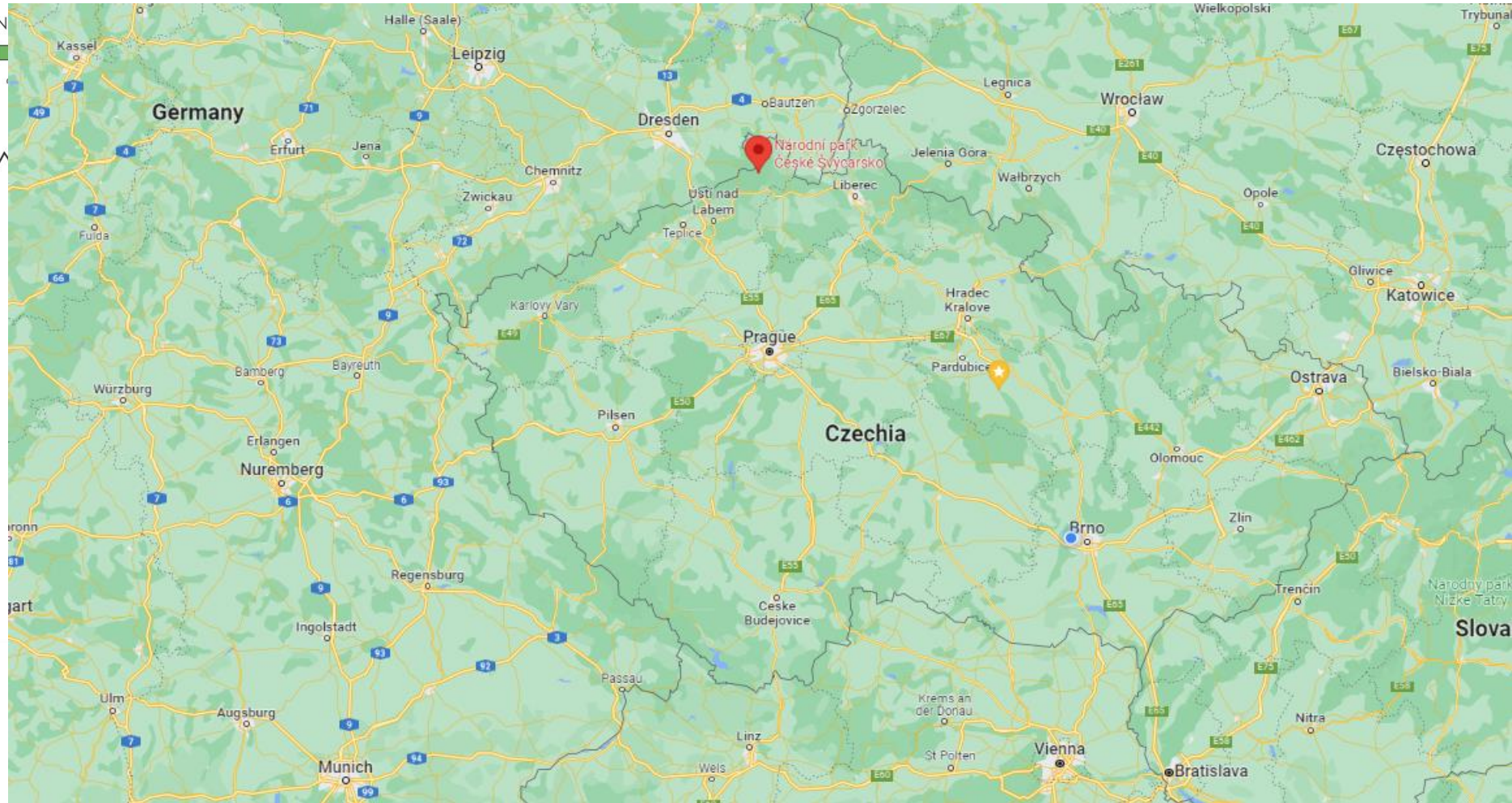

*České Švýcarsko - zhodnocení příčin a
důsledků nejrozsáhlejšího novodobého
požáru v ČR*

