

MUNI | RECETOX

# How can electronic tools effectively support effectiveness evaluation?

Richard Hůlek, Jana Borůvková, Jiří Kalina, Jakub  
Gregor, Kateřina Šebková

[www.genasis.cz](http://www.genasis.cz)

# GMP Data Warehouse - DEMONSTRATION

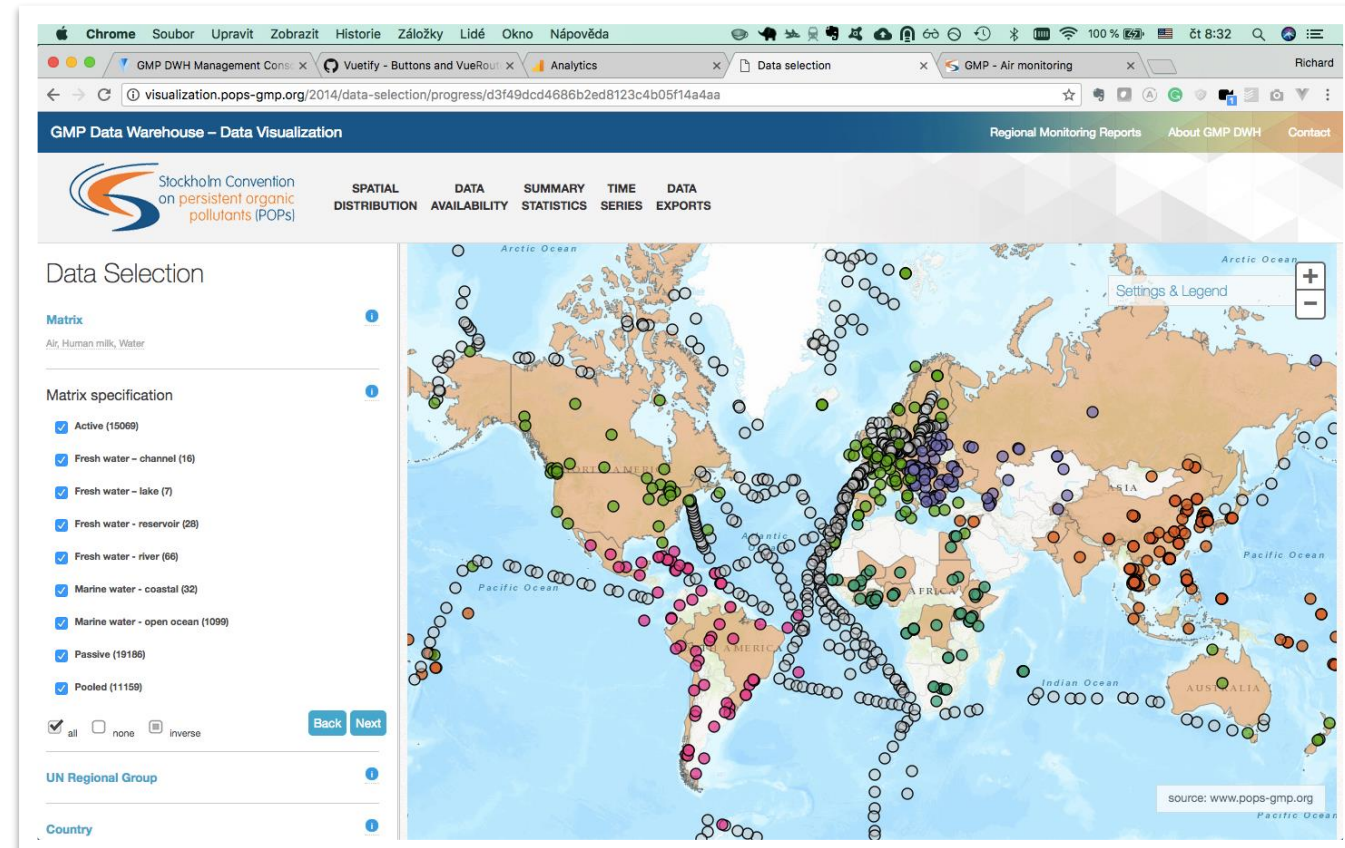
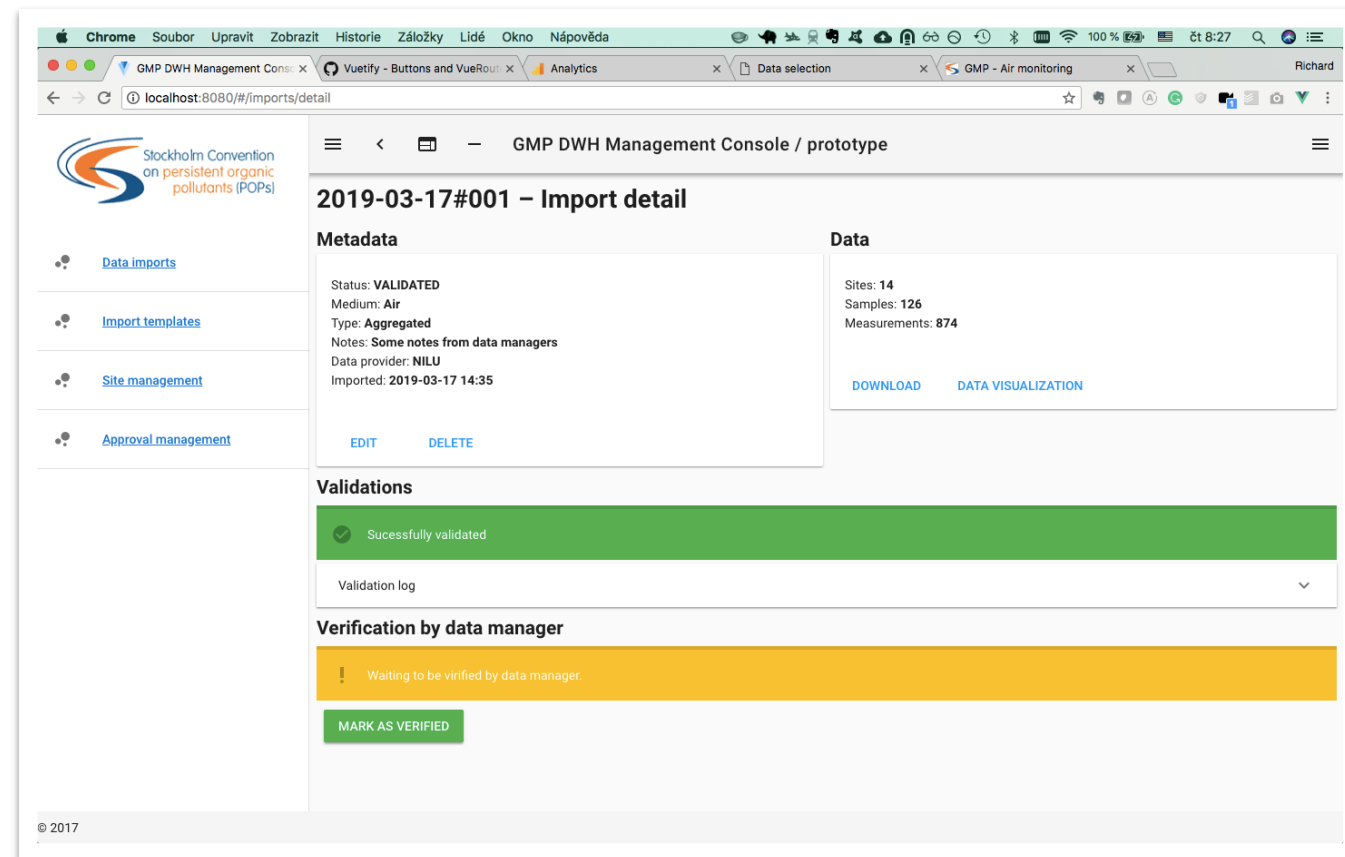
## GMP DWH Management Console

