

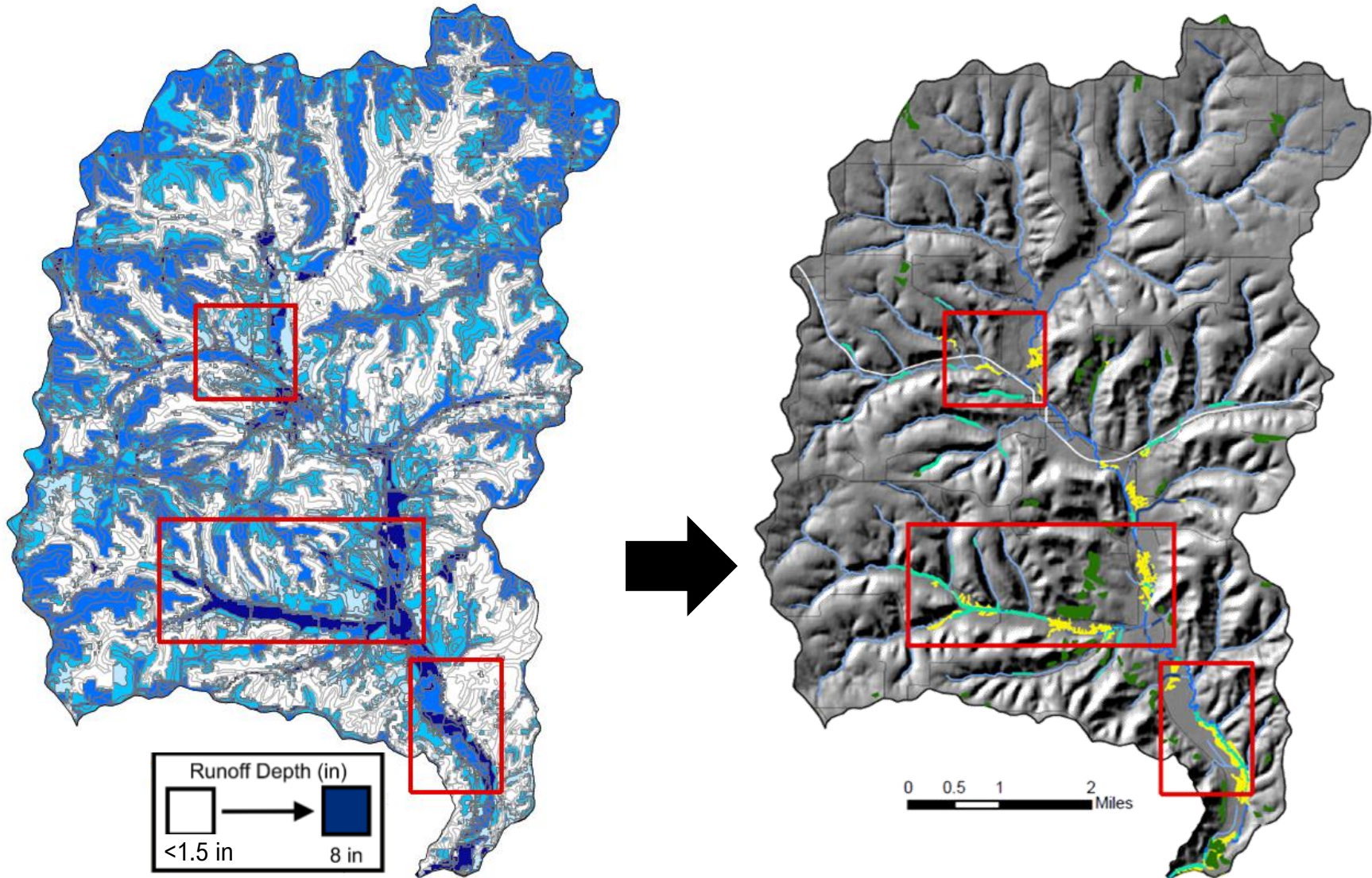
## Appendix VIII - Opportunity Assessments Methods and Maps