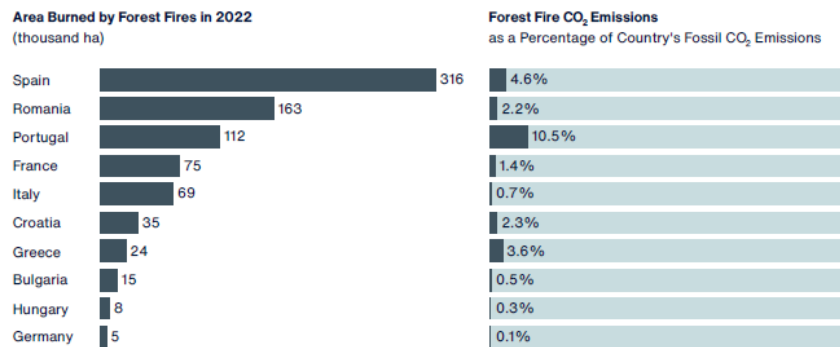
16.2. 2023

Kde se park nachází a co se stalo víme....



Jak na tom byla s požáry Evropa v roce 2022?

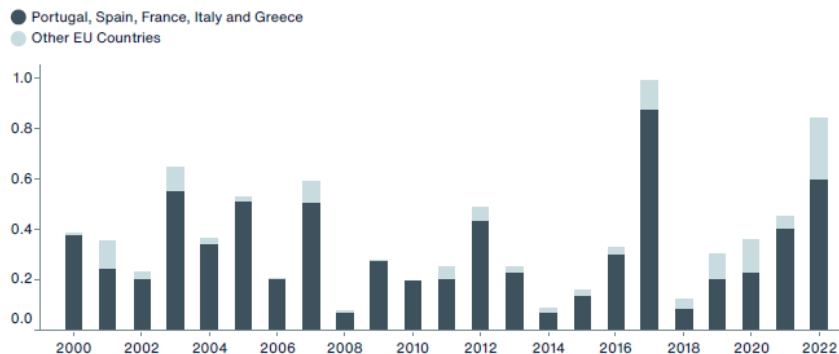
Exhibit 32: Extent Burned and Emissions from Forest Fires in 2022



Data: EFFIS, EDGAR

Spain recorded the largest area burned by forest fires in the European Union in 2022. This included a large fire in the Zamora province, which burned more than 30,000 ha. The European Forest Fire Information System (EFFIS) also includes information on estimated amount of CO₂ emissions released from the fires. Comparison with respective country's fossil emission is displayed on the right.

