



CONSULTATIVE SIGNAL ASSESSMENT
PRIMARY RISK ASSESSMENT
EVIDENCE BASED RISK ASSESSMENT
PUBLIC HEALTH EVENT ASSESSMENT

HEAT AND OZONE, 07 AUGUST 2020

Date of the signal	Date of the PRA	Signal provider	Experts consultation	Method
07/08/2020	07/08/2020	KMI/IRM Irceline	Permanent experts: Valeska Laisnez (AZG), Romain Mahieu (CCC-GGC), Paul Pardon (FOD), Sophie Lokietek (AViQ), Karin Cormann (OstBelgien), Laurence Nick (AViQ), Caroline Teughels (Ine Vlaanderen), Patrick Demol (HGR) Opinion from : Charlotte Vanpoucke (IRCEL), Bart Bautmans (AZG, milieu), Koen Schoeters (AZG, milieu), Nathalie Bossuyt (Sciensano), Sofie Willems (Nehap), Michèle Gerard (CHU St Pierre), Bénédicte Delaere (CHU-UCL Namur), Inge Neven (CCC-GGC)	eMail
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Signal Over the next 6-7 days high temperatures are predicted of more than 30°C (up to 36°C in Uccle). The temperature criteria for the alert phase of the heat and ozone plan have been met and will continue to be met.

At 2 p.m. today (07/08) we had already exceeded the European information threshold of 180 µg/m³ (186 µg/m³ in Berendrecht). In the next few hours, as well as tomorrow and Sunday, further exceedances are expected in large parts of the country.

<https://www.irceline.be/nl/smog/pdf/ozon-informatiebericht-07-08-2020/view>
<https://www.irceline.be/nl/luchtkwaliteit/voorspellingen/ozon>

Weather consideration Based on forecasting done on Tuesday 07/08/2020

Maximum temperature	The maximum temperatures are predicted to be higher than 30° the next 6 days (today 7/8 included) until (and including) Friday August 7 th and the next 4 days approximately even higher than 35° until (and including) Wednesday August 12 th . On Thursday August 13 th , the maximum temperature should return everywhere to normal seasonal values, but the prediction is unsure so far ahead. In large cities, f.i. city of Antwerp – point Borgerhout, the maximum temperature is expected to be even higher by 0.5 to 1 °C.
Minimum temperature	The minimum temperatures are predicted to be higher than 20° for 5 consecutive nights between Saturday August 8 th and Wednesday August 12 th . In large cities, f.i. city of Antwerp – point Borgerhout, the minimum temperature is expected to be even higher by 2 to 3 °C.
Rainfall/drought	Low groundwater levels and lack of rainfall in recent weeks. The average precipitation total over the last 3 months is coded “severe dry” and the dryness index is “moderate dry” to “extreme dry” over almost the entire territory and is predicted to remain so in the next 10 days. Local thunderstorms are predicted from Monday August 10 th on. Stormy precipitation is expected from Wednesday August 12 th on.
Wind	Weak
Relative humidity (%)	At a temperature of 31.5° and a relative humidity of 21%, the heat index temperature is currently 30. When 26-32: Caution: fatigue is possible with prolonged exposure and activity. Continuing activity could result in heat cramps.

Environmental conditions

Ozone - hour mean (µg/m³)	European information threshold > 180 µg/m ³ European alert threshold > 240 µg / m ³ High ozone concentrations are measured in the whole of Belgium. The European information threshold of 180 µg/m ³ /h has already been exceeded yesterday August 6 th in the north eastern part of the country and today August 7 th at 2 pm. More exceedances are expected both today and in the next three days.
Ozone - max 8 hour mean (µg/m³)	Reaching values above 120 µg/m ³ in a large part of the country (between 100 µg/m ³ and 120 µg/m ³ in de coastal area and high Ardennes
PM10 (µg/m³)	Running 24 hourly means are below 50 µg/m ³ in the whole country and are expected to remain so.
PM2.5 (µg/m³)	Running 24 hourly means are below 35 µg/m ³ in the whole country and are expected to remain so
NOx/NO2 (µg/m³)	Hourly values are below 120 µg/m ³ in the whole country and are expected to remain so or become lowers in the next days.
Black Carbon (nm)	Running 24 hourly means are 0-2.3 µg/m ³ on the whole country.
Pollen	The grass pollen season is fading out. On Thursday August 6 th , 6 grass pollen grains per m ³ of air were measured in Brussels. Mugwort has started blooming. Its pollen may

cause allergy symptoms during this summer period. Large amounts of allergenic fungal spores of the genus *Cladosporium* are also present in the air.

