Open Data Challange
Ground Truth 2.0 datasets

Joan Masó / CREAF

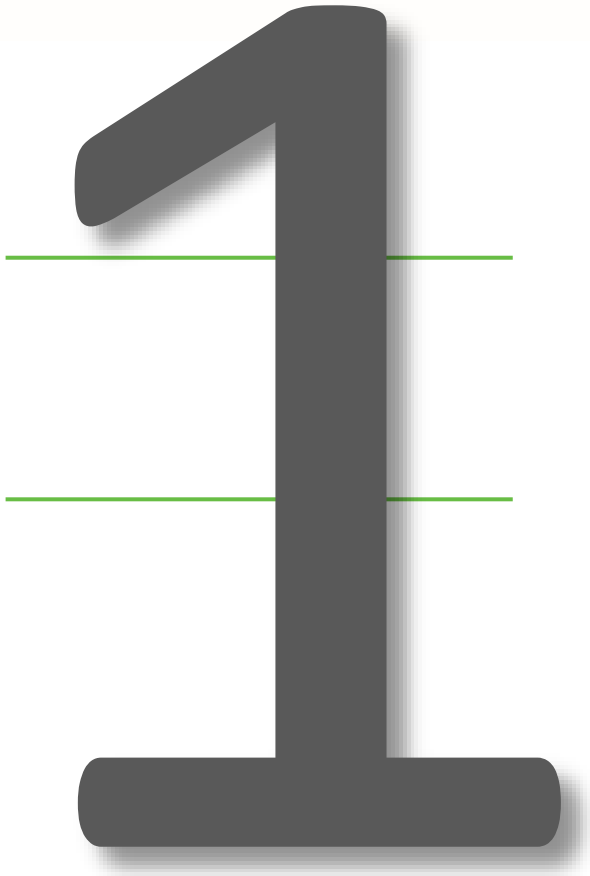
Ground Truth 2.0 datasets

1. Ritme Natura

2. Vatten Fokus

3. Meet Mee Mechelen


We bserve


1

Ritme Natura dataset

- **Objective:** Phenological observation
- **Slogan:** Follow the rhythm of nature
- **Location:** Catalonia (Spain)
- **Keywords:** Phenology, biodiversity, flowering, leaf fall, climate change
- **CSV format:** https://external.opengeospatial.org/twiki_public/pub/CitSciIE/OpenDataChallenge/RitmeNatura_odc.csv
- **KML format:** https://natusfera.gbif.es/observations/project/ritmenatura-observacions-ocasionals.kml

