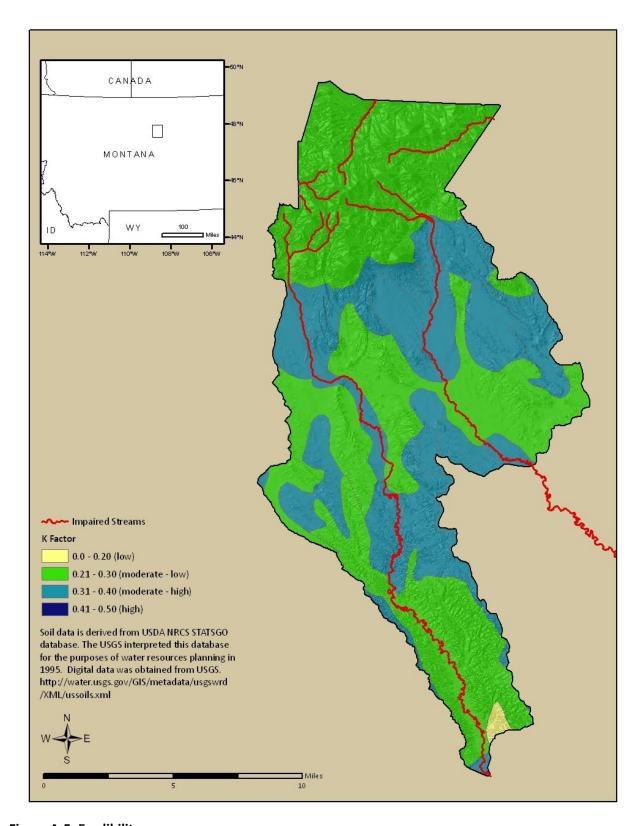


Figure A-5. Erodibility

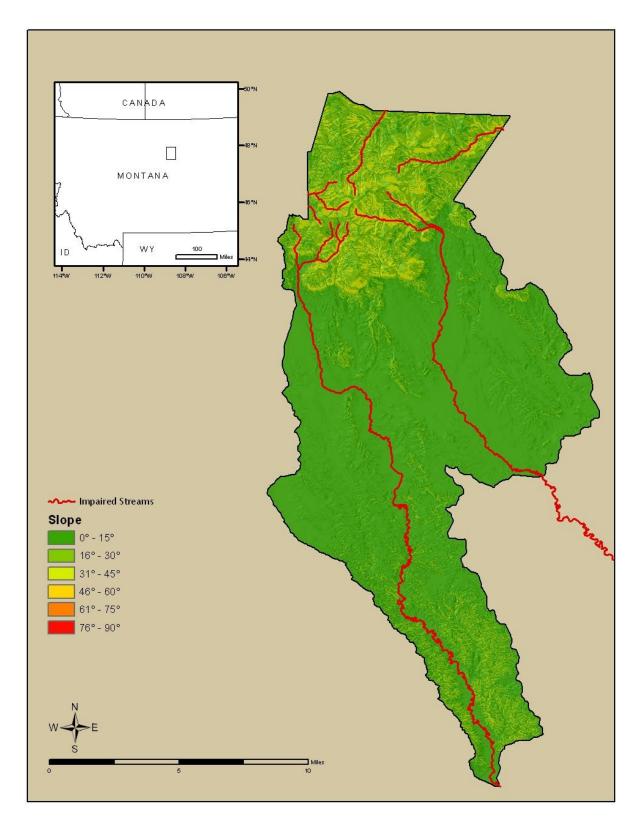


Figure A-6. Slope

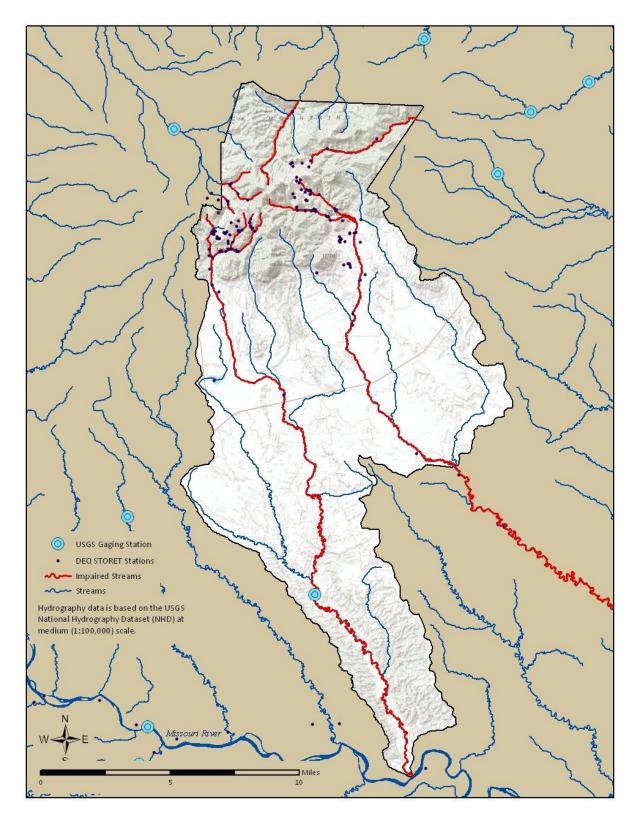


Figure A-7. Hydography

