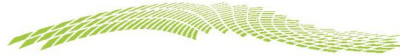




Interreg 
ADRION **ADRIATIC-IONIAN**

European Regional Development Fund - Instrument for Pre-Accession II Fund

HarmonIA



Harmonization and Networking for contaminant assessment in the Ionian and Adriatic Seas

Harmonia data visualization

Institute of Oceanography and Fisheries, Split, Croatia
Damir Ivanković



Online Workshop; 15th May, 2020

Introduction

- Focus on online products
- Products available after formal ending of project
- Source of information
- Stakeholders, scientists and general public

Hide filters <<< | Hide map

Year:

Project / Monitoring:

Institution:

Cruise:

Parameter group:

Parameter:

Station name: Search

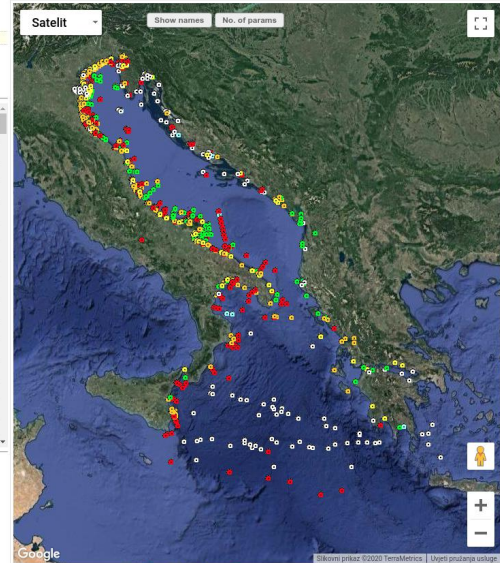
Download CSV(dot) | CSV instructions

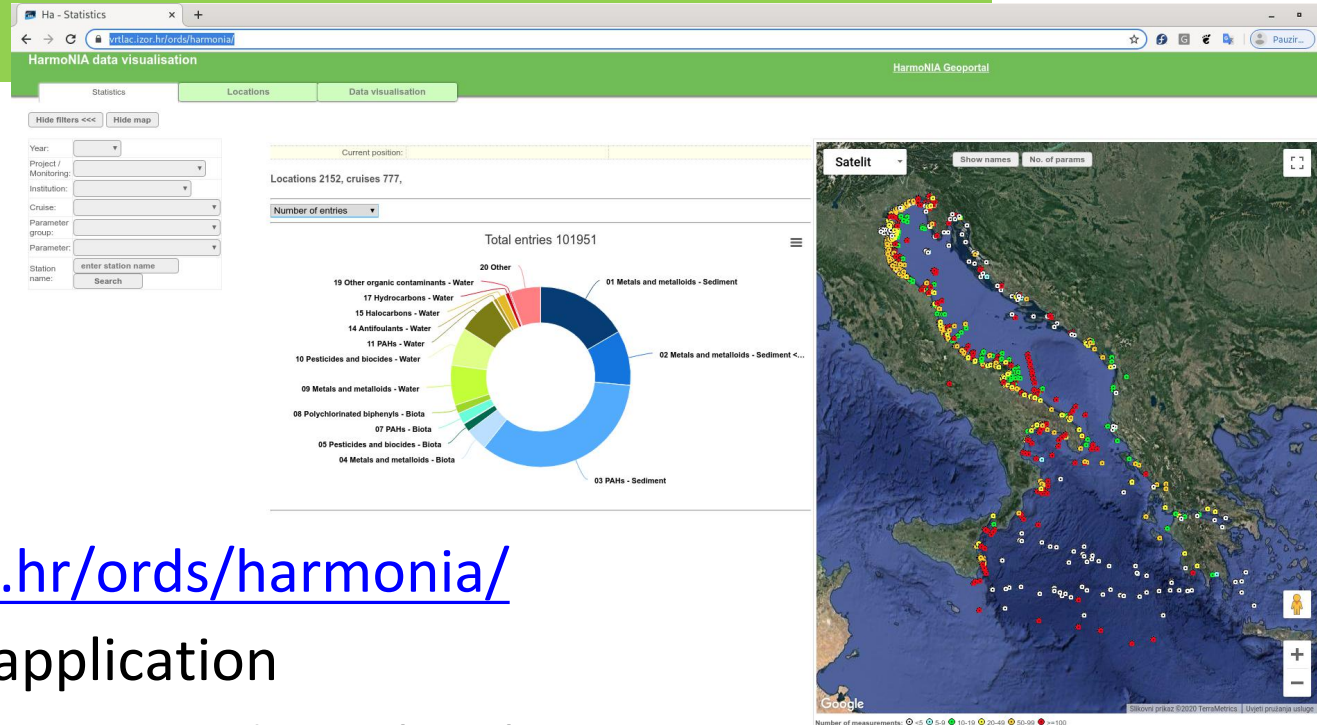
Current position:

