



IMDIS 2021

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HarmoNIA project: web application for data visualization

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HarmoNIA



<https://vrtlac.izor.hr/ords/harmonia/>

Hide filters <<< | Hide map

Year:

Project / Monitoring:

Institution:

Cruise:

Parameter group:

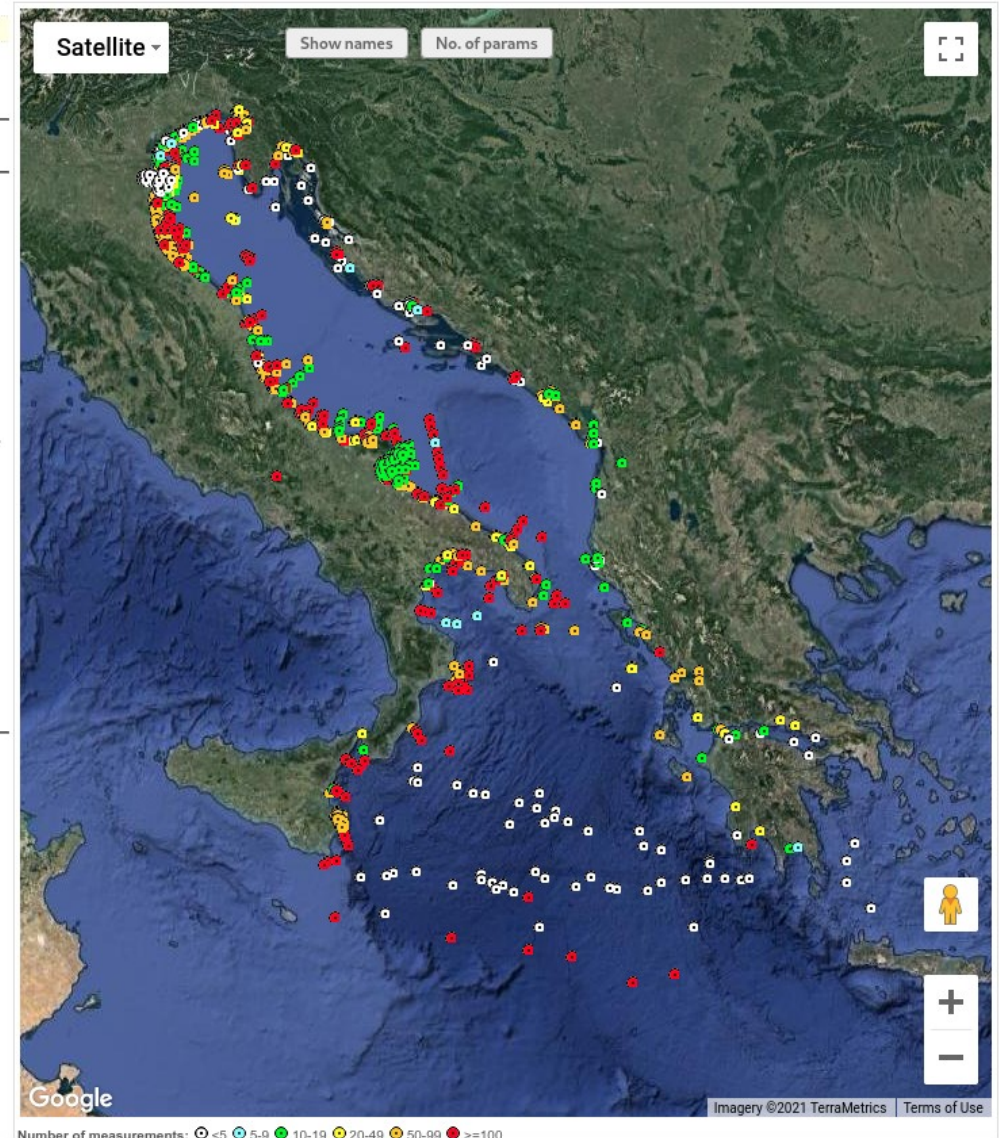
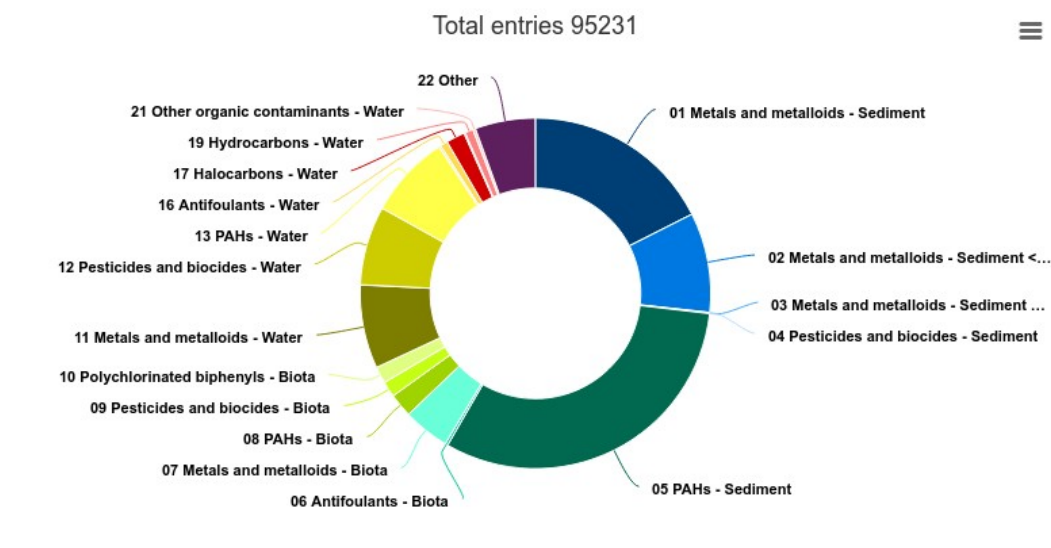
Parameter:

Station name:

Current position:

Locations 2149, cruises 777,

Number of entries



Datasets about hazardous substances in sediment, biota and water column were obtained using the EU initiative EMODnet, and in the framework of HarmonIA project. Datasets cover Adriatic - Ionian Seas and the time frame is 1980-2017. These data derive from 10 different institutions (originators). Data were collected in 2149 stations, sampled over 4282 times and producing a final number of 95231 single data which are referred to 510 different parameters.

Ha - Statistics

https://vrtlac.izor.hr/ords/harmonia/H_STAT

HarmoNIA data visualisation

HarmoNIA Geoportal

Remarks & questions: ivankovic@izor.hr

Statistics Locations Data visualisation

Hide filters <<< Hide map

Year:

Project / Monitoring:

Institution:

Cruise:

Parameter group:

Parameter:

Station name: enter station name

Current position: 0 0

Locations 2149, cruises 777,

Number of parameters

Total parameters 510

Category	Count
01 Metals and metalloids - Sediment	22
02 Metals and metalloids - Sediment <63um	19
03 Metals and metalloids - Sediment pore wat...	17
04 Pesticides and biocides - Sediment	16
05 PAHs - Sediment	15
06 Antifoulants - Biota	13
07 Metals and metalloids - Biota	12
08 PAHs - Biota	11
09 Pesticides and biocides - Biota	10
10 Polychlorinated biphenyls - Biota	9
11 Metals and metalloids - Water	8
12 Pesticides and biocides - Water	7
13 PAHs - Water	6
15 Polybrominated diphenyl ethers (PBDEs) - Water	5
16 Antifoulants - Water	4
17 Halocarbons - Water	3
19 Hydrocarbons - Water	2
22 Other	1

Number of parameters: 1 2 3-4 5-9 10-49 >=50

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A dedicated web application developed in the framework of the project HarmoNIA shows station locations and graphical representations of data. Users can filter data by: year, project, institution, cruise, parameter group and specific parameter. Data filter is adoptive, that means that changing each category, values in all other categories are re-calculated with values according to the new criteria. For example if users choose particular years, all other categories are restricted according to data available in those years (cruises from that year, parameters...). This approach helps users to quickly gain insight into which data are available.

Statistics Locations Data visualisation

Hide filters <<< Hide map

Year:

Project / Monitoring:

Institution:

Cruise:

Parameter group:

Parameter:

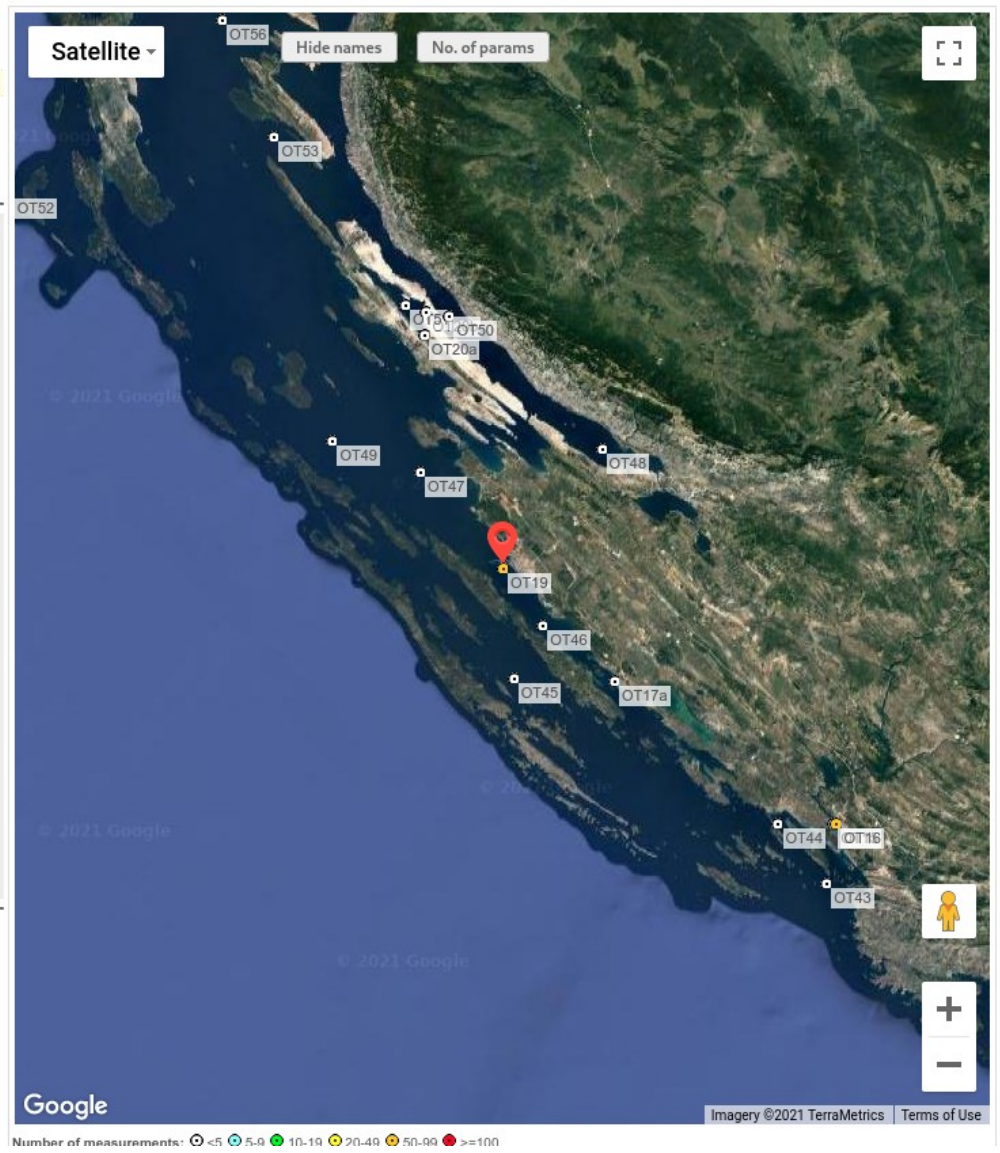
Station name:

Current position: 0 0

Locations 101

right click on station(at map) gives focus at row in table

Name	No. of measurements	No. of parameters	Depth
OT19	29	1	35
OT09a	29	1	38
OT16	29	1	39
OT05	29	1	23
OT01	28	1	105
OT13	25	1	102
ITCON1517MSFD-0000R1	5	1	
ITCON1517MSFD-000000	5	1	
ITCON1517MSFD-000000	5	1	
ITCON1517MSFD-0000R1	5	1	
ITCON1517MSFD-0000R1	5	1	
ITCON1517MSFD-000000	5	1	
ITCON1517MSFD-000000	5	1	
ITCON1517MSFD-000000	5	1	
ITCON1517MSFD-000000	5	1	
ITCON1517MSFD-000000	4	1	
ITCON1517MSFD-000000	4	1	
ITCON1517MSFD-000000	.	.	



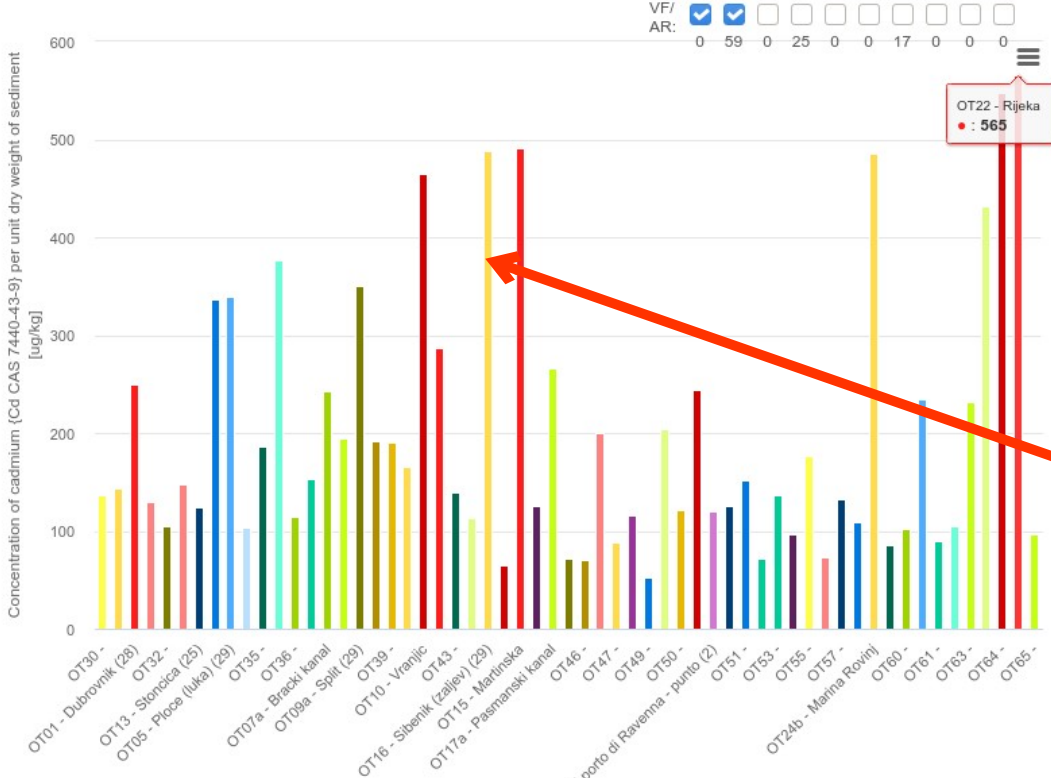
Locations tab shows sort-able table of locations containing measurements according current filter settings.