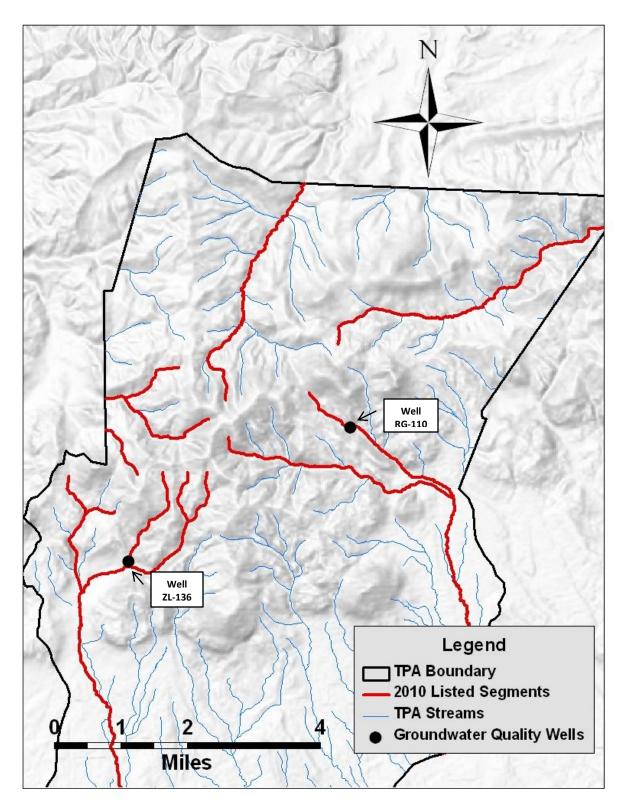


Figure A-8. Selected Ground Water Quality Well Sites

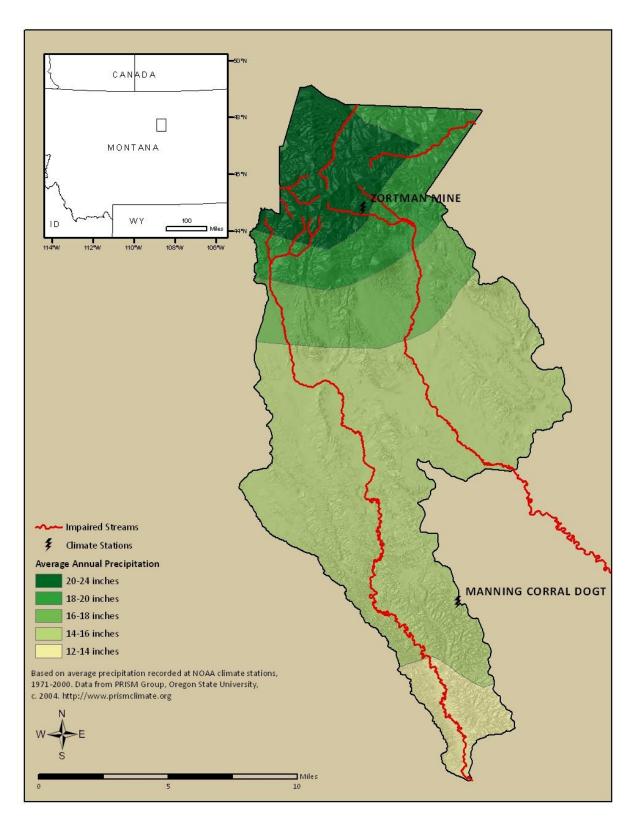


Figure A-9. Annual Precipitation

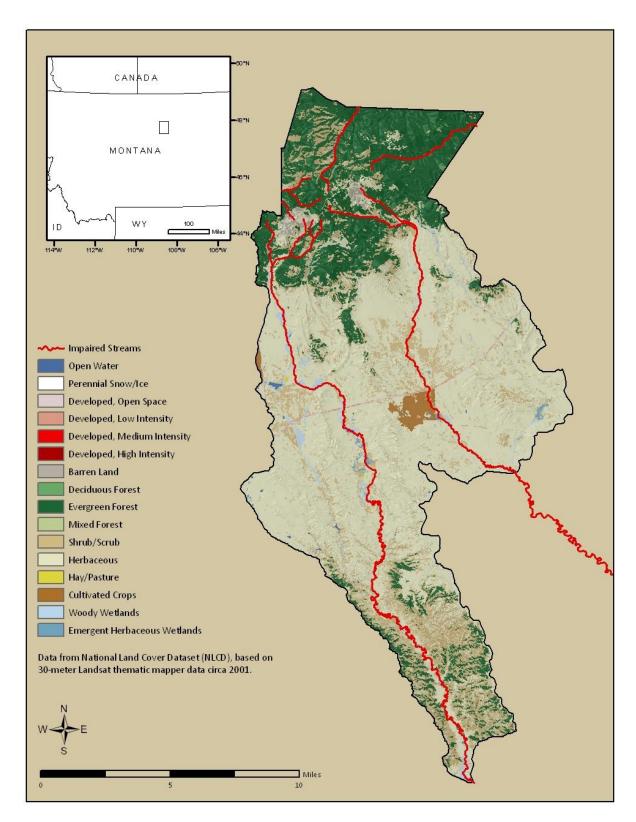


