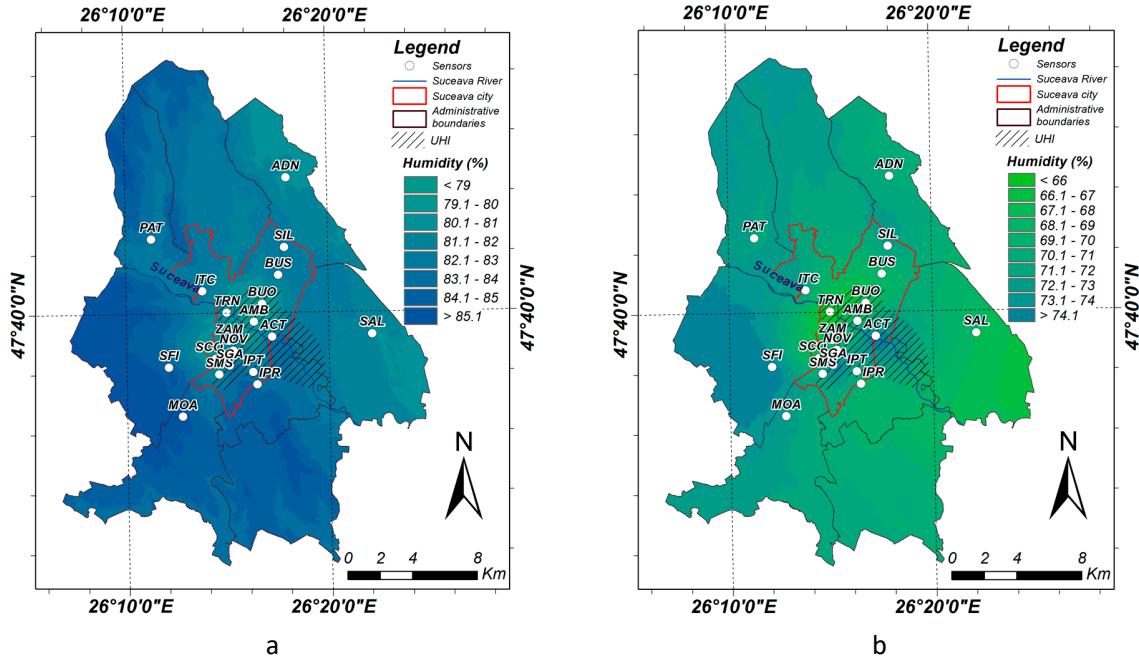


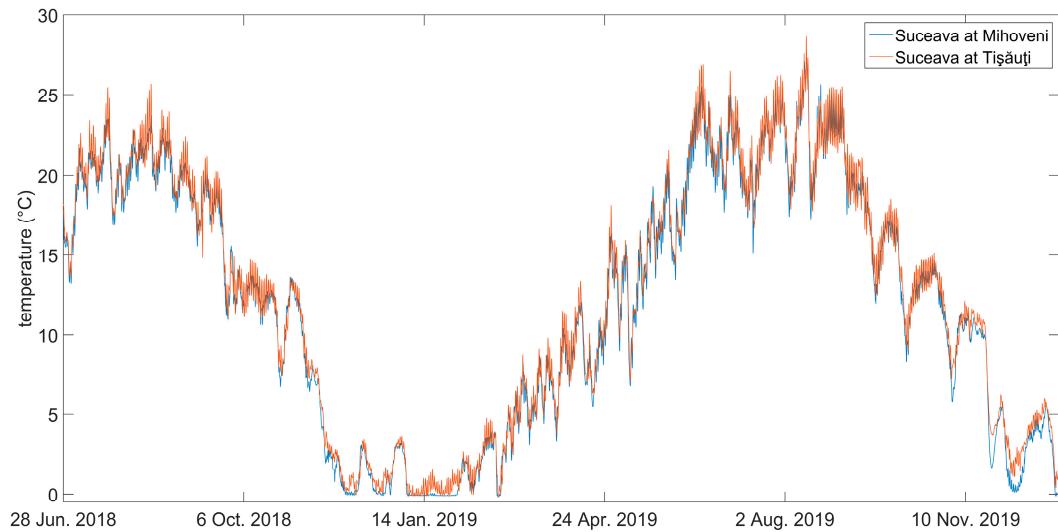
Supplementary Material of the article

"Changes in the Water Temperature of Rivers Impacted by the Urban Heat Island: Case Study of Suceava City"