- On-line web tool
- Data imports (data providers)
- Approval management (ROGs)

## Data Visualizations

- Spatial distribution
- Data availability
- Summary statistics
- Trend analysis
- Data exports
- Regional summaries

5



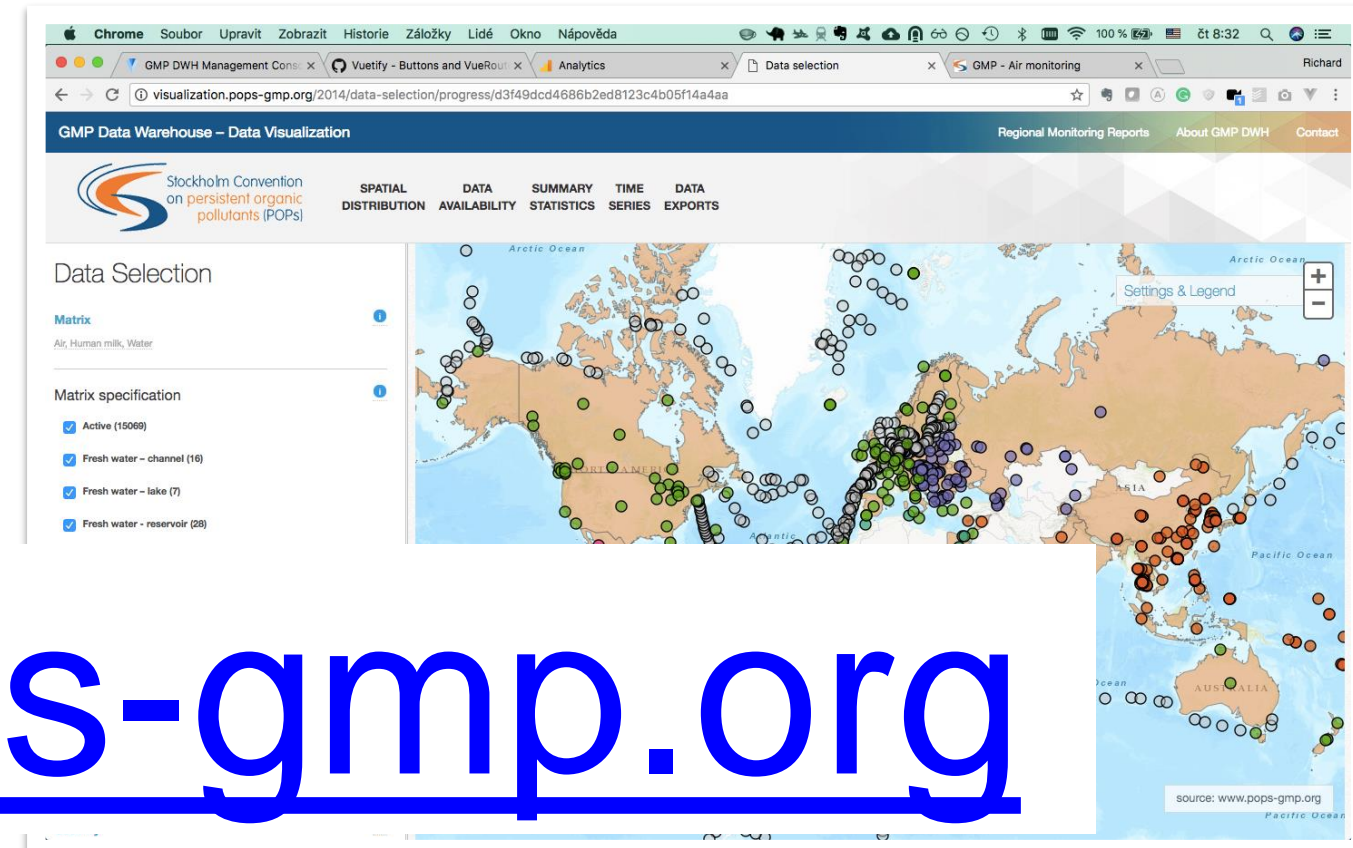
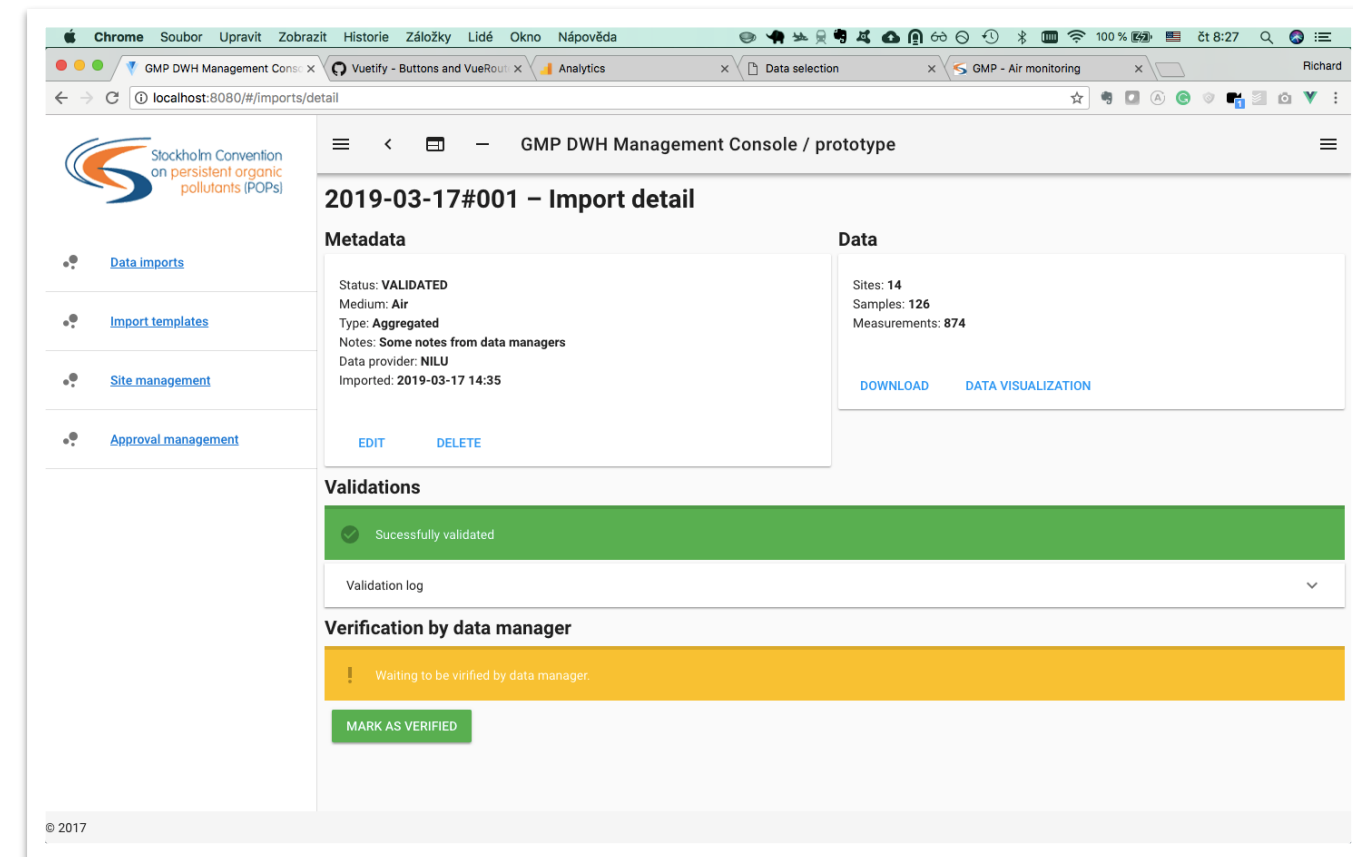
# GMP Data Warehouse - DEMONSTRATION

## GMP DWH Management Console

- On-line web tool
- Data imports (data providers)
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## Data Visualizations

- Spatial distribution
- Data availability
- Summary statistics
- Trend analysis
- Data exports
- Regional summaries



[www.pops-gmp.org](http://www.pops-gmp.org)



# 1



Next

- 



**Figure 1**

\*\*\*\*\*

The map displays the global distribution of 1000 sampling locations. The locations are categorized by color based on their geographic region: green for the Arctic, purple for the North Atlantic, blue for the North Pacific, pink for the South Atlantic, orange for the Indian Ocean, and white for the Southern Ocean. The map includes labels for major oceans (Arctic Ocean, North Pacific Ocean, South Pacific Ocean, Indian Ocean, Atlantic Ocean), seas (Bering Sea, Beaufort Sea, Barents Sea, Kara Sea, Laptev Sea, Bering Sea, Bering Sea, Bering Sea), and various countries (Russia, Canada, United States, Mexico, Central America, Caribbean, South America, Africa, Europe, Asia, Australia, New Zealand). A zoom control is visible in the top left corner.