Locations 2152

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

Name	No. of measurements	No. of parameters	Depth
PU03	5	5	
OT03	58	10	2
OP11	15	15	3
00MR	15	15	3
OT23	69	10	3
35	106	14	
618_611	9	3	13
597	3	3	14
1053	209	10	4007
TZ-6-S	16	8	4
LA-05-S	24	16	16
823	3	3	2
631	3	3	2
619	3	3	2
640	3	3	2
4480	6	6	13
...	-	-	-





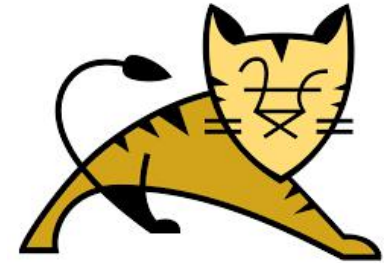
- <https://vrtlac.izor.hr/ords/harmonia/>
- A dedicated web application
- Shows station locations and graphical representations of data



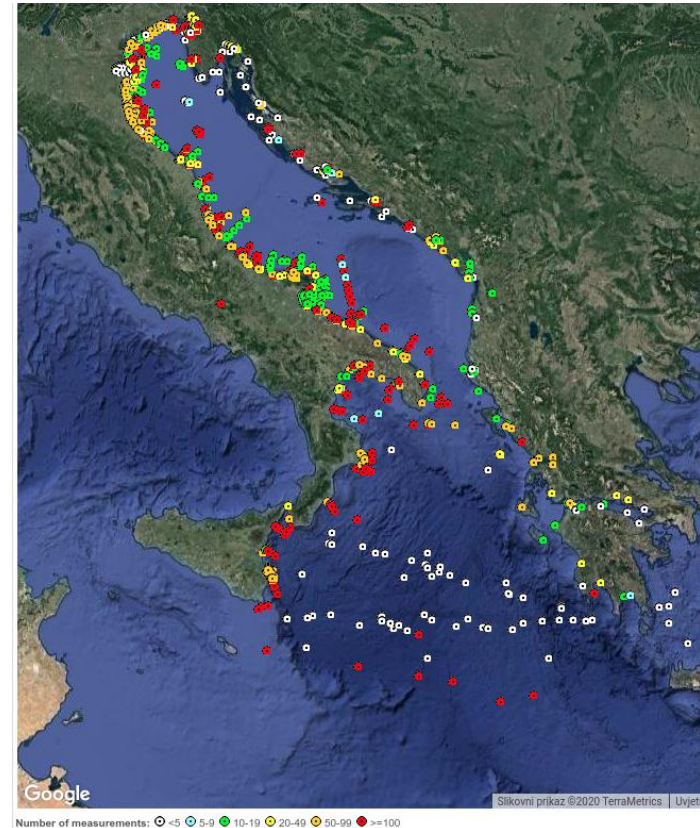
- Linux CentOs 7
- Oracle 19.3 database, Standard edition 2
- Oracle ORDS
- Tomcat 9
- Apache 2
- https
- JavaScript, AJAX, JSON