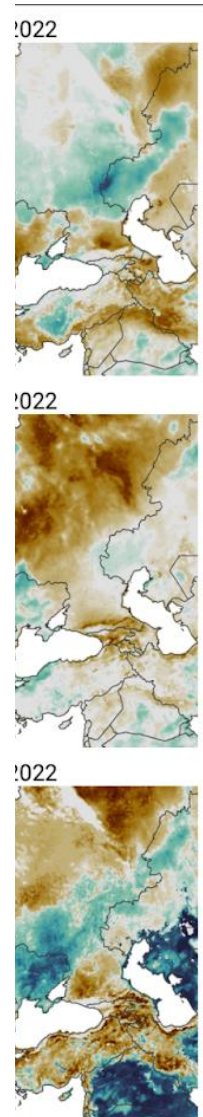
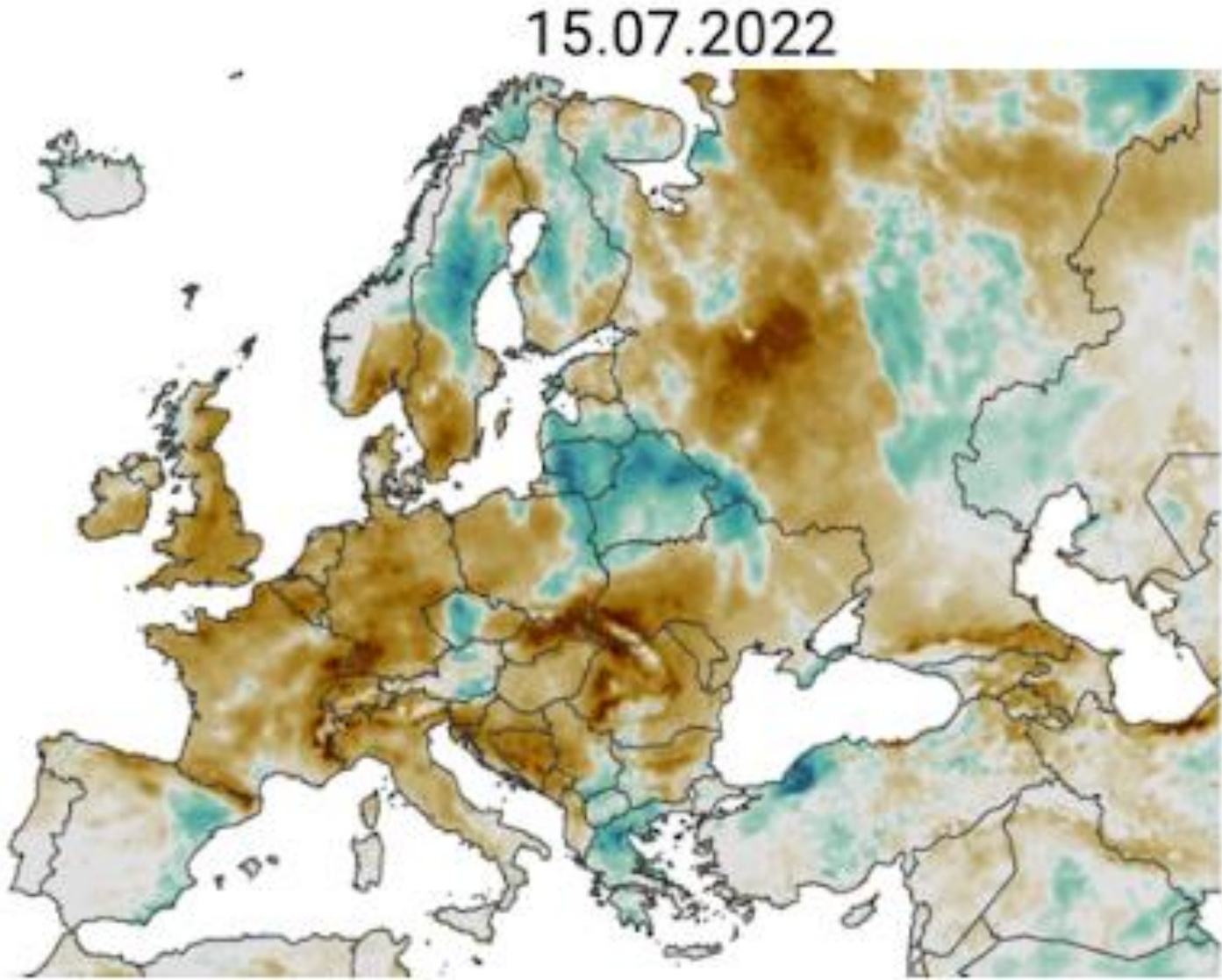
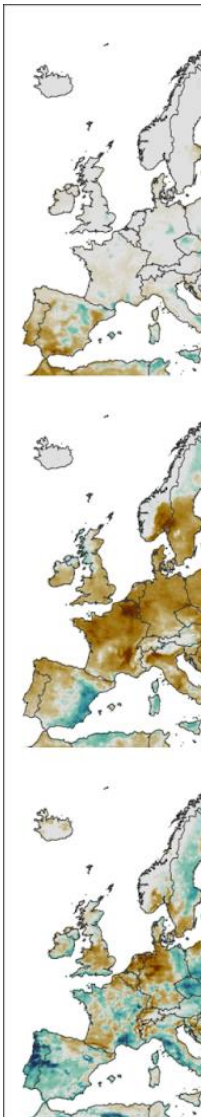
Exhibit 33: Extent Burned by Forest Fires in the European Union (M ha)

