APPENDIX A – OTTER CREEK WATERSHED DESCRIPTION TABLES AND FIGURES

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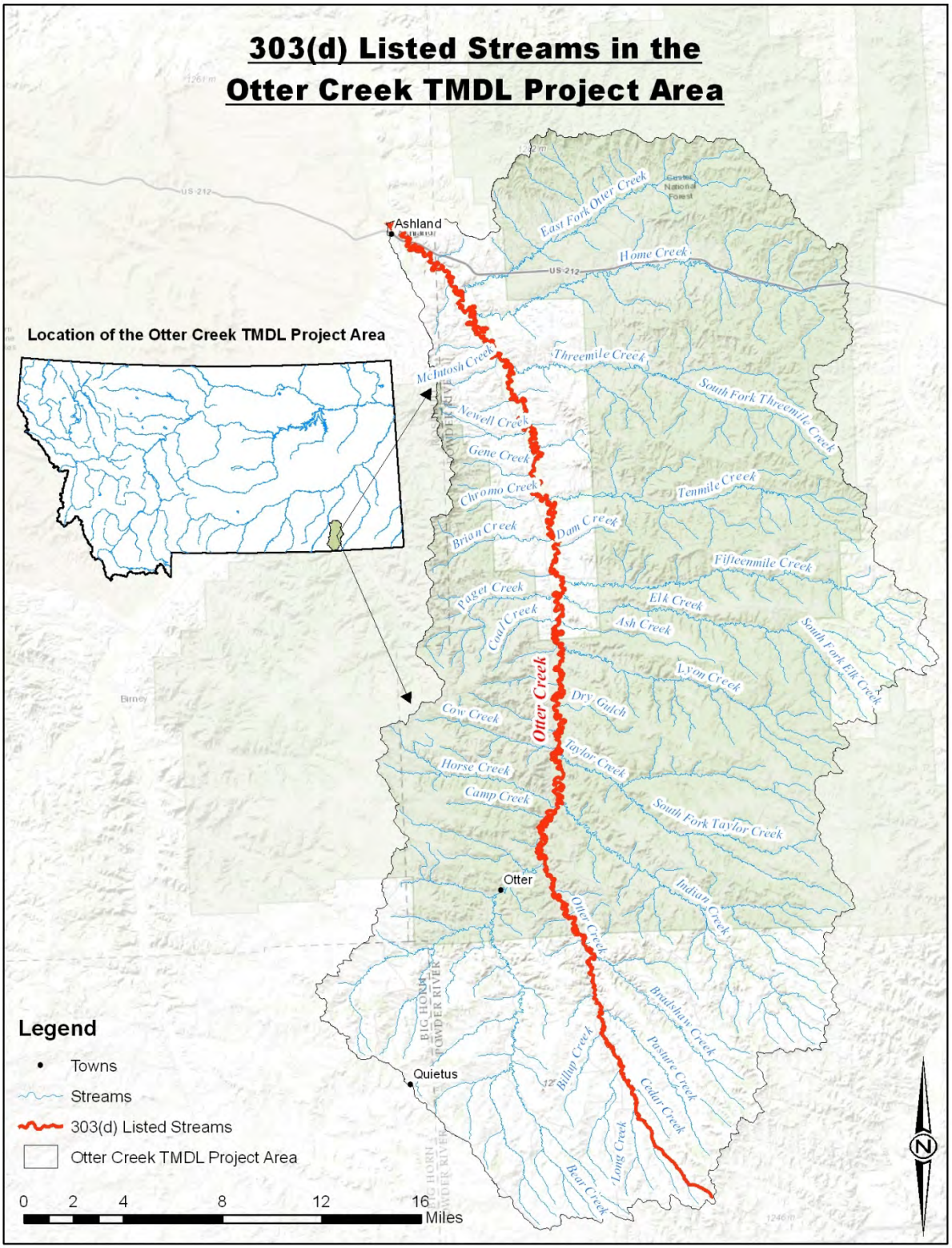

