Webinar (June 2, 2023): What are the consequences of uranium ammunition in the Ukraine war?

From environmental disaster to ecocide

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Content of this reader and the presentation:

- War in Ukraine: assessing the environment costs
- Ecocide of the Ukraine and global food crisis
- What happened on May 13, 2023?
- Environmental polluter at (Ukraine) war
- Metal-related health effects of war
- Main statements and conclusions

Sources and more infos:

https://www.icbuw.eu/en/

In German:
https://umwelt-militaer.org/tag/ukraine-krieg/

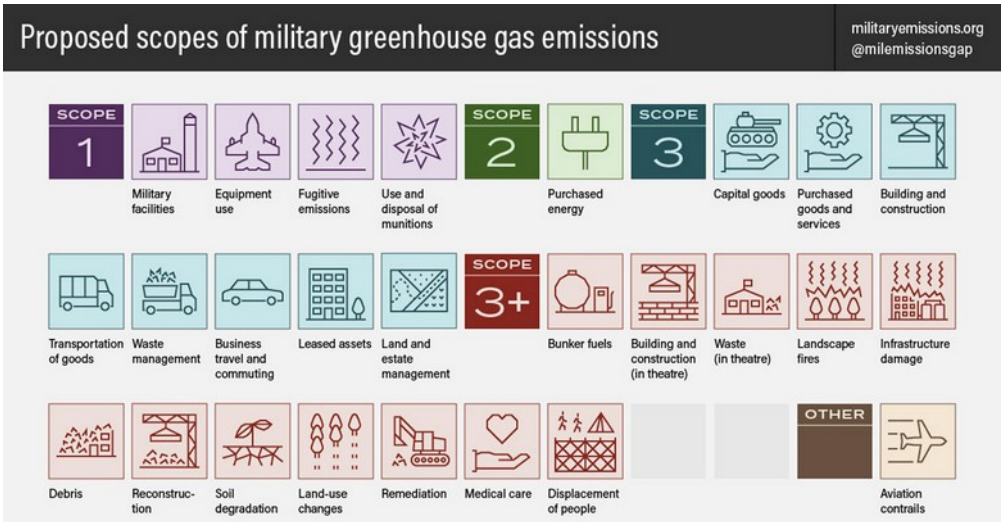
https://umwelt-militaer.org/category/umwelt-lokal/uranmunition/

War in Ukraine: assessing the environmental costs

GHG emissions: military fuel use, fires and explosions, refugee movements, and leakages of methane due to sabotage of the Nord Stream fossil gas pipelines have together led to emissions of approx. 50 million tonnes of CO2 equivalent (Mt CO2e) during the **first seven months** of the war.

Post-conflict reconstruction will result in a further 50 Mt CO2e being released.

Source: Dr. Stuart Parkinson, Scientists for Global Responsibility



Source:
https://ceobs.org/wp-content/uploads/2022/06/CEOBS_A_framework_for_military_GHG_emissions_reporting.pdf