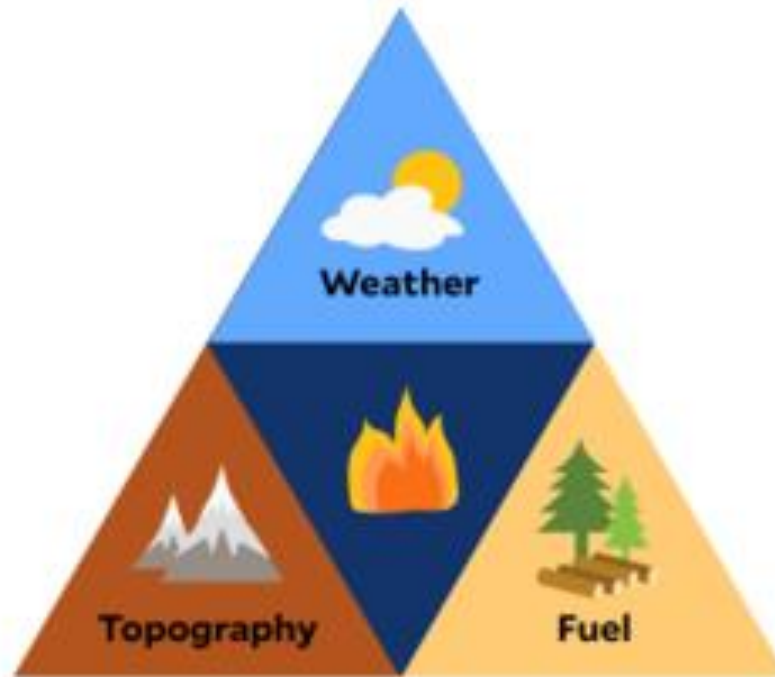


Data: EFFIS

According to the satellite-derived data from EFFIS, total extent burned by forest fires in the European Union in 2022 was the second highest this century, only surpassed by 2017, the year of the devastating fires in Portugal. It is also noteworthy that unusually large part of the extent occurred outside of the five southern European countries that typically constitute most of the burned extent. This was largely due to fires in Romania.

Ale co tomu předcházelo?