Figure A-1. Otter Creek watershed

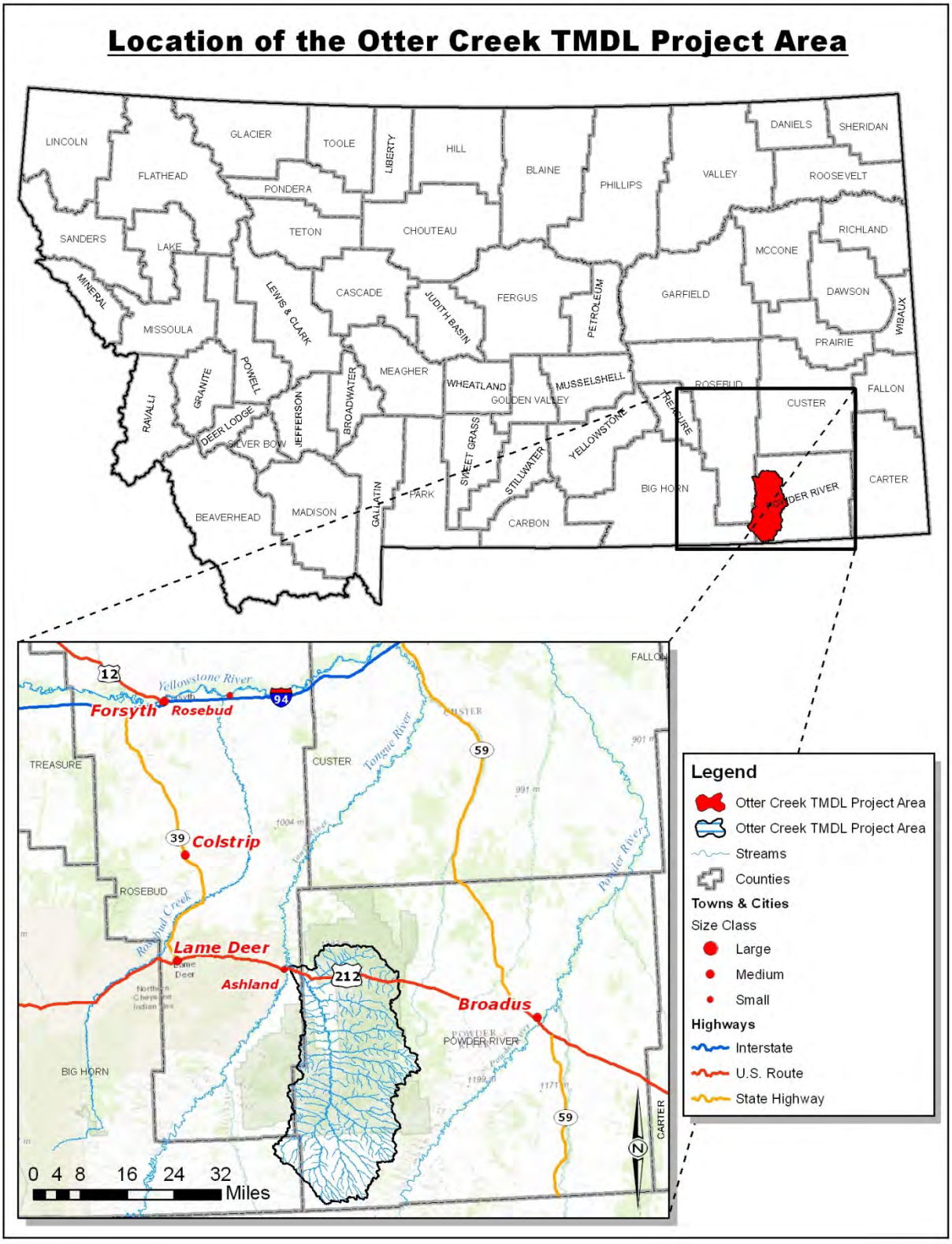

Figure A-2. Location of the Otter Creek TMDL Project Area

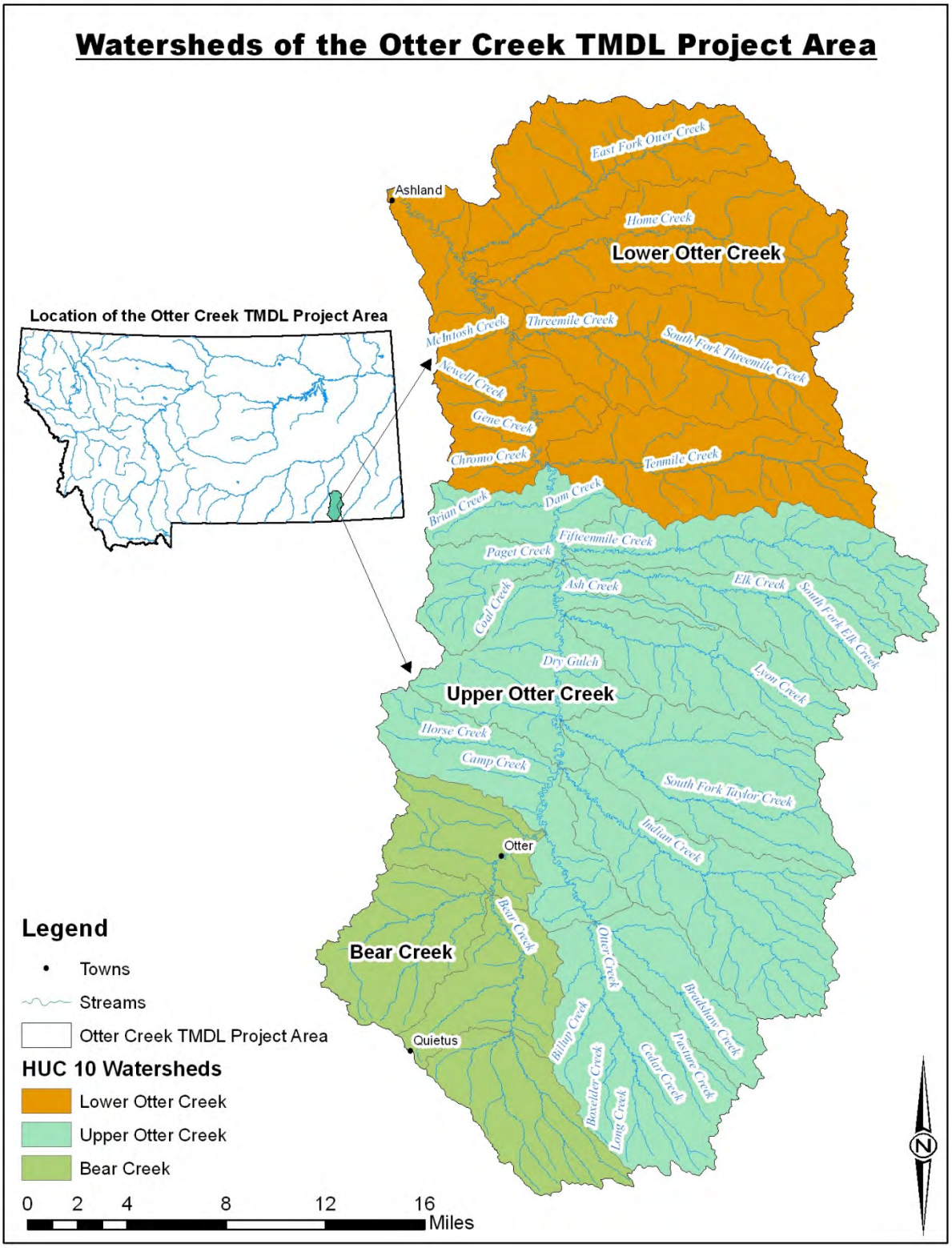

Figure A-3. Subwatersheds in the Otter Creek watershed

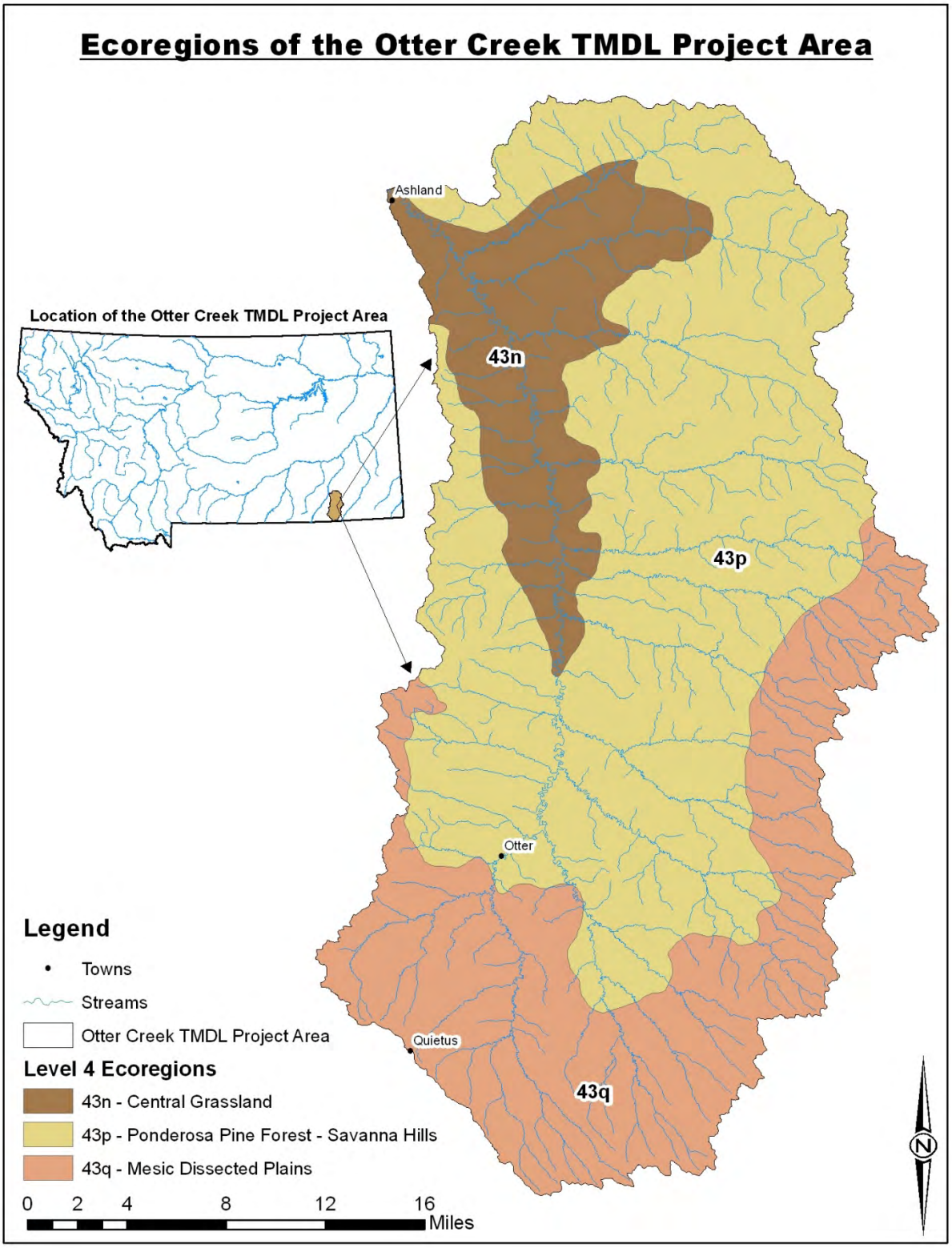

Figure A-4. Ecoregions in the Otter Creek TMDL Project Area

