

**Press Release**  
of the Regional Eastern Europe Fire Monitoring Center (REEFMC)  
Regarding large wildfires near the Chernobyl Exclusion Zone in April 2020  
3-5 April 2020

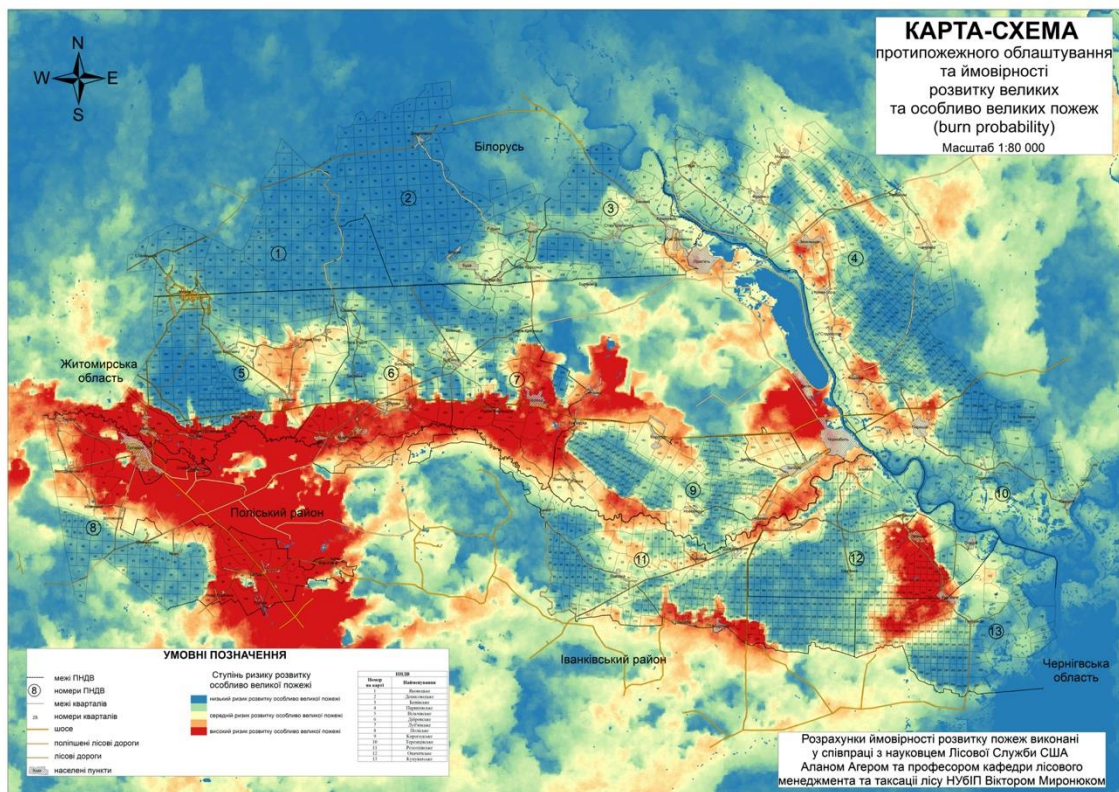
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Since 2007, REEFMC has been actively working with agencies of Ukraine and international partners (the Global Fire Monitoring Center [GFMC] by sponsorship of the Council of Europe's Major Hazard Agreement and the Organization for Security and Cooperation in Europe [OSCE], and the US Forest Service) over increasing preparedness and safety and capacity of fire management in terrains contaminated by radionuclides in the Chernobyl Exclusion Zone (CEZ) [1]. In April and August 2015 two major wildfires inside the CEZ burned around 15.000 ha. The emissions of these fires resulted in aerial transport of radionuclides beyond the CEZ borders [2].

Based on the dedicated activities of REEFMC and partners, including the support by US Forest Service, a number of recommendations and guidelines have been developed between 2016 and 2018, aimed at improvement of individual protection of firefighters, strategies and tactics of fire management in contaminated terrain. Among other, a burn probability map of CEZ and vicinity was developed that can be used by firefighting services to prevent fires and provide a fast fire response (the map is available on the website of REEFMC) (Fig. 1) [3, 4, 5, 6].