RitmeNatura.cat

What is phenology: Select a species


Aphyllanthes monspeliensis
Aphyllanthes monspeliensis


Arrhenatherum elatius
Arrhenatherum elatius


Betula pendula
Silverbirch


Brassica napus
Rapeseed


Calluna vulgaris
Common heather


Castanea sativa
Sweet chestnut


Citrus reticulata
Mandarin orange


Citrus sinensis
Sweet orange


Corylus avellana
Common hazel


Cytisus oromediterraneus
Cytisus oromediterraneus


Fagus sylvatica
European beech


Fraxinus excelsior
Ash


Genista scorpius
Genista scorpius


Hirundo rustica
Barn swallow


Malus domestica
Apple tree


Medicago sativa
Alfalfa


Olea europaea
Olive tree

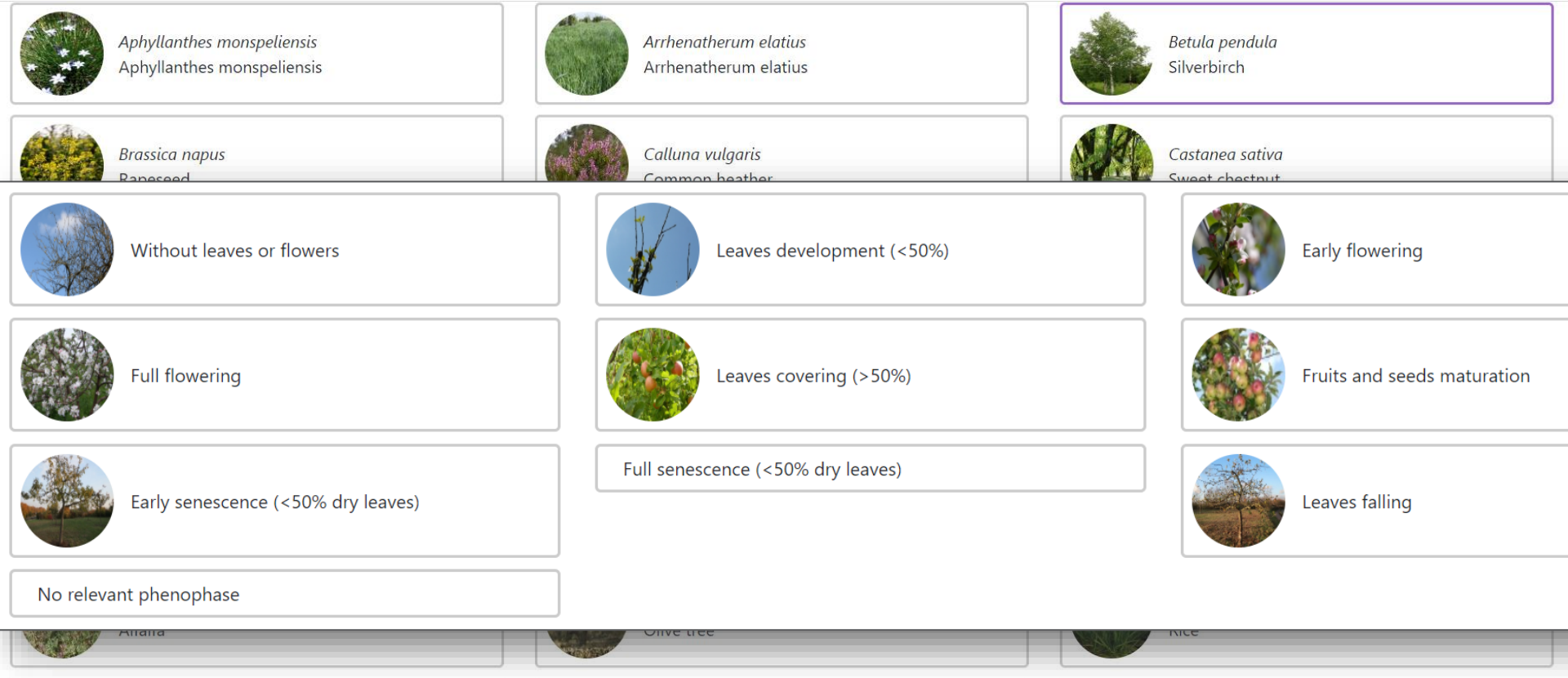

Oryza sativa
Rice


Papaver rhoeas
Poppy


Pinus halepensis
Aleppo pine


Pinus pinea
Italian stone pine

What is phenology: Select a phenophase



Content of the CSV

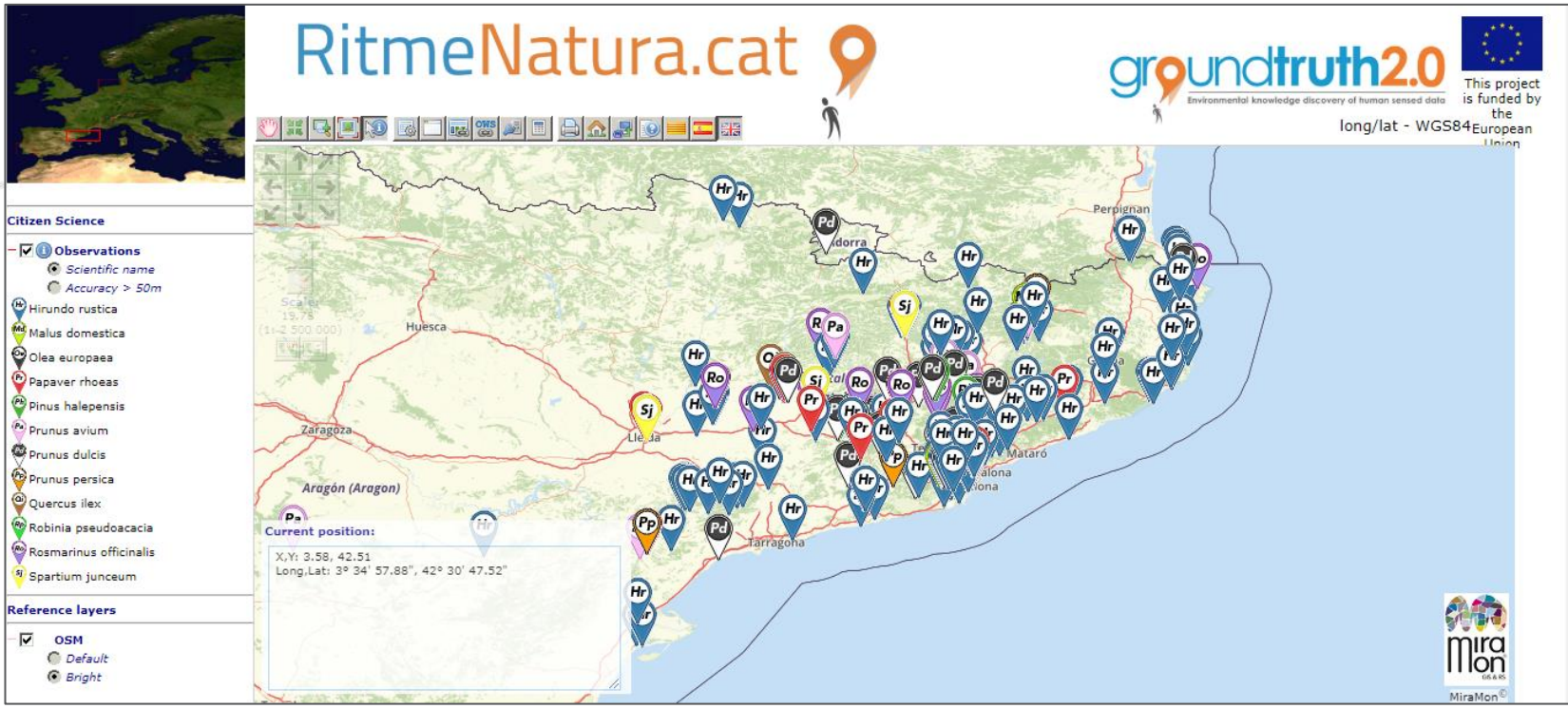
1. https://www.convertcsv.com/csv-viewer-editor.htm