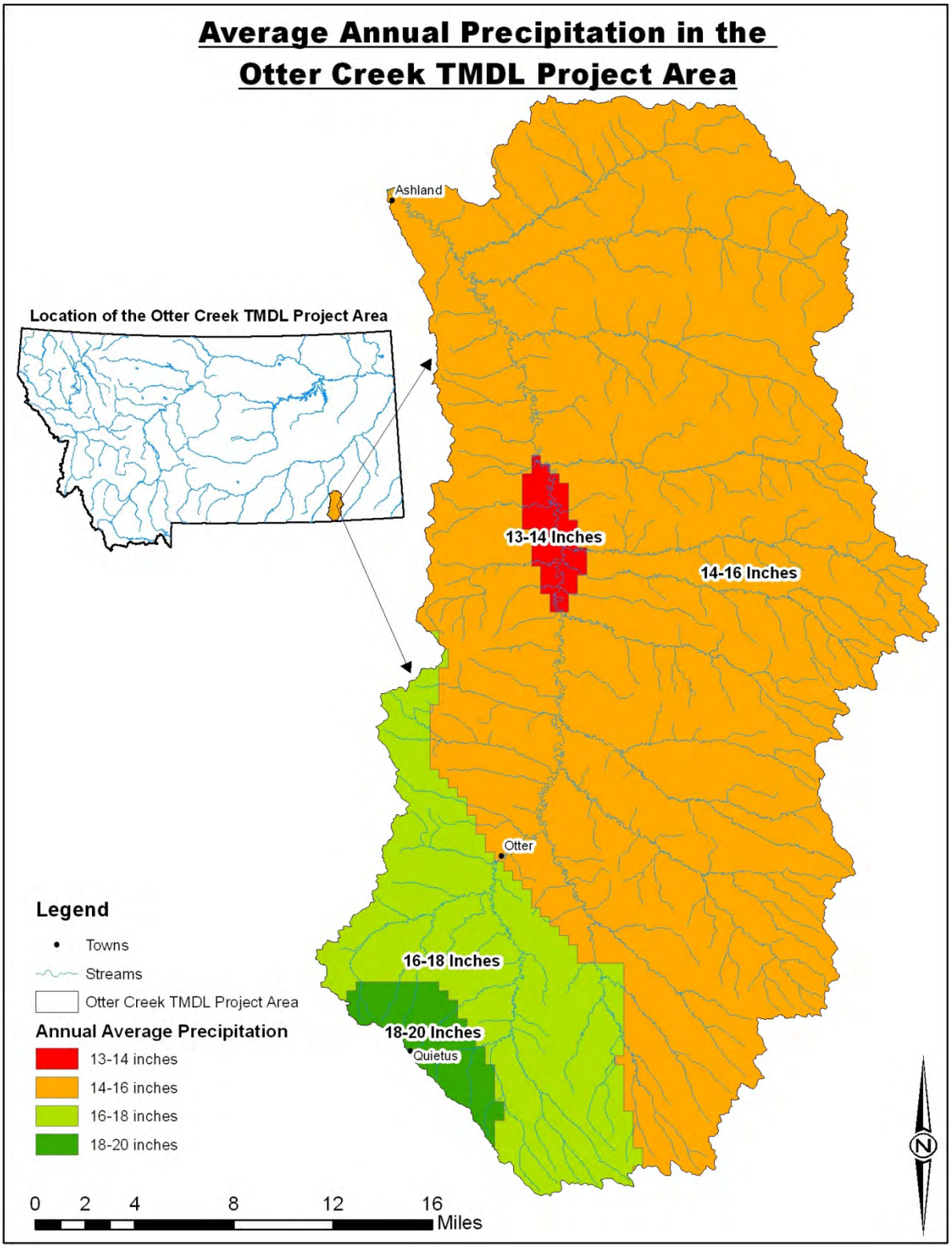

Figure A-5. Precipitation zones in the Otter Creek TMDL Project Area

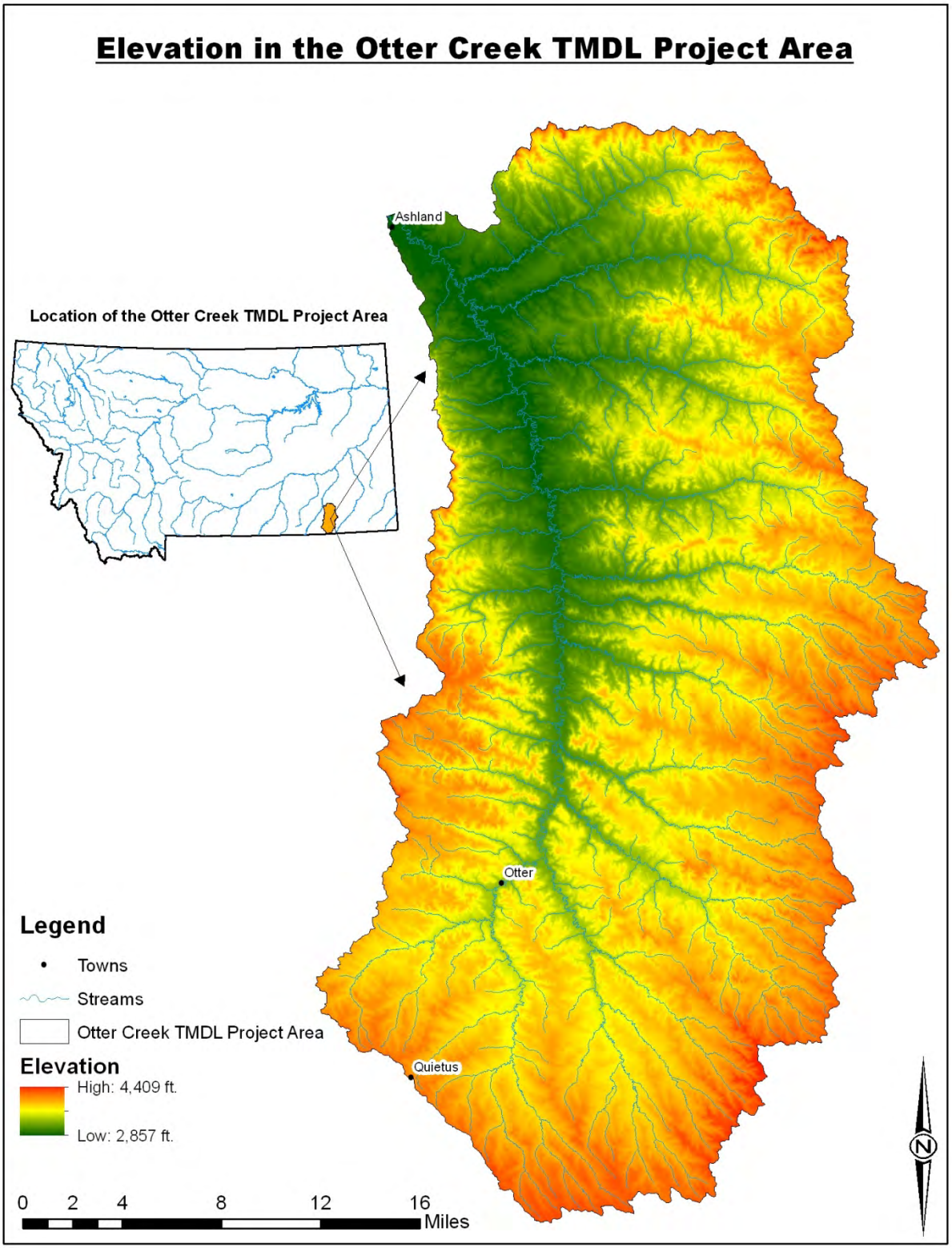

Figure A-6. Elevations of the Otter Creek TMDL Project Area

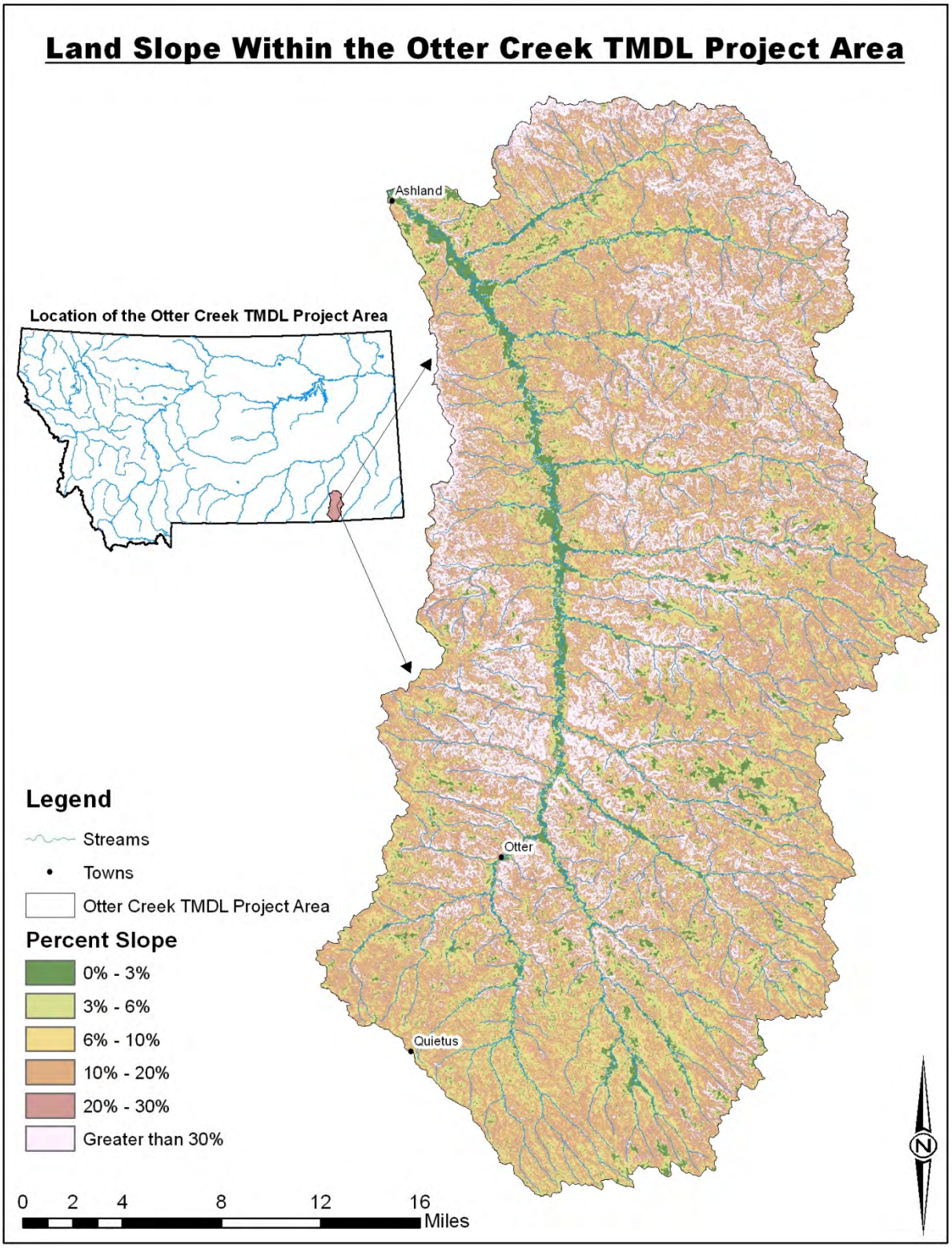

Figure A-7. Land Slope in the Otter Creek TMDL Project Area

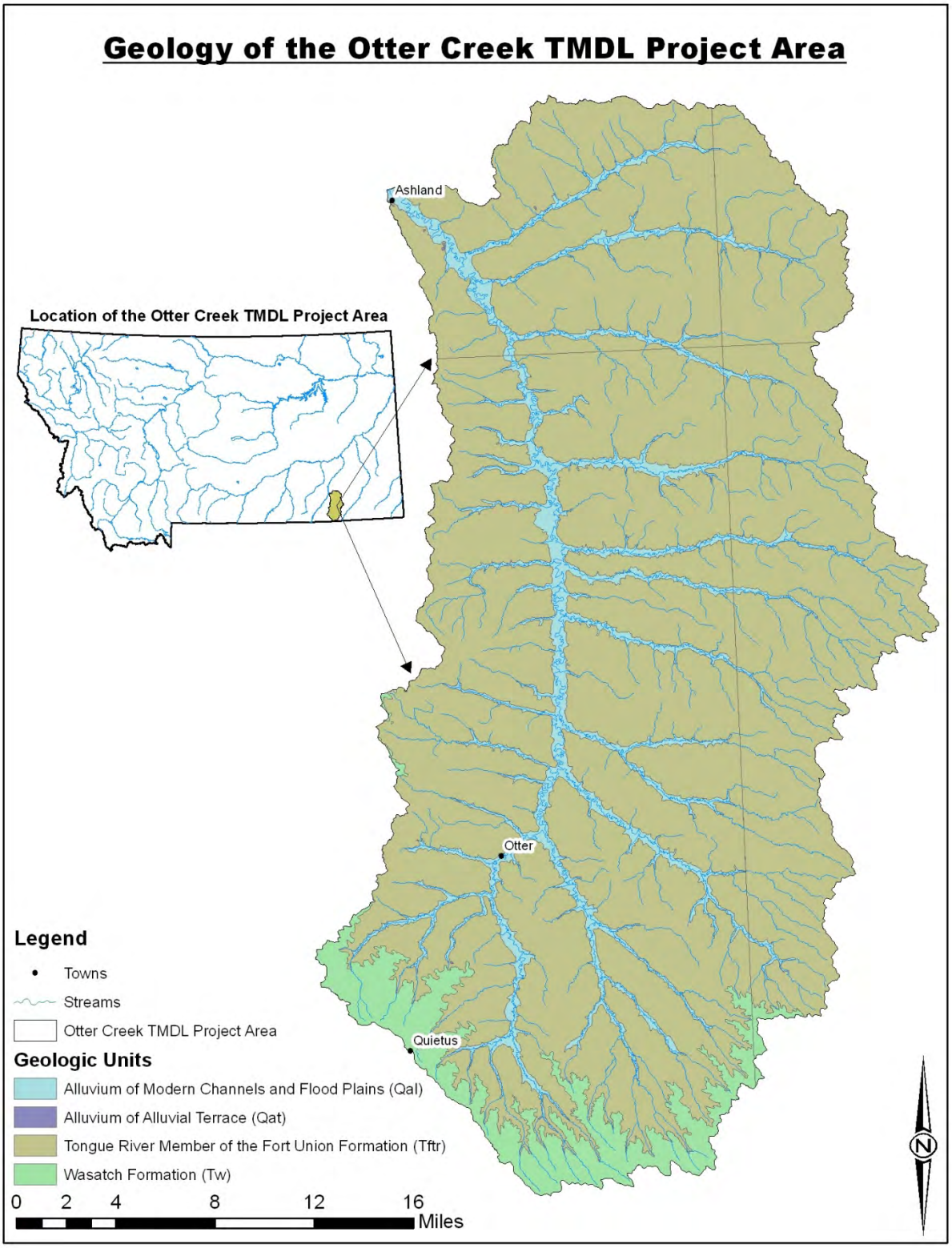

