

Supplementary material

Documenting the Changing Floodplain of Nileas Basin in North Euboea (Greece) before and after Storms Daniel and Elias

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1. The evolution of flora in riverbed of Voudouros river



Figure S1. Study areas.



Figure S2. The evolution of the disease in plain trees in area 1 of Figure S1.



Figure S3. The evolution of the disease in plain trees in area 1 of Figure S1.

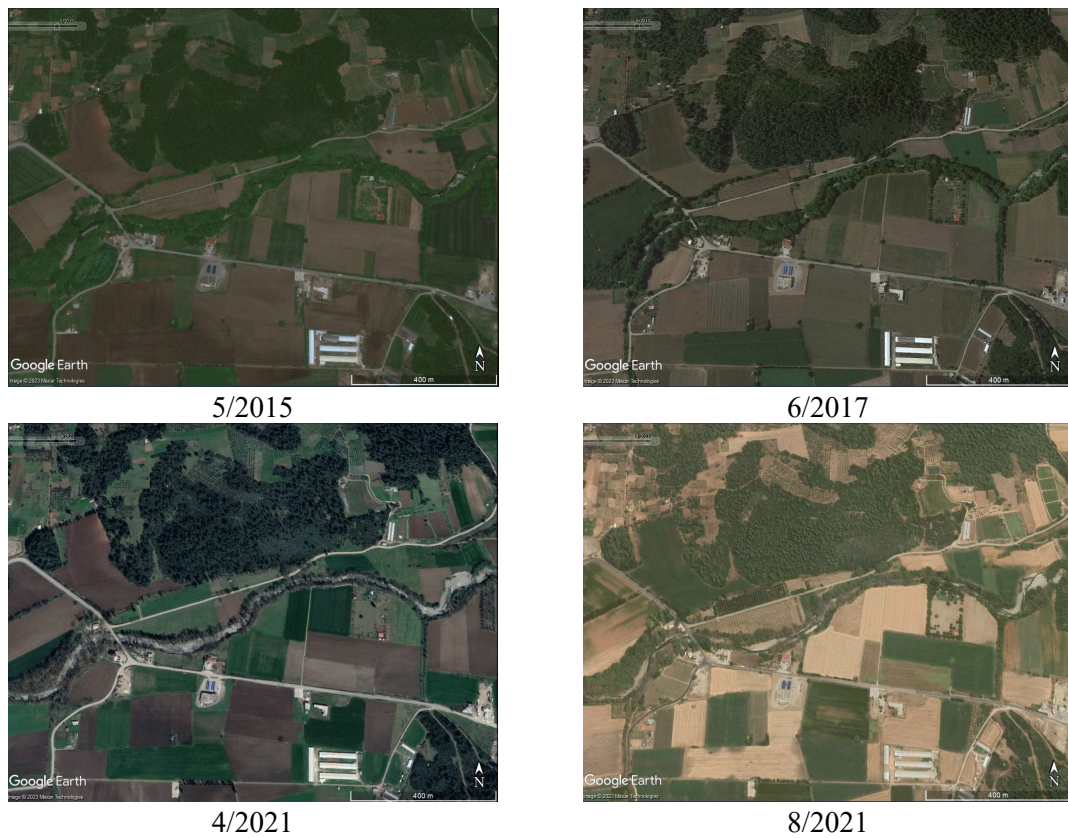


Figure S4. The evolution of the disease in plain trees in area 1 of Figure S1.