Figure A-10. Land Cover

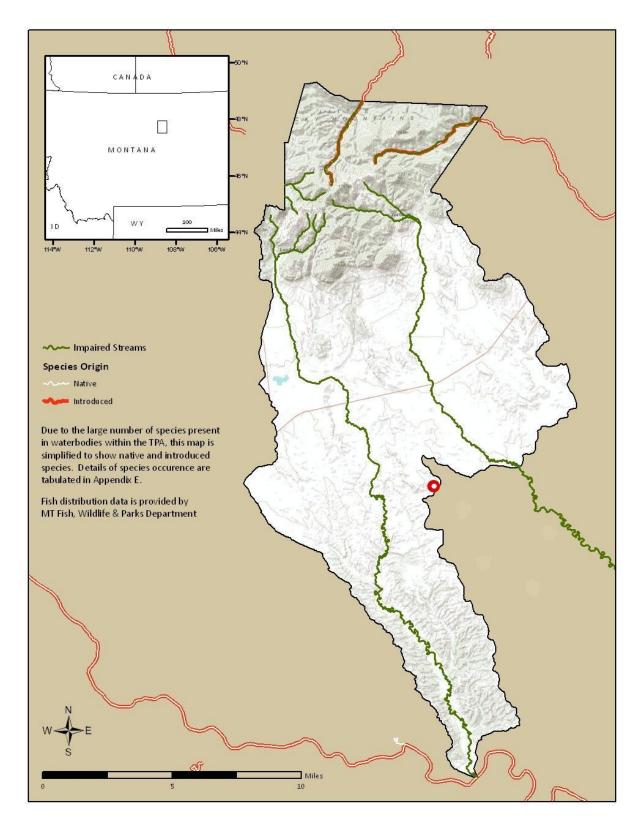


Figure A-11. Fish Distribution

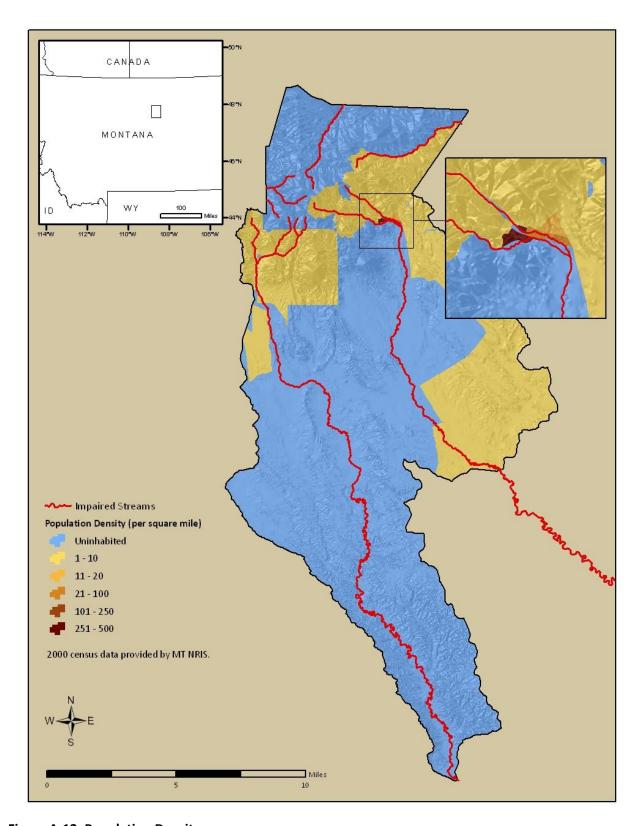


Figure A-12. Population Density