19^c **ORACLE[®]**
Database



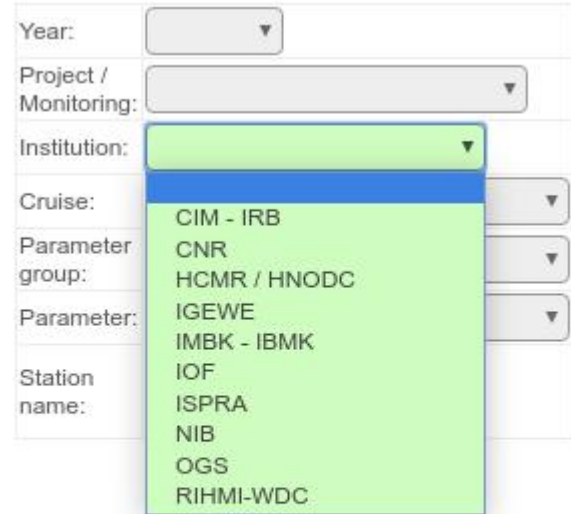
- Data-sets about hazardous substances in sediment, biota and water column were prepared using the EU initiative EMODnet for the management and supply of fragmented marine data, and in the framework of HarmoNIA project.
- Data-sets cover Adriatic – Ionian Seas and the time frame is 1980-2017. These data derive from 10 different institutions.
- Data were collected in 2152 stations, sampled over 4282 times producing a final number of 101951 data values which are referred to 504 different parameters.
- All data are quality flagged according to a shared approach and quality flags can be used to filter data to visualise.
- Data-sets contain some data with access restrictions (by negotiation or academic - 6010 out of 101953). Those data are not shown as single values but are used for statistics calculations.



Users can filter data by:

- year
- project
- institution
- cruise
- parameter group
- 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



The screenshot shows a web-based data filter interface with the following fields and options:

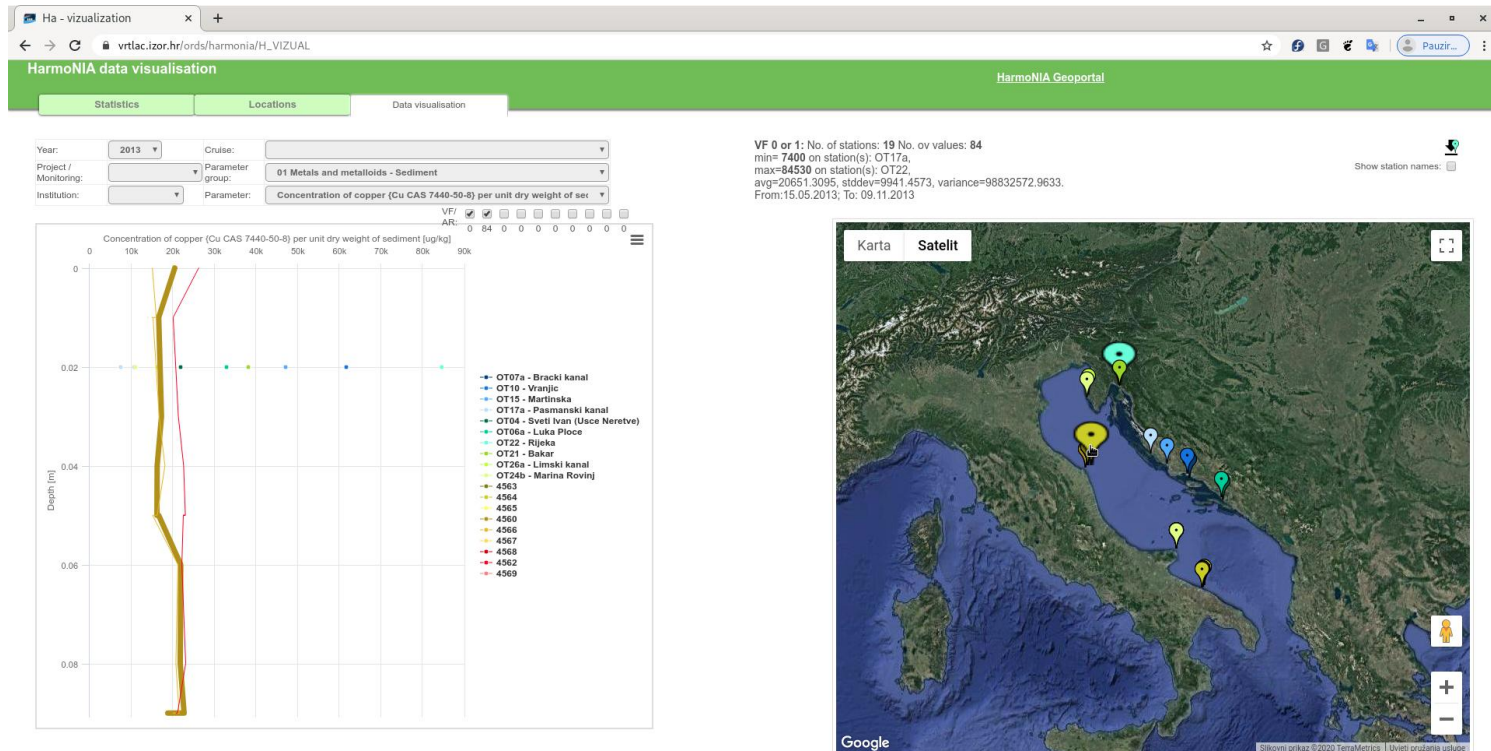
- Year: [Dropdown menu]
- Project / Monitoring: [Dropdown menu]
- Institution: [Dropdown menu with a list of options]
- Cruise: [Dropdown menu]
- Parameter group: [Dropdown menu]
- Parameter: [Dropdown menu]
- Station name: [Text input field]