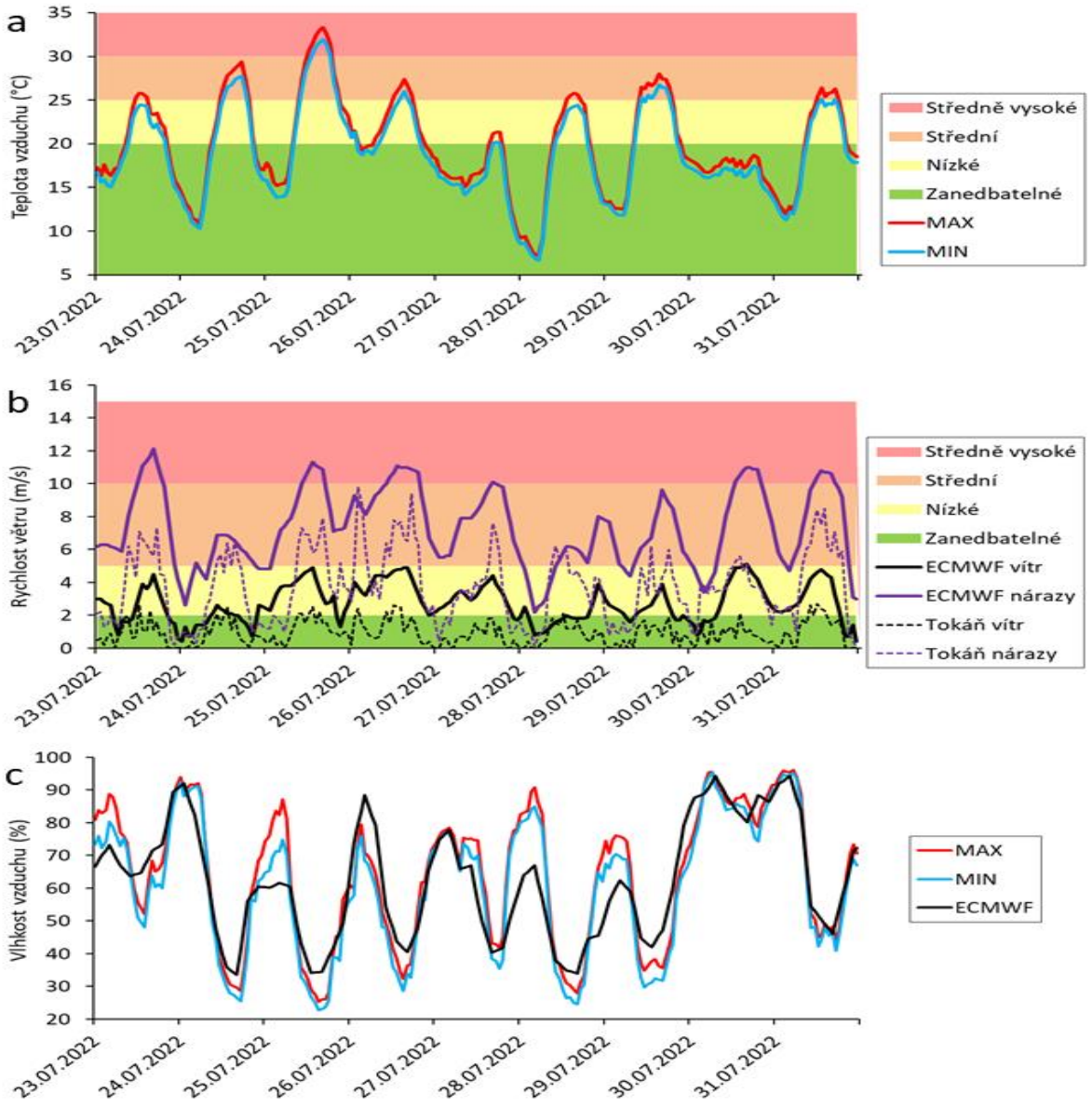
Fire Behavior Triangle

The factors involved in the severity, intensity, duration, size, and season of wildfires

Vhodná topografie – členitý a často exponovaný terén



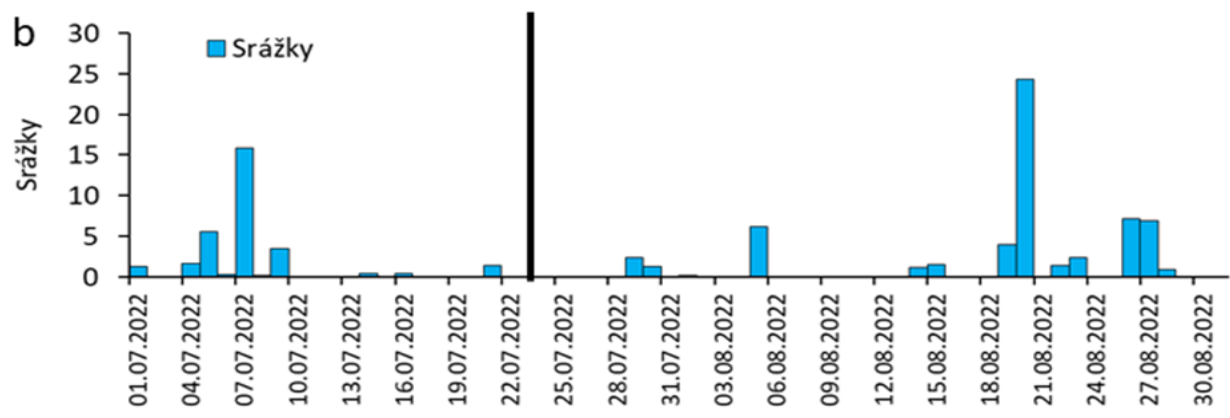
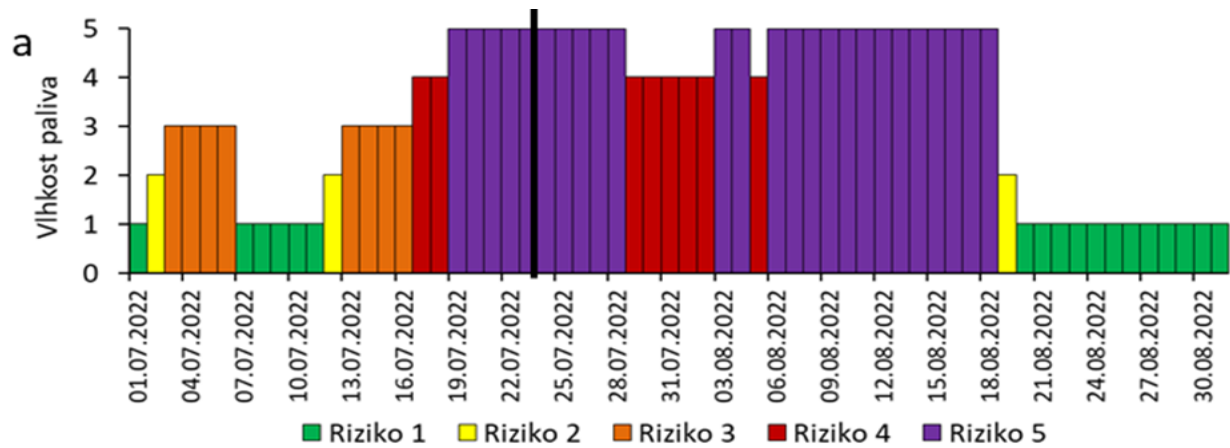
Vhodné požární počasí