Damage to infrastructure and the local environment

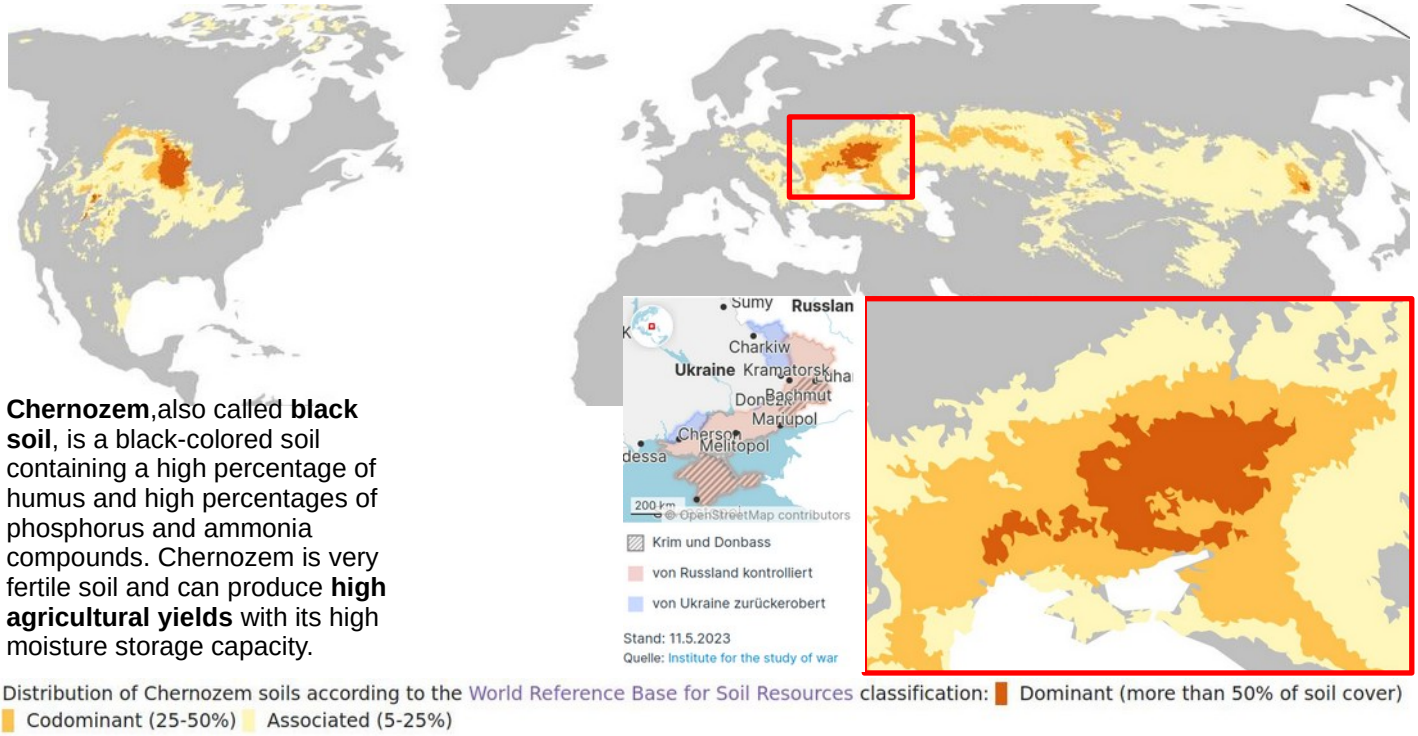
But, of course, the war does not only kill people directly, it damages essential infrastructure including homes, water and energy supplies, and health care services – leading to indirect civilian deaths – as well as causing huge impacts to the surrounding environment, including farmland and forests.

Indication of the scale of this damage is given in a report published by Climate Focus which assessed some of the environmental impacts of the first seven months of the war. [10] Using data from European and US satellite images, the researchers estimated that the conflict had caused over 6,000 fires damaging nearly 5,000 square kilometres of land – mostly cropland, but also large areas of forests and obviously urban areas as well. [...]

Arguably, however, the largest climate-related impacts of the war are likely to come from factors beyond the battlefield. In particular, there has been a massive international expansion of fossil gas capacity as nations seek to reduce their dependence on Russian supplies – in particular, for liquified natural gas (LNG), which is a higher carbon type of the fuel. This factor – coupled with an uptick in oil and gas exploration – may well have pushed the Paris Agreement target of 1.5°C out of reach. [20] Indeed, the huge increases in military spending that have followed the invasion are also highly likely to raise carbon emissions significantly.

Source:
https://www.sgr.org.uk/resources/war-ukraine-assessing-human-and-environmental-costs

Ecocide of the Ukraine and global food crisis



Chernozem,also called **black soil**, is a black-colored soil containing a high percentage of humus and high percentages of phosphorus and ammonia compounds. Chernozem is very fertile soil and can produce **high agricultural yields** with its high moisture storage capacity.

Distribution of Chernozem soils according to the World Reference Base for Soil Resources classification: Dominant (more than 50% of soil cover)
Codominant (25-50%) Associated (5-25%)

Chernozem (from Russian: чернозём, tr. chernozyom, IPA: [tɕɪrnɐˈzʲɵm]; "black ground"),also called black soil, is a black-colored soil containing a high percentage of humus and high percentages of phosphorus and ammonia compounds. Chernozem is very fertile soil and can produce high agricultural yields with its high moisture storage capacity.

Chernozem cover about 230 million hectares of land. There are two "chernozem belts" in the world. One is the Eurasian steppe which extends from eastern Croatia (Slavonia), along the Danube (northern Serbia, northern Bulgaria (Danubian Plain), southern and eastern Romania (Wallachian Plain and Moldavian Plain), and Moldova, to northeast Ukraine across the Central Black Earth Region of Central and Southern Russia into Siberia. The other stretches from the Canadian Prairies in Manitoba through the Great Plains of the US as far south as Kansas.