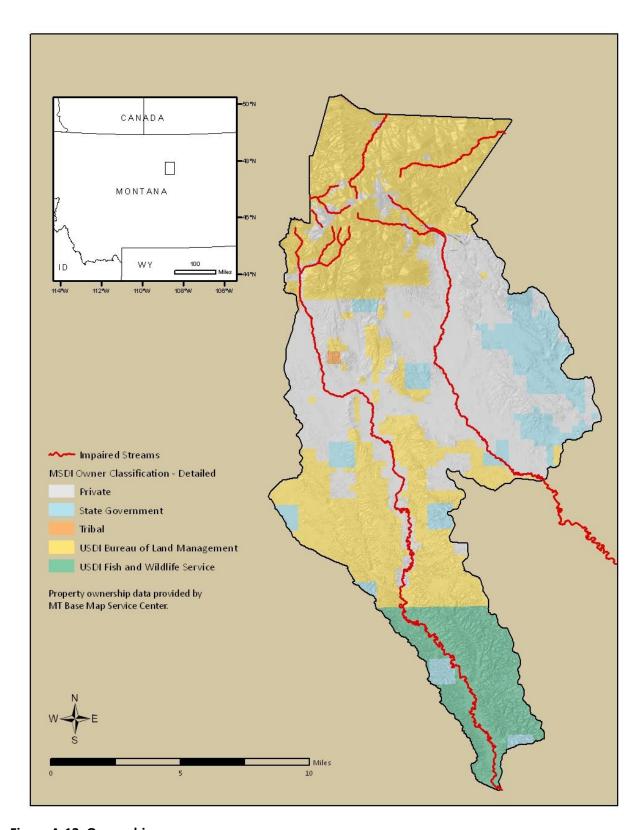


Figure A-13. Ownership

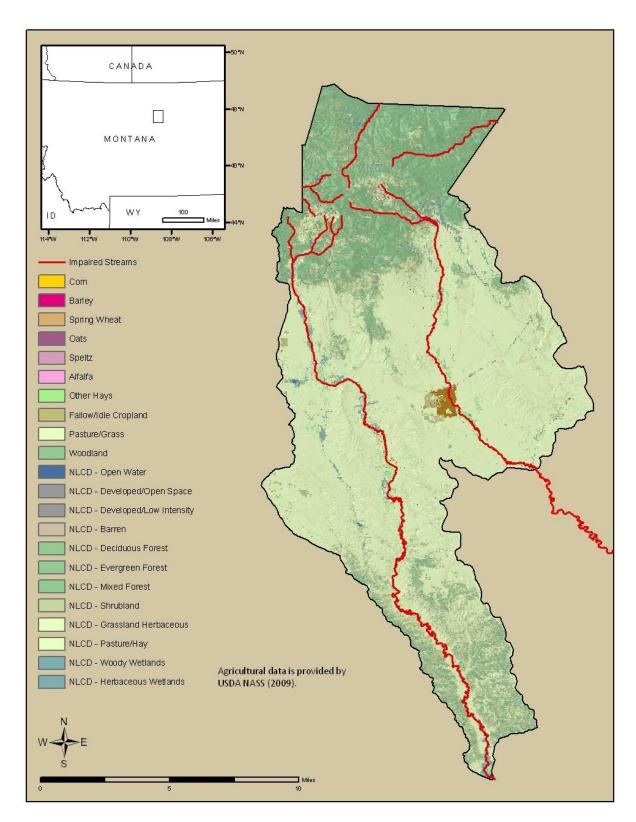


Figure A-14. Agricultural Use

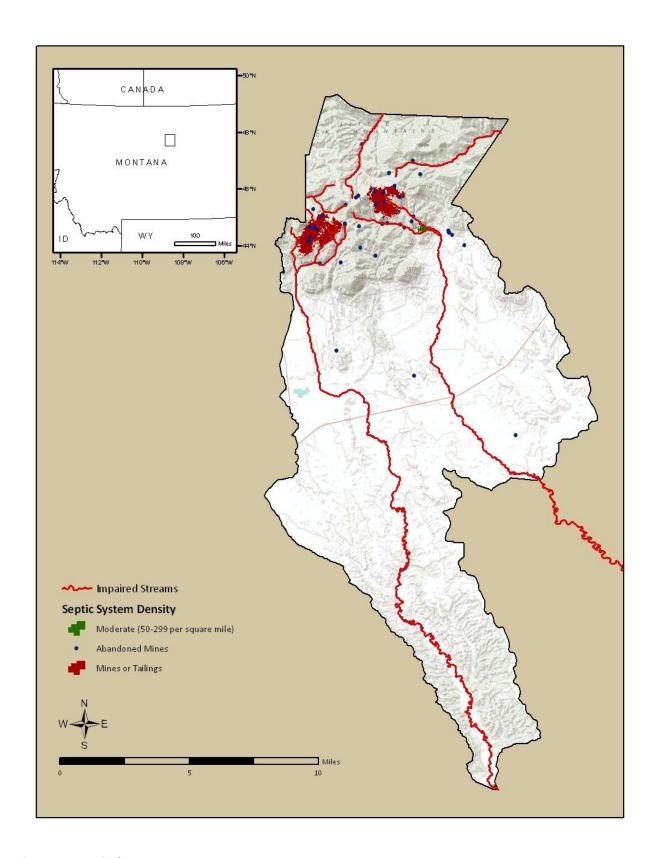


Figure A-15. Discharges