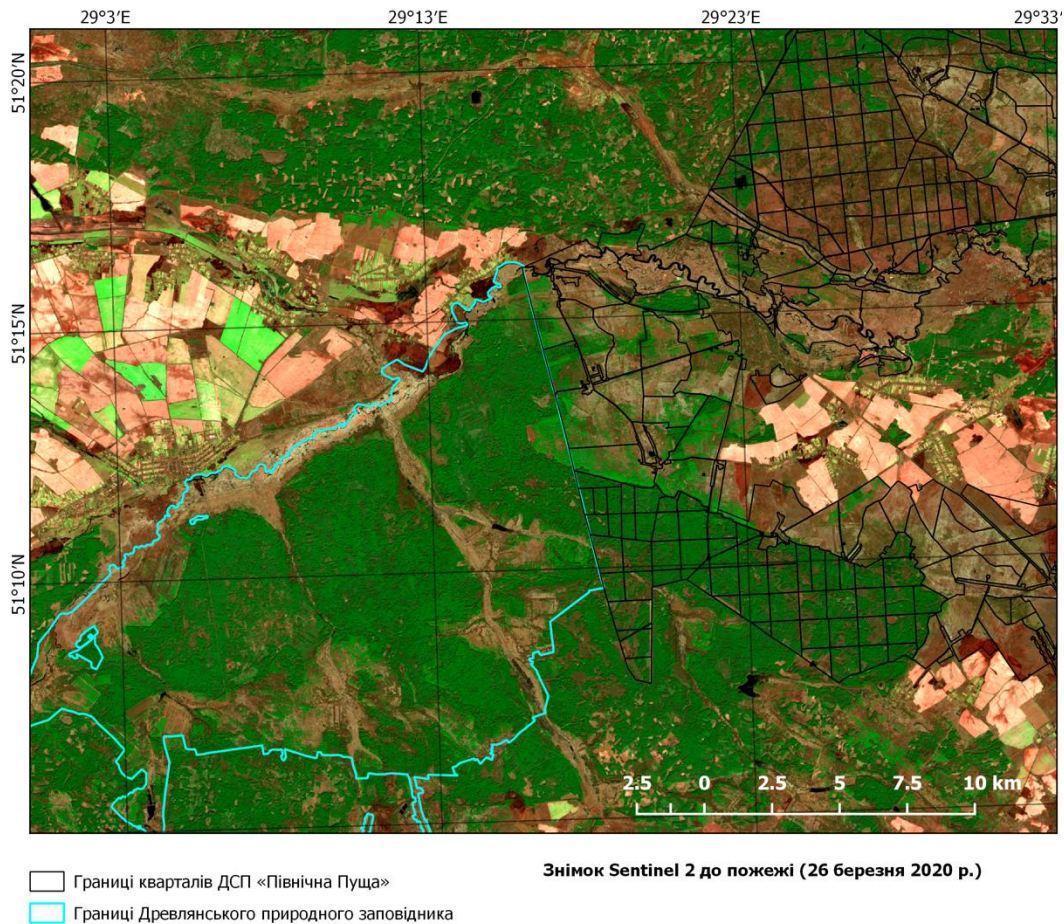


**Fig. 1.** Distribution of the burn probability index across the CEZ and firefighting infrastructure. REEFMC: S. Zibtsev, V. Myroniuk, V. Bogomolov, O. Soshenskiy (2020).

Area of the fire on 3-5 of April 2020 has high burn probability and high radionuclide contamination (Fig. 2) between Narodychi city, the Drevlianskiy Nature Reserve and the CEZ. The

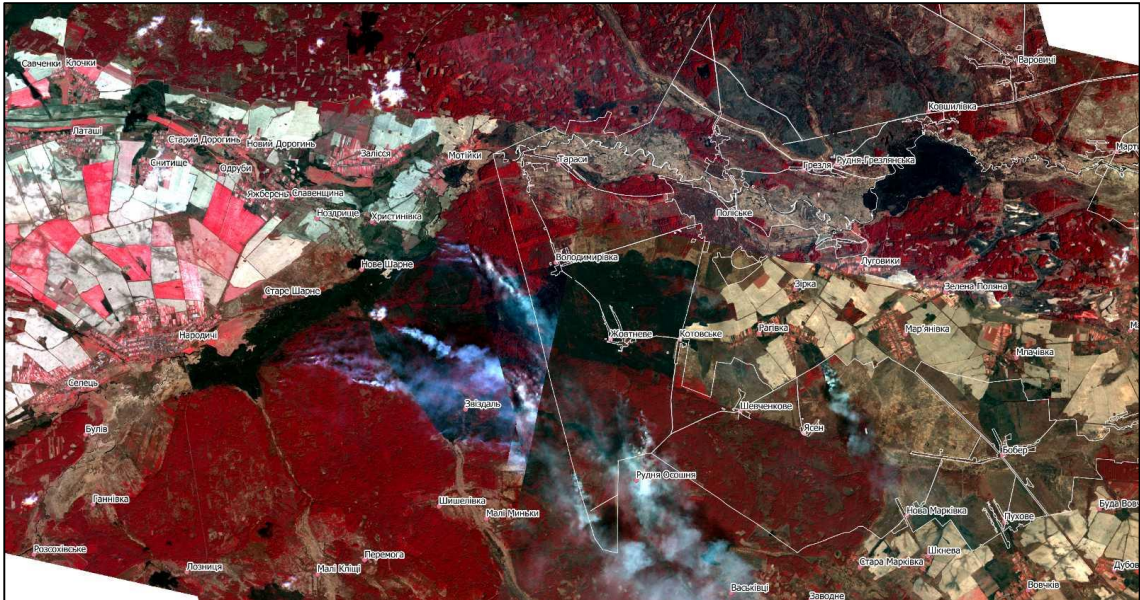
area affected by fire has no maintained road system and is hardly accessible for firefighting brigades.