Figure A-8. Geology of the Otter Creek TMDL Project Area

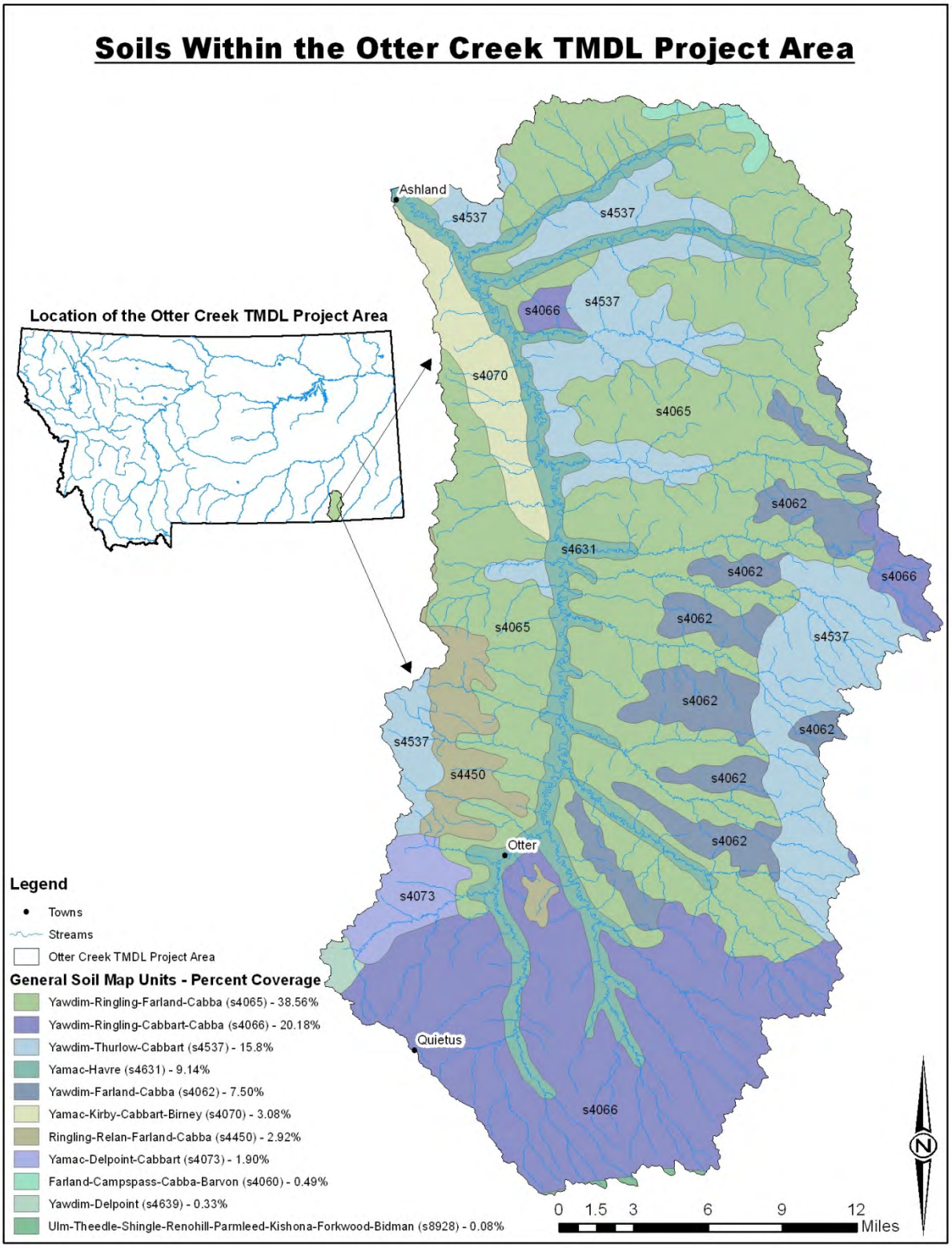

Figure A-9. Soils types within the Otter Creek TMDL Project Area

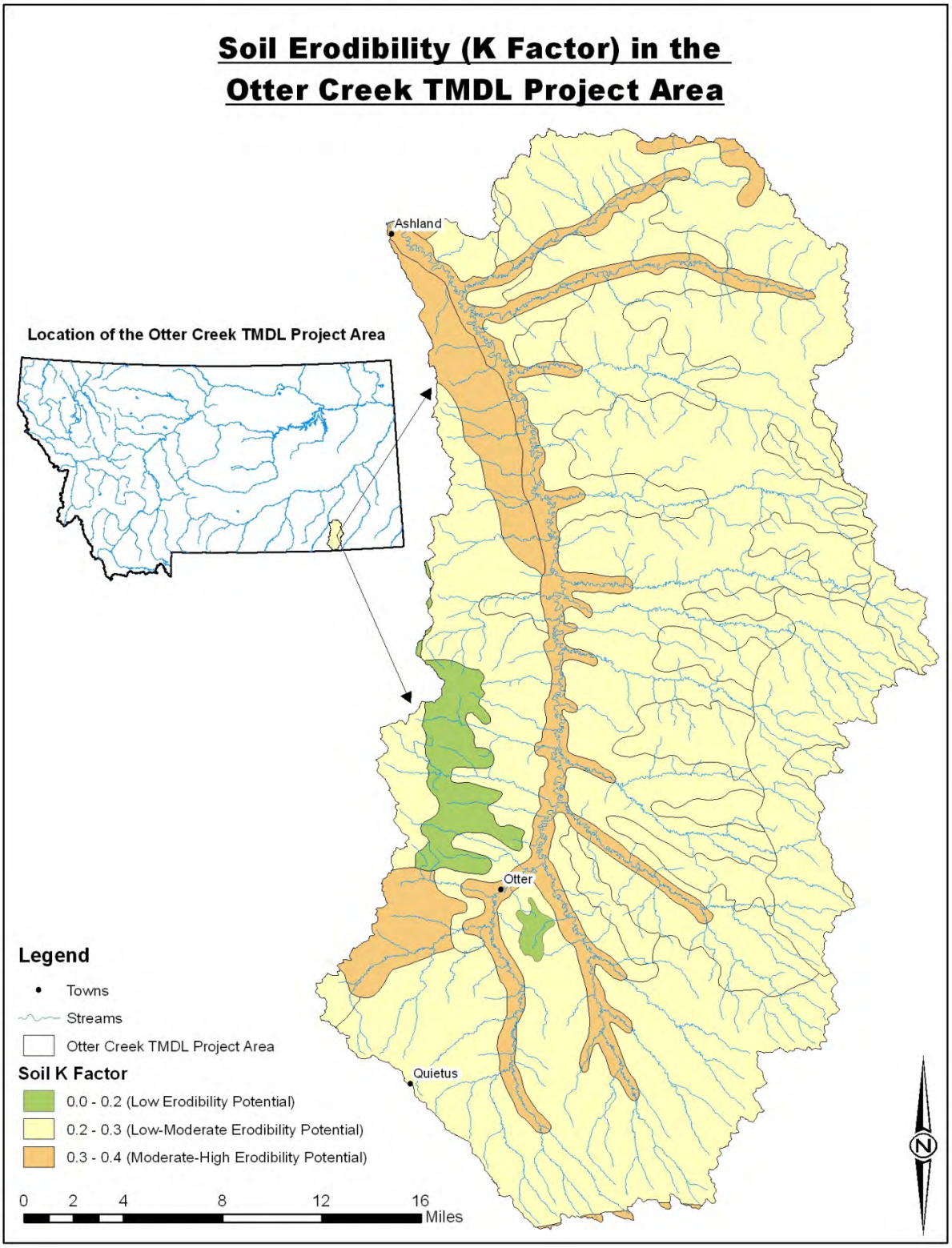

Figure A-10. Soil erodibility in the Otter Creek TMDL Project Area

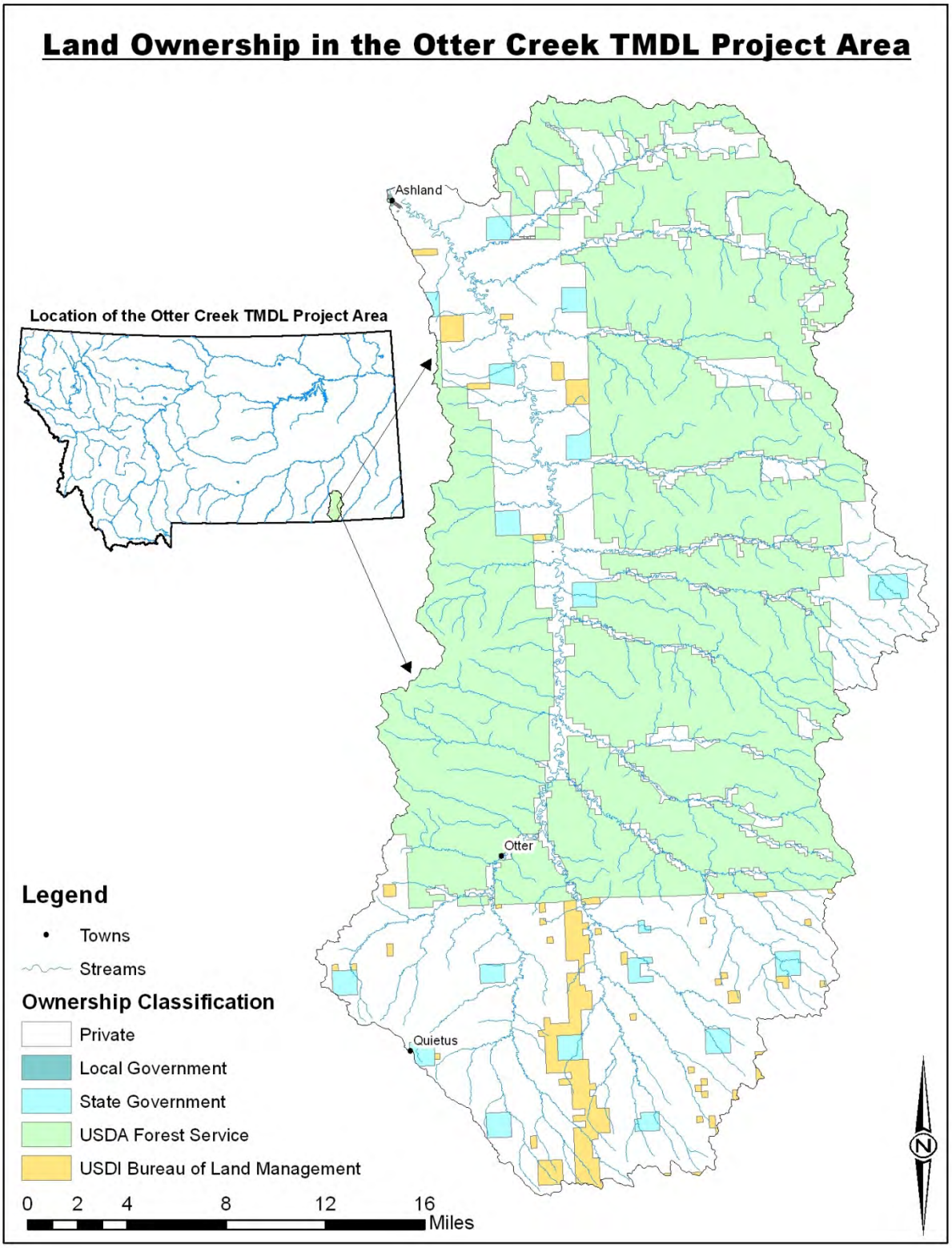