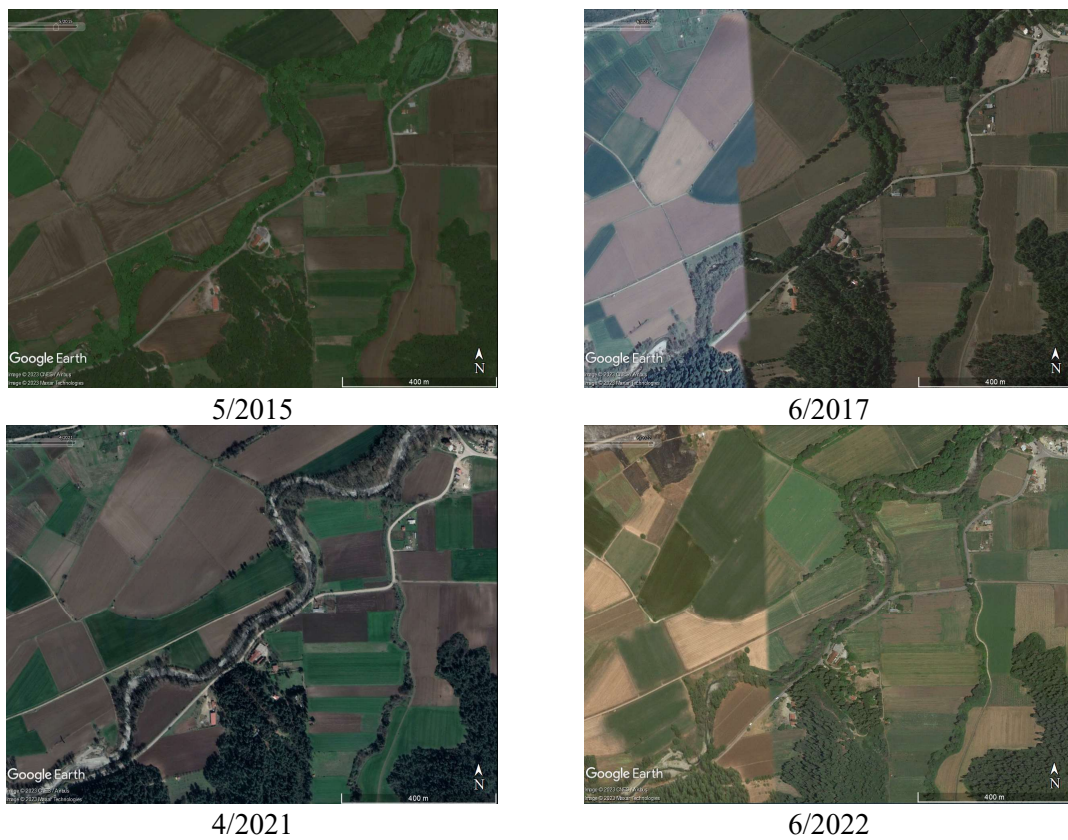


Figure S5. The evolution of the disease in plain trees in area 1 of Figure S1.

2. The riverbed before mid-2010s and in 2022 (Voudouros, Nileas and Kireas rivers)



Figure S6. The riverbed before mid-2010s and in 2022 in Voudouros, Nileas and Kireas rivers.