### Data Selection

#### Matrix

- ☒ Air (34255)  
☒ Human milk (11159)  
☒ Water (1248)

☒ all ☐ none ☐ inverse

Next

#### Matrix specification

#### UN Regional Group

#### Country

#### Sea

#### Site Type

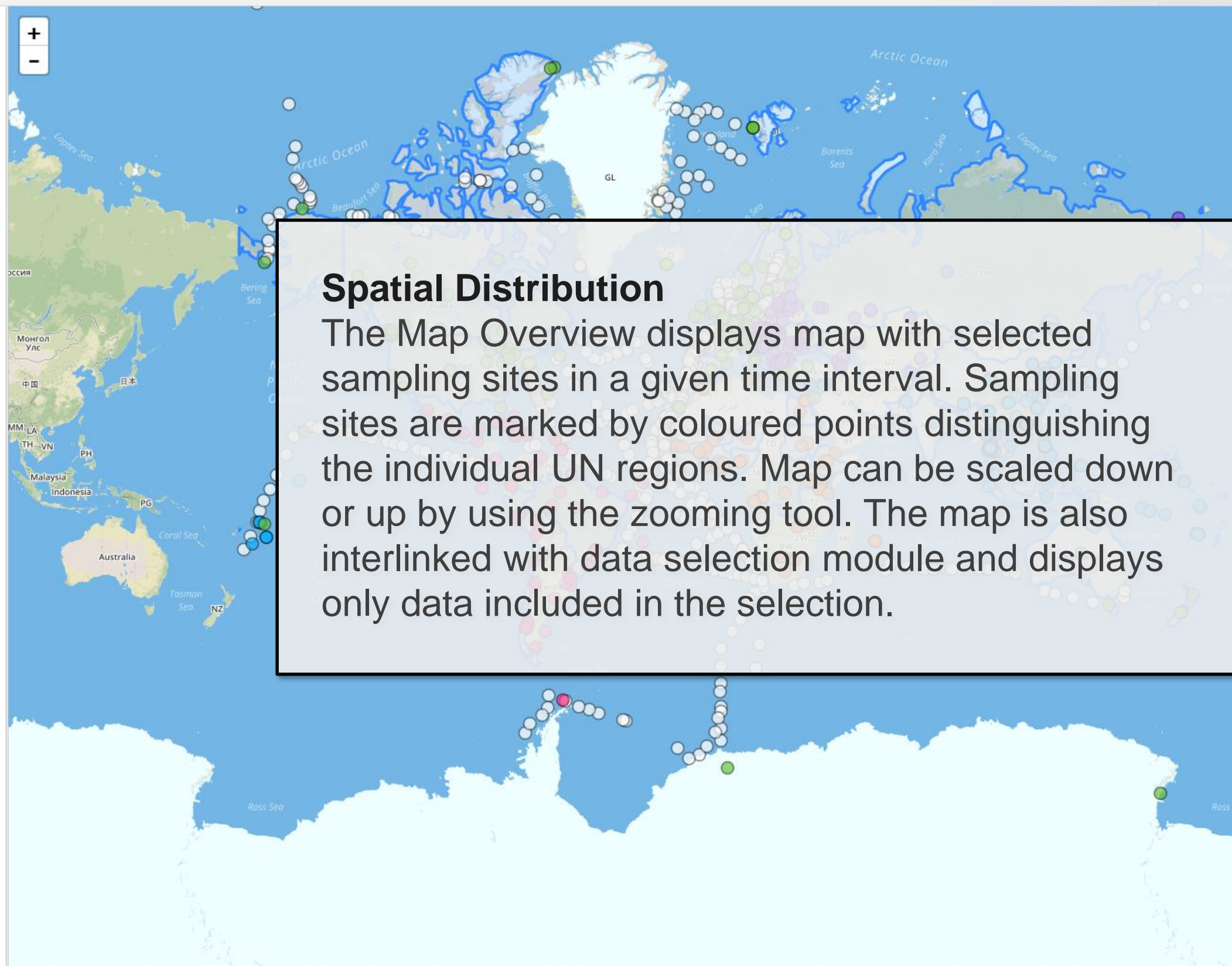
#### Time Range

#### Status

#### Monitoring programme

#### Data Provider

#### Compound



## Submenu

[Available Data – Parameters](#)[Available Data – Time](#)

Data selection

## Data Set Summary

Items contained in the selected data set:

Matrix: Air

Matrix specification: Active, Passive

UN Regional Group: Africa, Asia and Pacific...

Country: Antigua and Barbuda, Argentina...

Sea: Not classified

Site Type: Polar, Remote, Rural...

Time Range: 1990, 2014

Status: gmp-approved, gmp-validated

Monitoring programme: AMAP, Chemicals in Environment

(Ministry of the Environment, Japan)...

Data Provider: Africa-EC, Africa-RECETOX...

Compound: Polychlorinated biphenyls (PCB) – indicator

Total number of records: 7699

[Download the summary](#)

## Available Data – Parameters

Matrix:

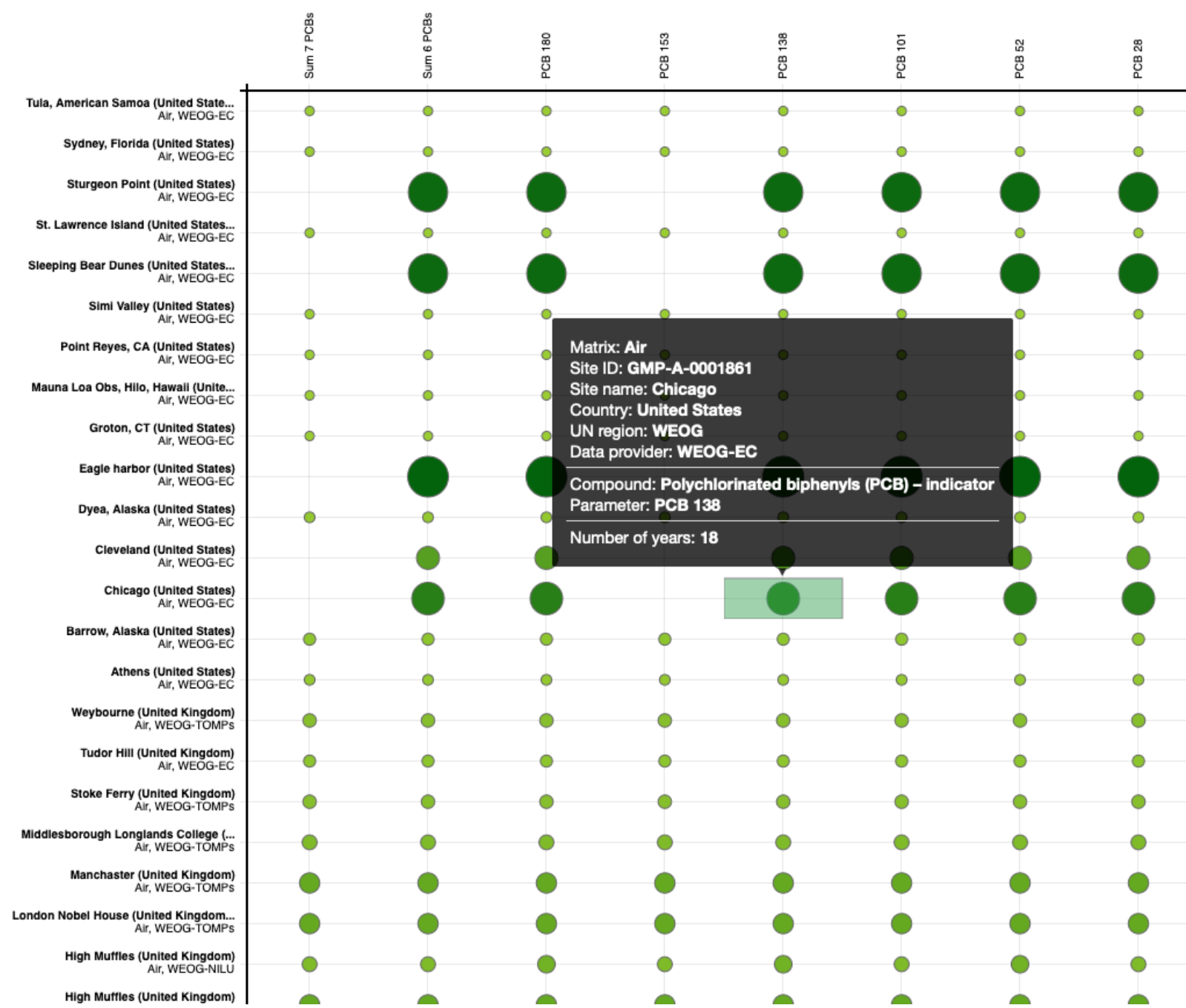
[Ignore this option](#)

Compound:

[Ignore this option](#)

Air

Polychlorinated biphenyls (PCB) – in



## Settings

Order by (rows)

Region - Country - Matrix - Site

Order direction

Descending

## Legend

Data availability years

Minimum: 1

Maximum: 24

[Download legend](#)

## Description

Available Data – Parameters shows frequency of chemical parameters in a selected data set. A dot (circle) represents a unique combination of parameter (x axis) and sampling site-matrix (y axis).

The size and colour of the point correspond to the number of years and occurrence of parameter in a selected data set. The more data are available for a parameter, the larger and darker the symbol. Hover the mouse over a point to see its summary.

Please note that both the colour and size of the point depend on the current data selection (i.e. the current selection of sites or parameters). The same point can correspond to a different number of years of data depending on the selection of another set of sites or parameters.



## Submenu

[Available Data – Parameters](#)[Available Data – Time](#)

Data selection

## Data Set Summary

*Items contained in the selected data set:*

Matrix: Air

Matrix specification: Active, Passive

UN Regional Group: Africa, Asia and Pacific...

Country: Antigua and Barbuda, Argentina...

Sea: Not classified

Site Type: Polar, Remote, Rural...

Time Range: 1990, 2014

Status: gmp-approved, gmp-validated

Monitoring programme: AMAP, Chemicals in Environment

(Ministry of the Environment, Japan)...

Data Provider: Africa-EC, Africa-RECETOX...

Compound: Polychlorinated biphenyls (PCB) – indicator

Total number of records: 7699

[Download the summary](#)

## Available Data – Parameters

Matrix:

[Ignore this option](#)

Compound:

[Ignore this option](#)

Air

Polychlorinated biphenyls (PCB) – in

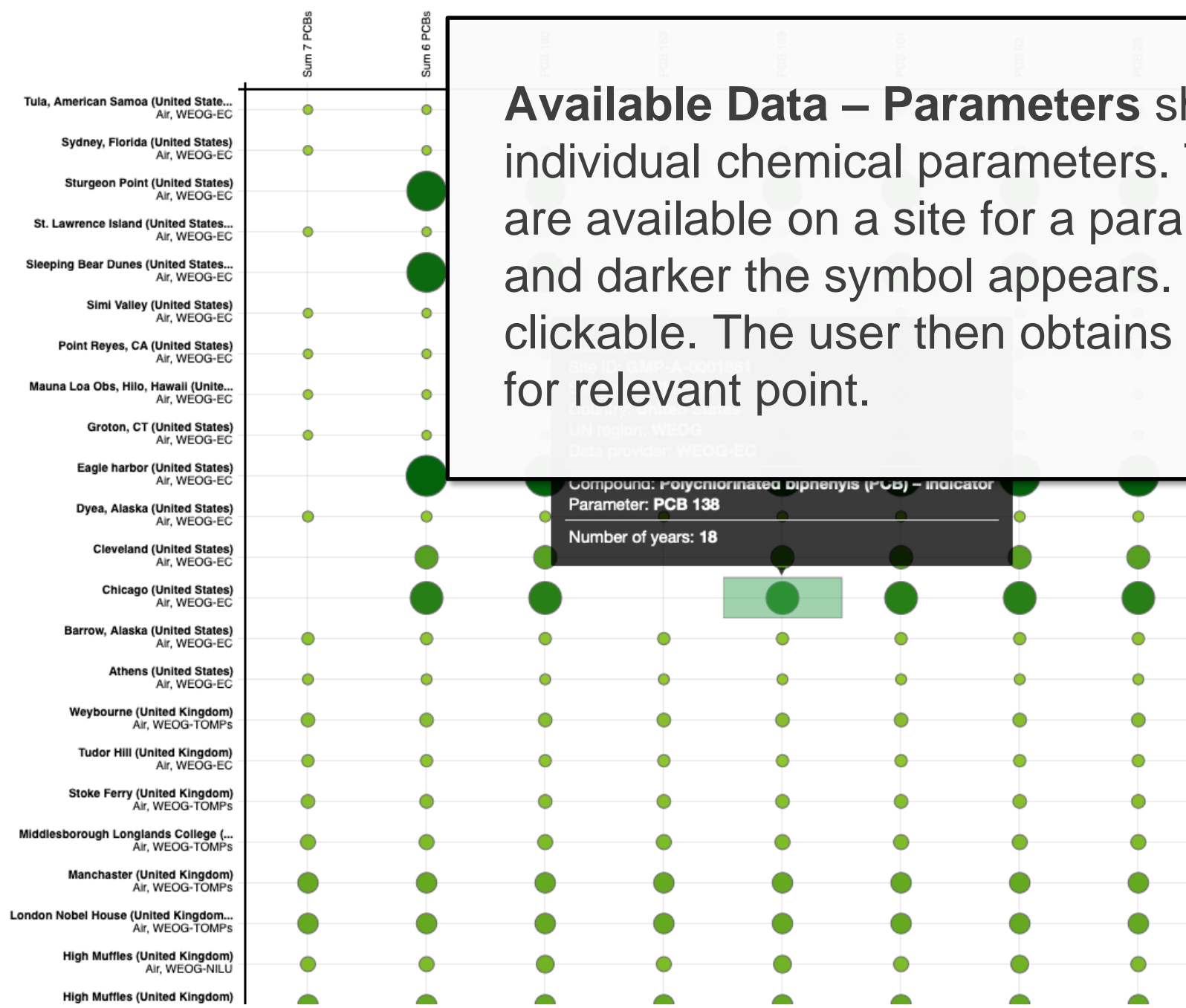
## Settings

Order by (rows)

Region - Country - Matrix - Site

Order direction

Descending



## Description

Available Data – Parameters shows frequency of individual chemical parameters in a selected data set. A circle (circle) represents a unique combination of parameter (x axis) and sampling site-matrix (y axis).

The size and colour of the point correspond to the number of years and occurrence of parameter in a selected data set. The more data are available for a parameter, the larger and darker the symbol appears. Please click the mouse over a point to see its summary table.