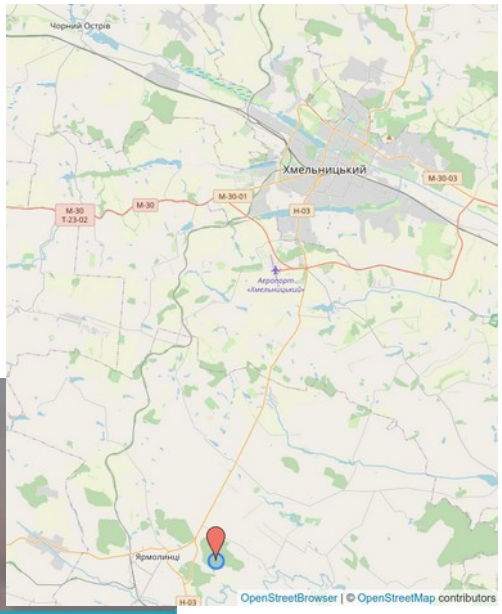
Source: Wikipedia

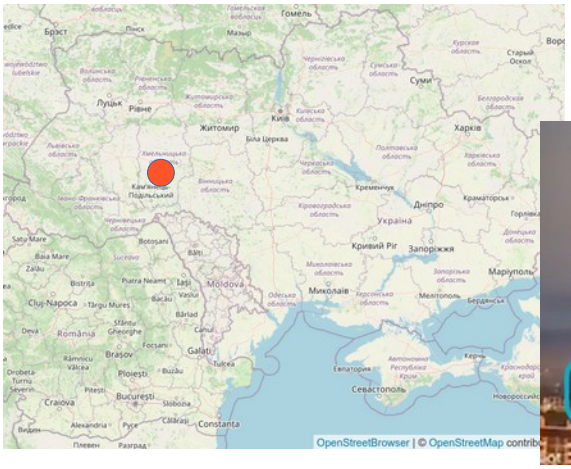
Ukraine and Russia are major international suppliers of wheat, maize, sunflower seed products, and fertilizers.

A subsequent report by the World Food Programme (WFP) estimated that the war had forced an extra 47 million into ‘acute food insecurity’.

What happened on May 13, 2023?

- UK announced to deliver uranium ammunition in March
- Shipment in April?
- Russian rocket destroyed major ammunition depot on May 13
- German government end of May: no danger!





After the destruction of the ammunition depot near the town of Khmelnytskyi, an increased radioactive contamination was measured.

Apparently, the attack was preceded by the fact that the huge underground depot - still dating from Soviet times - was filled with ammunition in preparation for Ukraine's announced military offensive, probably including uranium munitoin from Great Britain.
The map on the right shows that this depot has an optimal location in the west of Ukraine, with good access to a motorway - see https://en.wikipedia.org/wiki/Highway_M30_(Ukraine), rail network and airport. Of course, this could not remain hidden from the Russian side. The map on the right can be accessed on the internet with: https://www.openstreetbrowser.org/#map=12/49.2522/26.8235&basemap=osm-mapnik&categories=military

German Source from May 7, 2023:
https://overton-magazin.de/allgemein/verwandelt-der-westen-die-ukraine-in-ein-nukleares-schlachtfeld/

Environmental polluter at (Ukraine) war

Caused by:

- Military aircraft and ground vehicles
- Artillery Grants (approx. 20,000 from Russian forces every day)
- Bombs and combat drones

Global impact:

- Greenhouse gases (climate change)

Local impact:

- Particulate matter (fire, combustion)
- Ultra particulate matter (aircraft combustion)
- Nanoparticles (from ammunition, e.g. DU)
- Mineral oil and fuel (from vehicles)