3. The river basin of Nileas river in August 2020 and in August 2021

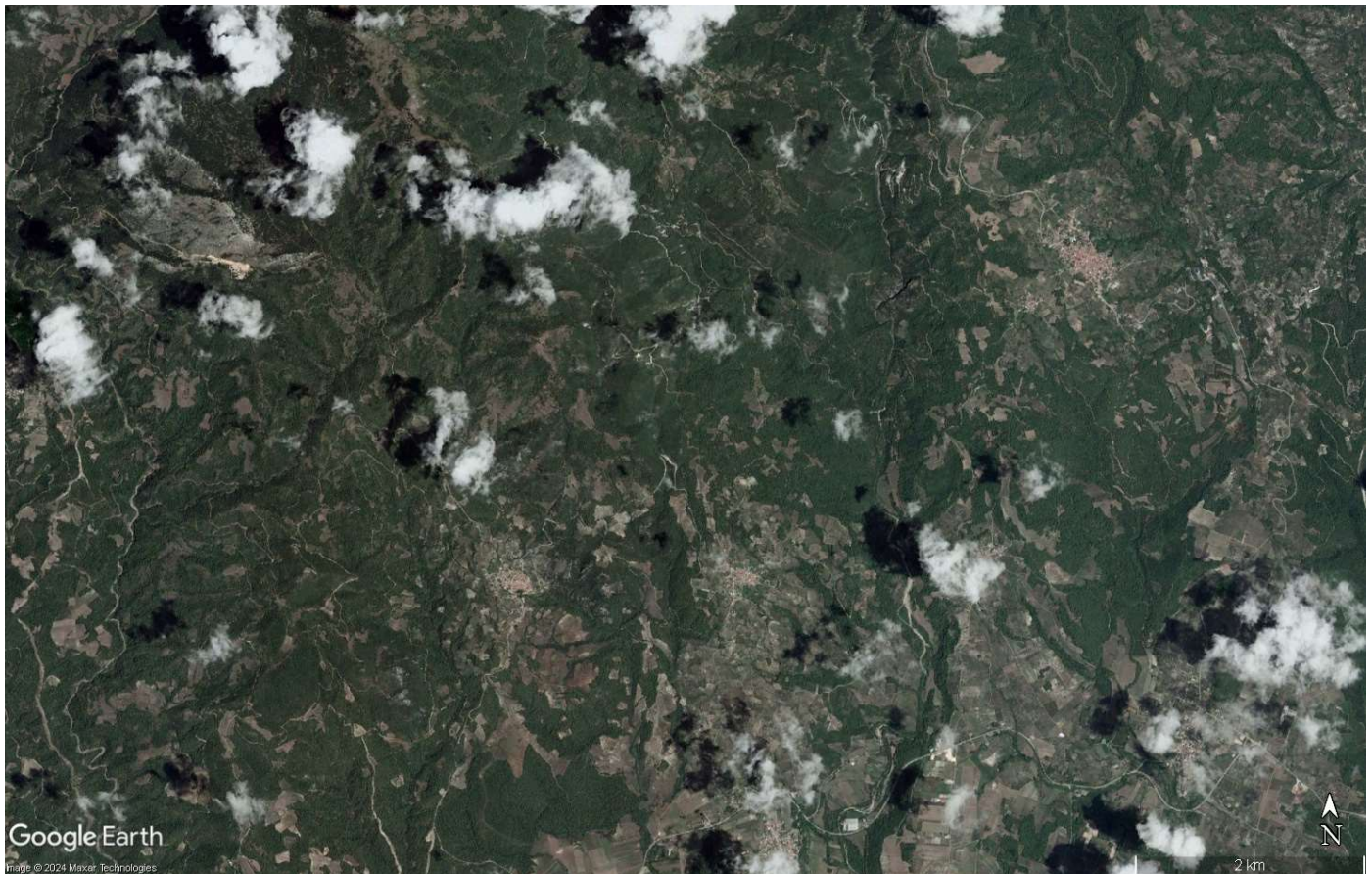


Figure S7. The riverbasin of Nileas river in August 2020 (before the wildfire) (Source: GoogleEarth).



Figure S8. The river basin of Nileas river in August 2021 (after the wildfire) (Source: GoogleEarth).

4. On-site Field Inspection Report

A total of 23 landmarks were taken, most of them along the river but also from the wider area of interest (Figure S9, S10). In Table 1 is a summary of points and their coordinates.

At each location, photographs were taken upstream and downstream of the river and details were noted of the problems observed due to the disease of plane trees and the burnt forest.

Positions A, B, C, D (Figure S11, Table S2) were added in the second phase of the on-site field inspection. They are mostly located downstream of the confluence of the rivers, along Voudouros river, where the greatest change in landscape was observed.