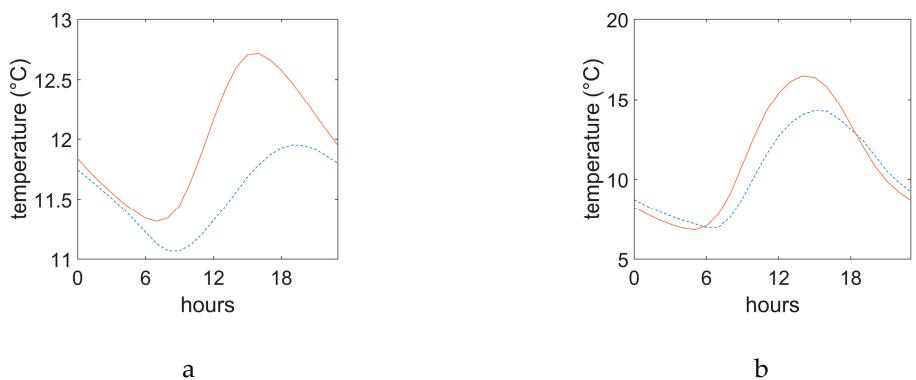
Authors: Andrei-Emil BRICIU, Dumitru MIHĂILĂ, Adrian GRAUR, Dinu Iulian OPREA, Alin PRISĂCARIU, Petruț Ionel BISTRICEAN



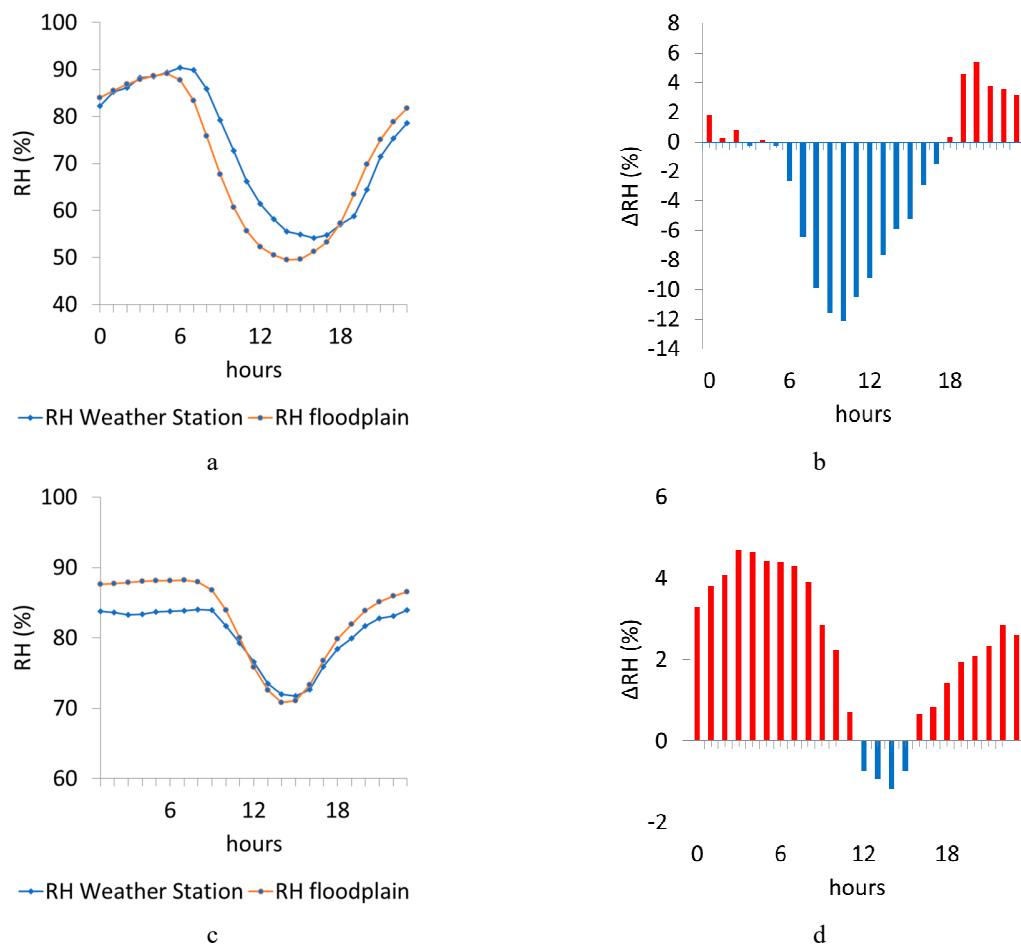
Supplementary Figure 1. Urban heat island above Suceava city as revealed by hourly air relative humidity measurements in 2019 during winter - a - and summer - b - (values used in maps are averages per season) – UHI represents the area most impacted by the urban heat island.