	BB	BC	BD	BE	BF	BG	BH	
1	photo_attribution_3	taxon_name	taxon_rank	identif_created_at_0	identif_current_0	identif_id_0	identif_created_at_1	identif_
2	(c) miriamgarces, algunos derechos reservados (CC BY-NC)	Morus alba	species	2020-04-09T12:43:42+02:00	T	323635	2020-04-09T12:50:57+02:00	T
3		Hirundo rustica	species	2020-04-09T10:33:58+02:00	T	323621		
4		Platanus ?hispanica	species	2020-03-29T13:52:31+02:00	T	322785	2020-03-30T11:56:56+02:00	T
5	(c)							
6		Platanus ?hispanica	species	2020-03-07T13:04:22+01:00	T	319717	2020-03-09T09:03:45+01:00	T
7		Prunus persica	species	2020-03-05T10:07:24+01:00	T	319470	2020-03-05T10:19:39+01:00	T
8		Foeniculum vulgare	species	2020-03-05T10:04:23+01:00	T	319469	2020-03-05T10:18:25+01:00	T
9		Diplotaxis erucoides	species	2020-03-02T11:07:47+01:00	T	319097	2020-03-05T10:19:20+01:00	T
10		Chaenomeles japonica	species	2020-03-02T05:00:26-05:00	T	319096	2020-03-05T04:19:17-05:00	T
11		Chaenomeles japonica	species	2020-03-02T04:47:19-05:00	T	319092	2020-03-05T04:19:14-05:00	T
12		Rosmarinus officinalis	species	2020-03-02T04:43:02-05:00	T	319091	2020-03-05T04:19:09-05:00	T
13		Parietaria officinalis	species	2020-03-02T04:39:05-05:00	T	319087	2020-03-05T04:19:06-05:00	T
14		Crataegus monogyna	species	2020-03-02T04:33:36-05:00	T	319086	2020-03-03T03:51:58-05:00	T
15		Prunus dulcis	species	2020-03-02T04:19:36-05:00	T	319084	2020-03-03T03:51:13-05:00	T
16		Prunus dulcis	species	2020-03-02T04:14:26-05:00	T	319079	2020-03-02T04:15:18-05:00	T
17		Anemone hepatica	species	2020-03-02T02:44:36-05:00	T	319076	2020-03-02T04:16:03-05:00	T
18		Platanus ?hispanica	species	2020-02-29T05:48:41-05:00	T	318697	2020-03-02T04:14:44-05:00	T
19		Papaver rhoeas	species	2020-02-26T05:30:30-05:00	T	318443	2020-02-27T03:44:41-05:00	T
20		Punica granatum	species	2020-02-24T03:51:12-05:00	T	318286	2020-02-26T02:41:36-05:00	T
21				2020-02-18T06:53:54-05:00	T	317705		
22								
23		Cistus albidus	species	2020-02-11T04:22:32-05:00	T	317176		
24				2020-02-10T04:14:54-05:00	T	316939		
25				2020-02-10T04:14:36-05:00	T	316938		

EF	EG	EH
taxon_geoprivacy	longitude	latitude
	2.094179	41.361
	2.489093	41.68966
	2.051037038	41.38240814
	2.050934	41.371234
	2.04869	41.372087
	0.966693	41.756926
	0.9671	41.7566
	0.9671	41.7566
	0.964859	41.75686
	2.044367	41.485526
	2.043674	41.484973
	0.966275	41.757199
	0.966275	41.757199
	2.397058	42.029287
	2.05108624	41.38221921
	2.197491	41.454509

Where to see the RitmeNatura dataset directly

- https://ritmenatura.cat/mapa
- http://www.ogc3.uab.cat/gt20/



Point X,Y: 3.02, 41.86 **Long,Lat:** 3° 1' 29.23", 41° 51' 29.04"

Ritme Natura

Basic

Observation time:
Observer alias:
Identifier: 70245
Date/hour of the observation: 19/05/2018
Normalized date: 19/05/2018
Normalized hour:
Time zone: Madrid
Is outsite the known geographical area of the taxon?:
User identifier: 1731
User name: xavi-de-yzaguirre
Creation date: 2018-05-23 12:08:54 UTC
Last update date: 2018-05-30 14:23:47 UTC
Quality grade: research
License: CC-BY-NC
Url: http://natusfera.gbif.es/observations/70245
Image:

Keywords: Moraceae, Fenologia, Fenología, Phenology
Description: Figuera amb fruit madurant#Higuera con fruto en maduración#Fig ripening
Number of identifications in agreement: 1
Number of identifications in disagreement: 0
Has been captive/cultivated?: false

GeoLocalització

Description of the location: Sant Feliu de Guíxols
Positional uncertainty: 24
Geoprivacy:
Positioning method:
Positioning device:
Town name:
County name:
State: Excursiones Milani 2016/17
Country:

Taxon

Species description: Ficus carica
Scientific name: Ficus carica
Common name:
Taxonomic category of the superior level: Plantae
Taxon identifier: 283

Taxon extras

Kingdom: Plantae
Phylum or division: Magnoliophyta
Subphylum or subdivision:
Superclass:
Class: Magnoliopsida
Subclass:
Superorder:
Order: Urticales
Suborder:
Superfamily:
Family: Moraceae
Subfamily:
Supertribe:
Tribe:
Subtribe:
Genus: Ficus
Genus hybrid:
Species: Ficus carica
Hybrid: Ficus carica
Subspecies:
Variety or Race:
Form:

Occasional observation: true

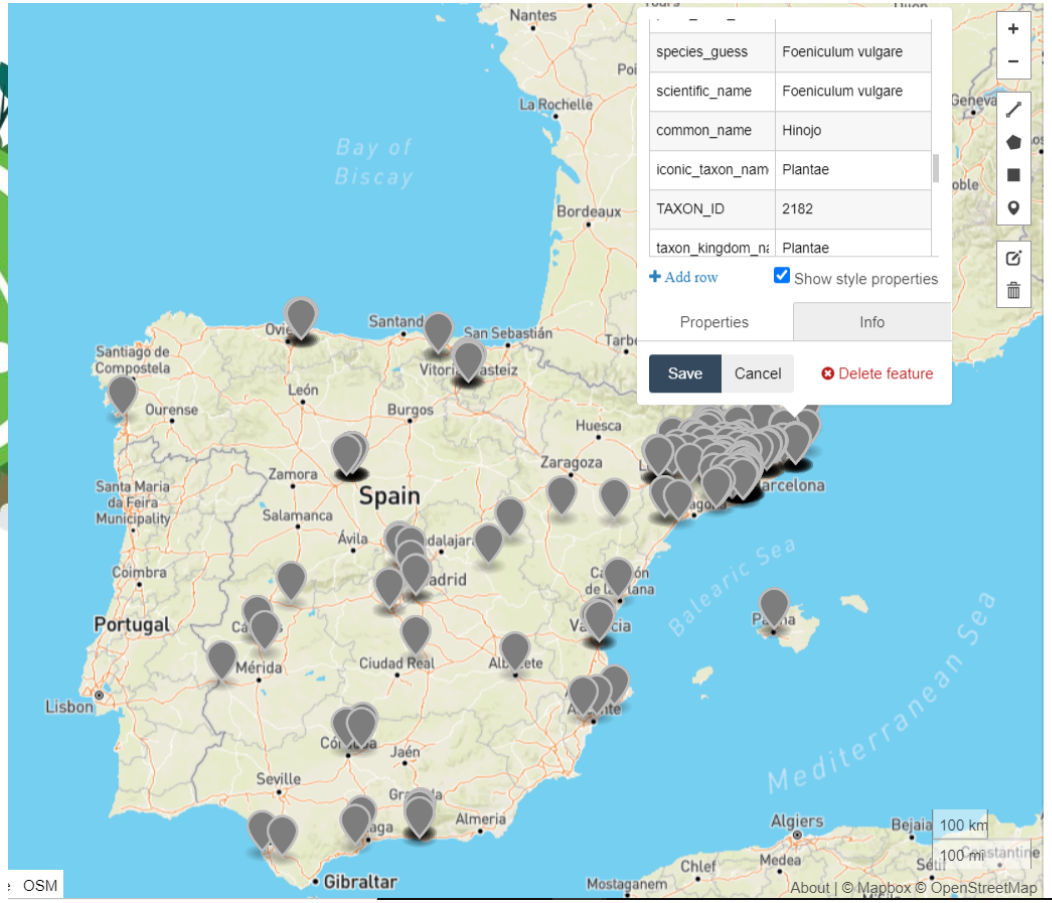
Camps d'observació (in recurrent observacions)

Observer code:
Code of the observation point:
Phenophase: Primers fruits comencen a agafar color
Individual identifier:

From Natusfera to iNaturalist

- The new dataset that aggregates data from both platforms is available using the OGC WFS protocol
- The syntax my look a bit scary but you only need to use this URL:
- https://ritmenatura.cat/cgi-bin/MiraMon.cgi?VERSION=2.0.0&SERVICE=WFS&REQUEST=GetFeature&ATRIBUTFORMAT=complex&SRSNAME=EPSG:4326&TYPENAME=ritme-natura&OUTPUTFORMAT=application/json
- (or **http://ves.cat/euSj**)
- To get a GeoJSON that you can see directly in any GeoJSON viewer

Load it in geojson.io




```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": "ritme-natura.0",
      "bbox": [
        1.186299,
        41.504417,
        1.186299,
        41.504417
      ],
      "geometry": {
        "type": "Point",
        "coordinates": [
          1.186299,
          41.504417
        ]
      },
      "properties": {
        "ID": 760,
        "observed_on_string": "17/04/2016",
        "observed_on": "17/04/2016",
        "time_observed_at": "",
        "TIME_ZONE": "UTC",
        "USER_ID": 233,
        "USER_LOGIN": "jaume-piera",
        "CREATED_AT": "2016-04-19 15:25:27 UTC",
        "UPDATED_AT": "2017-09-07 10:13:36 UTC",
        "quality_grade": "research",
        "LICENSE": "CC-BY-SA",
        "URL": "http://natusfera.gbif.es/observations/760",
```

2

Vatten Fokus dataset

- **Objective:** Water quality monitoring
- **Slogan:** Help improve water quality in your lakes and streams
- **Location:** South West Stockholm (Sweden)
- **Keywords:** Water quality, Nitrate, Phosphate, Turbidity, Water level
- **CSV format:** https://external.opengeospatial.org/twiki_public/pub/CitSciIE/OpenDataChallenge/VattenFokus.csv