Figure A-11. Land ownership in the Otter Creek TMDL Project Area

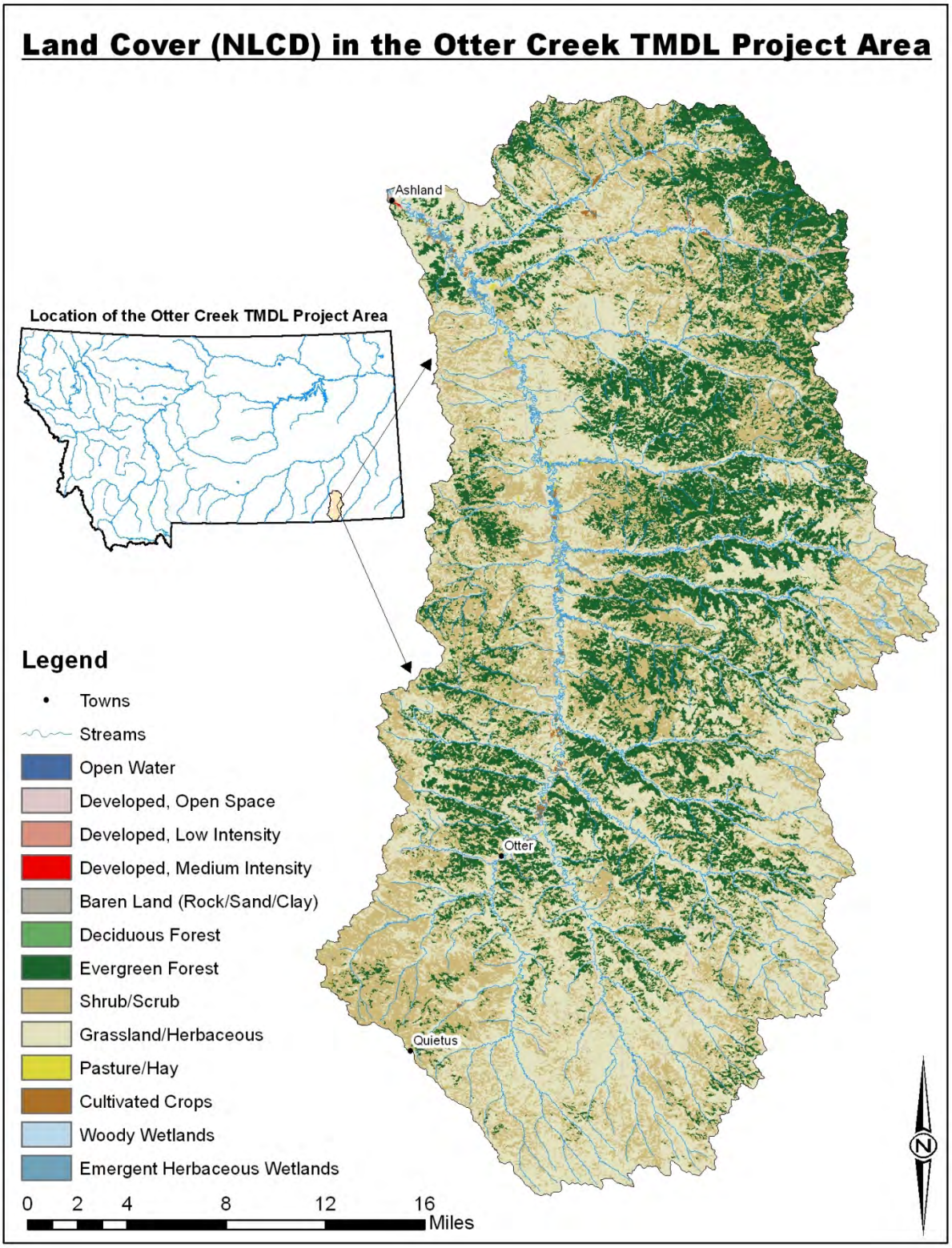

Figure A-12. Land uses in the Otter Creek TMDL Project Area

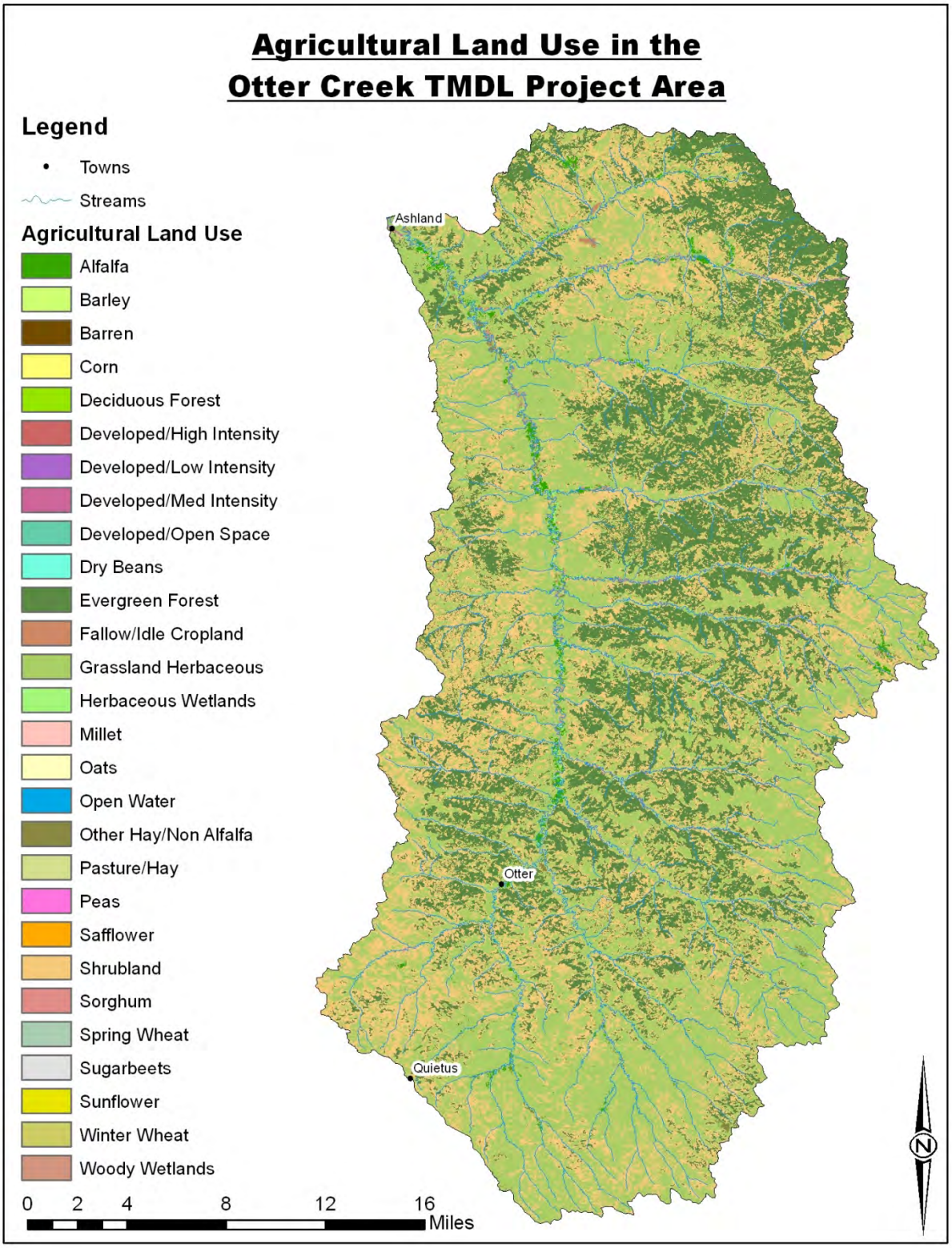

Figure A-13. Agricultural land uses in the Otter Creek TMDL Project Area

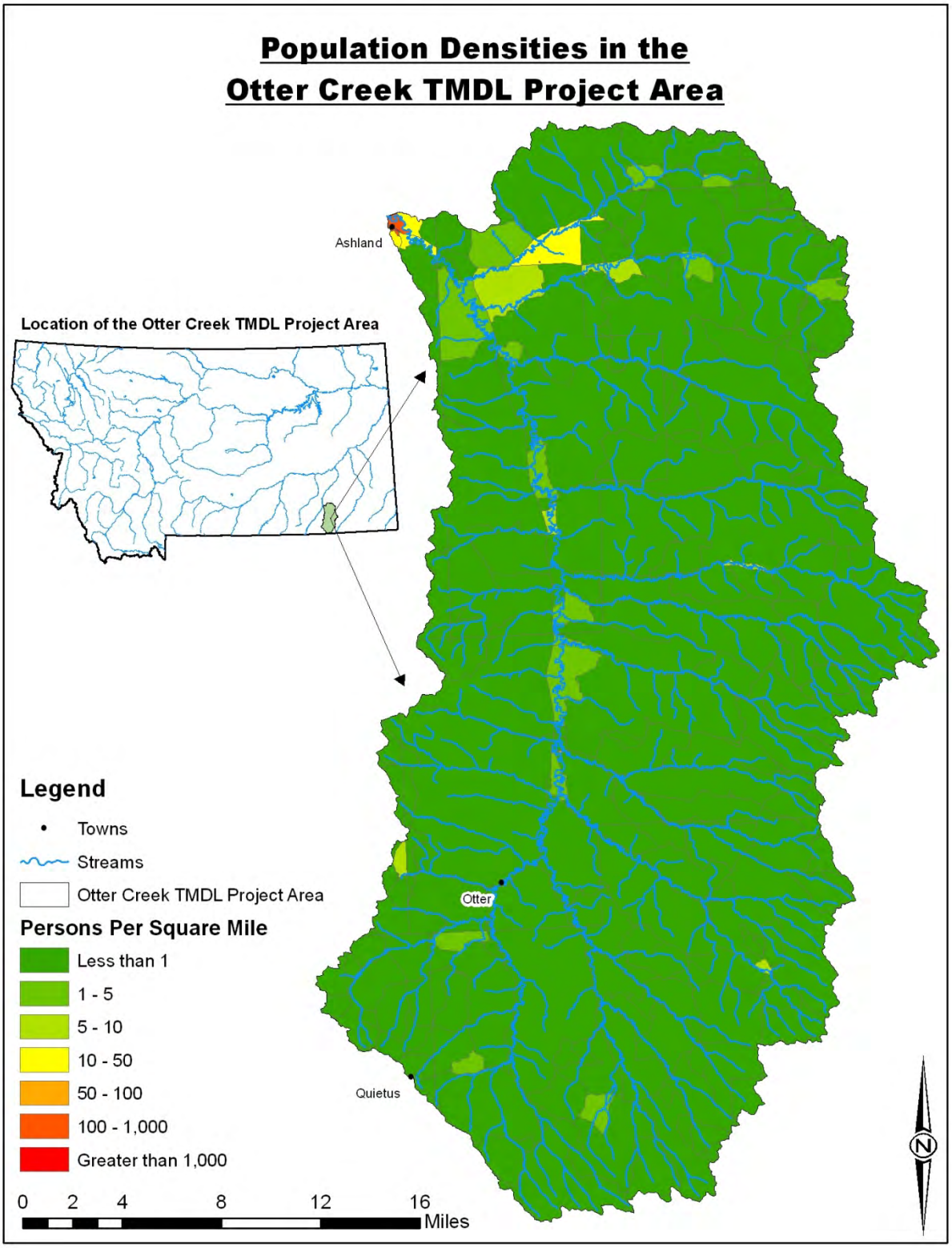

Figure A-14. Population density in the Otter Creek TMDL Project Area