The fire started at the western Chernobyl radioactive contamination path, bordering with Narodychi city and the Uzh River floodplains (Fig. 2) at around 17:00 / 18:00 h on 3 April 2020, probably because of intentional or unintentional grasslands / pasture burning, under west direction wind with speed 3-5 m/s.



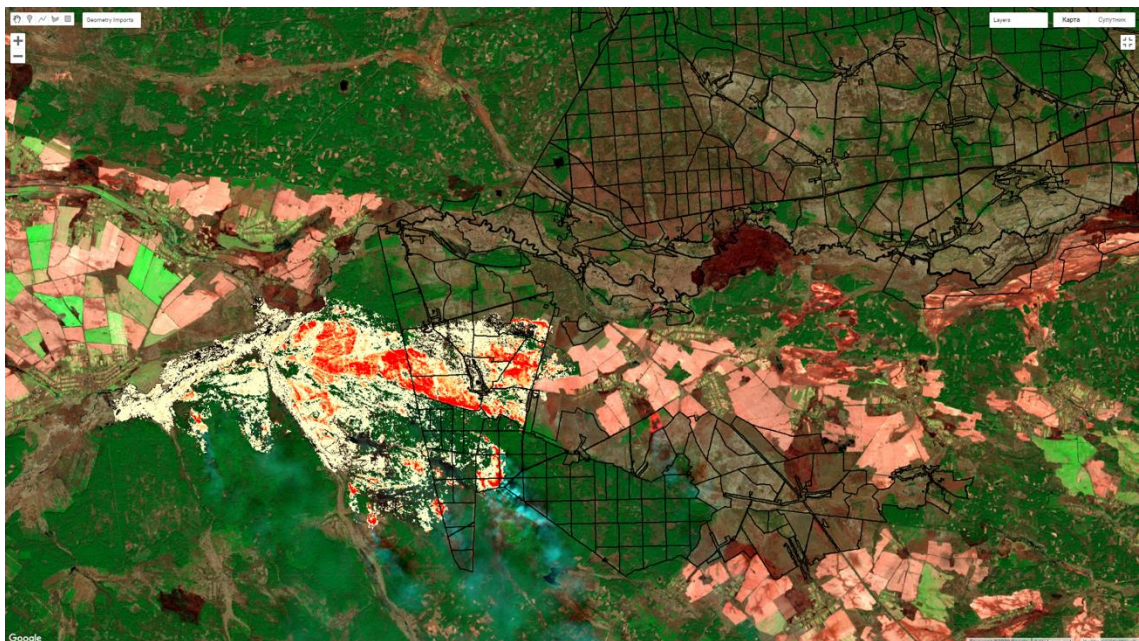
**Fig.2.** Pre-fire situation: blue line – border of Drevlianskii Reserve; black lines – forests of CEZ, villages and farmlands. Source: Sentinel-2, 26 March 2020.

In the morning on 4 April and during 5 April the wind had speeded up to 5-8 m/s, which contributed to fast spread of the fire (Fig. 3).

