



Supplementary Materials for

Sediment transport and flood discharge in the Menominee River, Illinois, USA

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Supplementary Figures

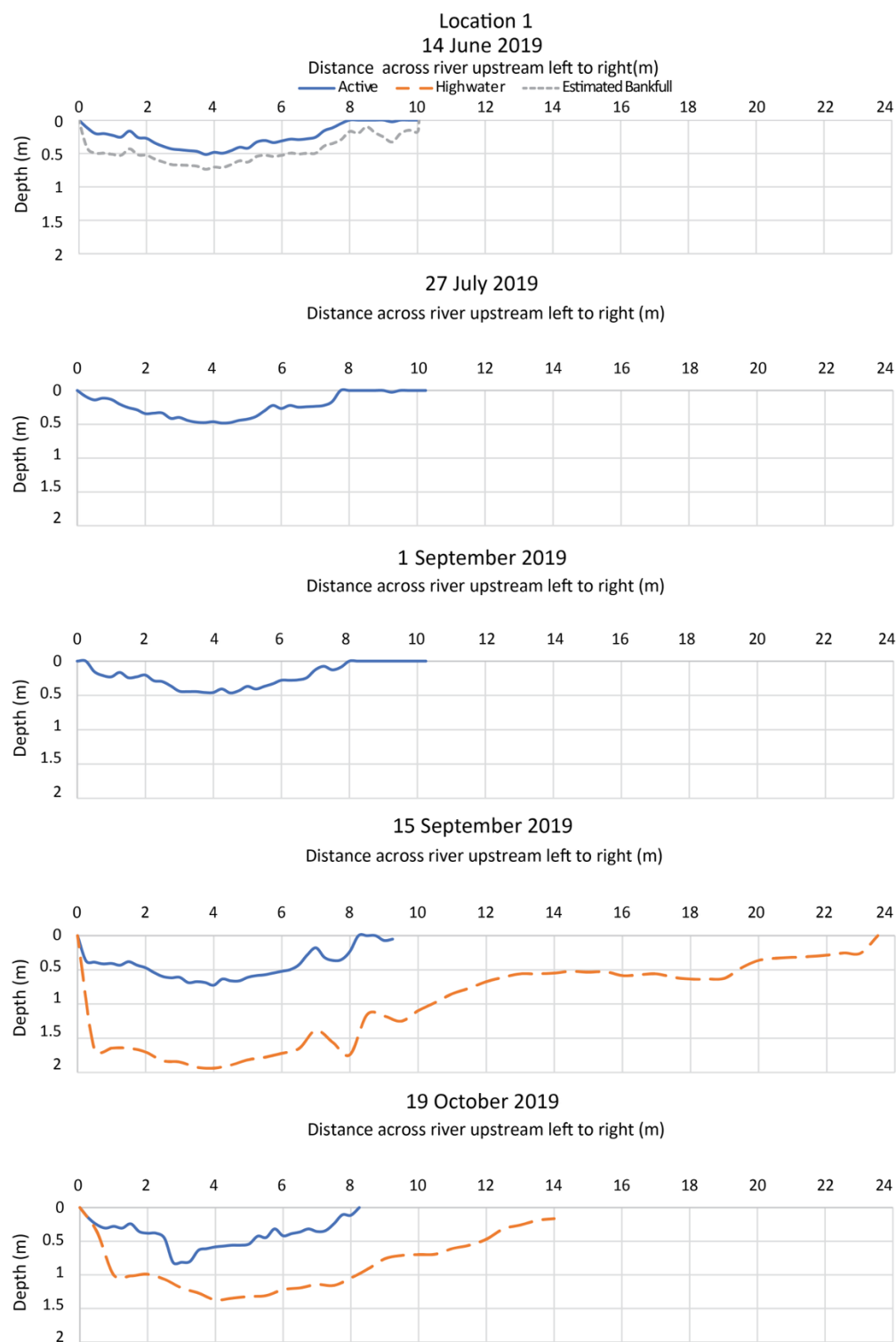


Figure S1.

Cross sections measured at location 1.