This analysis focused on 3 primary areas of potential ecological restoration: reforestation, potentially restorable wetlands (PRWs), and riparian buffer restoration. Reforestation opportunities were identified using The Nature Conservancy's [Reforestation Hub](#) spatial data, modified and refined to reflect accuracy issues. Areas amenable to the restoration of riparian buffers were identified in ArcGIS as current row crop/dairy rotation areas within 100 feet of a stream. This 100-foot "general" buffer distance has been demonstrated in the research to provide streambank stability, stream shading (where applicable), some level of floodwater control, and sediment control, under "typical" storm events. Riparian restoration areas were further prioritized as buffer areas (as described above) within 100m of a high slope area (>30%). Ideally, buffers would be 150 feet or wider to more completely filter nitrogen and phosphorus, however, buffers of this size will likely be case-specific and dependent on nearby geomorphological characteristics. Furthermore, some of these areas could be significantly expanded on when combined with marginal soils/high-priority potentially restorable wetland (PRW) areas.

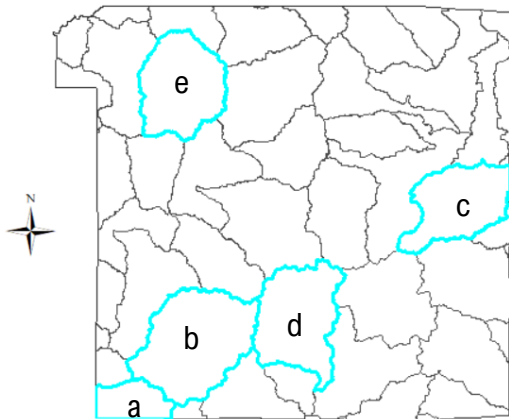
Potentially restorable wetlands are areas identified as likely being historic wetland (open marsh, emergent wetland, forested wetland etc.), with hydric soil, not currently mapped as a wetland, and have a land use compatible with restoration techniques. A total of 78,652 acres of PRWs have been identified by the WDNR in Monroe Co. Because restoration is often expensive, complex, and time-consuming, prioritization of PRWs is important for multiple benefits, particularly flood control, erosion control and nutrient runoff, is therefore important. High-priority PRWs were identified as those hydric soils within 450 feet of a steep slope (>30%), within 600 feet of a stream, and within 1 mile of a recent (2017-2021) recorded flood damage site.

This analysis identified over 470 miles of unbuffered stream in the County, accounting for more than 7,000 acres of streamside restoration opportunity (using a 100-foot buffer distance). Prioritizing only those areas within 100m of a high slope area (>30%), 2,569 acres of "high priority" riparian buffer conservation opportunity exists in the county. Prioritization of PRWs in the county resulted in the identification of 2,405 acres of high-priority areas; of these, 1100 acres intersect, overlap, or are partially within already identified high-priority riparian buffer areas, and many (1350 acres) of these locations fall within FEMA floodplains. The Nature Conservancy's Reforestation Hub, with necessary additional processing, resulted in a total of 20,991 acres of reforestation opportunity in the county. See Table 1 below for watershed-level results.

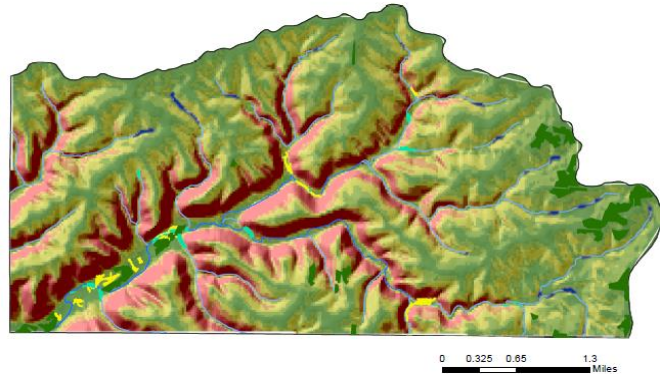
While this analysis was conducted for the entire county, detailed maps are provided below for the watersheds studied and reported on in the hydrological runoff model, for comparison purposes.