The dropdown menu for the Institution field is open, displaying the following options:

- CIM - IRB
- CNR
- HCMR / HNODC
- IGEWE
- IMBK - IBMK
- IOF
- ISPRA
- NIB
- OGS
- RIHMI-WDC

Line graph (profile)

When there are values from different depths, line graph is shown with negative y axis (depth)



Data visualization - columns

Column graph is used when visualised subset contain only one value per station

Column - location visual synchronization

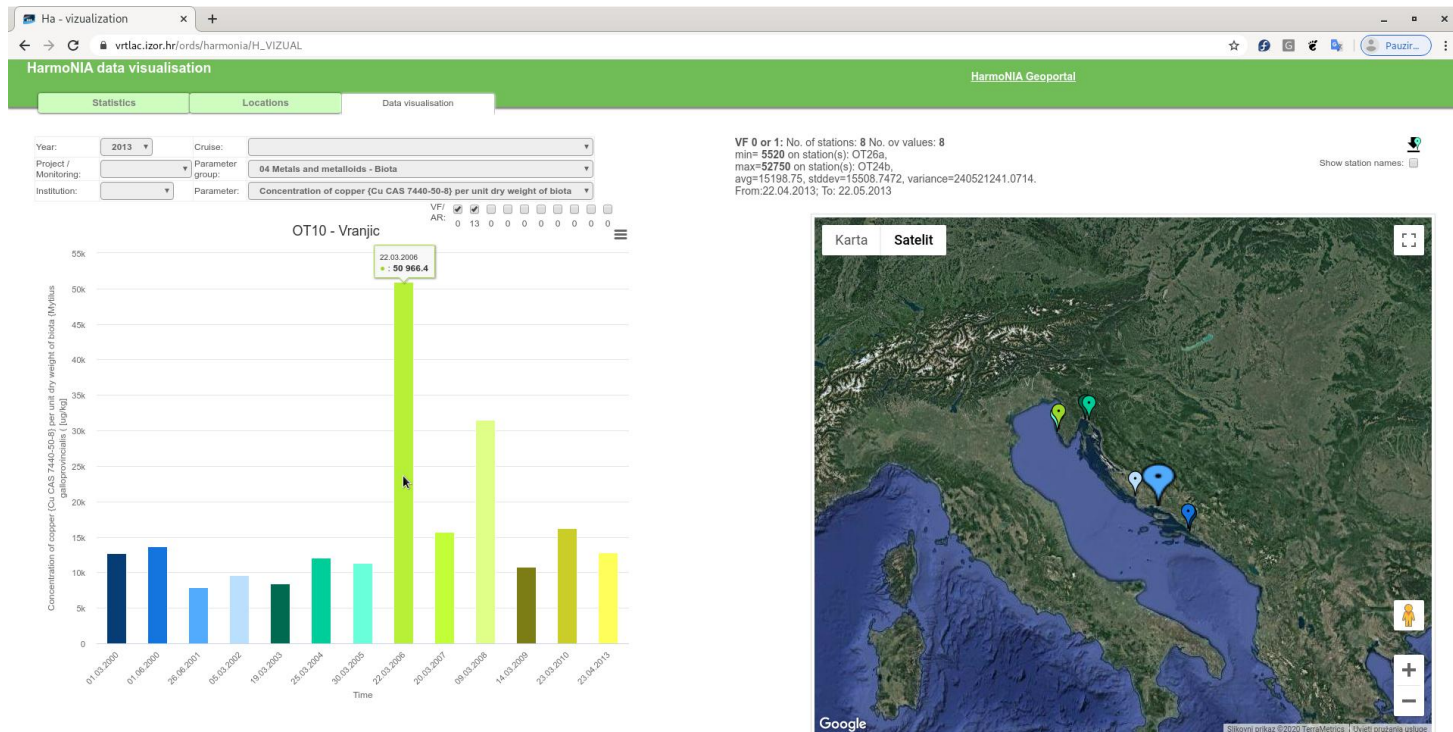
The screenshot shows the HarmonIA Geoportal interface. At the top, there are navigation tabs for 'Statistics', 'Locations', and 'Data visualisation'. Below these are filters for 'Year' (2013), 'Project / Monitoring', 'Institution', 'Parameter group' (04 Metals and metalloids - Biota), and 'Parameter' (Concentration of copper (Cu CAS 7440-50-8) per unit dry weight of biota). A column chart displays the concentration of copper at eight stations. The y-axis is labeled 'Concentration of copper (Cu CAS 7440-50-8) per unit dry weight of biota (dry mass g/g)' and ranges from 0 to 60. The x-axis lists the stations: OT04 - Sveti Ivan (Uisce Neretve), OT06a - Luka Ploce, OT10 - Vranjic, OT15 - Martinska, OT22 - Rijeka, OT21 - Bakar, OT24b - Marina Rovinj, and OT26a - Ljinski kanal. The bar for OT24b - Marina Rovinj is significantly higher than the others, reaching approximately 55. A tooltip for OT10 - Vranjic shows a value of 12.790. To the right of the chart, there are statistics: 'VF 0 or 1: No. of stations: 8 No. of values: 8', 'min= 5520 on station(s): OT26a, max=52750 on station(s): OT24b, avg=15198.75, stddev=15508.7472, variance=240521241.0714, From:22.04.2013, To: 22.05.2013'. Below the chart is a map showing the location of the stations along the coast of Croatia. The map has 'Karta' and 'Satelit' tabs and includes a Google logo and a scale bar.