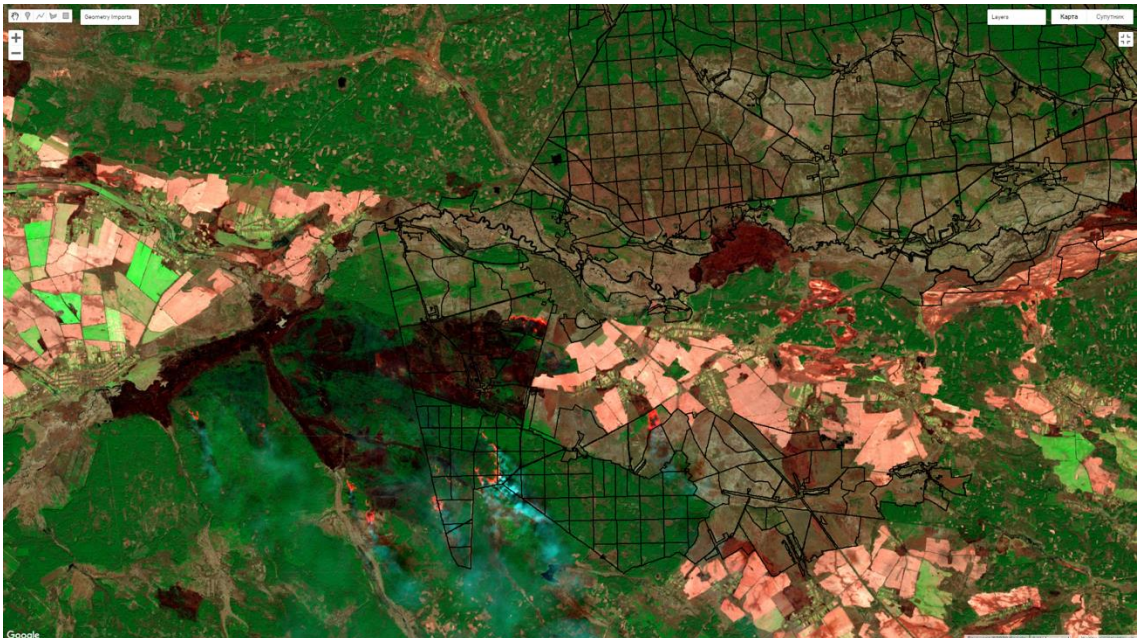


**Fig. 3.** Composite Planet satellite image of the fire development on the territory of the western part of the CEZ, 3-5 April 2020.

The fire moved across the territory of Drevliansky Nature Reserve towards villages Kotovske and Ragivka on northeast mainly along the left-bank part of the Uzh River floodplain with access to fallows covered by natural renewal of pine and birch, which increased the intensity of burning. The fire moved along the Zvizdal river as well and continued to move towards active farmlands located at the western part of Ragivka village, where it was extinguished or stopped (Fig. 4 and 5). Fig. 4 illustrates a new fire (field burn, which moved to the CEZ), that was ignited by residents of Ragivka on 5 April, despite the fact that a large fire occurred nearby, which was suppressed by fire with.