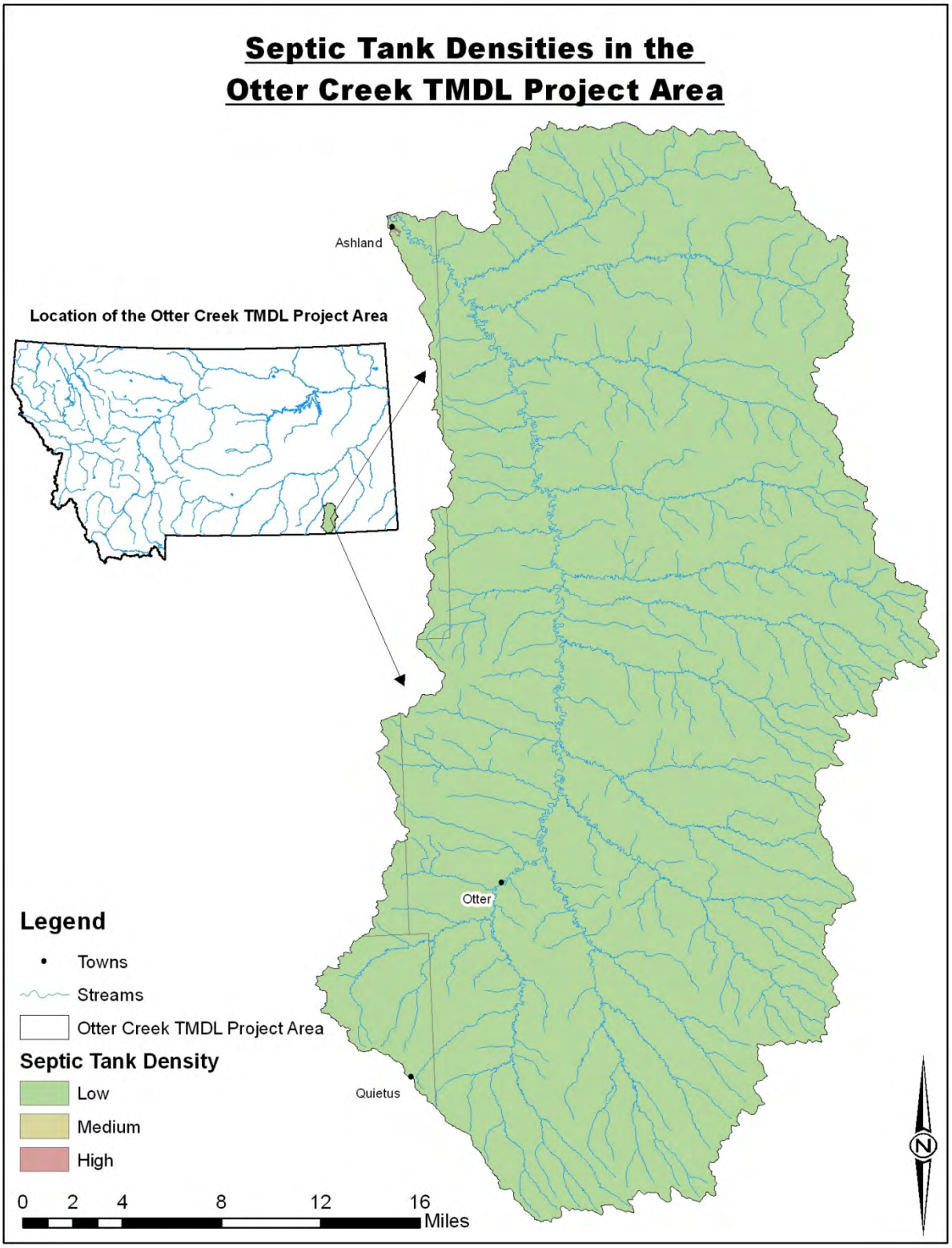

Figure A-15. Septic tank density in the Otter Creek TMDL Project Area

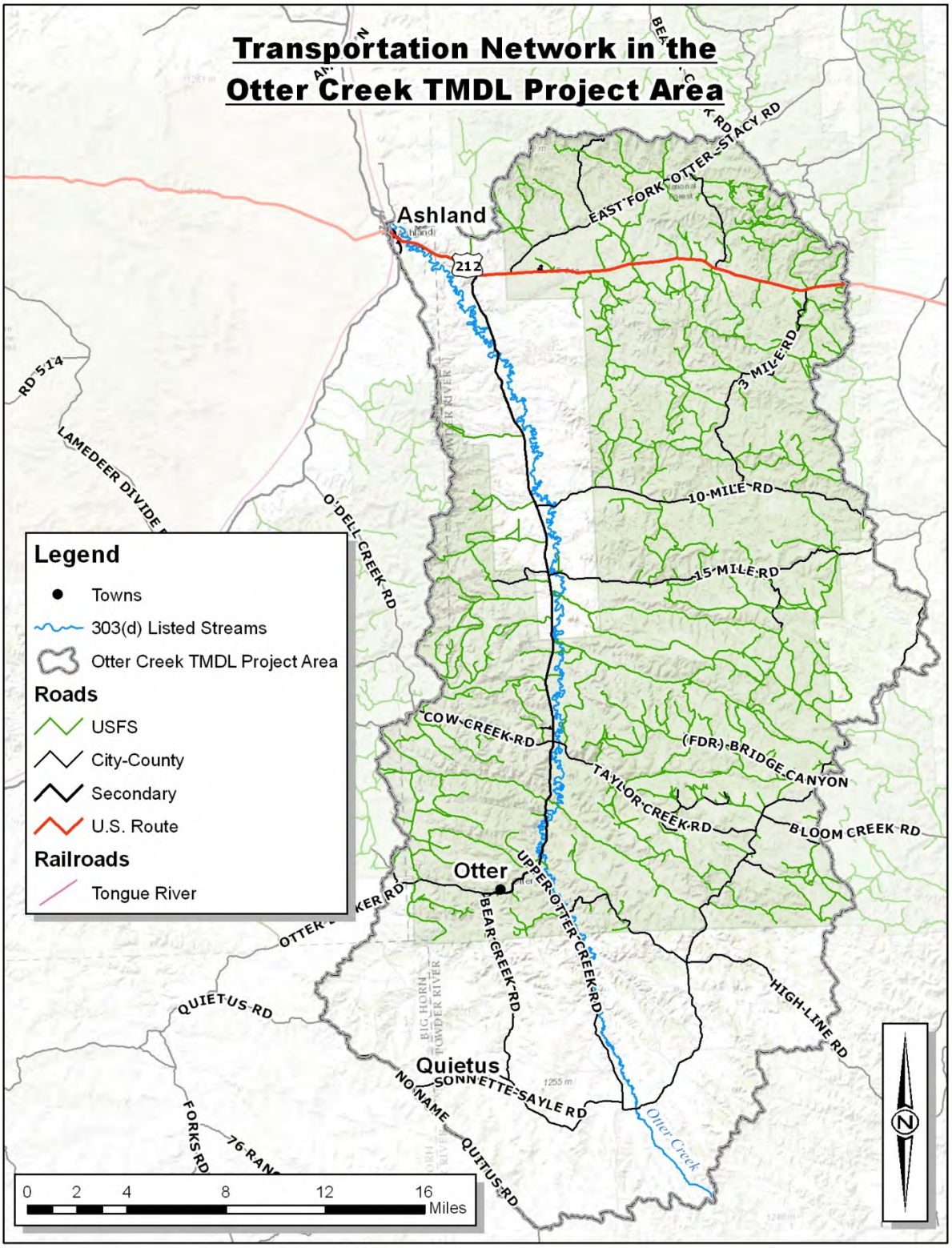

Figure A-16. Transportation network in the Otter Creek TMDL Project Area

Table A-1. Animal and Plant Species of Concern in the Otter Creek TMDL Project Area