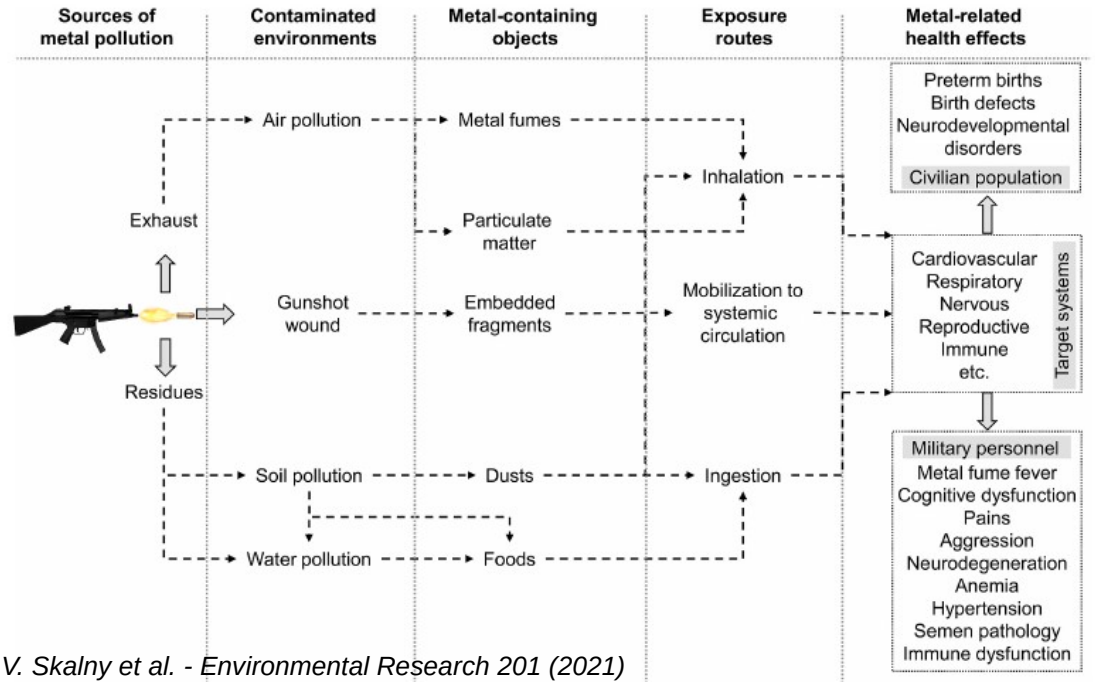
There are alarming figures presented by the Chairman of the Agricultural Committee of the Ukrainian Parliament, Oleksandr Haydu. More than five million hectares of agricultural land are already unusable due to mines, contamination with explosive remnants or ongoing fighting, Haydu explained. "Due to mines or dangerous explosive devices on agricultural land, it is often impossible to cultivate it," he said. Instead of 7.7 million hectares as last year, it was only possible to plant winter crops on 4.5 million hectares at last count, he said.

The missiles, cruise missiles and mines destroy buildings and release asbestos. If storage tanks for heavy oil, refineries and industrial plants are hit, oil and chemicals seep into the ground and can contaminate the groundwater. Ammunition also contains toxic chemicals, warn environmental experts like Wim Zwijnenburg of the Dutch peace research organisation Pax. "If an area is shelled every day for months, heavy metals from the fired ammunition accumulate in the soil," says Zwijnenburg in an interview with RedaktionsNetzwerk Deutschland (RND).

According to Zwijnenburg, large parts of the disputed area in Ukraine will no longer be able to be used for agriculture in the near future because they are contaminated with toxins. Ukraine has been one of the world's largest exporters of wheat and maize and a major supplier to countries in Africa and the Middle East. Reuters news agency reports that it will take decades to repair the damage to Europe's breadbasket and that the global food supply could suffer for years

Translated with www.DeepL.com/Translator from German source:
https://www.rnd.de/politik/ukraine-krieg-russlands-angriffe-vergiften-europas-kornkammer-was-sind-die-folgen-7F2HIGZ47FHYJBVQ3CFJFJRPPE.html

Metal-related health effects of war



Source: A.V. Skalny et al. - Environmental Research 201 (2021)

Abstract (shortened):

An increasing body of literature has demonstrated that armed conflicts and military activity may contribute to environmental pollution with metals, although the existing data are inconsistent.

Emission of metals into the environment upon military activity occurs from weapon residues containing high levels of particles containing lead (Pb; leaded ammunition), copper (Cu; unleaded), and depleted uranium (DU). As a consequence, military activity results in soil contamination with Pb and Cu, as well as other metals including Cd, Sb, Cr, Ni, Zn, with subsequent metal translocation to water, thus increasing the risk of human exposure. Biomonitoring studies have demonstrated increased accumulation of metals in plants, invertebrates, and vertebrate species (fish, birds, mammals).

Correspondingly, military activity is associated with human metal exposure that results from inhalation or ingestion of released particles, as well as injuries with subsequent metal release from embedded fragments. It is also notable that local metal accumulation following military injury may occur even without detectable fragments. Nonetheless, data on health effects of military-related metal exposures have yet to be systematized. The existing data demonstrate adverse neurological, cardiovascular, and reproductive outcomes in exposed military personnel.

Moreover, military-related metal exposures also result in adverse neuro developmental outcome in children living within adulterated territories.

Main statements and conclusions

- Uranium ammunition has an extremely toxic effect via nanoparticles in the human bloodstream - despite the apparently low radioactive radiation. Comparisons with nuclear weapons are misleading!
- Most valuable farmland in Ukraine has recently been sold to large investors from the West ("land grabbing") - for agricultural products with high pollution levels in the future.
- Destroyed infrastructure in war zones can be rebuilt in the short and medium term - contaminated soil is a burden for eternity!

Necessary demands:

- No trivialisation of uranium ammunition
- Stop all arms deliveries to Ukraine
- Ceasefire and diplomacy immediately

The ecocide and the threat to global food security must be stopped!

German Newspaper 1918:

Ukraine (separated from Russia): The German breadbasket (Granary of Germany).