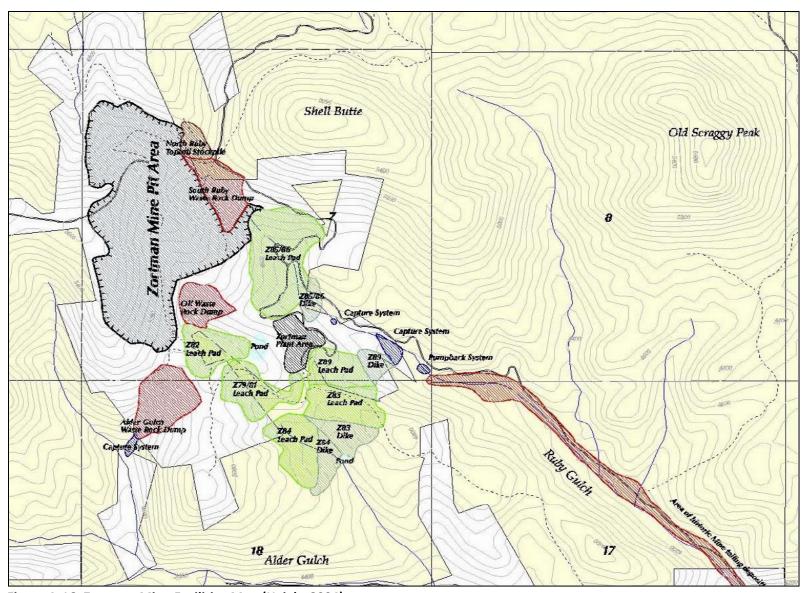


Figure A-16. Zortman Mine Facilities Map (Haight 2004).

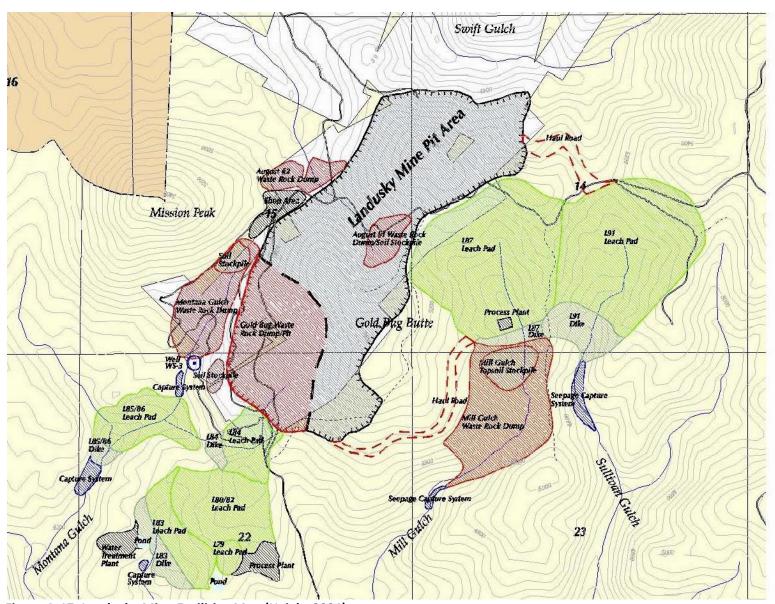


Figure A-17. Landusky Mine Facilities Map (Haight 2004).