Animal/Plant Group	Common Name	Scientific Name	Status
Amphibians	Great Plains Toad	Anaxyrus cognatus	Sensitive
Amphibians	Plains Spadefoot	Spea bombifrons	Sensitive
Birds	Black-backed Woodpecker	Picoides arcticus	Sensitive
Birds	Brewer's Sparrow	Spizella breweri	Sensitive
Birds	Brown Creeper	Certhia americana	
Birds	Burrowing Owl	Athene cunicularia	Sensitive
Birds	Cassin's Finch	Haemorhous cassinii	
Birds	Clark's Nutcracker	Nucifraga columbiana	
Birds	Golden Eagle	Aquila chrysaetos	Sensitive
Birds	Great Blue Heron	Ardea herodias	
Birds	Greater Sage-Grouse	Centrocercus urophasianus	Sensitive
Birds	Lewis's Woodpecker	Melanerpes lewis	
Birds	Loggerhead Shrike	Lanius ludovicianus	Sensitive
Birds	Long-billed Curlew	Numenius americanus	Sensitive
Birds	Northern Goshawk	Accipiter gentilis	Sensitive
Birds	Pinyon Jay	Gymnorhinus cyanocephalus	
Birds	Red-headed Woodpecker	Melanerpes erythrocephalus	Sensitive
Birds	Sage Thrasher	Oreoscoptes montanus	Sensitive
Fish	Flathead Chub	Platygobio gracilis	
Fish	Sauger	Sander canadensis	Sensitive
Fish	Stonecat	Noturus flavus	
Fish	Western Silvery Minnow	Hybognathus argyritis	
Mammals	Black-tailed Prairie Dog	Cynomys ludovicianus	Sensitive
Mammals	Eastern Red Bat	Lasiurus borealis	
Mammals	Fringed Myotis	Myotis thysanodes	Sensitive
Mammals	Hoary Bat	Lasiurus cinereus	
Mammals	Meadow Jumping Mouse	Zapus hudsonius	Sensitive
Mammals	Merriam's Shrew	Sorex merriami	
Mammals	Townsend's Big-eared Bat	Corynorhinus townsendii	Sensitive
Reptiles	Common Sagebrush Lizard	Sceloporus graciosus	
Reptiles	Milksnake	Lampropeltis triangulum	Sensitive
Reptiles	Snapping Turtle	Chelydra serpentina	Sensitive
Reptiles	Spiny Softshell	Apalone spinifera	Sensitive
Reptiles	Western Hog-nosed Snake	Heterodon nasicus	Sensitive
Vascular Plants	Barr's Milkvetch	Astragalus barrii	Sensitive
Vascular Plants	Bractless blazingstar	Mentzelia nuda	Sensitive
Vascular Plants	Double Bladderpod	Physaria brassicoides	Sensitive
Vascular Plants	Heavy Sedge	Carex gravida	Sensitive
Vascular Plants	New Jersey Tea	Ceanothus herbaceus	
Vascular Plants	Scribner's Panic Grass	Dichanthelium oligosanthes var. scribnerianum	Sensitive
Vascular Plants	Wyoming Ipomopsis	Ipomopsis congesta ssp. pseudotypica	

Table A-2. Fish species distribution in Otter Creek

Begin Mile	End Mile	Species	Abundance	Origin
0	77.7	Black Bullhead	Common	Introduced
0	10.3	Brassy Minnow	Rare	Native
10.3	77.7	Brassy Minnow	Abundant	Native
77.7	102.4	Brassy Minnow	Rare	Native
62.3	63.4	Brook Trout	Unknown	Introduced
0	6.3	Channel Catfish	Rare	Native
0	26	Common Carp	Common	Introduced
62.3	63.4	Creek Chub	Unknown	Native
0	10.3	Fathead Minnow	Common	Native
10.3	43.5	Fathead Minnow	Abundant	Native
62	77.7	Fathead Minnow	Common	Native
0	21.7	Flathead Chub	Common	Native
0	10.3	Golden Shiner	Common	Introduced
0	10.3	Green Sunfish	Rare	Introduced
10.3	21.7	Green Sunfish	Abundant	Introduced
21.7	36.8	Green Sunfish	Rare	Introduced
36.8	56.5	Green Sunfish	Common	Introduced
0	10.3	Lake Chub	Rare	Native
10.3	46.4	Lake Chub	Common	Native
46.4	75	Lake Chub	Abundant	Native
73.9	75	Longnose Dace	Rare	Native
21.7	22.7	Plains Minnow	Unknown	Native
0	21.7	Pumpkinseed	Common	Introduced
21.7	47	Pumpkinseed	Abundant	Introduced
0	10.3	River Carpsucker	Common	Native
0	10.3	Rock Bass	Common	Introduced
0	21.7	Sand Shiner	Common	Native
21.7	36.8	Sand Shiner	Rare	Native
0	36.8	Shorthead Redhorse	Common	Native
0	10.3	Smallmouth Bass	Common	Introduced
10.3	21.7	Smallmouth Bass	Common	Introduced
0	10.3	Stonecat	Common	Native
0	10.3	Walleye	Rare	Introduced
21.7	22.7	Western Silvery Minnow	Unknown	Native
0	10.3	White Crappie	Common	Introduced
0	75	White Sucker	Common	Native
2.5	5.1	Yellow Bullhead	Unknown	Introduced

