

Figure S1. The flood conditioning factors (part 1).

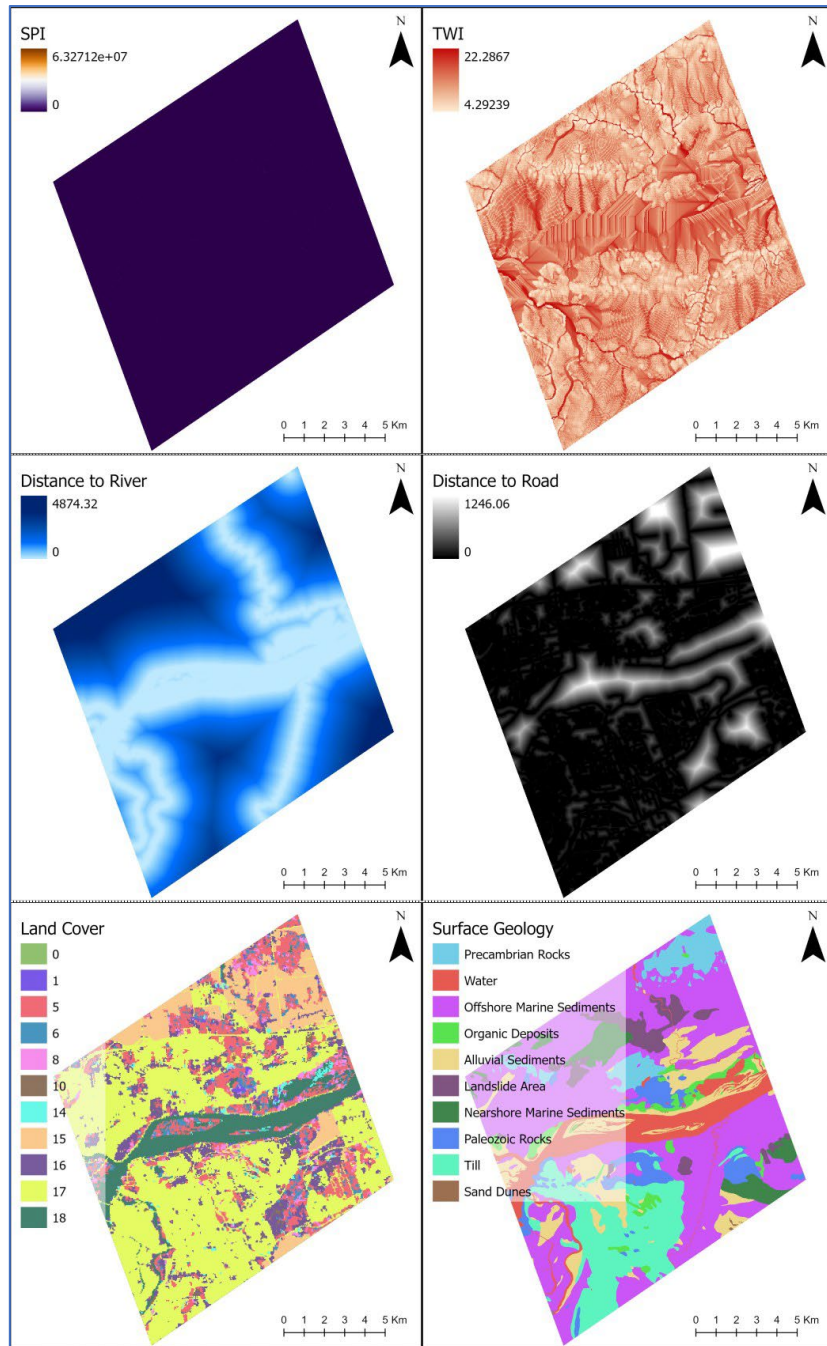


Figure S2. The flood conditioning factors (part 2).

Table S1. Random forest classification performance for single site vs multi-sites trained models.

	Single site based random forest classification (10,000 points)	Multi-sites based random forest classification (15,000 points)
Model accuracy	0.972	0.971
Kappa coefficient	0.944	0.943

Table S2. The distribution of the predicted flood probability and the cumulative pixels (derived from the multi-sites training random forest classification model) within the existing flood hazard areas (FDRP and RVCA maps, used for training).