Health evaluations

Number of deaths The first warning phase of the heat and ozone plan lasted 4 days from Tuesday 23 June (week 26) to Friday 26 June 2020 (week 26) inclusive. Over this period, there were 4 days with ozone concentrations above 100 µg/m³ over the whole country (highest 8-hour mean) and two days when temperatures in Uccle were close to 30°C. There were no high concentrations of PM_{2.5} or PM₁₀. The ozone concentration was higher on the first two days of the warning phase. We observed a few days of excess mortality in all regions centralized during the warning phase, mainly among the age group 65-84 years old.

Other diseases COVID-19 epidemic, where the most vulnerable group is the same as for heat (elderly, people with chronic conditions, vulnerable persons...).

Planned mass gathering events

Festivals In the context of COVID-19, there are no mass events planned. Smaller events (up to 200 people outside) can be planned (private initiatives). In the province of Antwerpen, no events are allowed.

Youth camp Youth camps like scouts have been informed about additional measures to be taken during heat waves previous years (see 2019: <https://lesscouts.be/parents/news/avertissement-forte-chaaleur-1.html>), but this should be repeated. Camps take place in tents or often older buildings where temperatures can rise sharply, and activities are not always adapted according to the weather conditions.

Exceptional situation

More traffic can be expected this weekend because of departure or returns from holidays, but it is not expected to be a “red” weekend.

Due to COVID-19, some measurement are in contradiction to the ones to counter high temperature effects on health. There is also an exceptional high pressure on both the health system and persons individual health. The health effect of COVID-19 can strengthen the health effect of temperature and air quality – and vice versa. The capacity of caring staff of hospitals, elderly homes, ... and local governments are more than 100% occupied with fighting the COVID-pandemic – leaving less time to counter heat effects. Also, some symptoms associated with high heat and/or ozone peaks are similar to the symptoms of COVID-19 (shortness of breath, throat irritation, headache, severe fatigue, high body temperature, altered consciousness, diarrhoea).

Assessment

Cause know Heat periods in the summer are known and a specific plan does exist.

Unusual/unexpected Heat periods during the summer are expected but the temperature forecasts for the 6 coming days is unusual. Also, the peak coincides with the COVID-19 epidemic.

Severity Based on the previous observations done by Be-Momo, we can expect that there will be an impact on health but possibly moderate if measures are applied. However the impact on increased transmission of COVID-19 (because respect of social distance in cool rooms will be more difficult, people will be more reluctant to wear masks,

Exposed population The whole population is concerned by the heat but a particular attention has to be given to persons with chronic conditions, vulnerable persons/socially isolated persons, elderly and young children. Measures have also to be taken for workers doing heavy work.

Preparedness and response

Preparedness After the heat period of 2003, an action plan detailing the necessary measures in order to mitigate the impact of heat and ozone on health has been developed. Each region and the federal level have such a plan. There is a labour legislation.

