

1 **Supplementary material for:**

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3 **Enhanced Watershed Modeling by Incorporating Remotely Sensed Evapotranspiration**

4 **and Leaf Area Index**

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27 **Table S1.** Management schedules (adapted from Lee et al. (2016))

Crop	Planting	Fertilizer	Harvest
Corn (after corn)	Apr. 30 (no-till)	157 kg N ha <sup>-1</sup> of poultry manure on Apr. 20 45 kg N ha <sup>-1</sup> of sidedress 30% UAN on Jun. 7	Oct. 3
Corn (after Soybean and Double crop soybean)	Apr. 30 (no-till)	124 kg N ha <sup>-1</sup> of poultry manure on Apr. 20 34 kg N ha <sup>-1</sup> of sidedress 30% UAN on Jun. 7	Oct. 3
Soybean	May 20 (no-till)		Oct. 15
Double crop winter wheat (Dbl WW)	Oct. 10	34 kg N ha <sup>-1</sup> of sidedress 30% UAN on Oct. 8 45 kg N ha <sup>-1</sup> of sidedress 30% UAN on Mar. 1 67 kg N ha <sup>-1</sup> of sidedress 30% UAN on Apr. 5	Jun. 27
Double crop soybean (Dbl Soyb)	Jun. 29		Nov. 1

28 Note: UAN stands for Urea-Ammonium Nitrate. The typical nitrogen content for poultry manure  
 29 is assumed as 2.8% (Yeo et al., 2014).

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50 **Table S2.** KGE values of ET for individual sub-watersheds.

Sub.	PAR#3		PAR#4		PAR#9		PAR#12		PAR#13		PAR14	
	Cal	Val	Cal	Val	Cal	Val	Cal	Val	Cal	Val	Cal	Val
1	0.55	0.61	0.56	0.59	0.52	0.59	0.52	0.60	0.53	0.59	0.53	0.60
2	0.53	0.59	0.58	0.59	0.52	0.58	0.52	0.57	0.48	0.55	0.50	0.57
3	0.54	0.59	0.54	0.58	0.53	0.59	0.53	0.60	0.52	0.58	0.52	0.59
4	0.53	0.58	0.55	0.57	0.51	0.58	0.49	0.55	0.49	0.56	0.50	0.57
5	0.53	0.60	0.55	0.58	0.54	0.59	0.52	0.59	0.51	0.57	0.52	0.59
6	0.51	0.56	0.53	0.54	0.49	0.56	0.49	0.54	0.49	0.55	0.48	0.55
7	0.54	0.58	0.55	0.57	0.53	0.59	0.53	0.59	0.51	0.57	0.52	0.58
8	0.52	0.56	0.55	0.55	0.51	0.56	0.49	0.55	0.48	0.55	0.49	0.55
9	0.54	0.57	0.55	0.57	0.54	0.58	0.53	0.59	0.52	0.56	0.54	0.58
10	0.53	0.57	0.54	0.55	0.52	0.58	0.52	0.58	0.50	0.57	0.51	0.57
11	0.55	0.57	0.56	0.55	0.54	0.58	0.54	0.58	0.52	0.58	0.53	0.58
12	0.51	0.57	0.53	0.53	0.50	0.56	0.49	0.56	0.47	0.56	0.48	0.55
13	0.54	0.58	0.55	0.55	0.53	0.59	0.53	0.58	0.50	0.58	0.52	0.58
14	0.55	0.57	0.58	0.59	0.53	0.57	0.56	0.60	0.51	0.55	0.52	0.56
15	0.54	0.58	0.56	0.57	0.54	0.59	0.54	0.59	0.52	0.58	0.54	0.59
16	0.49	0.57	0.58	0.59	0.52	0.57	0.51	0.59	0.49	0.55	0.52	0.58
17	0.49	0.56	0.52	0.52	0.49	0.56	0.50	0.55	0.47	0.55	0.47	0.55
18	0.55	0.58	0.56	0.57	0.54	0.59	0.54	0.58	0.53	0.57	0.55	0.59
Median	0.54	0.58	0.55	0.57	0.53	0.58	0.52	0.58	0.51	0.57	0.52	0.58

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60 **Table S3.** KGE values of LAI for individual sub-watersheds