Flood Probability	Number of Pixels	Cumulative Number of Pixels	Cumulative Percentage of Pixels
0.98-1	22,484,324	22,484,324	75.8%
0.96-0.98	1,394,437	23,878,761	80.5%
0.94-0.96	849,798	24,728,559	83.4%
0.92-0.94	549,376	25,277,935	85.2%
0.9-0.92	456,906	25,734,841	86.8%
0.88-0.9	376,507	26,111,348	88.1%
0.86-0.88	246,685	26,358,033	88.9%
0.84-0.86	252,329	26,610,362	89.7%
0.82-0.84	177,543	26,787,905	90.3%
0.8-0.82	173,650	26,961,555	90.9%
0.78-0.8	170,758	27,132,313	91.5%
0.76-0.78	136,240	27,268,553	92.0%
0.74-0.76	119,484	27,388,037	92.4%
0.72-0.74	97,416	27,485,453	92.7%
0.7-0.72	100,452	27,585,905	93.0%
0.68-0.7	101,185	27,687,090	93.4%
0.66-0.68	74,007	27,761,097	93.6%
0.64-0.66	77,068	27,838,165	93.9%
0.62-0.64	82,110	27,920,275	94.2%
0.6-0.62	63,092	27,983,367	94.4%
0.58-0.6	69,735	28,053,102	94.6%
0.56-0.58	55,288	28,108,390	94.8%
0.54-0.56	45,064	28,153,454	94.9%
0.52-0.54	52,474	28,205,928	95.1%
0.5-0.52	40,999	28,246,927	95.3%

0.48-0.5	46,036	28,292,963	95.4%
0.46-0.48	36,198	28,329,161	95.5%
0.44-0.46	37,789	28,366,950	95.7%
0.42-0.44	42,507	28,409,457	95.8%
0.4-0.42	34,829	28,444,286	95.9%
0.38-0.4	39,448	28,483,734	96.1%
0.36-0.38	46,678	28,530,412	96.2%
0.34-0.36	37,581	28,567,993	96.3%
0.32-0.34	42,089	28,610,082	96.5%
0.3-0.32	40,638	28,650,720	96.6%
0.28-0.3	32,505	28,683,225	96.7%
0.26-0.28	35,849	28,719,074	96.8%
0.24-0.26	40,337	28,759,411	97.0%
0.22-0.24	42,774	28,802,185	97.1%
0.2-0.22	35,064	28,837,249	97.2%
0.18-0.2	43,904	28,881,153	97.4%
0.16-0.18	90,199	28,971,352	97.7%
0.14-0.16	131,683	29,103,035	98.1%
0.12-0.14	89,022	29,192,057	98.4%
0.1-0.12	70,853	29,262,910	98.7%
0.08-0.1	44,742	29,307,652	98.8%
0.06-0.08	33,055	29,340,707	98.9%
0.04-0.06	42,202	29,382,909	99.1%
0.02-0.04	71,278	29,454,187	99.3%
0-0.02	199,205	29,653,392	100.0%

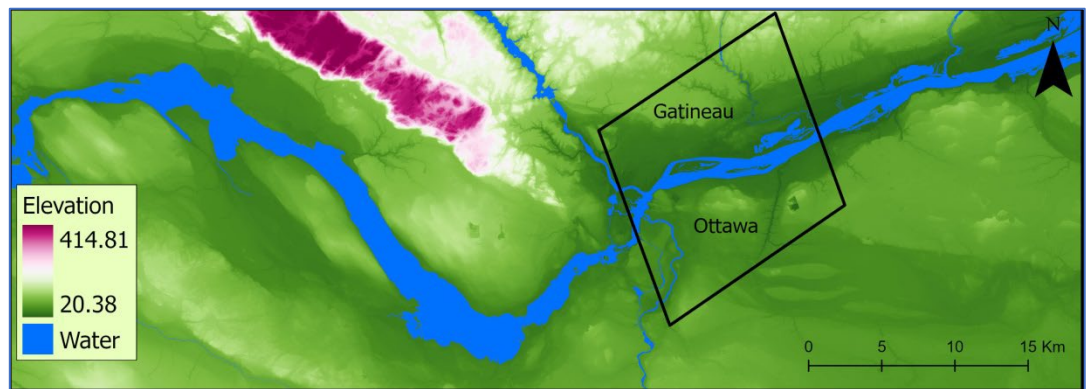


Figure S3. 1m resolution elevation raster across the study area.