Please note that both the colour and size of the symbol depend on the current data selection (i.e. the current selection of sites or parameters). The same symbol can correspond to a different number of years of data selection of another set of sites or parameters.

## Submenu

[Available Data – Parameters](#)[Available Data – Time](#)

## Available Data – Time

Matrix:

[Ignore this option](#)

Year:

Air

-- Choose an option --

Data selection

## Data Set Summary

Items contained in the selected data set:

Matrix: Air

Matrix specification: Active, Passive

UN Regional Group: Africa, Asia and Pacific...

Country: Antigua and Barbuda, Argentina...

Sea: Not classified

Site Type: High altitude, Polar...

Time Range: 1990, 2014

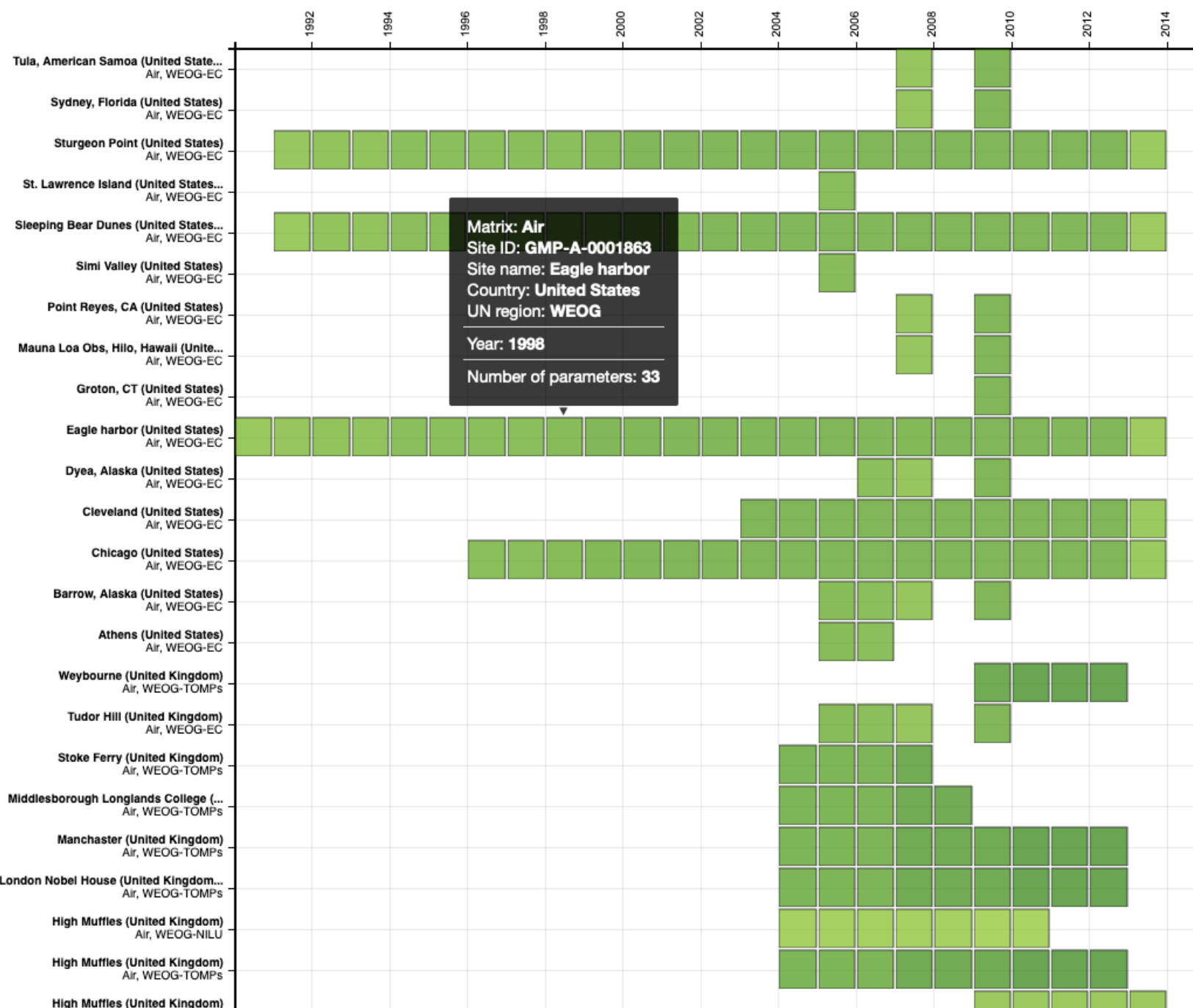
Status: gmp-approved, gmp-validated

Monitoring programme: AMAP, Chemicals in Environment  
(Ministry of the Environment, Japan)...

Data Provider: Africa-EC, Africa-RECETOX...

Compound: Aldrin, Chlordane,  
Dichlorodiphenyltrichloroethane (DDT)...

Total number of records: 34255

[Download the summary](#)

## Settings

Order by (rows)

Matrix - Region - Country - Site

Order direction

Descending

## Legend

Data availability parameters

Minimum: 1  
Maximum: 97

[Download legend](#)

## Description

Available Data - Time shows availability over time for a given site in charts. Each rectangle represents a unique combination of a site (x axis) and sampling site-year (y axis).

Green rectangles represent number of parameters in samples per year within the selected time range. The more data available, the larger and darker the rectangle appears. Hover the mouse over a rectangle to view the summary table.

Please note that the colour of a rectangle represents data selection (please note that the size of the rectangle correspond to a different number of parameters in samples per year selection of another set of sites, years, etc.).



## Submenu

[Available Data – Parameters](#)[Available Data – Time](#)

## Available Data – Time

Matrix:

[Ignore this option](#)

Year:

Air

-- Choose an option --

## Settings

Order by (rows)

Matrix - Region - Country - Site

Order direction

Descending

Data selection

## Data Set Summary

*Items contained in the selected data set:*

Matrix: Air

Matrix specification: Active, Passive

UN Regional Group: Africa, Asia and Pacific...

Country: Antigua and Barbuda, Argentina...

Sea: Not classified

Site Type: High altitude, Polar...