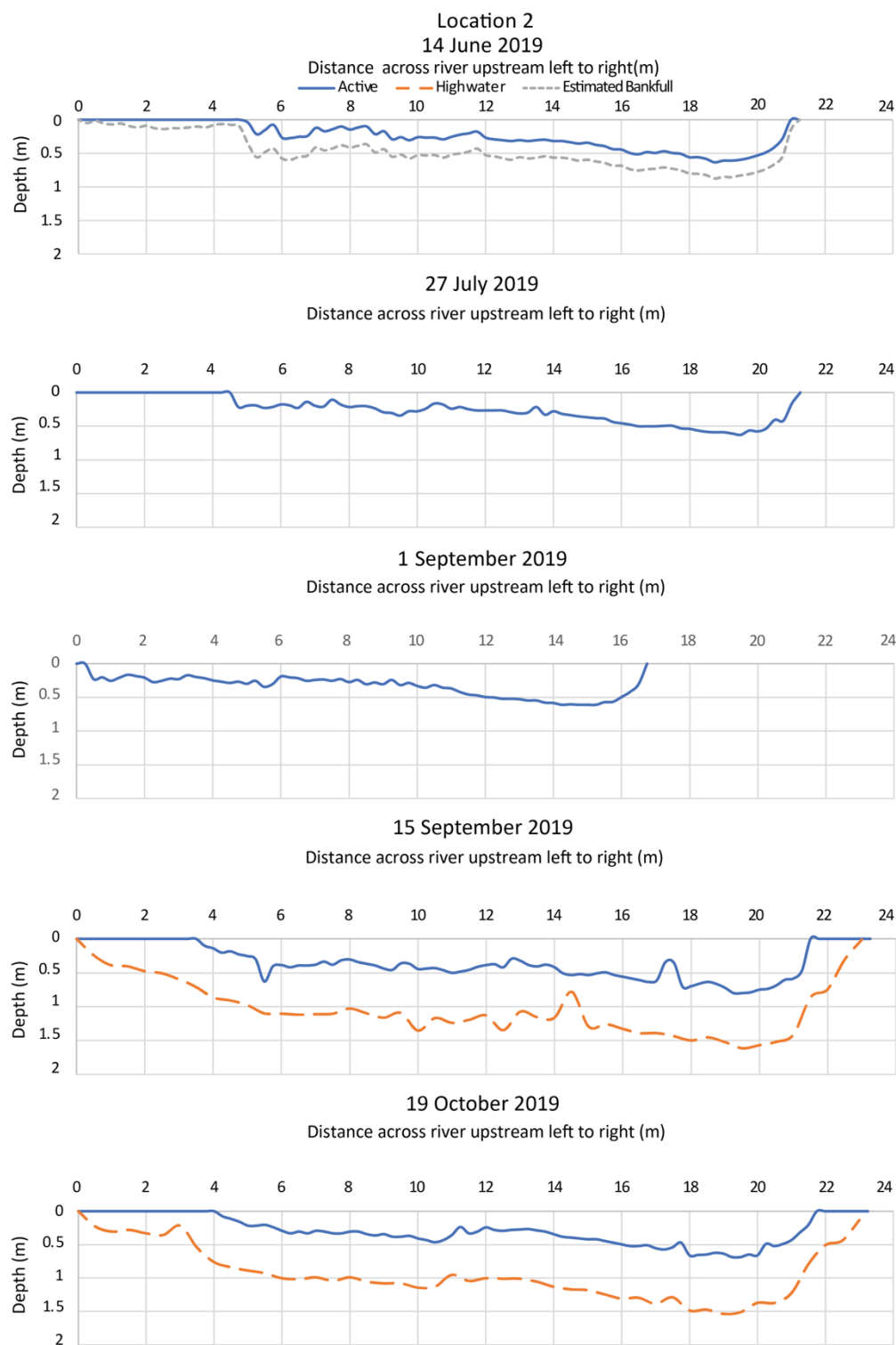


Figure S2

Cross sections measured at location 2.