Year: Cruise:
 Project / Monitoring: Parameter group: 01 Metals and metalloids - Sediment
 Institution: Parameter: Concentration of cadmium (Cd CAS 7440-43-9) per unit

Depth for column view:
 Reset filters
 Filter params:

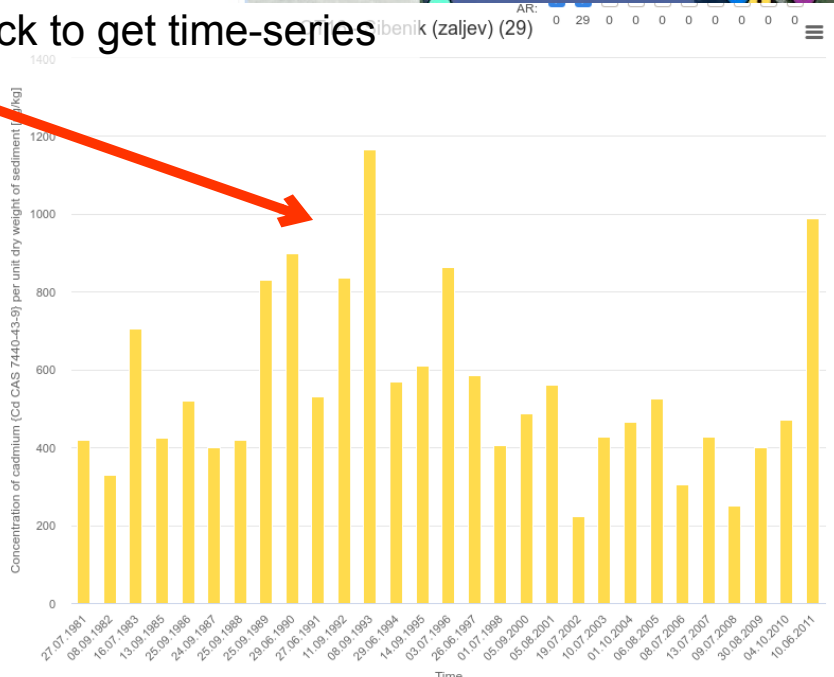
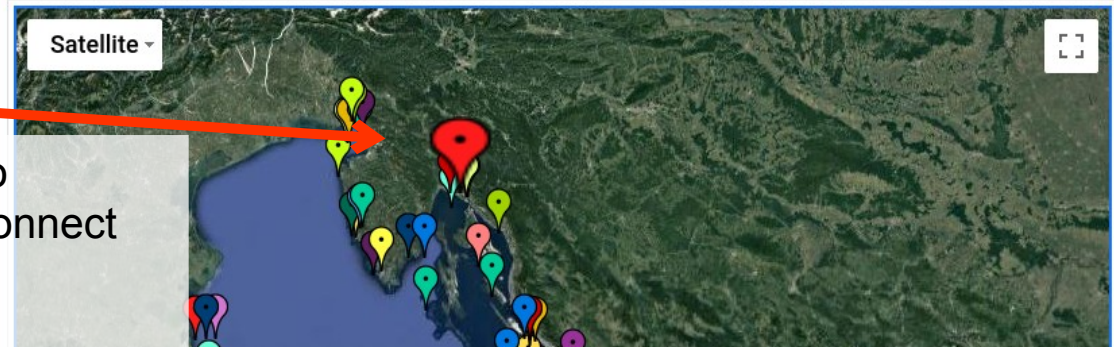
VF 0 or 1: No. of stations: 62 No. of values: 240
 min= 50 on station(s): OT13,
 max=1165 on station(s): OT16,
 avg=280.9771, stddev=202.0172, variance=40810.9443.
 From:27.06.1981; To: 01.12.2017

Show station names:



Mouse hover to highlight and connect graph and map

Click to get time-series



Graph and map are bi-directional paired and color matched.

Values (n) at the end of station name indicates from how many values median value is calculated. If there is no rounded brackets at the end of station name, individual value is shown.

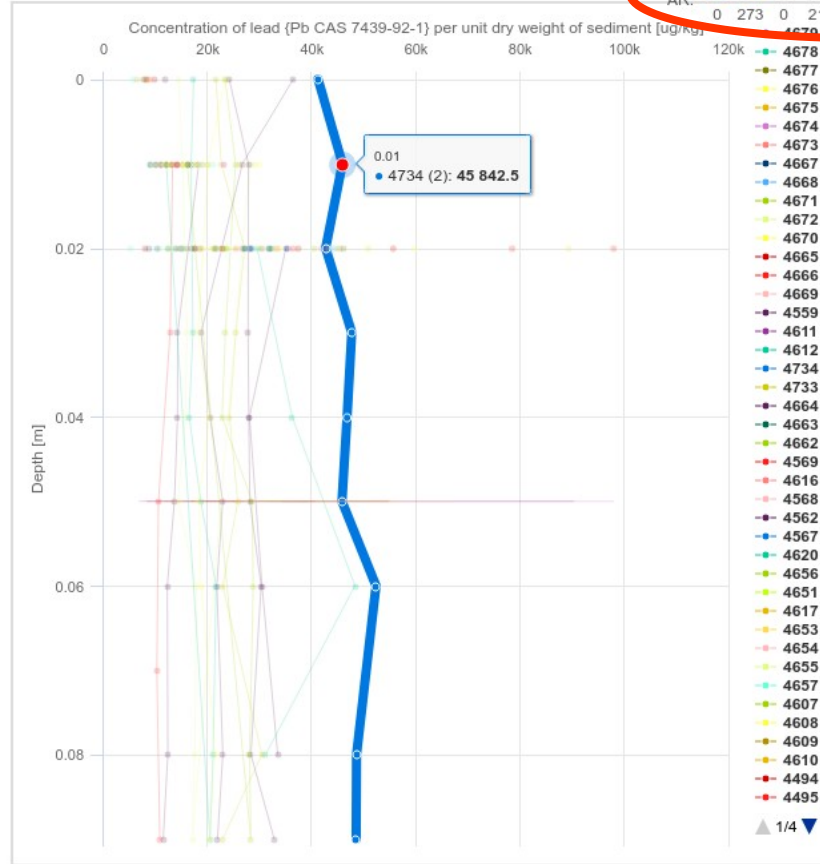
Year:		Cruise:	
Project / Monitoring:		Parameter group:	01 Metals and metalloids - Sediment
Institution:		Parameter:	Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment

Depth for column view:
Reset filters:
Filter params:

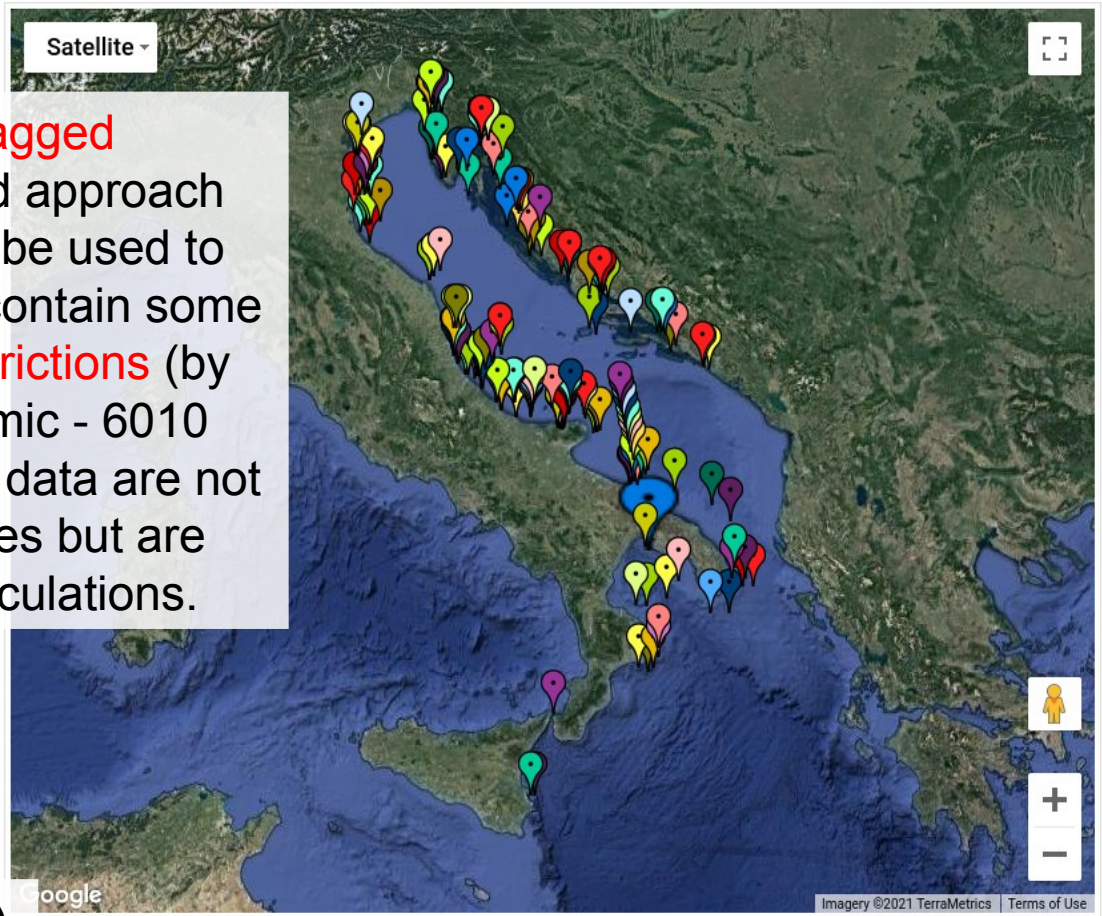
VF 0 or 1: No. of stations: 171 No. of values: 701
min= 5160 on station(s): 4626, 4657,
max=646000 on station(s): 385002, 385001, 385000, 384999, 384998, 384995,
avg=35723.9244, stddev=58002.1433, variance=3364248623.9414.
From:20.06.1991; To: 02.08.2017

Show station names:

VF/AR:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	0	273	0	21	0	0	1	0	0	0	3



All data are **quality flagged** according to a shared approach and quality flags can be used to filter data. Datasets contain some data with **access restrictions** (by negotiation or academic - 6010 out of 95231). Those data are not shown as single values but are used for statistics calculations.



Values (n) at the end of station name indicates from how many values median was calculated. If there is no rounded brackets at the end of station name, individual value is shown.

Depth profiles (with negative y axes) are displayed when data from different depths are available