Vhodné palivo...



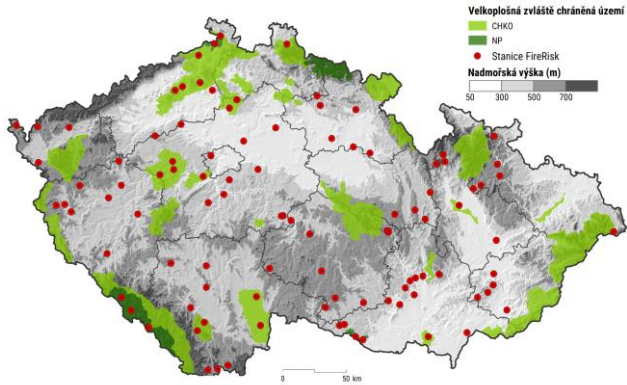
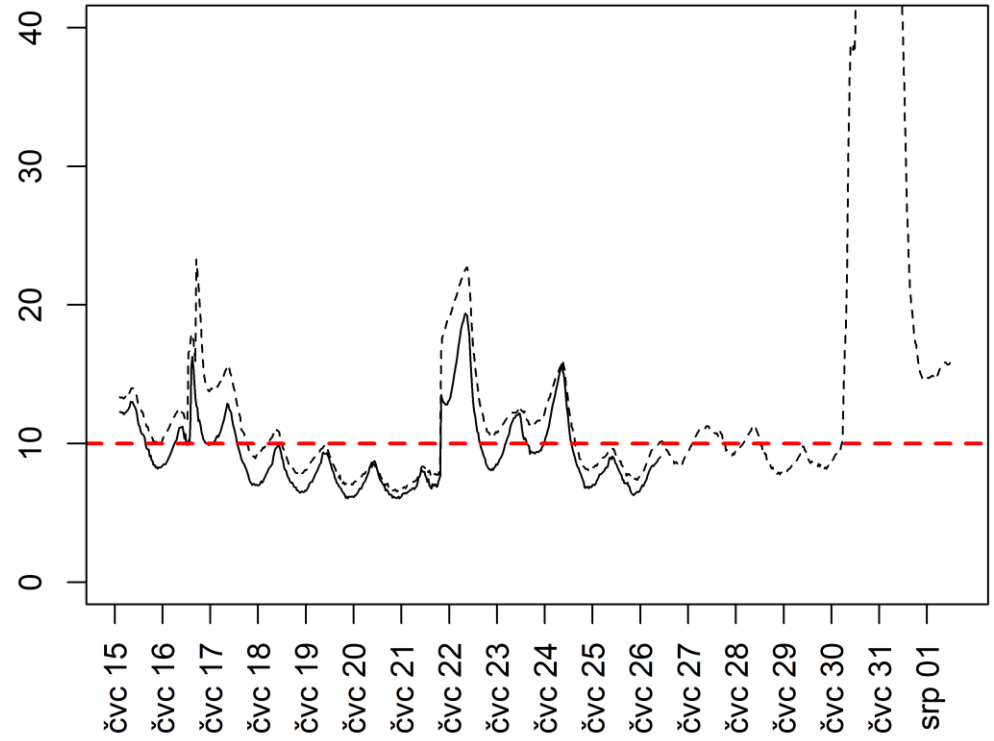
O ideální vlhkosti...