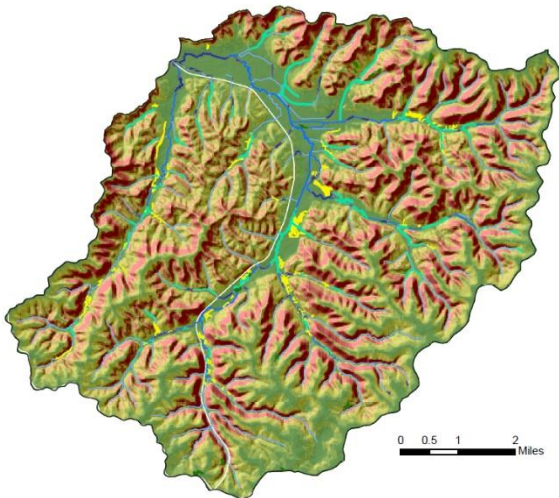
Depiction of modeled runoff depth (left) and modeled high-priority conservation/restoration opportunity areas (right). Conservation and restoration sites in the floodplain and along rivers and streams prioritizes “slowing the flow”, but also provides nutrient filtration, wildlife habitat, and carbon sequestration.



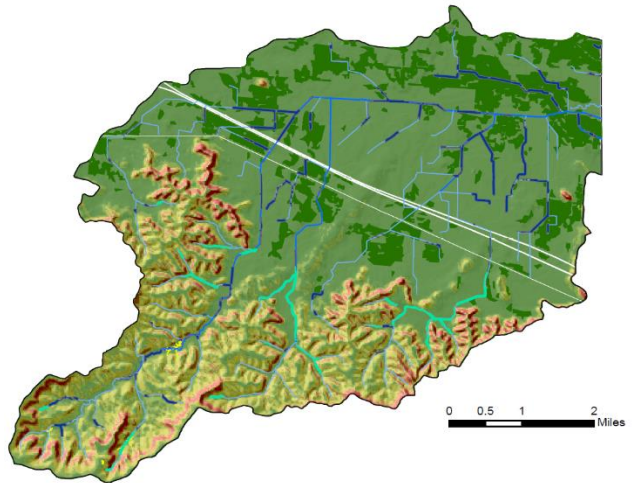
Timber Coulee Creek (a)



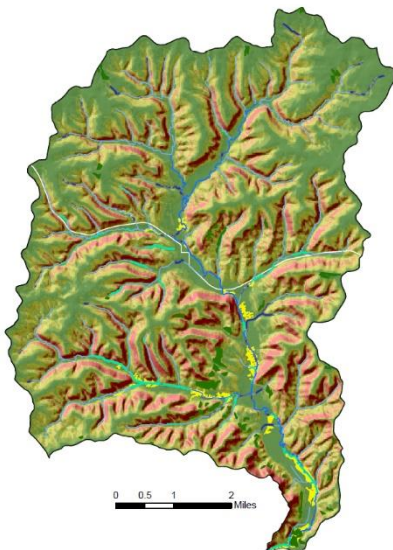
Headwaters of the Little La Crosse River



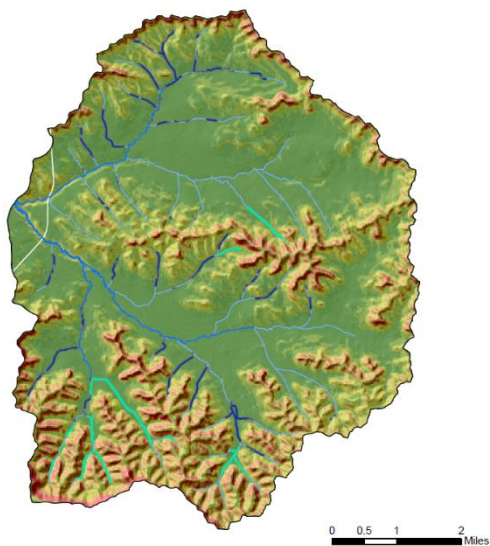
Bear Creek (c)



Moore Creek (d)



Rathbone Creek – Soper Creek



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Table 1. Watershed-level results of restoration opportunity assessment.