Statistics

Locations

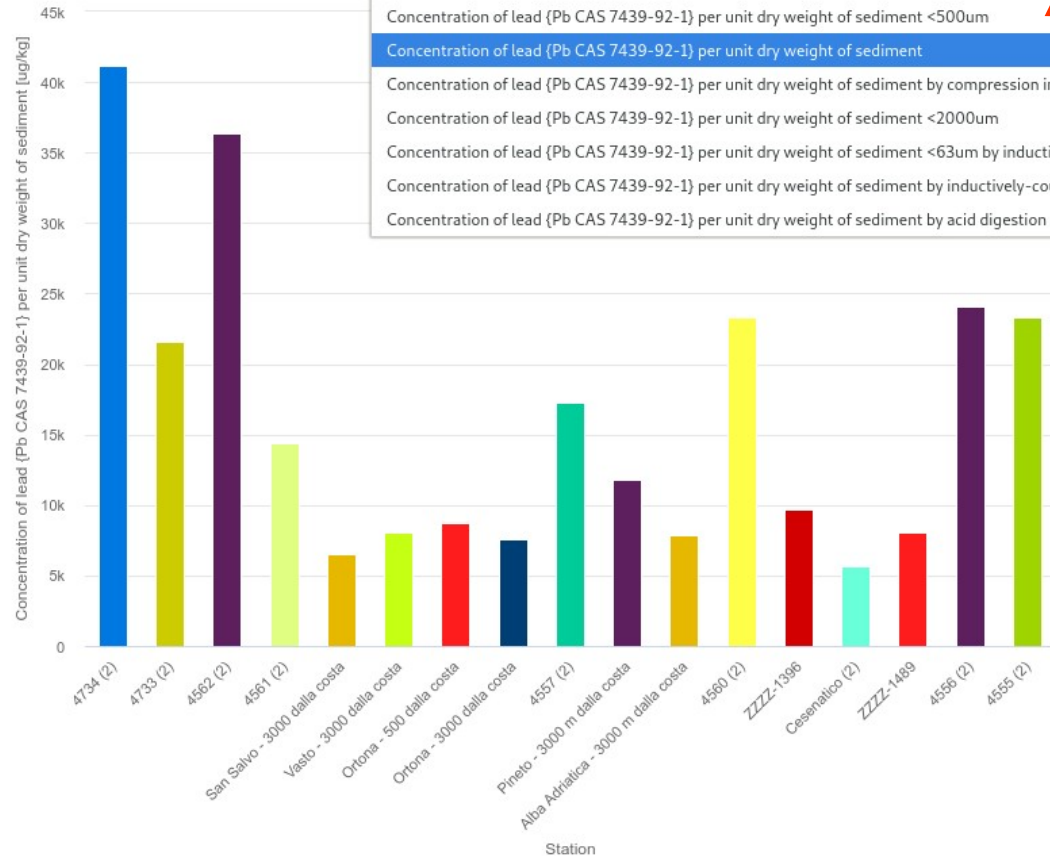
Data visualisation

Year:	<input type="text"/>	Cruise:	<input type="text"/>
Project / Monitoring:	<input type="text"/>	Parameter group:	01 Metals and metalloids - Sediment
Institution:	<input type="text"/>	Parameter:	Concentration of lead (Pb CAS 7439-92-1) per unit dry wt

Depth for column view:

VF 0 or 1: No. of stations: 171 No. of values: 701
 min= 5160 on station(s): 4626, 4657,
 max=646000 on station(s): 385002, 385001, 385000, 384999, 384998, 384995,
 avg=35723.9244, stddev=58002.1433, variance=3364248623.9414.
 From:20.06.1991; To: 02.08.2017

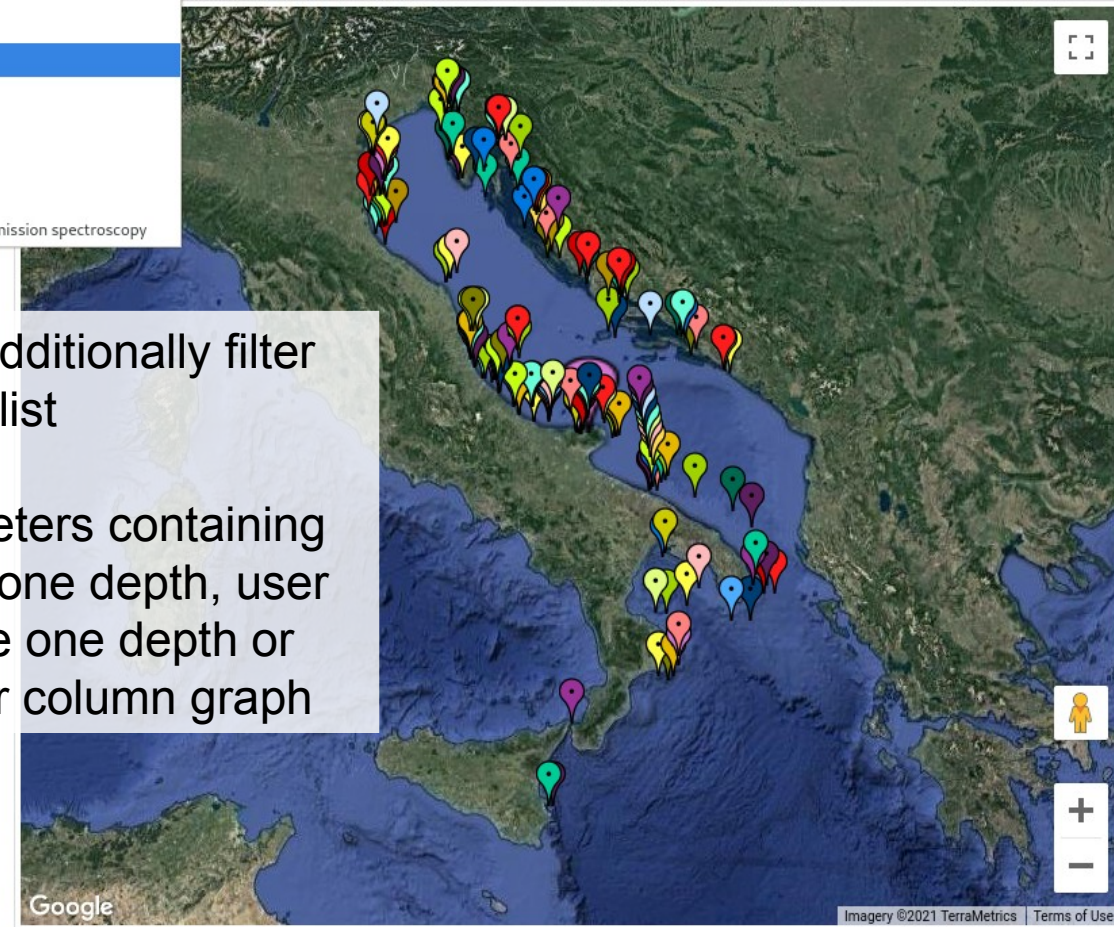
Show station names:



- Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment <500um
- Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment**
- Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment by compression into pellets and X-ray fluorescence
- Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment <2000um
- Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment <63um by inductively-coupled plasma mass spectrometry
- Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment by inductively-coupled plasma mass spectrometry
- Concentration of lead (Pb CAS 7439-92-1) per unit dry weight of sediment by acid digestion and inductively-coupled plasma atomic emission spectroscopy

User can additionally filter parameter list

For parameters containing more then one depth, user can choose one depth or average for column graph



Values (n) at the end of station name indicates from how many values median value is calculated. If there is no rounded brackets at the end of station name, individual value is shown.

Statistics Locations Data visualisation

Year:		Cruise:	
Project / Monitoring:		Parameter group:	05 PAHs - Sediment
Institution:		Parameter:	Concentration of fluorene (CAS 86-73-7) per unit dry weight

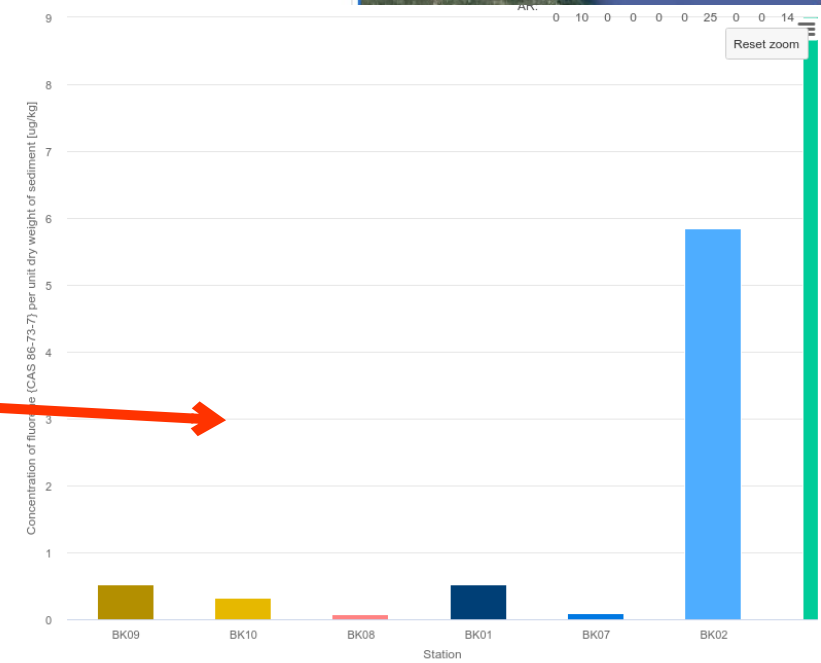
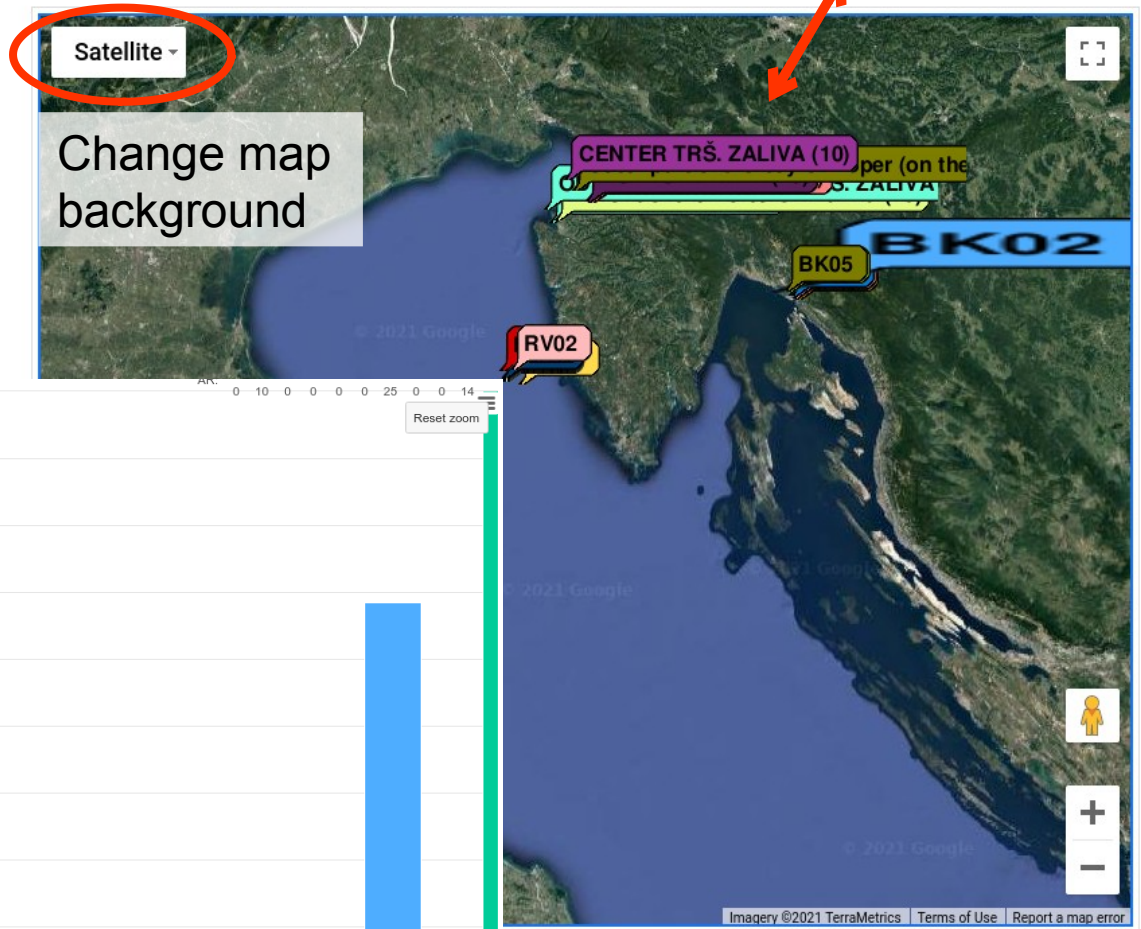
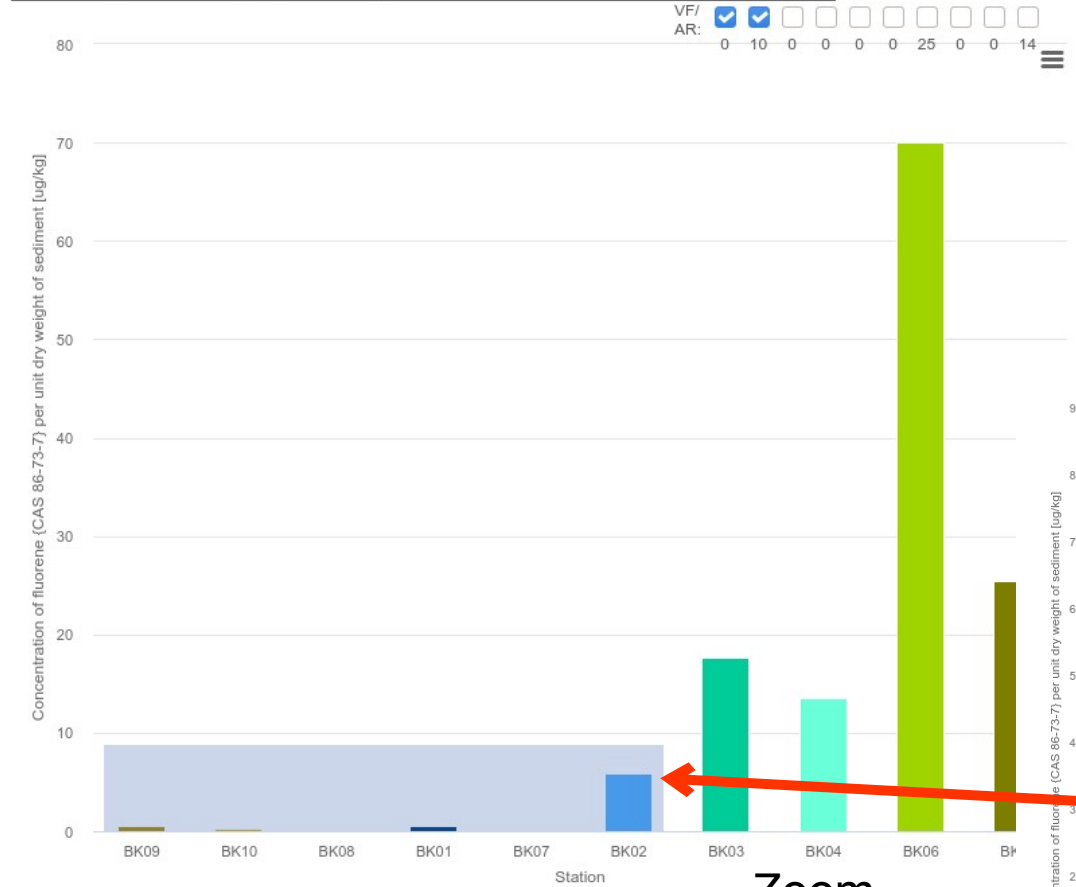
Depth for column view

Reset filters

Filter params:

VF 0 or 1: No. of stations: 17 No. of values: 91
min=0.08 on station(s): BK08,
max=213 on station(s): 14,
avg=18.1097, stddev=34.7063, variance=1204.5245.
From:22.09.1999; To: 18.09.2013

Show station names:



Values (n) at the end of station name indicates from how many values median value is calculated. If there is no rounded brackets at the end of station name, individual value is shown.

Zoom graph with mouse

Acknowledgment

The work was supported by **INTERREG Adrion Project HarmoNIA**. We acknowledge the contribution of the whole HarmoNIA partnership for sharing data and information.

Conclusion

Oceanographic research and monitoring are very relevant and expensive. It is important that data produced by research are used more than once, and in the proper way. Good visualizations help to better evaluate the state of marine environment. One of the tasks of **HarmoNIA project** was to harmonize methodologies used by different institutions. Additionally, this web application shows data heterogeneity, and lack of constant and coordinated monitoring efforts of hazardous substances in the Adriatic-Ionian region. Together with other project outputs, web application will help to address the needs of future research and monitoring.



<https://vrtlac.izor.hr/ords/harmonia/>

HarmoNIA data visualization