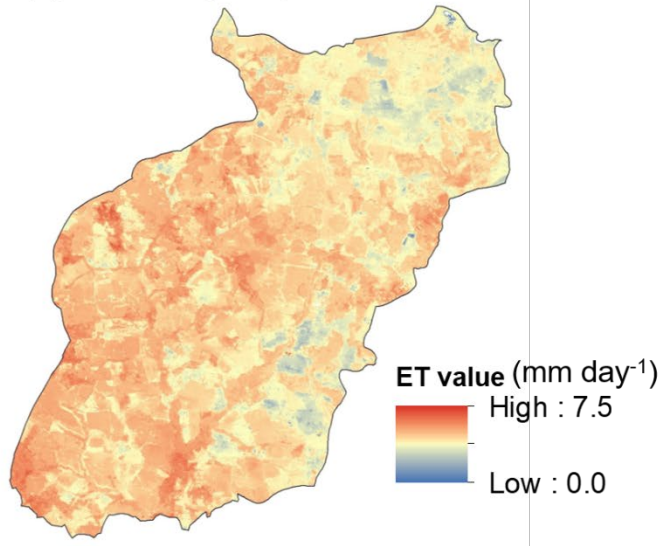
Sub.	PAR#3		PAR#4		PAR#9		PAR#12		PAR#13		PAR14	
	Cal	Val	Cal	Val	Cal	Val	Cal	Val	Cal	Val	Cal	Val
1	0.56	0.72	0.54	0.65	0.45	0.50	0.61	0.69	0.57	0.67	0.54	0.65
2	0.52	0.58	0.46	0.55	0.41	0.48	0.50	0.58	0.51	0.54	0.44	0.55
3	0.49	0.65	0.66	0.76	0.55	0.59	0.40	0.45	0.50	0.63	0.61	0.73
4	0.57	0.63	0.37	0.46	0.36	0.39	0.42	0.51	0.50	0.61	0.42	0.53
5	0.21	0.53	0.54	0.68	0.42	0.57	0.25	0.42	0.22	0.44	0.43	0.61
6	0.59	0.63	0.39	0.46	0.36	0.38	0.46	0.52	0.56	0.67	0.43	0.53
7	0.52	0.68	0.62	0.70	0.54	0.58	0.47	0.64	0.58	0.78	0.59	0.72
8	0.55	0.60	0.37	0.46	0.36	0.37	0.46	0.56	0.51	0.63	0.41	0.52
9	0.55	0.72	0.76	0.83	0.61	0.69	0.46	0.47	0.65	0.71	0.71	0.83
10	0.39	0.68	0.60	0.77	0.52	0.66	0.28	0.50	0.35	0.59	0.54	0.75
11	0.47	0.64	0.59	0.67	0.51	0.57	0.32	0.53	0.47	0.64	0.55	0.69
12	0.43	0.69	0.51	0.60	0.49	0.54	0.58	0.68	0.55	0.72	0.50	0.65
13	0.49	0.66	0.53	0.62	0.51	0.59	0.46	0.61	0.57	0.72	0.53	0.64
14	0.46	0.56	0.70	0.79	0.52	0.59	-0.09	-0.01	0.43	0.56	0.63	0.71
15	0.46	0.70	0.64	0.80	0.54	0.66	0.35	0.51	0.46	0.62	0.60	0.77
16	0.47	0.57	0.67	0.72	0.45	0.48	0.52	0.57	0.52	0.48	0.63	0.70
17	0.51	0.59	0.49	0.53	0.42	0.46	0.55	0.65	0.56	0.65	0.47	0.56
18	0.57	0.68	0.60	0.70	0.53	0.58	0.55	0.62	0.64	0.74	0.58	0.71
Median	0.50	0.64	0.57	0.67	0.50	0.57	0.46	0.54	0.51	0.64	0.54	0.67

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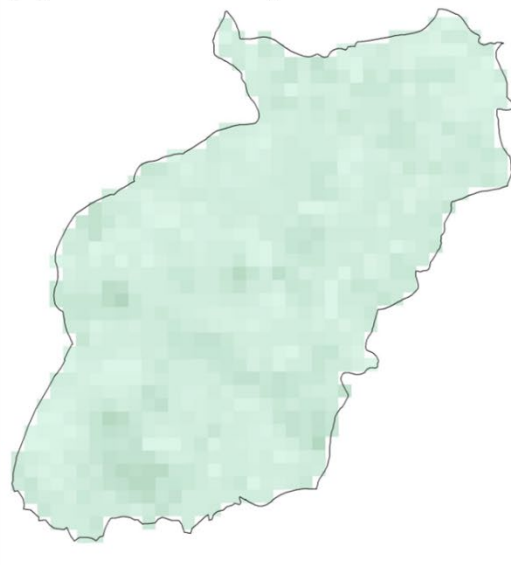
(a) ET at Feb. 1<sup>th</sup>, 2012



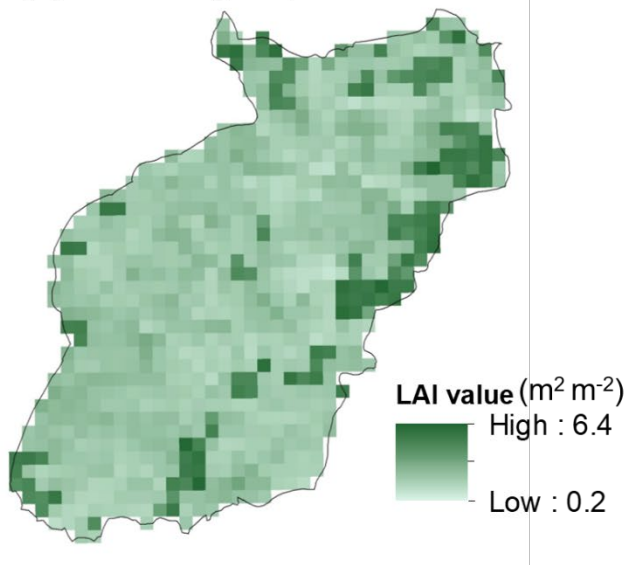
(b) ET at Aug. 1<sup>th</sup>, 2012



(c) LAI at Feb. 1<sup>th</sup>, 2012



(d) LAI at Aug. 1<sup>th</sup>, 2012



77 **Fig. S1.** Examples of RS-ET and RS-LAI used in this study