<b>HUC-12 Watershed Name (HUC-12 Code)</b>	<b>HUC12 Total Acres±</b>	<b>Miles Unbuffered Stream</b>	<b>General Stream Buff (acres)</b>	<b>High Priority Stream Buff (acres)</b>	<b>High Priority PRWs (acres)</b>	<b>Reforestation Opportunity (acres)</b>	<b>Eco Index</b>	<b>Stress Index</b>
Bailey Creek-La Crosse River (70400060204)	17363	13	160	79	0	9	42.99	32.21
Bear Creek (70700031601)	21558	37	423	156	22	2927	15.22	59.43
Beaver Creek (70400060302)	11294	16	130	130	0	0	17.99	46.35
Big Creek (70400060305)	9220	14	158	61	0	3	17.79	48.3
Billings Creek (70700060302)	7737	6	27	53	44	1317	26.45	41.54
Brandy Creek-Lemonweir River (70700031507)	21578	5	84	0	0	1552	51.65	12.92
Brush Creek (70700060301)	13431	10	58	65	118	382	20.92	45.3
Clear Creek (70400071005)	13994	0	0	0	0	253	62.36	9.08
Cleaver Creek (70700040101)	2029	1	4	0	4	7	10.02	58.87
Cook Creek (70700060103)	5771	5	23	44	85	543	22.73	44.12
Cutler Ditch-Lemonweir River (70700031602)	3270	5	69	22	0	311	43.57	28.82
Dandy Creek-Lemonweir River (70700031508)	11835	10	154	0	0	1708	49.01	27.27
Dutch Creek (70400060308)	911	1	8	0	0	0	23.32	46.97
Eagle Nest Flowage-Beaver Creek (70700031402)	6153	2	39	0	0	721	60.52	6.67
Farmer's Valley Creek (70400060301)	14920	12	90	91	7	23	29.69	36.7
Fish Creek (70400060307)	5241	7	5	104	0	0	23.45	48.32
Fountain Creek-Little Lemonweir Riv (70700031604)	261	1	5	0	0	0	14.25	50.34
Glenn Creek-Robinson Creek (70400071006)	4715	1	0	10	0	92	66.36	5.98
Headwaters La Crosse River (70400060202)	24900	2	21	9	0	270	59.58	10.82
Headwaters Little La Crosse River (70400060303)	33350	38	155	445	395	35	20.15	47.62

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Headwaters of the Baraboo River (70700040102)	19045	12	158	4	62	961	11.59	52.8
Indian Creek-Little Lemonweir Riv (70700031603)	20660	17	145	99	86	12	17.75	47.13
Jay Creek-East Fork of Lemonweir Riv (70700031506)	7950	0	0	0	0	409	53.05	10.95
Knapp Creek-West Fork Kickapoo Riv (70700060202)	1784	3	47	0	0	76	18.24	46.32
Kreyer Creek-South Fork Lemonweir Riv (70700031504)	23772	23	269	33	121	2133	14.6	51.68
Lake Tomah-South Fork Lemonweir Riv (70700031501)	19393	23	255	89	0	39	5.69	55.74
Little La Crosse River (70400060304)	19656	24	343	56	328	23	17.56	45.44
Moore Creek (70700060102)	25988	21	119	173	434	251	18.02	47.88
Mud Creek (70700031502)	11075	7	115	0	0	638	16.6	39.13
Poe Creek-Kickapoo River (70700060104)	20676	19	126	119	408	1398	22.11	45.73
Rathbone Creek-Soper Creek (70400071201)	24064	26	324	129	0	48	39.45	29.15
Roaring Creek-Black River (70400071205)	7400	2	26	8	0	132	34.55	39.38
Sand Creek (70700031505)	12273	3	52	0	0	1605	53.77	15.63
Seymour Creek (70700040103)	7840	5	54	3	6	1802	8.56	62.54
Silver Creek (70400060203)	24641	13	87	93	0	21	44.46	25.44
Sleighton Creek-Kickapoo River (70700060101)	22450	22	160	134	264	843	18.28	49.33
Spencer Creek-Big Creek (70400071202)	18199	16	101	186	0	84	39.62	27.49

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Stony Creek-Robinson Creek (70400071007)	7651	9	119	49	0	124	58.21	20.29
Tarr Creek (70400060201)	13717	8	33	96	0	167	49.75	19.57
Timber Coulee Creek (70600010101)	8559	5	31	21	77	176	20.4	47.66
Town of Sparta-La Crosse River (70400060306)	9633	3	52	0	0	20	17.48	33.79
Upper Coon Creek (70600010102)	3743	4	32	10	9	25	24.29	47.53
Water Mill Pond-Lemonweir River (70700031503)	16121	22	324	17	0	1628	20.52	46.6
<b>Totals</b>		470	4586	2588	2470	22764		

± For watersheds that fall partially outside of Monroe Co, only the acres within Monroe County are reported.