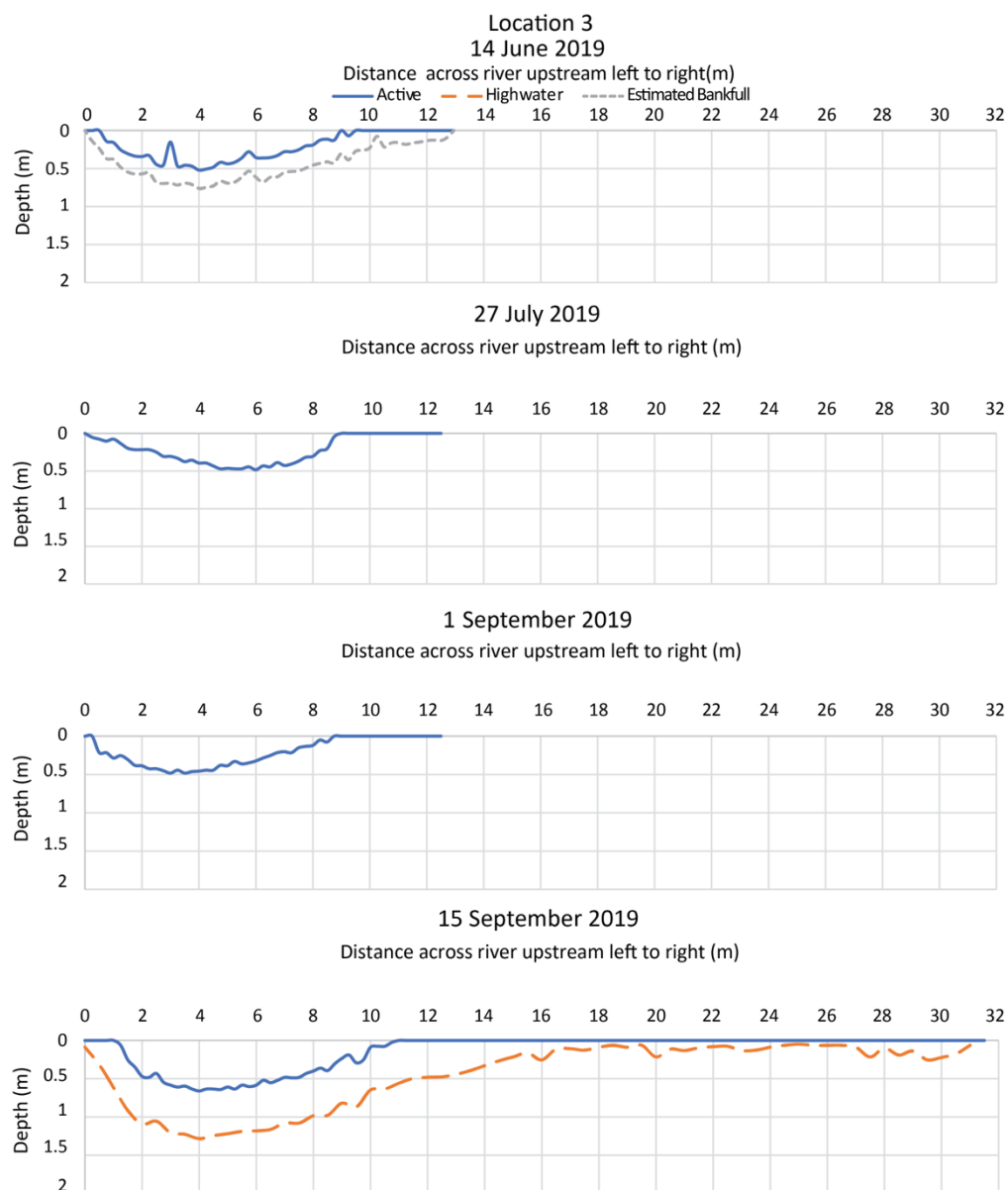


Figure S3

Cross sections measured at location 3. We did not collect data on the October visit due to safety concerns from weather changes.