VattenFokus

Content of the CSV

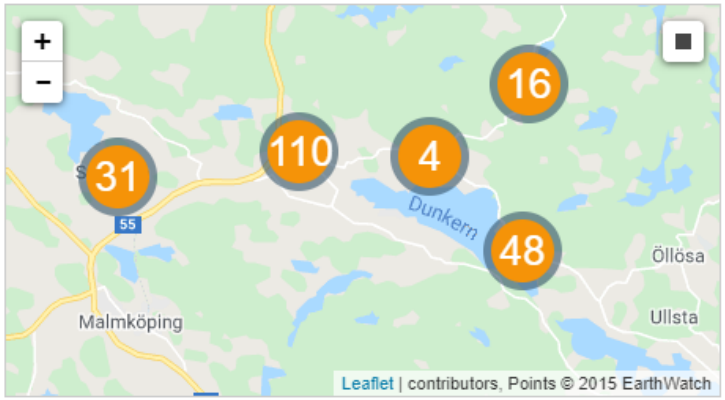
AA	AB	AC	AD	AE	AF	AG	AH
NITRATE	PHOSPHATE	TURBIDITY	RESULT	WATER_COLOR	OTHER_WATER_COLOR	MAPX	MAPY
0.10	0.075	<14		Other	Svagt brun	19.9070360000000	59.1861890000000
1.50	0.075	<14		Colourless		16.8268510000000	59.1681770000000
7.50	0.035	0	100	Other	Gr?brunt.	16.8340000000000	59.1580000000000
0.75	0.035			Colourless		16.7930000000000	59.1610000000000
0.35	0.075			Colourless		16.7190000000000	59.1640000000000
0.35	0.035			Brown		16.7620000000000	59.1780000000000
0.10	0.010			Colourless		16.8980000000000	59.1510000000000
0.35	0.035			Colourless		16.9130000000000	59.1350000000000
0.75	0.035			Colourless		16.8191000000000	59.1605000000000
0.75	0.010			Brown		16.7350000000000	59.1580000000000
7.50	0.010			Other	Grumligt gr?.	16.7920000000000	59.2040000000000
0.10	0.150			Colourless		16.7190000000000	59.1640000000000
0.10	0.010			Other	brunt	16.7620000000000	59.1780000000000
0.10	0.035			Colourless		16.7600000000000	59.1640000000000
7.50	0.350			Colourless		16.8330000000000	59.1570000000000
0.75	0.150			Colourless		16.8310000000000	59.1590000000000
0.10	0.150			Colourless		16.9130000000000	59.1350000000000
0.75	0.150			Colourless		16.8191000000000	59.1605000000000

VattenFokus dataset

Dunkern

Dela:

Karta över resultat

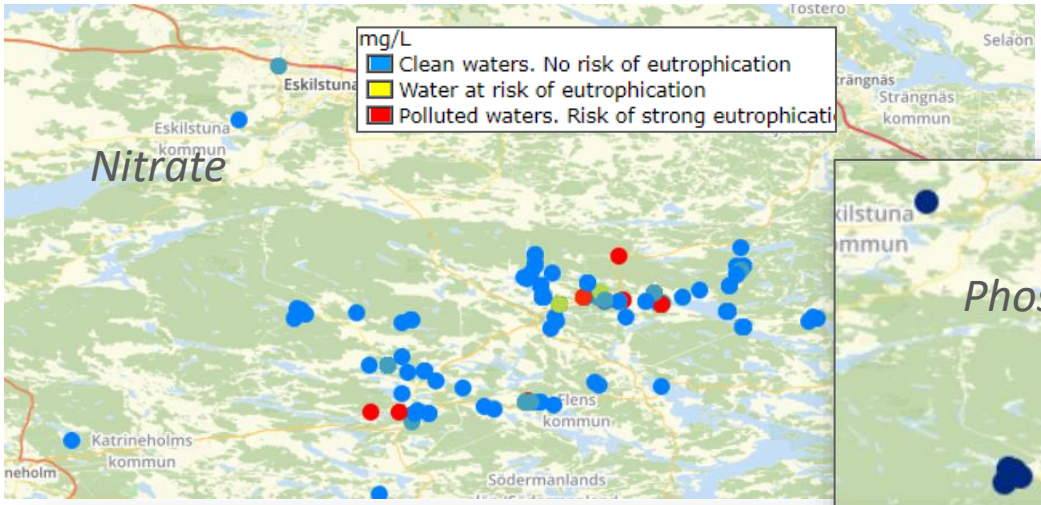


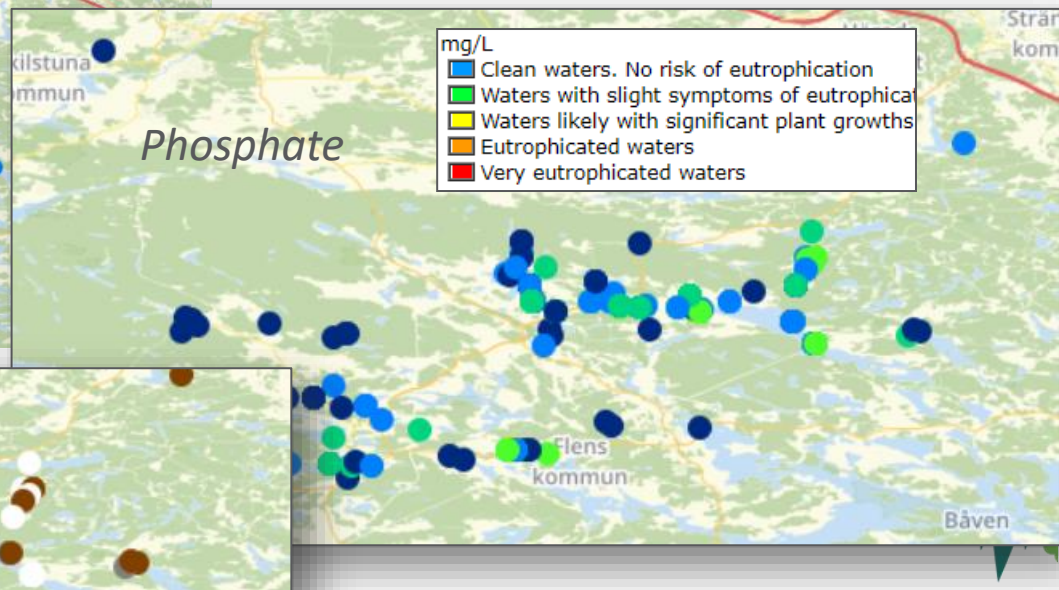
Tabell över resultat

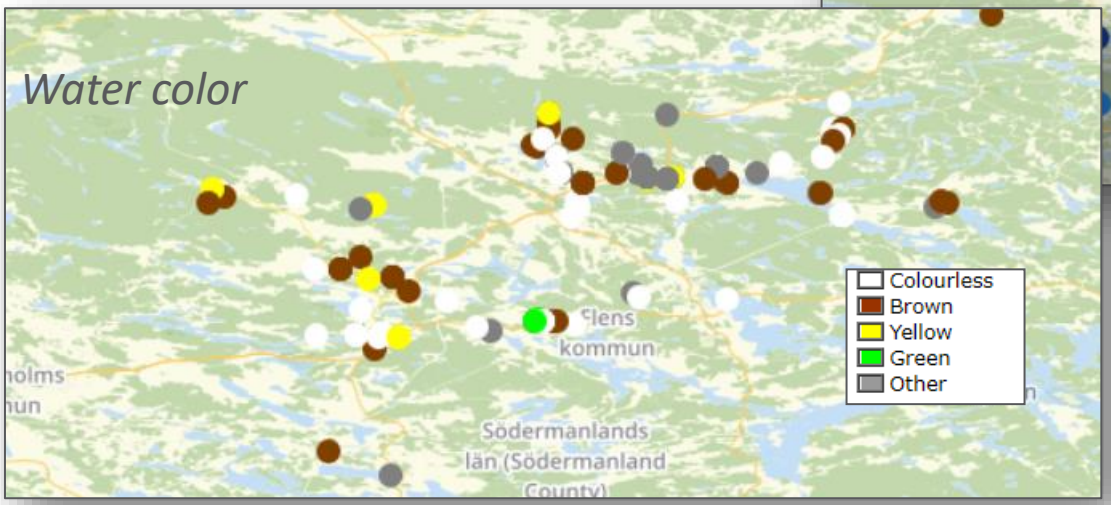
Title	Sample Date
Vindsbro-05-06-2020-16	05/06/20
RÖHL. Riksväg 55.-31-05-2020-16	31/05/20
Flasjön-25-05-2020-15	25/05/20
Glömnäs kvarn-09-05-2020-16	09/05/20
Dunkershall dike-07-05-2020-15	07/05/20
Altnäs dike-06-05-2020-16	06/05/20
Altnäs gångbro-06-05-2020-15	06/05/20

1 2 3 4 5 … next › last »

What is in the data? (http://www.ogc3.uab.cat/gt20/)







Data structure

Vatten Fokus

User ID:
Sample ID: 45711
Creation Date: 01/12/2018 20:12
Modification date: 01/12/2018 20:12
Sample date: 01/12/2018 11:00
Group ID: Dunkern, Group ID: 38438
Site name: R¤hl_dike v¤gtrumma uppstr¤ms riksv¤g 55
Sample date/time: 01/12/2018 11:00
Total number of participants: 1
Notes: + 2 grader C i vattnet. Stillast¤ende.
Freshwater body type: Other
Other freshwater body type: Dike
Land use in the immediate surroundings: Agriculture
Other the land use in the immediate surroundings:
Bank vegetation: Grass
Other bank vegetation:
On the water surface: None
Pollution sources in the immediate surroundings: Other
Evidence of water uses:
Other evidence of water uses:
Evidence of aquatic life: None
Other evidence of aquatic life:
Algae presence: No algae
Estimated the water flow: Still
Estimated water level: Low
Nitrate(mg/L): 7.50
Phosphate(mg/L): 0.010
Water Quality Secchi Tube (Turbidity):
Result:
Estimated water colour: Other
Other estimated water colour: Grumligt gr¤.

Vatten Fokus

User ID:
Sample ID: 40463
Creation Date: 25/05/2018 15:46
Modification date: 03/06/2018 8:28
Sample date: 25/05/2018 9:00
Group ID: VattenFokus Blitz, Group ID: 37274
Site name: Berga¤n
Sample date/time: 25/05/2018 9:00
Total number of participants: 1
Notes: Stannade vid passering och tog ett prov.
Freshwater body type: River
Other freshwater body type:
Land use in the immediate surroundings: Grassland/shrub
Other the land use in the immediate surroundings:
Bank vegetation: Trees/shrubs
Other bank vegetation:
On the water surface: None
Pollution sources in the immediate surroundings:
Evidence of water uses:
Other evidence of water uses:
Evidence of aquatic life:
Other evidence of aquatic life:
Algae presence:
Estimated the water flow:
Estimated water level:
Nitrate(mg/L): 0.10
Phosphate(mg/L): 0.035
Water Quality Secchi Tube (Turbidity):
Result:
Estimated water colour: Brown
Other estimated water colour:

Short-term exposure to drinking water with a nitrate level at or just above the health standard of 10 mg/l nitrate-N is a potential health problem primarily for infants. Babies consume large quantities of water relative to their body weight, especially if water is used to mix powdered or concentrated formulas or juices. Also, their immature digestive

http://psep.cce.cornell.edu/facts-slides-self/facts/nit-heef-grw85.aspx

Alternative

- Also available as OGC SOS protocol as an XML file
- http://www.ogc3.uab.cat/cgi-bin/CitSci/MiraMon.cgi?VERSION=2.0.0&SERVICE=SOS&REQUEST=GetObservation&featureOfInterest=http://www.opengis.uab.cat/vatten-fokus/featureOfInterest/&SRSNAME=EPSG:4326
- Or as OGC SOS in JSON
- http://www.ogc3.uab.cat/cgi-bin/CitSci/MiraMon.cgi?VERSION=2.0.0&SERVICE=SOS&REQUEST=GetObservation&featureOfInterest=http://www.opengis.uab.cat/vatten-fokus/featureOfInterest/&SRSNAME=EPSG:4326&responseFormat=application/json