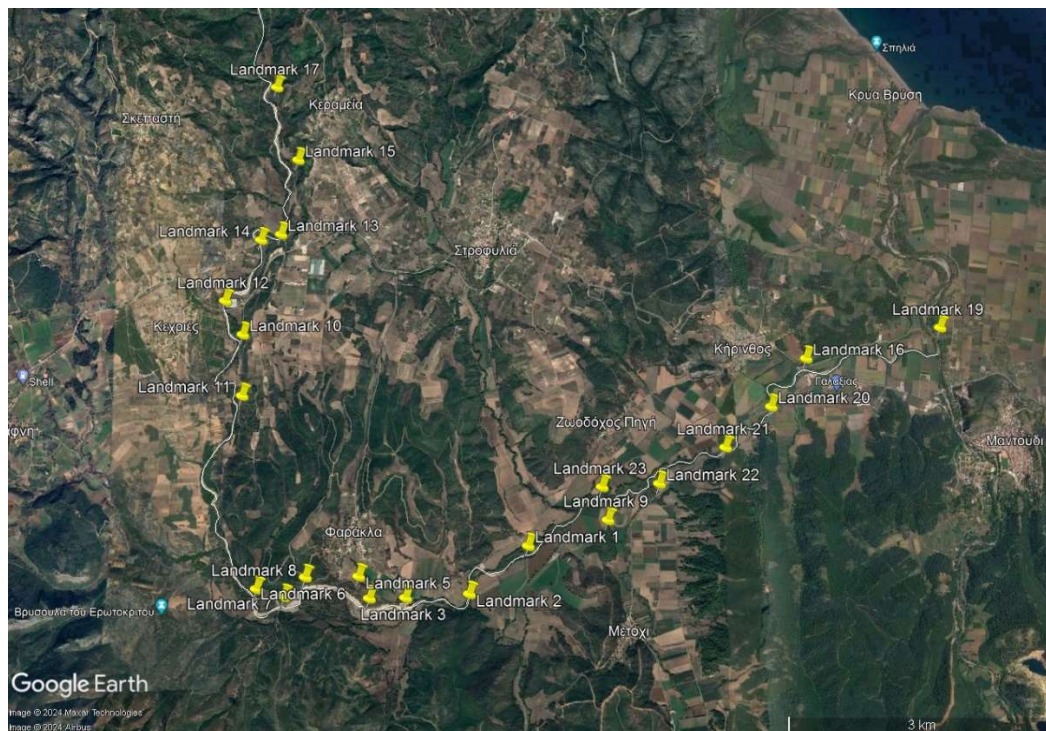


Figure S9. Nileas River-Branch of Interest (Source: GoogleEarth).



Figure S10. River elevation profile (Source: GoogleEarth).

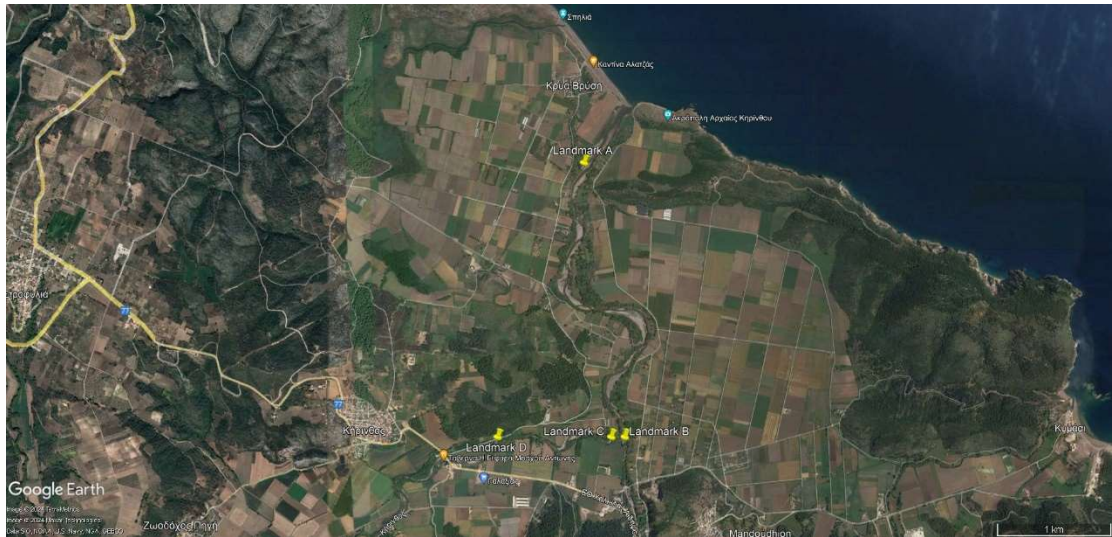


Figure S11. Additional Points (Source: GoogleEarth)