Supplementary Figure 2. Comparative evolution of Suceava River water temperature upstream (Mihoveni) and downstream (Tișăuți) of Suceava city (hourly data, June 28th, 2018 – December 31st, 2019).



Supplementary Figure 3. Comparisons of water temperature at Mihoveni (upstream) and Tișăuți (downstream) and air temperature in Suceava city area in 2019: a. average diurnal profiles of water temperature, b. average diurnal profiles of air temperature.



Supplementary Figure 4. Relative humidity diurnal regime of the air at Suceava Weather Station and in the floodplain in 2019 during summer (a) and winter (b) (ΔRH is the difference between the floodplain values and those of Suceava Weather Station).

Supplementary Table 1. Correlation matrix of selected water and air parameters in Suceava city in 2019.

	Temperature WS	Precipitation WS	Relative humidity WS	I fl.	Precipitation fl.	Temperature fl.	Solar radiation fl.	Relative humidity fl.	Water level M	Water level T	Discharge WTP	Water WTP	Water temperature M	Water temperature T
Temperature WS	1.000	0.081	-0.298	0.063	0.996	0.670	-0.436	0.261	0.169	-0.018	0.931	0.951	0.950	
Precipitation WS	0.081	1.000	0.273	0.643	0.085	-0.059	0.253	0.280	0.229	0.580	0.116	0.121	0.122	
Relative hum. WS	-0.298	0.273	1.000	0.300	-0.266	-0.445	0.940	-0.069	-0.075	0.312	-0.142	-0.207	-0.200	
Precipitation I	0.063	0.643	0.300	1.000	0.069	-0.064	0.295	0.308	0.267	0.549	0.111	0.104	0.105	
Temperature fl.	0.996	0.085	-0.266	0.069	1.000	0.690	-0.427	0.279	0.190	-0.008	0.937	0.961	0.959	
Solar radiation fl.	0.670	-0.059	-0.445	-0.064	0.690	1.000	-0.615	0.548	0.564	0.030	0.571	0.630	0.626	
Relative hum. fl.	-0.436	0.253	0.940	0.295	-0.427	-0.615	1.000	-0.179	-0.182	0.291	-0.292	-0.380	-0.369	
Water level M	0.261	0.280	-0.069	0.308	0.279	0.548	-0.179	1.000	0.894	0.457	0.150	0.215	0.208	
Water level T	0.169	0.229	-0.075	0.267	0.190	0.564	-0.182	0.894	1.000	0.490	0.043	0.117	0.108	
Discharge WTP	-0.018	0.580	0.312	0.549	-0.008	0.030	0.291	0.457	0.490	1.000	-0.043	-0.016	-0.019	
Temperature WTP	0.931	0.116	-0.142	0.111	0.937	0.571	-0.292	0.150	0.043	-0.043	1.000	0.969	0.973	
Water temp. M	0.951	0.121	-0.207	0.104	0.961	0.630	-0.380	0.215	0.117	-0.016	0.969	1.000	0.999	
Water temp. T	0.950	0.122	-0.200	0.105	0.959	0.626	-0.369	0.208	0.108	-0.019	0.973	0.999	1.000	

Abbreviations: WS – Suceava Weather Station, M – Mihoveni, I – Ițcani, T – Tișăuți, fl. – floodplain, WTP – wastewater treatment plant