....což jsme viděli v přímém přenosu....



Průměrná vlhkost klesu (%) NP České Švýcarsko



Kdo nebyl a byl v Českém Švýcarsku 23./24.7.??





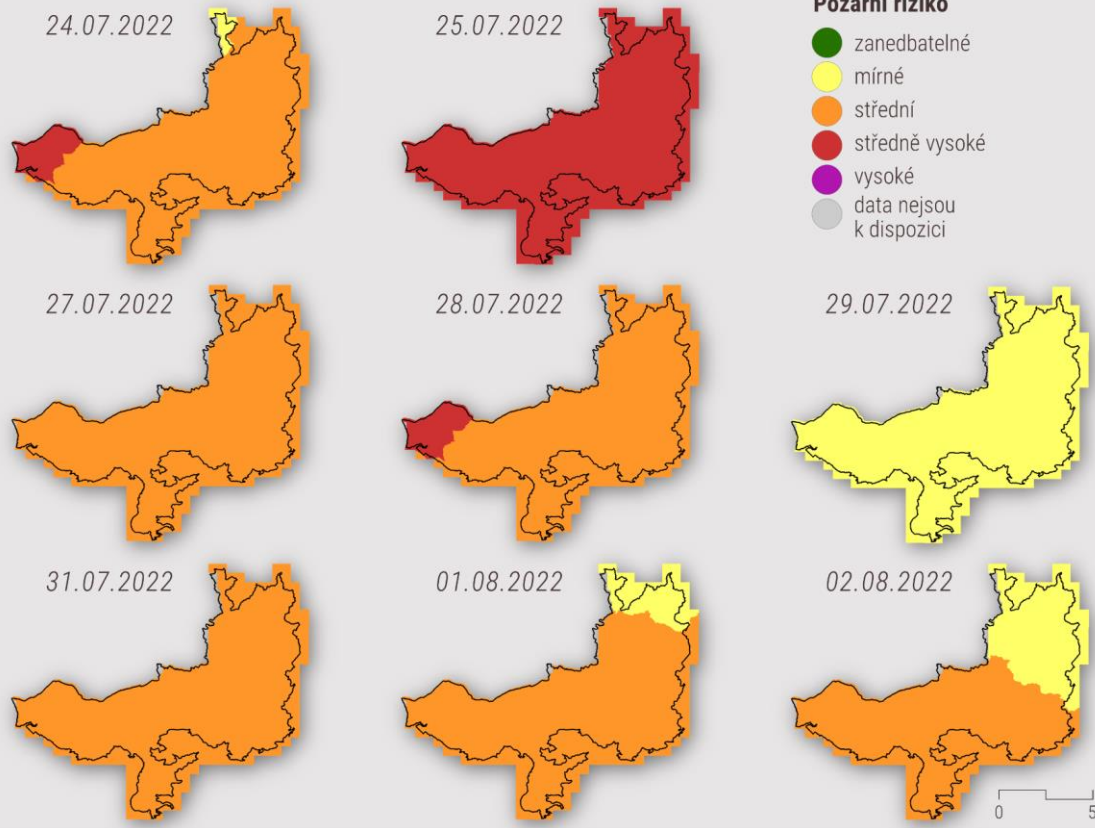
PŘEDPOVĚĎ POŽÁRNÍHO RIZIKA - MAX

Na základě evropského předpovědního modelu (zdroj dat: ECMWF/IFS)