<p>Response</p>	<p>Surveillance systems partially exists. We are missing of a rapid indicator-based system like the possibility to use nearly real-time data from emergency wards (UREG). The regional plans have been activated in the past, but this is the first time that the (federal) alert phase is activated.</p> <p>In Flanders, the alert phase has been activated since 2/8. Intermediaries working towards the target groups around heat were asked to prepare and take measures. This was announced with a newsletter from the agency Care and Health and supported with the 'hot days' campaign, the website www.warmedagen.be and the facebook page www.facebook.com/warmedagen. On 6/8, attention was again drawn to the exceptional weather conditions and to taking sufficient measures. On the website www.warmedagen.be/warmte-en-het-coronavirus the application of both COVID-19 measures and heat measures within different settings is discussed in detail.</p> <p>No information on measures taken was provided by the other regions.</p>
<p>Decision</p>	<p>Since the criteria for temperature and ozone concentration for the alert phase have been reached on 7/8 and in the context of the COVID-19 epidemic, needing to find a balance between measures recommended in the heat plan and for limiting COVID-19 transmission, the alert phase is initiated.</p>
<p>Actions</p>	<p>At regional level, the recommended measures in existing heat plans should be followed. The actions recommended below concern mainly measures in the heat plan that could be difficult to implement during the COVID-19 epidemic, as highlighted in a RAG advice on heat and COVID-19 from 26/05/20, see http://covid-19.sciensano.be/sites/default/files/Covid19/20200527_PRA_COVID%20%26%20plan%20canicule.pdf</p> <ul style="list-style-type: none"> • A clear <u>communication</u> is needed on the importance to continue wearing a face mask, despite the heat. The use of chirurgical masks or masks made of a material that allows better ventilation, such as cotton and without the use of an additional filter could be promoted. For intensive sports activities (that are discouraged and should only be conducted in the morning or evening) outdoors and in non-crowded areas (e.g. running and cycling), the obligation to wear a face mask could be overruled by the local authorities. In case of urgent heat stress, the mask can be temporarily left off, in conditions COVID-safe to the person and his environment). Masks may not be made wet and should be changed more often, especially once wet with sweat. • <u>Easy access to water, especially in an urban setting</u>; drinking water fountains that have been closed because of COVID-19 must be reopened (taking hygiene measures, especially with regards to high touch surfaces, into account, see also https://www.warmedagen.be/warmte-en-het-coronavirus); bars and restaurants must be encouraged to provide free tap water to their clients; drinking water should be provided in case of traffic jams or public transport problems. • Measures should be taken at places where <u>queuing</u> can be expected (supermarkets before entrance in the shop, public transport) to provide shadow/shelter while waiting. • In <u>nursing homes</u>, persons requiring isolation/quarantine because of COVID-19 the next few days should preferably be isolated in the coolest areas/rooms of the institution as far as possible. If no case has been reported in the nursing home during the past 2 weeks, social distancing is of lower priority than giving access to the residents to a cool place, and vans can be used when a person is alone in a room and no care is given (see also further). Visits from family should not be organised outside during the alert phase, but alternatives insides in cool places should be looked for (chapel, cafeteria, ...). More specific recommendations are available here: https://www.zorg-en-

gezondheid.be/sites/default/files/atoms/files/Tijdelijke%20maatregelen%20oudere%20zorg%20-%20Update%2023-07-2020%20DEF.pdf

- Extra support to the staff will be needed in residential collectivities with vulnerable population (nursing homes, hospitals, ...) to provide the residents with the necessary refreshment (additional water rounds, encourage people to drink footbaths,...), through students or volunteers (e.g. volunteers or red cross, provide information on possibility to contact them through the website <https://www.helpdehelpers.be/>). These persons must be informed about correct use of PPE when working in a nursing home and sufficient PPE should be made available. A screening PCR test at entrance is not recommended/not useful.
- Particular attention should be given to the elderly living alone at home (regular contact to question the state of health, as planned in the heat plans and already sometimes implemented in the context of COVID-19).
- Ventilation of rooms: although in the heat plan it is recommended to keep indoor spaces closed to keep the heat out, it is important to ventilate the spaces in the context of COVID-19. This should be done preferably in the early morning and evening, while the room is empty.
- Air currents (f.i. from ventilators, air-conditioning units, ...) should be avoided, because they can spread infective droplets over a larger area. The possible use of these cooling devices should be evaluated case by case considering urgency of heat effect to COVID-transfer. Social distancing is important in this case, and avoiding air flows from one person to another, or continuous resuspension of indoor air. See also HGR-CSS advice on ventilation: <https://www.health.belgium.be/nl/advies-9599-ventilatie>
- Public places with air conditioning (museum, cinema, library...) should allow access to those most vulnerable to the heat, while respecting social distancing measures. A system with reservation of time spots could be used to avoid crowding. Increased shadow places should be provided at outdoor public places.
- Swimming is only possible where it is allowed (f.i. check www.kwaliteitzwemwater.be).
- Youth camps should be informed on the importance of drinking enough water and installing sleeping places in shady areas (if possible). (Heavy) physical activities should be avoided, especially during the hottest hours of the day
- If needed, drinking water should be transported to the camp in bulk.
- Access to showers, cool public places and accommodation centres should be provided to homeless people, with respect of social distancing measures.
- In the event of major problems in a collectivity or municipality to cool down institutions and residents, municipal contingency plans can be initiated with the deployment of emergency services (civil protection, fire brigade, etc.).