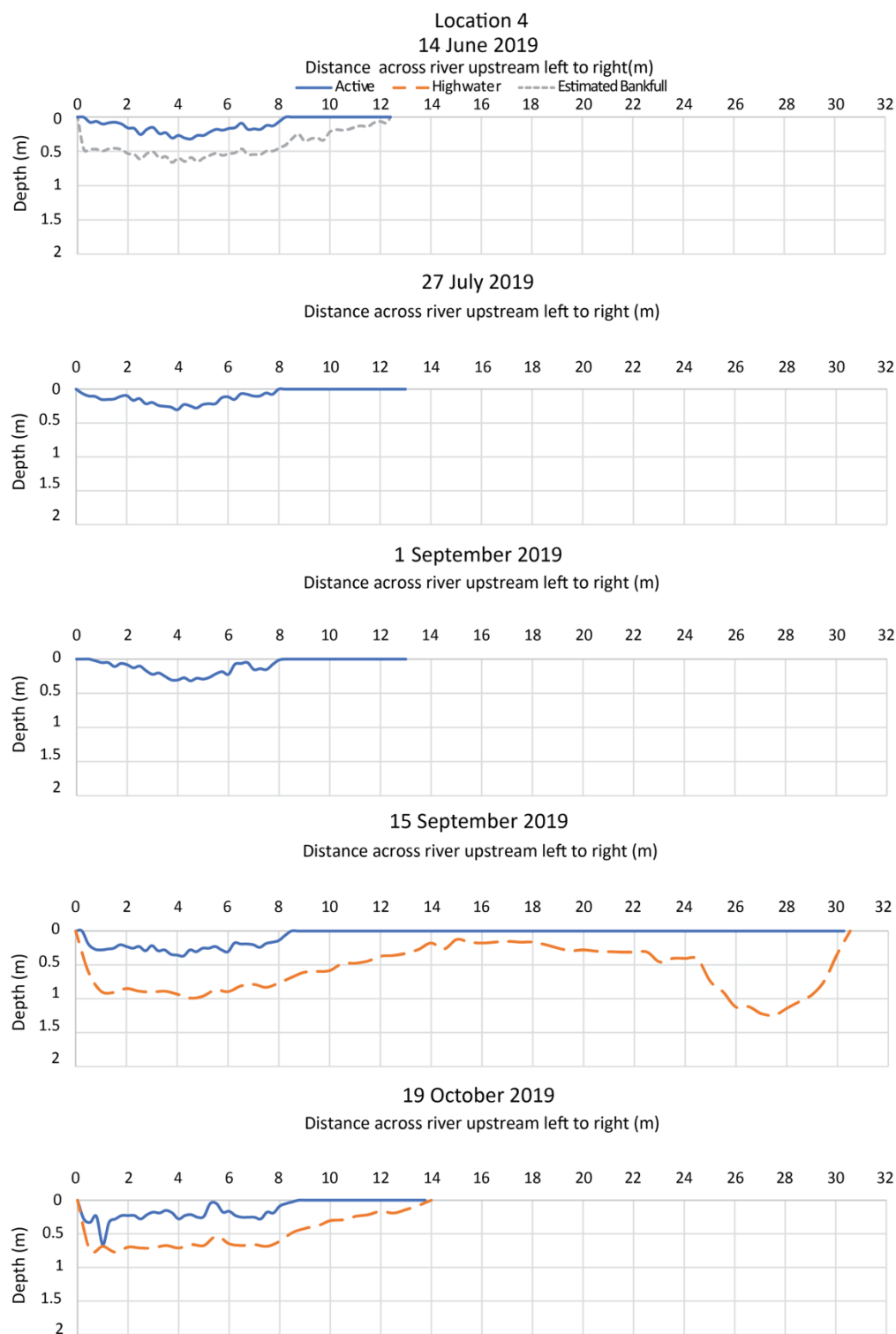


Figure S4

Cross sections measured at location 4.



Supplementary Tables

Table S1

Supplementary Table 1. Summary of river channel observations.