Table S1. Landmarks which present before and after Daniel and Elias storms

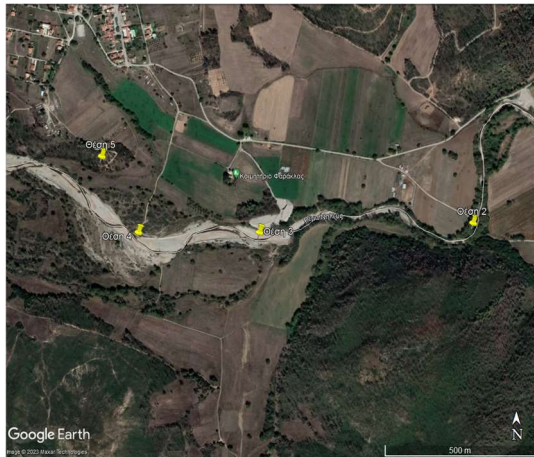
Landmarks	Coordinates					
	Degrees		Decimal format		ΕΓΣΑ'87	
	longitude	latitude	longitude	latitude	X	Y
Landmark 1	38°47'17"N	23°24'51"E	38,78805556	23,41416667	448971,3927	4293133,165
Landmark 2	38°47'00"N	23°24'23"E	38,78333333	23,40638889	448292,4841	4292613,5
Landmark 3	38°46'59"N	23°23'53"E	38,78305556	23,39805556	447568,4755	4475684,755
Landmark 4	38°46'59"N	23°23'36"E	38,78305556	23,39333333	447158,3163	4292590,116
Landmark 5	38°47'07"N	23°23'31"E	38,78527778	23,39194444	447039,3206	4292837,514
Landmark 6	38°47'07"N	23°23'06"E	38,78527778	23,385	446436,1653	4292841,546
Landmark 7	38°47'00"N	23°22'56"E	38,78333333	23,38222222	446193,4455	4292627,399
Landmark 8	38°47'03"N	23°22'43"E	38,78416667	23,37861111	445880,4242	4292721,998
Landmark 9	38°47'26"N	23°25'29"E	38,79055556	23,42472222	449889,8971	4293404,768
Landmark 10	38°48'37"N	23°22'35"E	38,81027778	23,37638889	445707,1711	4295620,842
Landmark 11	38°48'14"N	23°22'35"E	38,80388889	23,37638889	445702,3353	4294911,87
Landmark 12	38°48'50"N	23°22'26"E	38,81388889	23,37388889	445492,8554	4296023,049
Landmark 13	38°49'15"N	23°22'53"E	38,82083333	23,38138889	446149,2188	4296789,237
Landmark 14	38°49'15"N	23°22'43"E	38,82083333	23,37861111	445908,0761	4296790,873
Landmark 15	38°49'44"N	23°23'01"E	38,82888889	23,38361111	446348,1616	4297681,858
Landmark 16	38°48'25"N	23°27'07"E	38,80694444	23,45194444	452264,9882	4295208,906
Landmark 17	38°50'13"N	23°22'50"E	38,83694444	23,38055556	446088,9953	4298577,575
Landmark 18	38°51'29"N	23°22'56"E	38,85805556	23,38222222	446249,4915	4300919,3
Landmark 19	38°48'36"N	23°28'13"E	38,81	23,47027778	453858,798	4295538,596
Landmark 20	38°48'07"N	23°26'49"E	38,80194444	23,44694444	451827,4924	4294656,675
Landmark 21	38°47'52"N	23°26'26"E	38,79777778	23,44055556	451269,8915	4294197,68
Landmark 22	38°47'39"N	23°25'54"E	38,79416667	23,43166667	450495,498	4293801,719
Landmark 23	38°47'37"N	23°25'26"E	38,79361111	23,42388889	449819,66	4293744,295

Table S2. Landmarks which were added in the second phase

Landmark A	38°49'48"N	23°27'58"E	38.83000000	23.46611111	453509.989580076	4297760.08998513
Landmark B	38°48'29"N	23°28'13"E	38.80805556	23.47027778	453857.543200798	4295322.82668214
Landmark C	38°48'29"N	23°28'08"E	38.80805556	23.49388889	455907.612612412	4295311.2132054
Landmark D	38°48'29"N	23°27'26"E	38.80805556	23.45722222	452723.974246426	4295329.47558376

Name	Landmark 1	
Coordinates	38°47'17"N	
	23°24'51"E	
Coordinates ΕΓΣΑ '87	448971,3927 4293133,165	
Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 2	
Coordinates	38°47'00"N	
	23°24'23"E	
Coordinates ΕΓΣΑ '87	448292,48412112 4292613,4996715	
Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 3	
Coordinates	38°46'59"N	
	23°23'53"E	
Coordinates ΕΓΣΑ '87	447568,47548165	
	4292587,4059006	
Notes: Not notable alterations		
Downstream	Upstream	
		
29.4.2023	29.4.2023	
		
11.11.2023	11.11.2023	

Name	Landmark 4	
Coordinates	38°46'59"N	
	23°23'36"E	
Coordinates ΕΓΣΑ '87	447158,31632233 4292590,1155395	
Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 5	
Coordinates	38°47'07"N	
	23°23'31"E	
Coordinates ΕΓΣΑ '87	447039,32061134 4292837,5139173	
Notes: Hill near the river		
		
29.4.2023		

Name	Landmark 6	
Coordinates	38°47'07"N	
	23°23'06"E	
Coordinates ΕΓΣΑ '87	446436,16530411 4292841,5463686	
Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 7	
Coordinates	38°47'00"N	
	23°22'56"E	
Coordinates ΕΓΣΑ '87	446193,44549748 4292627,3985305	
Notes: Not notable alterations		
Downstream		Upstream
		