REFERENCES

Situation and forecasting drought :

<https://www.meteo.be/fr/meteo/previsions/secheresse>

<https://www.wallonie.be/fr/actualites/quel-est-letat-de-la-secheresse-en-wallonie>

https://www.waterinfo.be/default.aspx?path=NL/Thema/Droogte_Actueel

WBGT: <http://www.emploi.belgique.be/defaultTab.aspx?id=39434>

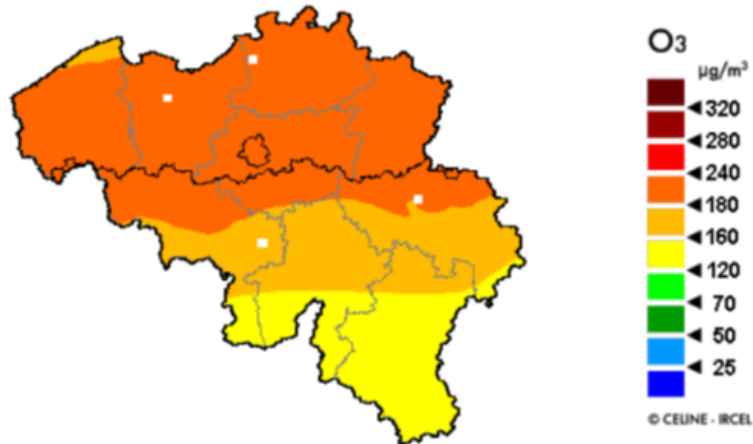
Heat index : <http://meteoherhet.be/template/plugins/bioIndexes/index.php>

Pollen: <https://airallergy.sciensano.be>

ANNEXES

Morgen zaterdag 8 augustus:

Morgen zaterdag wordt het op sommige plaatsen nog warmer met verwachte temperaturen in de Kempen tot 37°C. Aan zee wordt het iets minder warm en kan er na de middag een zeebries opsteken. In de rest van het land waait de wind zwak uit noordoostelijke richting. De ozonconcentraties zullen verder toenemen en in een groot deel van het land worden overschrijdingen van de Europese informatiedrempel verwacht.

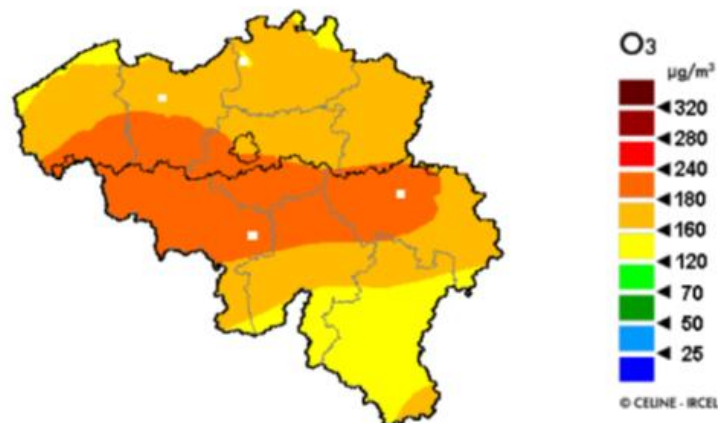


Verwachte hoogste uurgemiddelde ozonconcentraties morgen zaterdag 8 augustus 2020

- Hoogste verwachte uurgemiddelde concentraties: tussen 155 en 215 µg/m³
- Europese informatiedrempel van 180 µg/m³: kans op overschrijdingen van de informatiedrempel in grote delen van het land.

Overmorgen zondag 9 augustus:

Ook overmorgen zondag blijft het tropisch warm en zonnig. De wind blijft zwak uit noordoostelijke richting. Door de opstapeling van luchtvervuiling de voorbije dagen in combinatie met dit weer, blijven de ozonconcentraties hoog. Het risico op overschrijdingen van de Europese informatiedrempel houdt aan.



Hoogste verwachte uurgemiddelde concentraties: tussen 160 en 190 µg/m³
Europese informatiedrempel van 180 µg/m³: kans op overschrijdingen van de informatiedrempel. De grootste kans is er in het centrum van het land.