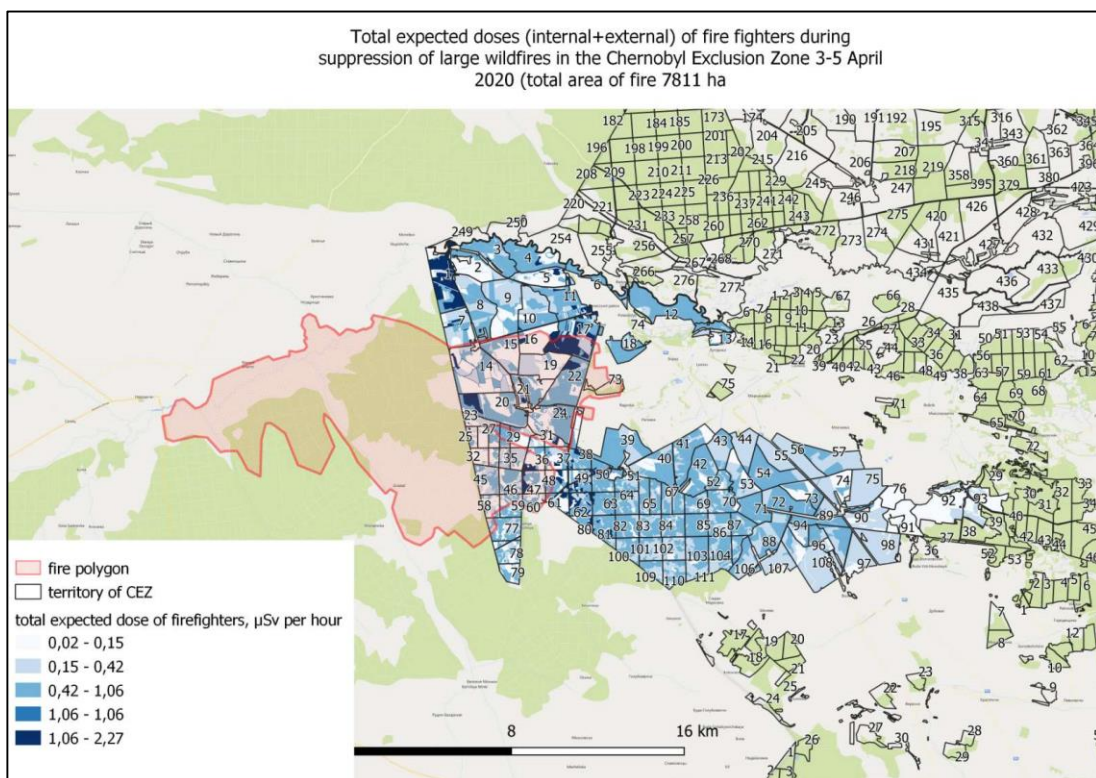


**Fig. 4.** Burning intensity according to dNBR index



**Fig. 5.** Territory affected by fire on 3-5 April 2020 as of 5 April. According to satellite data the overall area burned is 7811 ha, including 2398 ha of the CEZ and 4914 ha of Drevlianskii Reserve.

Total expected doses of firefighters during one hour of suppression are in range from 0,2 to 2,27 microsievert (Fig. 6). As most part of fire burned grasslands with relative low temperature migration of radionuclides with smoke has local scale.



**Fig. 6.** Total expected doses (internal + external) of fire fighters during one hour of suppression on fire line of fire 3-5 April 2020.



**Fig.7.** Aerial view of the fires burning through an intermix of grasslands and forested lands. Photo: State Emergency Service of Ukraine.

### **Consequences on health and security of firefighters and the public**

The main fires are currently burning on grasslands with a low- to medium intensity. According to earlier research the aerial transport and deposition of radionuclides is limited to the immediate vicinity of the fires. Thus, they represent a threat to firefighters and not to the populated areas in the downwind direction.

### **References:**

1. International efforts aimed in increasing capacity of prevention and safe management of fires in the Chernobyl Exclusion Zone <https://nubip.edu.ua/en/node/9087/7>.
2. Evangeliou N., Zibtsev S., Myroniuk V., Zhurba M. et al. Resuspension and atmospheric transport of radionuclides due to wildfires near the Chernobyl Nuclear Power Plant in 2015: An impact assessment. Scientific Reports. 2016. Vol. 6. Article number: 26062. Doi: 10.1038/srep26062. URL: <http://rdcu.be/i1GL>.
3. Ager A.A., Lasko R., Myroniuk M., Zibtsev S., Day M.A., Usenia V., Bogomolov V., Kovalets I., Evers C.R. The wildfire problem in areas contaminated by the Chernobyl disaster. Science of the Total Environment 696 (2019) 133954. <https://doi.org/10.1016/j.scitotenv.2019.133954>. URL: [https://nubip.edu.ua/sites/default/files/u184/ager\\_final\\_ste\\_1-s2.0-s0048969719339245-main.pdf](https://nubip.edu.ua/sites/default/files/u184/ager_final_ste_1-s2.0-s0048969719339245-main.pdf)
4. Pocket Guideline for forest firefighters of the Chernobyl Exclusion Zone. Regional Eastern Europe Fire Monitoring Center, US Forest Service, 2018. 150 p. [https://nubip.edu.ua/sites/default/files/u184/irpg\\_ukr\\_chernobyl\\_forest\\_firefighters\\_2018.pdf](https://nubip.edu.ua/sites/default/files/u184/irpg_ukr_chernobyl_forest_firefighters_2018.pdf)
5. Burn probability map of the CEZ: [https://nubip.edu.ua/sites/default/files/u184/karta\\_burn\\_probaility\\_vb\\_14-01-2020\\_1.jpg](https://nubip.edu.ua/sites/default/files/u184/karta_burn_probaility_vb_14-01-2020_1.jpg)
6. Global Fire Monitoring Center (GFMC) website on fire management on terrain contaminated by radioactivity and unexploded ordnance: [https://gfmc.online/globalnetworks/seeurope/SEEurope\\_1\\_radio.html](https://gfmc.online/globalnetworks/seeurope/SEEurope_1_radio.html)