29.4.2023	29.4.2023	
		
11.11.2023	11.11.2023	

Name	Landmark 8	
Coordinates	38°47'03"N	
	23°22'43"E	
Coordinates ΕΓΣΑ '87	445880,42421008	
	4292721,9978979	
Notes: 11/9-Fallen tree: landmark could not be accessed		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		

Name	Landmark 9	
Coordinates	38°47'26"N	
	23°25'29"E	
Coordinates ΕΓΣΑ '87	449889,89706435 4293404,7682185	
Notes: Landmark near the river		
		
29.4.2023		

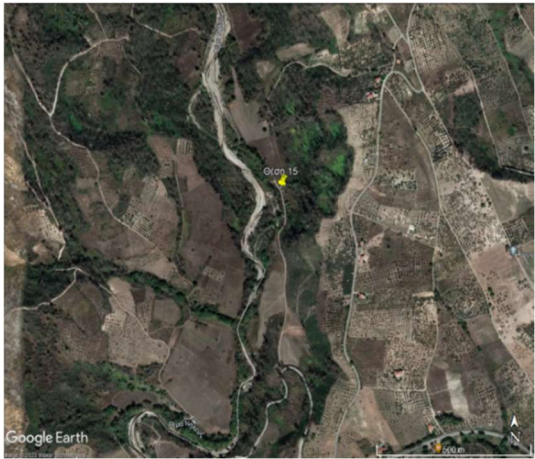
Name	Landmark 10	
Coordinates	38°48'37"N	
	23°22'35"E	
Coordinates ΕΓΣΑ '87	445707,17113211 4295620,8418867	
Notes: Important alterations of the landscape are noted/landslide		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 11	
Coordinates	38°48'14"N	
	23°22'35"E	
Coordinates ΕΓΣΑ '87	445702,33528394 4294911,8703228	
Notes: Not notable alterations		
Downstream		Upstream
		
29.4.2023	29.4.2023	
		
11.11.2023	11.11.2023	

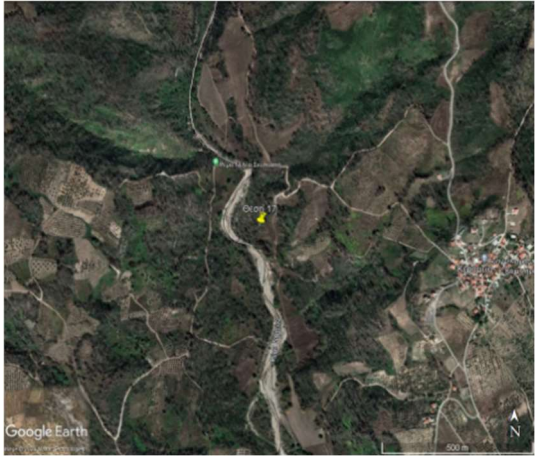
Name	Landmark 12	
Coordinates	38°48'50"N	
	23°22'26"E	
Coordinates ΕΓΣΑ '87	445492,85537959 4296023,0487593	
Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

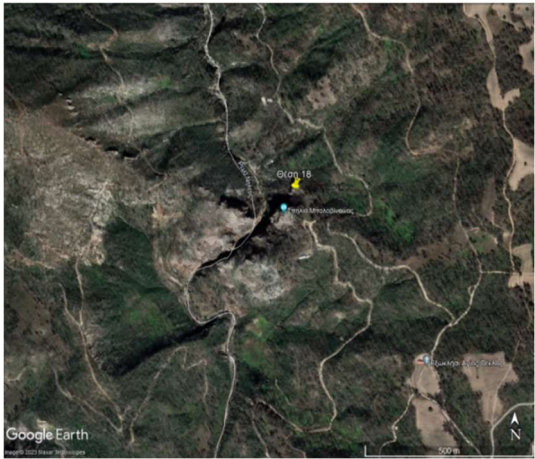
Name	Landmark 13	
Coordinates	38°49'15"N	
	23°22'53"E	
Coordinates ΕΓΣΑ '87	446149,21875529 4296789,2373994	
Notes: Important alterations of the landscape are noted/landslide		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 14	
Coordinates	38°49'15"N	
	23°22'43"E	
Coordinates ΕΓΣΑ '87	445908,07608114	
	4296790,8731805	
Notes: Not notable alterations as the riverbed / new civil infrastructures.		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 15	
Coordinates	38°49'44"N	
	23°23'01"E	
Coordinates EPSG '87	446348,16162438	
	4297681,8575034	
Notes: Not notable alterations		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 16	
Coordinates	38°48'25"N	
	23°27'07"E	
Coordinates ΕΓΣΑ '87	452264,98819047	
	4295208,9063405	
Notes: Not notable alterations as the riverbed is protected by civil infrastructures.		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 17	
Coordinates	38°50'13"N	
	23°22'50"E	
Coordinates ΕΓΣΑ '87	446088,99533681 4298577,5746008	
Notes: no access to the riverbed		
Downstream		Upstream
		