	w	h	Active Area	Average V	Max V	Q [†]	Wetted Perimeter	R	Sf	n [‡]
	m	m	m ²	m/s	m/s	m ³ /s	m	m		
Location 1									0.007	
14 Jun 2019	9.25	0.26	2.44	0.17	0.49	1.08	12.95	0.19		0.16
<i>14 Jun 2019 Bankfull Estimate</i>	<i>10.05</i>	<i>0.45</i>	<i>4.70</i>				<i>21.96</i>	<i>0.21</i>		
27 Jul 2019	9.5	0.24	2.32	0.13	0.42	0.52	12.39	0.19		0.22
1 Sept 2019	8.00	0.28	2.22	0.11	0.35	0.44	12.63	0.18		0.24
15 Sept 2019 (bankfull)	9.50	0.41	3.99	0.40	0.81	2.15	18.14	0.22		0.08
<i>September Flood Estimate</i>	<i>23.00</i>	<i>0.96</i>	<i>23.17</i>				<i>53.78</i>	<i>0.43</i>		
19 Oct 2019	8.25	0.40	3.36	0.17	0.60	1.17	16.19	0.21		0.17
<i>October Flood Estimate</i>	<i>13.50</i>	<i>0.84</i>	<i>12.13</i>				<i>28.75</i>	<i>0.42</i>		
Location 2									0.002	
14 Jun 2019	16.25	0.32	5.31	0.11	0.41	0.69	27.52	0.19		0.14
<i>14 Jun 2019 Bankfull Estimate</i>	<i>21.25</i>	<i>0.47</i>	<i>10.01</i>				<i>46.92</i>	<i>0.21</i>		
27 Jul 2019	16.75	0.33	5.56	0.07	0.29	0.44	28.49	0.20		0.22
1 Sept 2019	16.25	0.34	5.66	0.07	0.23	0.43	28.59	0.20		0.22
15 Sept 2019 (bankfull)	17.75	0.45	8.29	0.19	0.41	1.95	38.52	0.22		0.09
<i>September Flood Estimate</i>	<i>23.25</i>	<i>1.03</i>	<i>23.95</i>				<i>54.82</i>	<i>0.44</i>		
19 Oct 2019	17.75	0.38	6.88	0.14	0.26	1.01	33.58	0.20		0.11
<i>October Flood Estimate</i>	<i>23.25</i>	<i>0.94</i>	<i>22.03</i>				<i>50.76</i>	<i>0.43</i>		
Location 3									0.011	
14 Jun 2019	9.00	0.29	2.70	0.13	0.44	0.60	14.54	0.19		0.28
<i>14 Jun 2019 Bankfull Estimate</i>	<i>12.95</i>	<i>0.43</i>	<i>5.72</i>				<i>26.95</i>	<i>0.21</i>		
27 Jul 2019	9.00	0.29	2.70	0.10	0.27	0.49	14.54	0.19		0.34
1 Sept 2019	8.50	0.30	2.60	0.10	0.32	0.44	13.82	0.19		0.37
15 Sept 2019 (bankfull)	10.00	0.41	4.20	0.10	0.64	1.75	20.47	0.21		0.36
<i>September Flood Estimate</i>	<i>31.50</i>	<i>0.44</i>	<i>14.18</i>				<i>46.90</i>	<i>0.30</i>		
Location 4									0.011	
14 Jun 2019	8.25	0.16	1.36	0.28	1.05	0.78	9.90	0.14		0.10
<i>14 Jun 2019 Bankfull Estimate</i>	<i>12.40</i>	<i>0.41</i>	<i>5.22</i>				<i>24.77</i>	<i>0.21</i>		
27 Jul 2019	8.00	0.15	1.25	0.21	0.94	0.57	9.65	0.13		0.13
1 Sept 2019	7.75	0.15	1.21	0.19	0.82	0.57	9.49	0.13		0.14





15 Sept 2019 (bankfull)	8.25	0.23	2.87	0.28	1.67	2.14	11.76	0.24	0.15
<i>September Flood Estimate</i>	<i>30.25</i>	<i>0.57</i>	<i>17.68</i>				<i>48.67</i>	<i>0.36</i>	
19 Oct 2019	8.75	0.21	1.87	0.44	1.23	1.51	11.87	0.16	0.07
<i>October Flood Estimate</i>	<i>13.75</i>	<i>0.47</i>	<i>6.88</i>				<i>20.32</i>	<i>0.34</i>	

Discharge (Q), width (w), average flow depth (h), velocity (V), hydraulic radius (R), friction slope (S_f), Manning's roughness (n)

‡Manning's roughness coefficient calculated with Manning's equation.

Table S2

Supplementary Table 2. Discharge comparison between the Menominee and Sinsinawa Rivers. The Menominee River values are from Location 1. Negative percent different values indicate greater values in the Menominee River.

	Menominee River	Sinsinawa River	percent difference
<i>Upstream drainage area (km²)</i>	<i>56</i>	<i>103</i>	<i>59</i>
Menominee River Discharge from Field Measurements			
14 June Discharge (m ³ /s)	1.1	1.0	-8
27 July Discharge (m ³ /s)	0.5	0.8	44
1 September Discharge (m ³ /s)	0.4	0.8	53
15 September Discharge (m ³ /s)	2.1	6.1	98
19 October Discharge (m ³ /s)	1.2	2.5	74
Menominee River Flood Discharge based on Mannings Equation (width, depth, Manning's n, and slope)			
September Flood Discharge (m ³ /s)	23.1	35.1	41
October Flood Discharge (m ³ /s)	4.8	28.9	143