3

Meet Mee Mechelen dataset

- **Objective:** Air quality
- **Slogan:** Measuring air quality and noise together
- **Location:** Mechelen (Belgium)
- **Keywords:** Air quality, noise pollution, city, health, traffic
- **CSV format:** https://external.opengeospatial.org/twiki_public/pub/CitSciIE/OpenDataChallenge/MeetMeeMechelen.csv

Meet Mee Mechelen

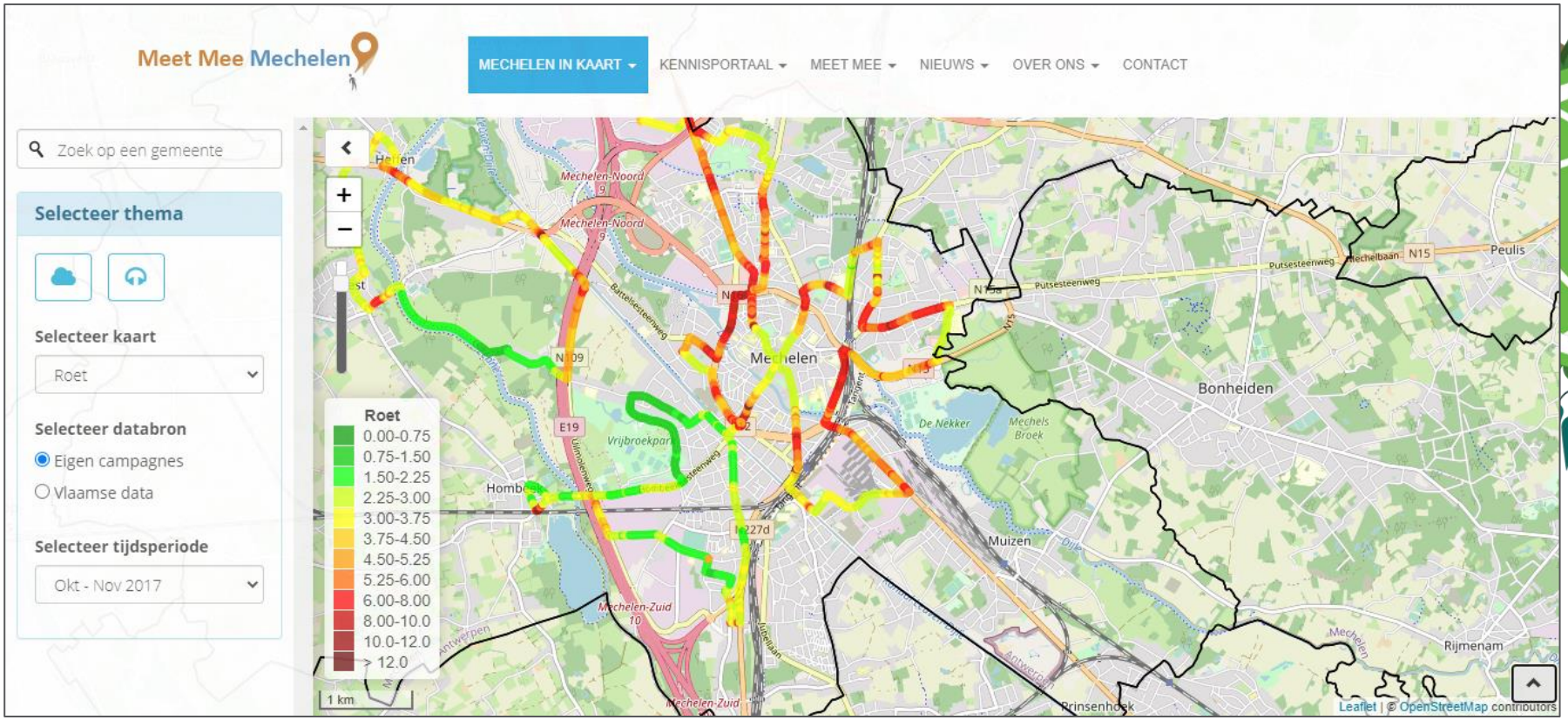
Taking a look at the CSV

- A bicicle is moving arround an records Black Carbon concentration every 8 seconds. This creates a line of points.

B	C	D	E	F	G	H	I
CAMPAIGN	street_nam	time_first	time_last	bc_aggr	bc_aggr_mi	bc_aggr_ma	bc_aggr_st
Oct-Nov2017	5	2017-11-06 08:00:10+01	2017-11-19 17:20:00+01	3155	30	16413	3398
Oct-Nov2017	5	2017-11-06 08:00:18+01	2017-11-19 17:20:06+01	3382	30	17256	3663
Oct-Nov2017	5	2017-11-06 08:00:24+01	2017-11-19 17:20:13+01	2826	30	7863	2113
Oct-Nov2017	5	2017-11-06 08:00:04+01	2017-11-19 17:19:54+01	2421	30	7639	1739
Oct-Nov2017	5	2017-11-06 08:00:32+01	2017-11-19 17:20:19+01	2775	30	7759	2049
Oct-Nov2017	5	2017-11-06 07:59:58+01	2017-11-19 17:19:49+01	2421	30	7916	1762
Oct-Nov2017	5	2017-11-06 08:00:38+01	2017-11-19 17:20:27+01	2564	30	7655	1918
Oct-Nov2017	5	2017-11-06 08:00:43+01	2017-11-19 17:20:30+01	2625	30	8862	2228
Oct-Nov2017	5	2017-11-06 07:59:51+01	2017-11-19 17:19:42+01	2337	30	7971	1638
Oct-Nov2017	5	2017-11-06 08:00:50+01	2017-11-19 17:20:37+01	2900	30	16314	3448
Oct-Nov2017	5	2017-11-06 07:59:45+01	2017-11-19 17:19:36+01	2261	30	8099	1625
Oct-Nov2017	5	2017-11-06 07:59:44+01	2017-11-19 17:19:35+01	2266	30	8118	1630
Oct-Nov2017	5	2017-11-06 07:59:37+01	2017-11-19 17:19:28+01	2327	30	8137	1673
Oct-Nov2017	5	2017-11-06 08:00:56+01	2017-11-19 17:20:42+01	2750	30	15718	3241
Oct-Nov2017	5	2017-11-06 07:59:30+01	2017-11-19 17:19:22+01	2346	30	8256	1717