29.4.2023		29.4.2023

Name	Landmark 18	
Coordinates	38°51'29"N	
	23°22'56"E	
Coordinates ΕΓΣΑ '87	446249,49145963	
	4300919,3000177	
Notes: no access to the riverbed		
Downstream		Upstream
		

Name	Landmark 19	
Coordinates	38°48'36"N	
	23°28'13"E	
Coordinates ΕΓΣΑ '87	453858,79796172 4295538,5963718	
Notes: Downstream confluence between Nileas Kireas. After that point the river change it's name and named Voudouros		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name		Landmark 20	
Coordinates		38°48'07"N	
		23°26'49"E	
Coordinates ΕΓΣΑ '87		451827,49242389	
		4294656,6751993	
Notes:Not notable alterations			
Downstream		Upstream	
			
29.4.2023		29.4.2023	
			
11.11.2023		11.11.2023	

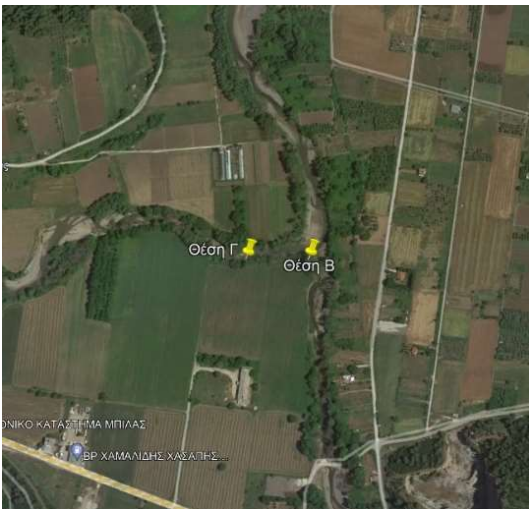
Name	Landmark 21	
Coordinates	38°47'52"N	
	23°26'26"E	
Coordinates ΕΓΣΑ '87	451269,89154031	
	4294197,6799047	
Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark 22	
Coordinates	38°47'39"N	
	23°25'54"E	
Coordinates ΕΓΣΑ '87	450495,49802462 4293801,7185473	
Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name Landmark 23 Coordinates 38°47'37"N 23°25'26"E Coordinates ΕΓΣΑ '87 449819,6600203 4293744,2949471 Notes: Important alterations of the landscape are noted		
Downstream		Upstream
		
29.4.2023		29.4.2023
		
11.11.2023		11.11.2023

Name	Landmark A		
Coordinates	38°49'48"N		
	23°27'58"E		
Coordinates ΕΓΣΑ '87	453509.989580076 4297760.08998513		
Notes: Voudouros river			
Downstream		Upstream	
			
11.11.2023		11.11.2023	

Name	Landmark B	
Coordinates	38°48'29"N	
	23°28'13"E	
Coordinates ΕΓΣΑ	453857.543200798	
'87	4295322.82668214	
Notes: Voudouros river		
Downstream		Upstream
		
11.11.2023		11.11.2023

Name	Landmark C	
Coordinates	38°48'29"N	
	23°28'08"E	
Coordinates ΕΓΣΑ '87	455907.612612412	
	4295311.2132054	
Notes: Voudouros river		
Downstream		Upstream
		
11.11.2023		11.11.2023

Name	Landmark D	
Coordinates	38°48'29"N	
	23°27'26"E	
Coordinates ΕΓΣΑ	452723.974246426	
‘87	4295329.47558376	
Notes: Voudouros river		
Downstream		Upstream
		
11.11.2023		11.11.2023