Time Range: 1990, 2014

Status: gmp-approved, gmp-validated

Monitoring programme: AMAP, Chemicals in Environment

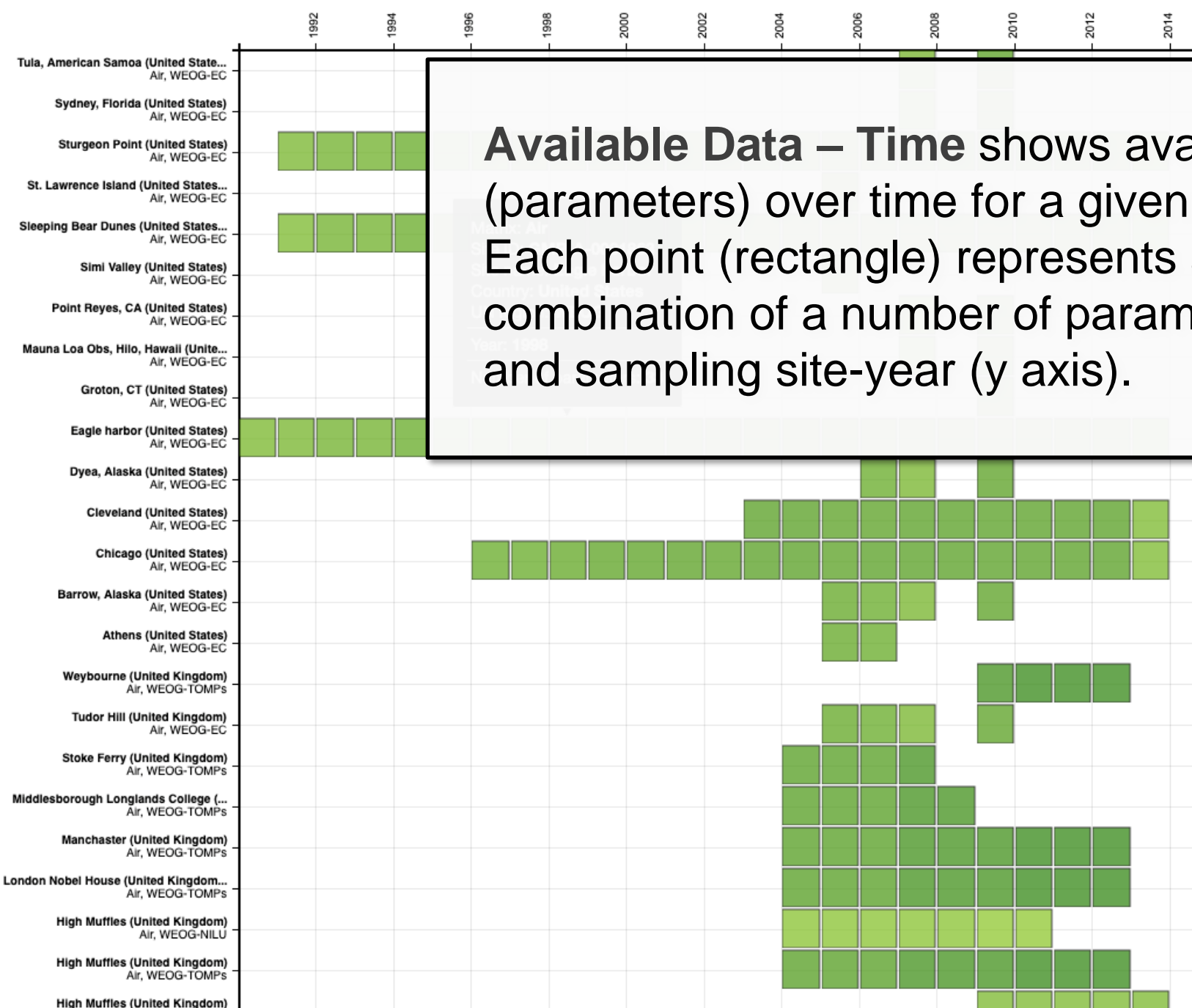
(Ministry of the Environment, Japan)...

Data Provider: Africa-EC, Africa-RECETOX...

Compound: Aldrin, Chlordane,

Dichlorodiphenyltrichloroethane (DDT)...

Total number of records: 34255

[Download the summary](#)

**Available Data – Time** shows availability of data (parameters) over time for a given site in charts. Each point (rectangle) represents a unique combination of a number of parameters (x axis) and sampling site-year (y axis).

over time for a given site in charts. Each point (rectangle) represents a unique combination of a number of parameters (x axis) and sampling site-year (y axis).

Green rectangles represent number of parameters available in samples per year within the selected time range. The more data available, the larger and darker the rectangle appears. Hover the mouse over a rectangle to view the summary table.

Please note that the colour of a rectangle represents data selection (please note that the size of the rectangle correspond to a different number of parameters). Please select another set of sites, years, etc.).

[Data selection](#)

## Data Set Summary

Items contained in the selected data set:

Matrix: Air

Matrix specification: Active

UN Regional Group: Asia and Pacific, CEE...

Country: Canada, China, Peoples Republic of...

Sea: Not classified

Site Type: High altitude, Polar...

Time Range: 1990, 2013

Status: gmp-approved, gmp-validated

Monitoring programme: AMAP, Chemicals in Environment  
(Ministry of the Environment, Japan)...

Data Provider: Asia-CAS, Asia-Japan...

Compound: Hexachlorobenzene (HCB)

Total number of records: 284

[Download the summary](#)

## Summary Statistics

Matrix: \*

Air

Matrix specification: \*

Active

Compound: \*

Hexachlorobenzene (HCB)

Parameter: \*

HCB

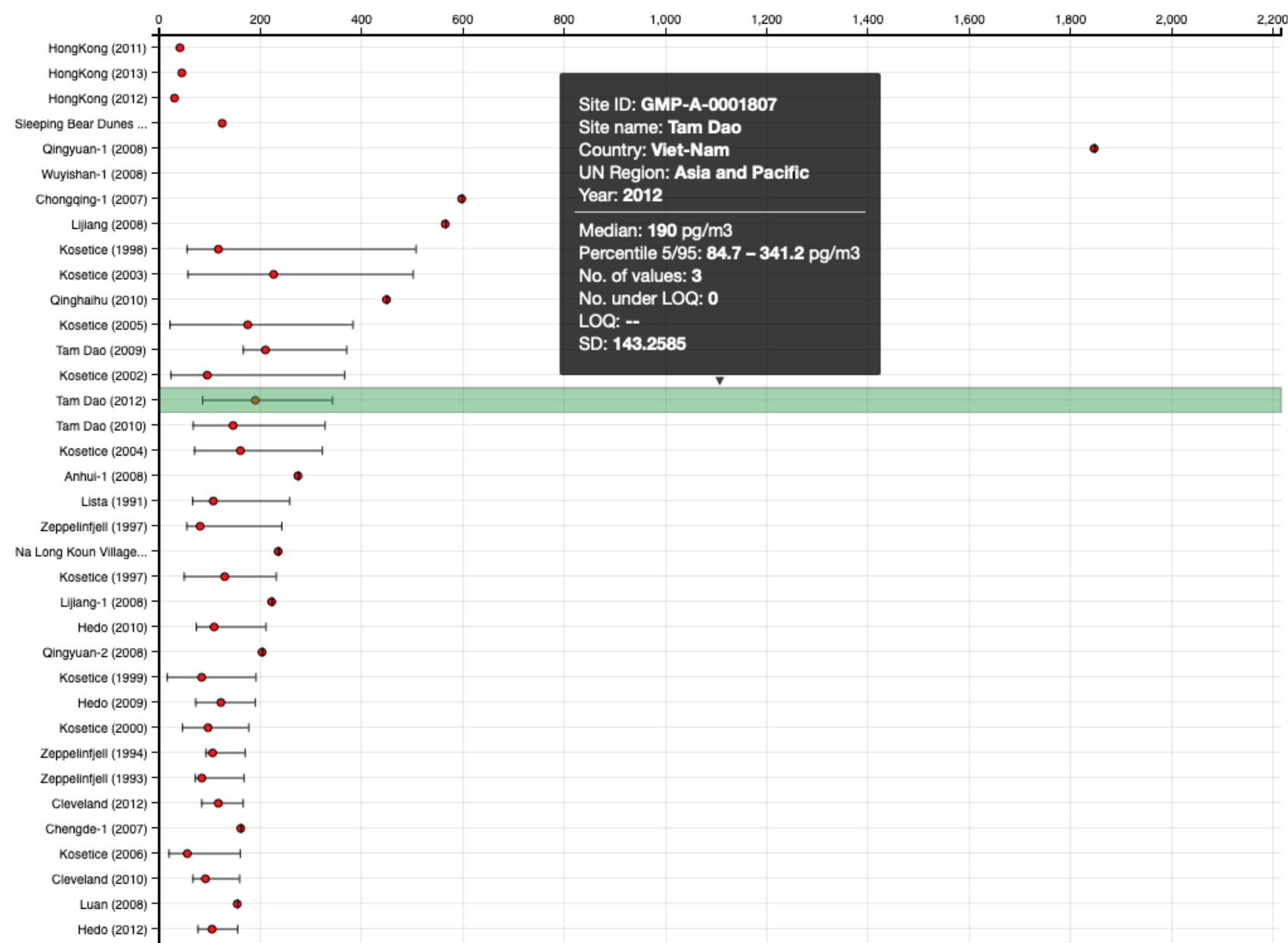
Unit: \*

pg/m3

Site:

-- Choose an option --

Year:



## Settings

Central value

Median

Range

Percentile 5/95

Order by

Whisker top value

Order direction

Ascending

## Legend

Percentile 5/95:

Median:

[Download legend](#)

## Description

Summary Statistics presents concentrations for one compound in individual year. The user selects a compound, parameter, and year. The output is a plot showing a central point for concentration (geometric mean) and its variability (standard deviations, percentiles) for a given year on selected set of sites.