Meet Mee Mechelen dataset (https://mechelen.meetmee.be/)

- Intersections accumulate Black Carbon



Structure of the data

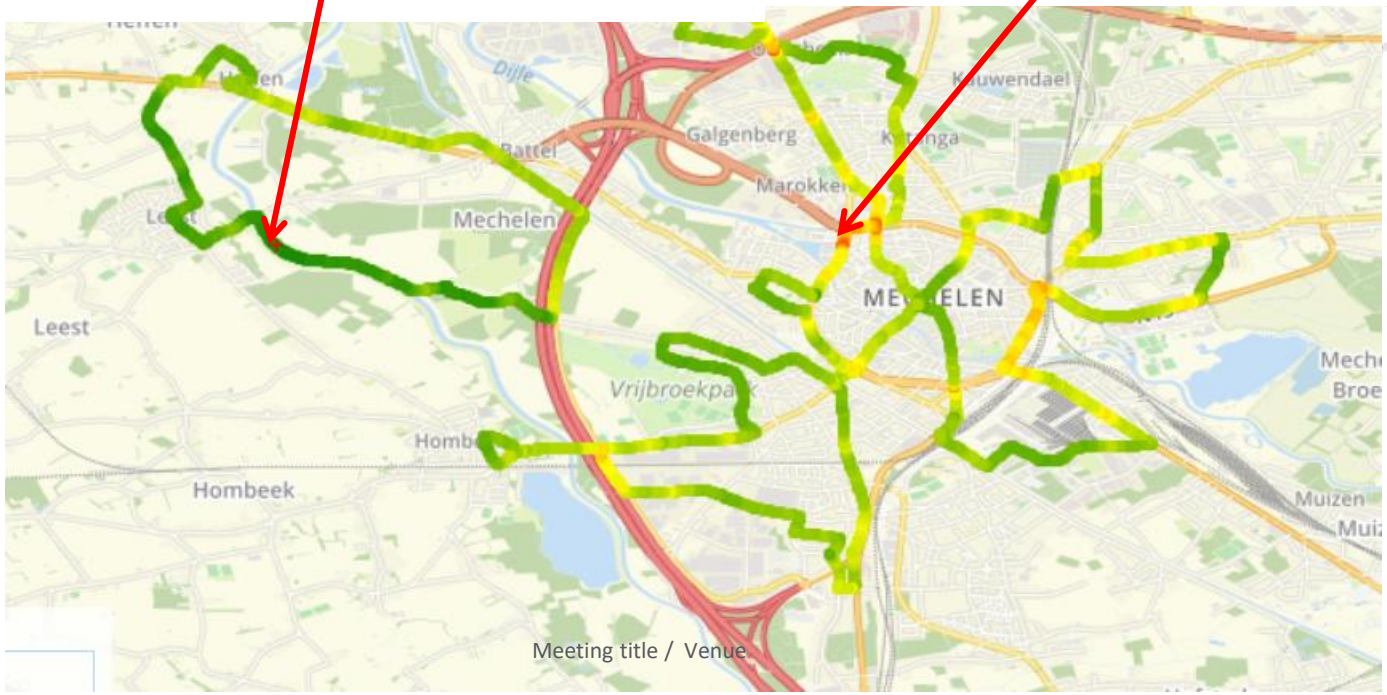
(http://www.ogc3.uab.cat/gt20/)

Meet Mee Mechelen

Campaign period: Oct-Nov2017
Date and time of the first observation: 2017-11-06 08:11:52+01
Date and time the last observation:
Mean black carbon concentration(ng/m³): 1903
Minimum black carbon concentration(ng/m³): 80
Maximum black carbon concentration(ng/m³): 5223
Standard deviation of the black carbon concentration(ng/m³): 1194
Total number of observations: 25
Number of days with observations: 13
Uncertainty on average (stan_dev/sqrt(n))* 2.228/mean): 0.29
Uncertainty (half length conf. interval at 95% confidence)(ng/m³): 551.87

Mechelen

eriod: Oct-Nov2017
ne of the first observation: 2017-11-06 08:11:49+01
ne the last observation:
carbon concentration(ng/m³): 8200
ack carbon concentration(ng/m³): 2008
lack carbon concentration(ng/m³): 21618
eviation of the black carbon concentration(ng/m³): 5671
er of observations: 22
days with observations: 13
on average (stan_dev/sqrt(n))* 2.228/mean): 0.34
(half length conf. interval at 95% confidence)(ng/m³):



Alternative

- Also available using the OGC SOS protocol as a JSON file.
- http://www.ogc3.uab.cat/cgi-bin/CitSci/MiraMon.cgi?VERSION=2.0.0&SERVICE=SOS&REQUEST=GetObservation&featureOfInterest=http://www.opengis.uab.cat/meet-mee-mechelen/featureOfInterest/&SRSNAME=EPSG:4326&responseFormat=application/json

THANK YOU!

Any Questions?

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CREAF

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