Station	Concentration of copper (Cu CAS 7440-50-8) per unit dry weight of biota (dry mass g/g)
OT04 - Sveti Ivan (Uisce Neretve)	~8
OT06a - Luka Ploce	~12
OT10 - Vranjic	12.790
OT15 - Martinska	~8
OT22 - Rijeka	~15
OT21 - Bakar	~10
OT24b - Marina Rovinj	~55
OT26a - Ljinski kanal	~5

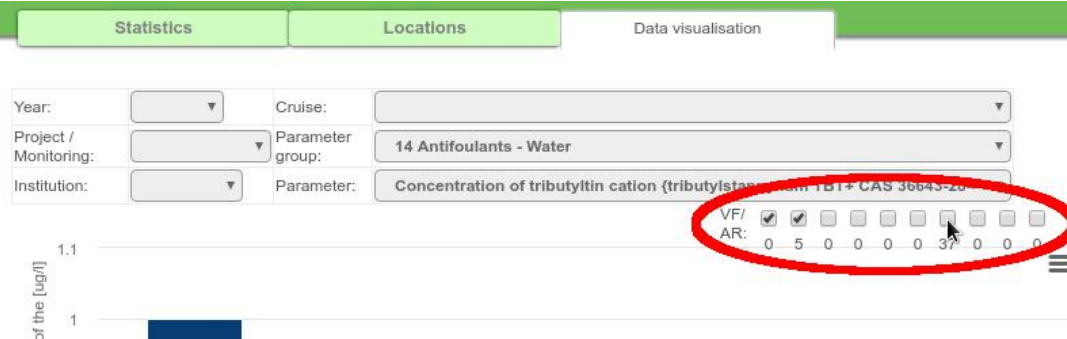


Time series

By clicking on the value in the graph user can see time series for particular station and parameter



- Validation factor and access restriction filter
- Statistics calculated only for VF 0 (not validated) and VF 1 (good value)



VF 0 or 1: No. of stations: 4 No. of values: 5
min= 0.02 on station(s): ITCON1517MSFD-000000,
max=1 on station(s): ITCON1517MSFD-000000,
avg=0.246, stddev=0.4232, variance=0.1791.
From:11.03.2016; To: 08.03.2017

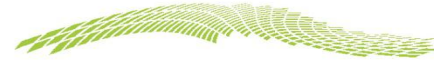
Karta Satelit





Interreg 
ADRION **ADRIATIC-IONIAN**
European Regional Development Fund - Instrument for Pre-Accession II Fund

HarmonIA



Thank you for your attention!