Hovering a mouse over a box

Data selection

## Data Set Summary

Items contained in the selected data set:

Matrix: Air

Matrix specification: Active

UN Regional Group: Asia and Pacific, CEE...

Country: Canada, China, Peoples Republic of...

Sea: Not classified

Site Type: High altitude, Polar...

Time Range: 1990, 2013

Status: gmp-approved, gmp-validated

Monitoring programme: AMAP, Chemicals in Environment  
(Ministry of the Environment, Japan)...

Data Provider: Asia-CAS, Asia-Japan...

Compound: Hexachlorobenzene (HCB)

Total number of records: 284

[Download the summary](#)

## Summary Statistics

Matrix: \*

Air

Matrix specification:

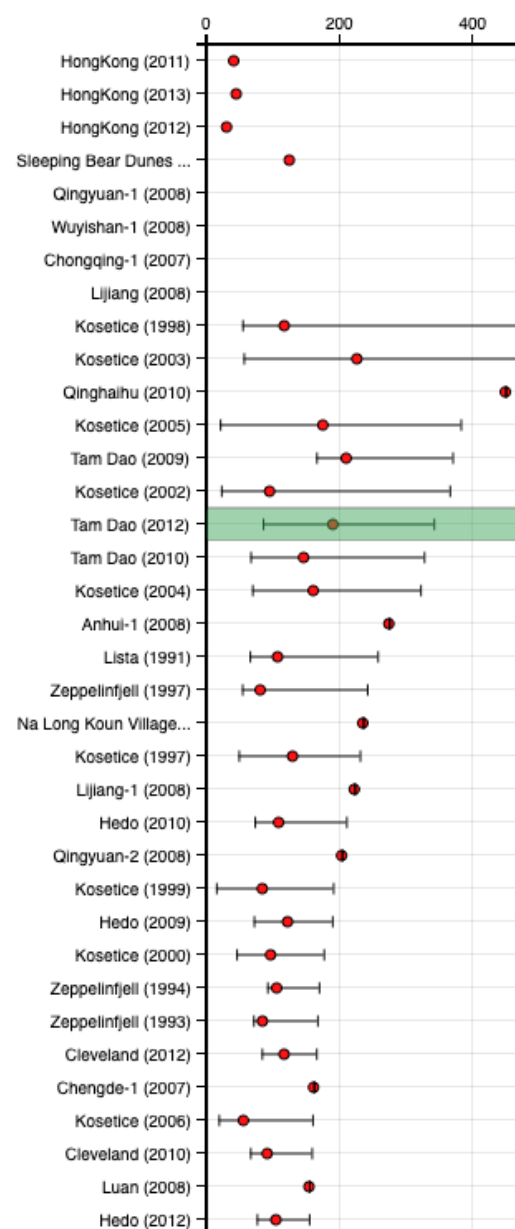
Active

Unit: \*

pg/m3

Site:

-- Choose a site



**Available Data – Time** presents interval of measured concentrations for one compound in a given matrix and site in individual year. The user selects combination of matrix, compound, parameter, and unit to view relevant concentrations. The output is a horizontal box-whisker chart showing a central point for concentration (median, mean, geometric mean) and its variability (minium and maximum, standard deviations, percentiles) for each sampling site in a given year on selected set of sites and time interval.

## Settings

Central value

Median

Geometric mean

Mean

Standard deviation

Percentiles

Order direction

Ascending

Descending

Legend

Description

Summary Statistics presents

concentrations for one comp

in individual year. The user s

compound, parameter, and

concentrations. The output i

showing a central point for c

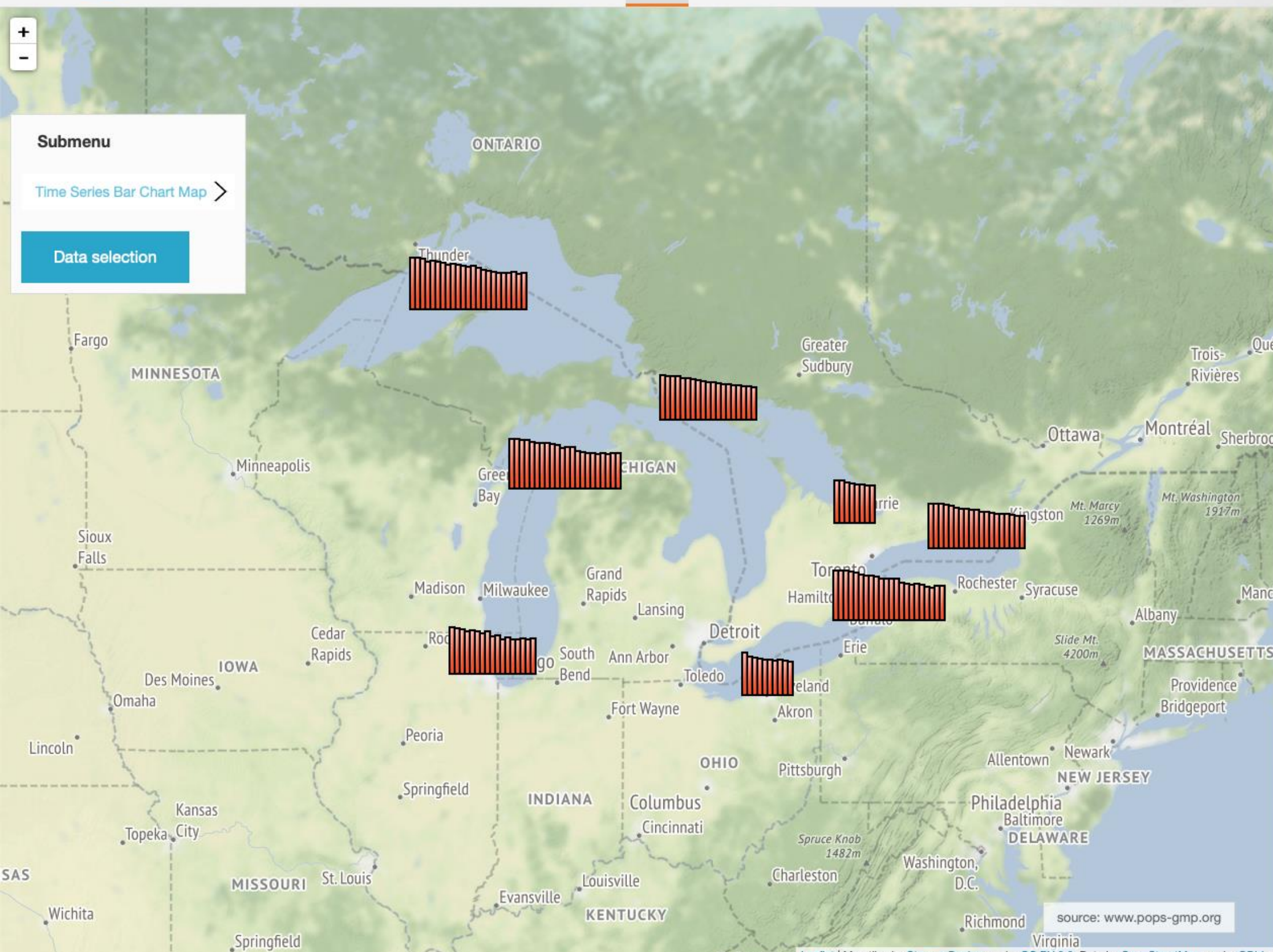
geometric mean) and its var

standard deviations, percent

given year on selected set o

Hovering a mouse over a bo





## Filters

## Matrix:

Air

## Matrix specification:

Active

## Compound:

Alpha-hexachlorocyclohexane ( $\alpha$ -HCH)