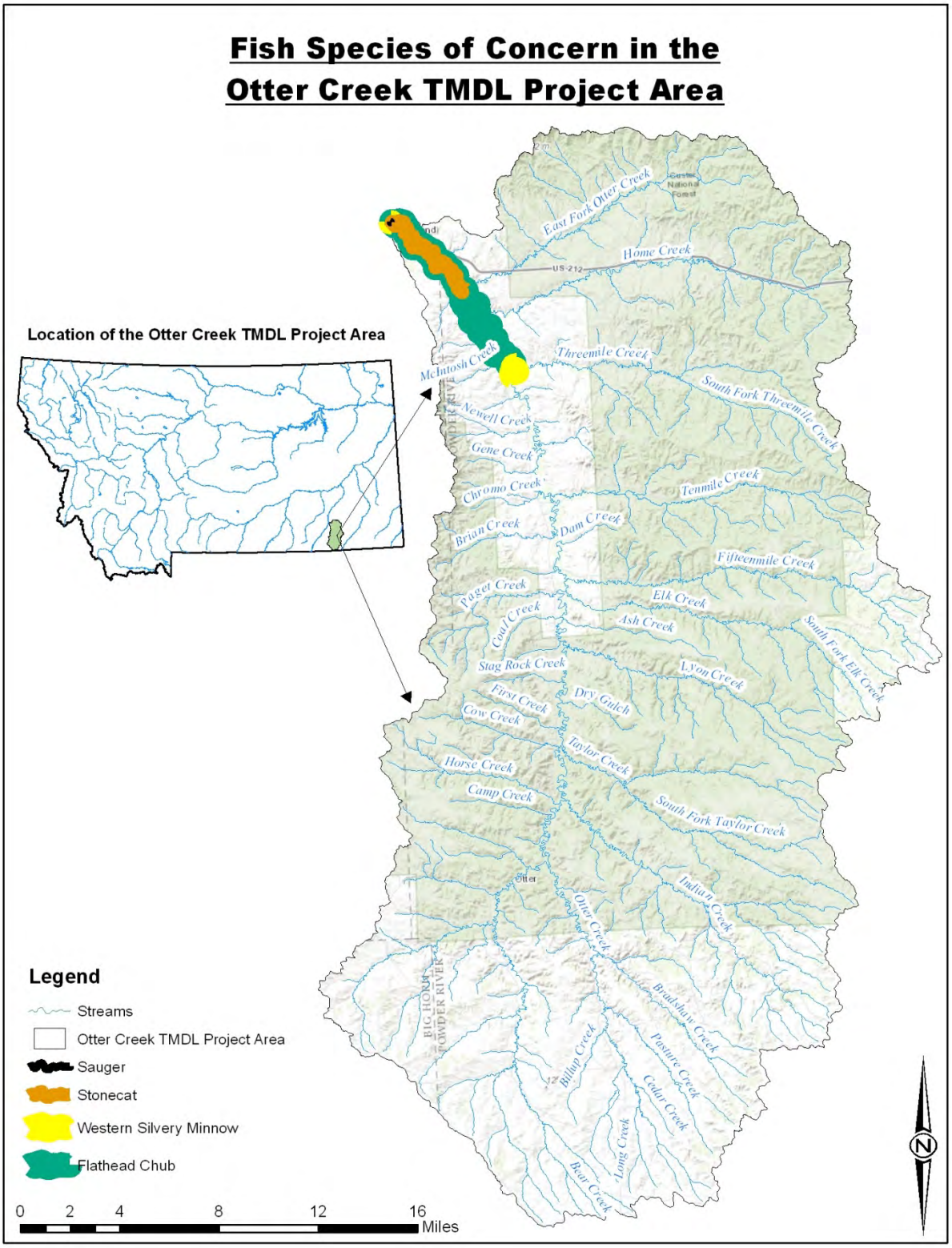

Figure A-17. Fish species of concern in the Otter Creek TMDL Project Area

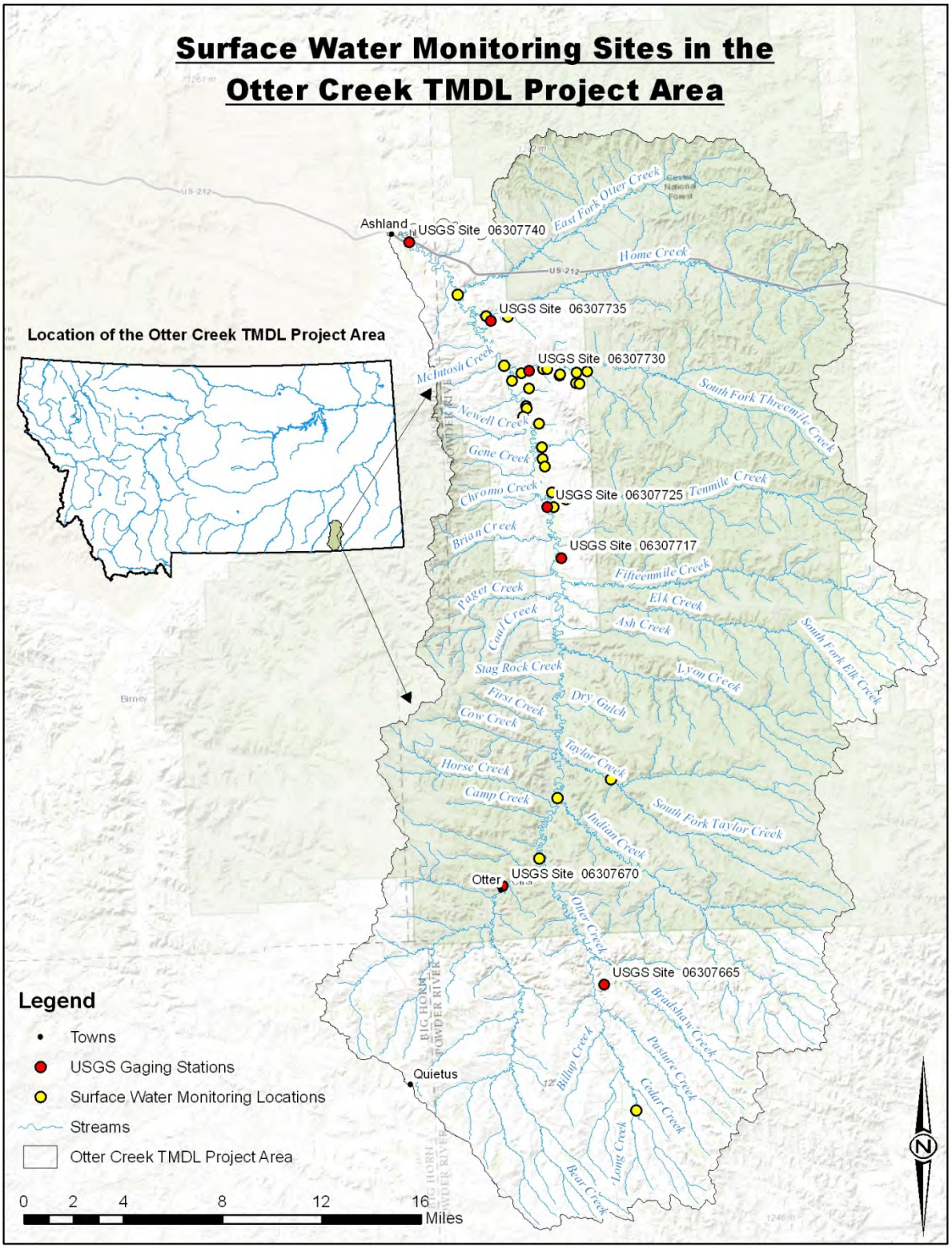

Figure A-18. Surface water monitoring locations in the Otter Creek TMDL Project Area

Table A-3. Historical fires in the Otter Creek watershed (1985-2012)

Fire Name	Fire Year	Agency	Acres	Fire Name	Fire Year	Agency	Acres
Buck	1985	USFS	144	**Tobin**	**2000**	**USFS**	**9,265**
Hilltop	**1985**	**USFS**	**2,580**	Tobin Spot	2000	USFS	67
Lemonade	1985	USFS	13	Cub Creek	2001	USFS	14
Threemile	1985	USFS	14	Coombe	2002	USFS	21
Birthday	1988	USFS	277	Debtborn	2002	USFS	58
Burnside	1988	USFS	69	Little Tobin	2002	BLM	6
Camp	1988	USFS	16	Cub Creek	2003	BLM	20
Cub	1988	USFS	40	**Willey**	**2003**	**USFS**	**5,405**
Flex	**1988**	**USFS**	**3,610**	Bear Valley	2004	BLM	17
Indian	1988	USFS	12	Indian	2004	BLM	44
Kinderman	1988	USFS	14	**Little Bradshaw**	**2004**	**BLM**	**3,568**
Logging Creek	1988	USFS	353	Trapper	2004	BLM	5
North	1988	USFS	18	**Erickson Spring Reburn**	**2005**	**BLM**	**2,687**
Schiller	**1988**	**USFS**	**17,197**	Bloom Creek	2006	BLM	126
Tooley	1988	USFS	16	Cub Creek	2006	BLM	12
Chalsea	**1989**	**USFS**	**1,037**	Horse Creek	2006	BLM	9
Coil Springs	1989	USFS	33	King Mountain	2006	BLM	244
Forest	**1989**	**USFS**	**1,142**	Piper Draw	2006	BLM	28
Miss	1989	USFS	12	**Watt**	**2006**	**BLM**	**18,005**
Blue Bore	1990	USFS	131	Yager Butte	2006	BLM	101
Cain	1991	USFS	22	Dutch	2007	BLM	25
Blank	**1992**	**USFS**	**7,036**	**Lost**	**2007**	**BLM**	**10,733**
Blue	1992	USFS	15	Reamus	2007	USFS	27
Miller	1992	USFS	550	Rocky Draw	2007	USFS	10
Three Mile	1992	USFS	960	Schaeffer	2007	BLM	169
Holiday	1993	USFS	120	Taylor	2007	USFS	7
Lemonade	1994	USFS	26	**Trail Creek**	**2007**	**BLM**	**9,843**
Nutter	1994	USFS	20	Wilbur	2007	USFS	399
Outyear	1994	USFS	29	Brian	2009	USFS	15
Wynnkoop	1994	USFS	36	Paget	2009	USFS	12
Yager	1994	USFS	17	Shorty	2009	USFS	7
Doonan	1995	USFS	35	Burnside	2011	USFS	7
Indian Creek	1995	USFS	161	Coal	2011	USFS	6
South Fork	1995	USFS	19	Dunning Butch	2011	USFS	93
Shorty	1996	BLM	79	**Little Fork**	**2011**	**BLM**	**34,550**
Deer	1998	USFS	124	Mcbride	2011	USFS	7
Thirty	1998	USFS	14	Perry	2011	USFS	5
Ghost	1999	USFS	112	**Ash Creek**	**2012**	**BIA**	**248,594**
Corral	2000	USFS	122	Bear	2012	BLM	2
Dailey	2000	USFS	425	Boyce	2012	BLM	729
Lemonade	2000	USFS	49	Circle Bar	2012	BLM	9
Little E	2000	USFS	32	**Dutch**	**2012**	**BLM**	**19,248**
Mansion	2000	USFS	12	Gumbo	2012	USFS	0
Morris	2000	USFS	58	Red	2012	BLM	39
Stag	**2000**	**USFS**	**61,727**	Rough	2012	BLM	770
Stag Spot	2000	USFS	139	**Southeastern Montana Complex**	**2012**	**BLM**	**62,109**
Stevens	2000	USFS	27	**Stag**	**2012**	**BLM**	**1,263**
Taylor Butte	2000	USFS	786	**Taylor Creek**	**2012**	**BLM**	**36,581**
Taylor Creek	2000	USFS	337	Threemile	2012	BLM	380

*** Bold text denotes fires over 1,000 acres in size.**

Fire acreage may include burned areas outside of the Otter Creek watershed.

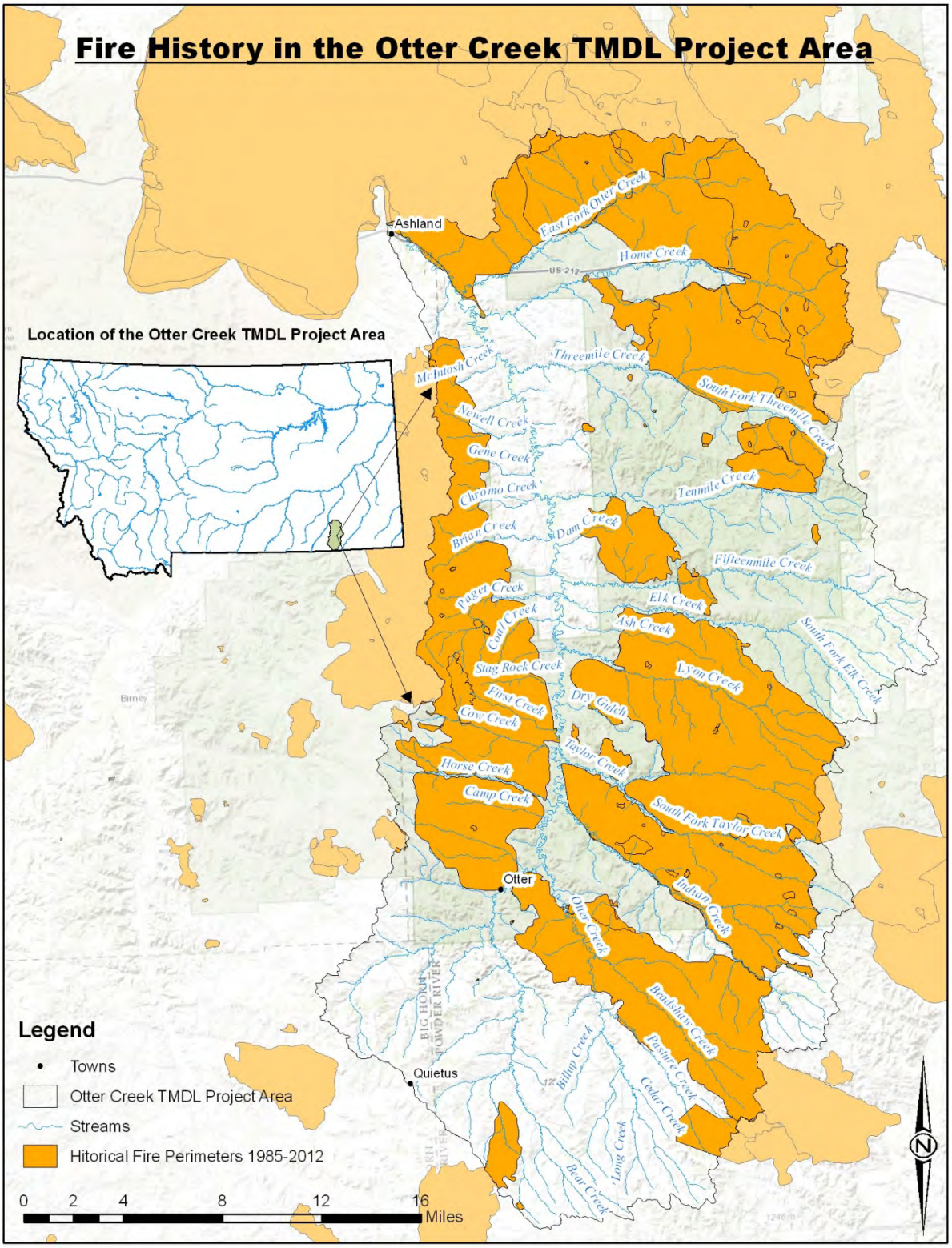

Figure A-19. Fire History of the Otter Creek TMDL Project Area