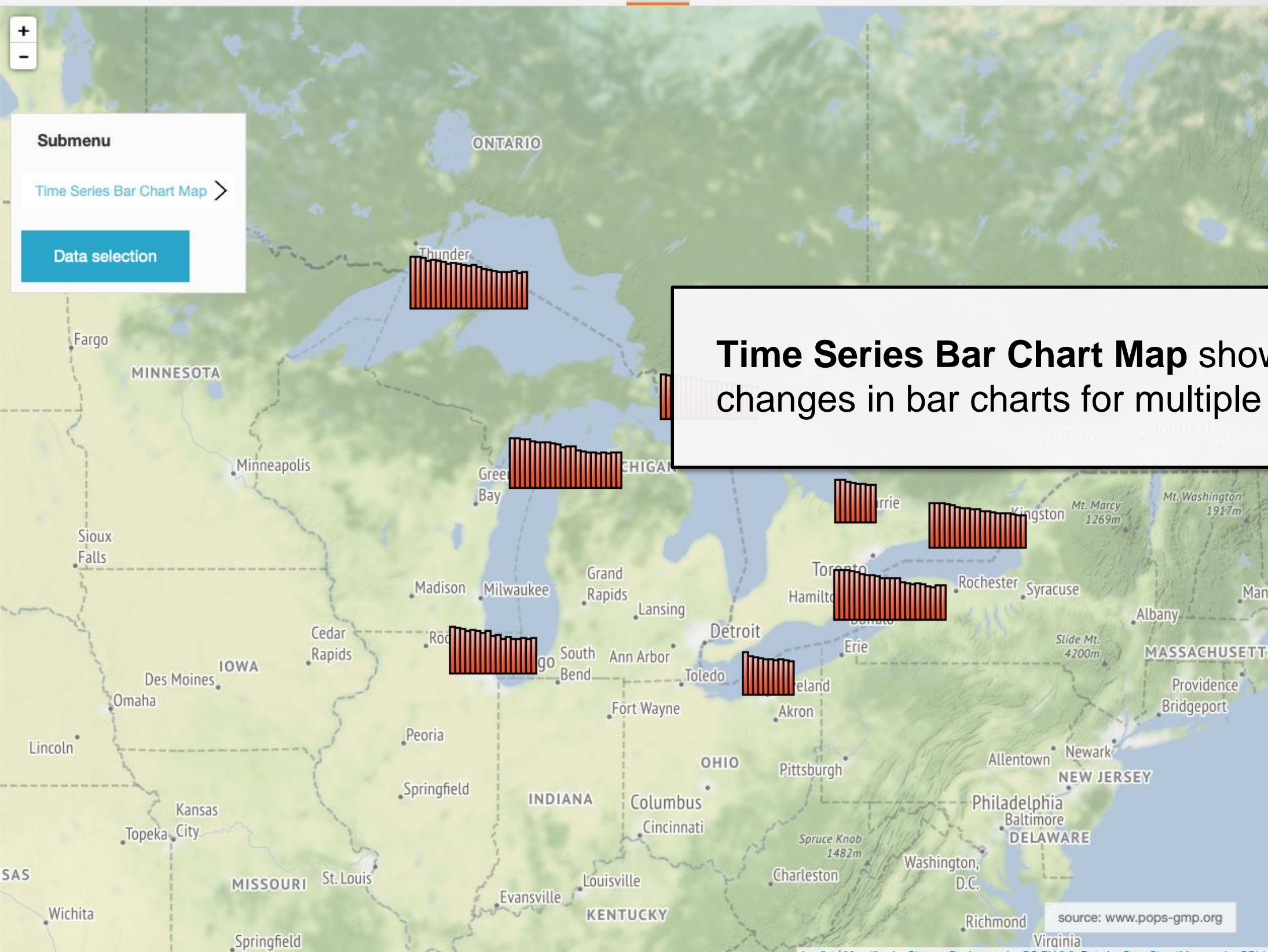
## Parameter:

Alpha-HCH

## Unit:

pg/m3





Filters

Matrix:

Air

Matrix specification:

Active

Compound:

Alpha-hexachlorocyclohexane (α-HCH)

pg/m<sup>3</sup>

# GMP DWH Data Visualizations

## Data Exports



SPATIAL  
DISTRIBUTION

DATA  
AVAILABILITY

SUMMARY  
STATISTICS

TIME  
SERIES

DATA  
EXPORTS

### Submenu

Export of All Data Selected

Sites Summary

Analytical Methods Summary

Data Sources Summary



Data selection

### Data Set Summary

Items contained in the selected data set:

Matrix: Air, Human milk, Water

Matrix specification: Active, Fresh water – channel...

UN Regional Group: Africa, Asia and Pacific...

Country: Albania, Antigua and Barbuda...

Sea: Arctic ocean, Atlantic ocean...

Site Type: High altitude, Polar...

Time Range: 1987, 2014

Status: gmp-approved, gmp-validated

Monitoring programme: Alcor (Kirchgeorg et al. 2010)...

Data Provider: Africa-EC, Africa-RECETOX...

Compound: Aldrin, Chlordane,  
Dichlorodiphenyltrichloroethane (DDT)...

Total number of records: 46662

Download the summary

## Data Sources Summary

Show

25

Search:

entries

Matrix	Matrix Specification	Monitoring Programme	First Year	Last Year	Num. of Compounds	Num. of Sites
Air	Active	AMAP	1992	2010	16	5
Air	Active	Chemicals in Environment (Ministry of the Environment (Japan))	2006	2012	18	1
Air	Active	China National POPs Monitoring	1995	2010	12	18
Air	Active	EMEP	1995	2010	12	18
Air	Active	Environment Survey of Dioxins (Ministry of the Environment (Japan))	1995	2010	12	18
Air	Active	IADN	1995	2010	12	5
Air	Active	Kosetice	1996	2013	21	1
Air	Active	Northern Contaminants Program	1992	2012	16	1
Air	Active	POPs Monitoring Project in East Asian Countries	2009	2013	13	8
Air	Active	Toxic Organic Micro-Pollutants Program	2004	2012	6	8
Air	Passive	GAPS	2004	2010	12	66
Air	Passive	GAPS-GRULAC	2011	2012	3	11
Air	Passive	GMP UNEP	2010	2013	23	41
Air	Passive	LAPAN	2010	2012	15	13
Air	Passive	MONET	2003	2014	17	122
Human milk	Pooled	China National POPs Monitoring	2007	2011	13	27
Human milk	Pooled	GMP UNEP	1987	2014	23	79

### File Export

EXPORT TO MS-Excel

### Description

Background information/input into chapter 4.1.3 in REGIONAL MONITORING REPORT

This table provides a summary overview of the data set used in selected data set. It shows data for the First Year and Last Year in the GMP Data Warehouse, the available compounds therein and number of monitoring programme and matrix.

User can search data in the table by using the search bar, as sort columns by clicking on a column header. The data can be exported to XLS format by the blue button in the right corner of the screen.

### Data exports:

- Export of All Data Selected
- Sites Summary
- Analytical Methods Summary
- Data Sources Summary



# **Existing electronic tool - GMP DWH**

- useful, practical tool**
- one-stop-shop for core matrices**
- visibility of data improves**
- use of data/outputs - charts, maps, figures in reports/briefs**
- support effectiveness evaluation synthesis report/monitoring report**

**SCRC Czech Republic (RECETOX) is ready to help and make such tool available for the use of Minamata Convention on Mercury!**

**Data management / support/ helpdesk:**  
**[dwh@pops-gmp.org](mailto:dwh@pops-gmp.org)**

Richard Hůlek (head of IT team)  
Jakub Gregor (help desk visualization)  
Jana Borůvková (head of data managers)

Thank you for your kind cooperation!