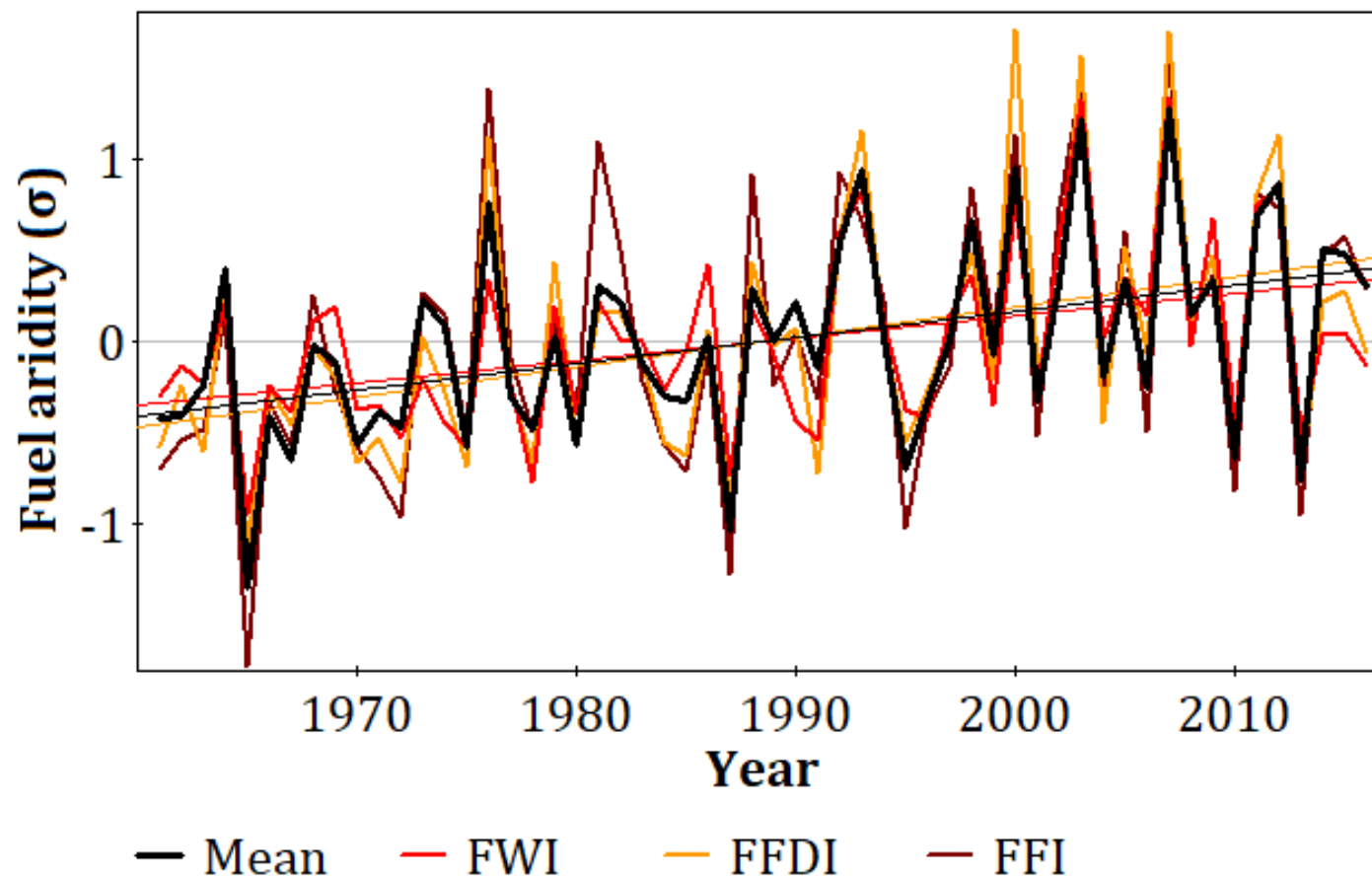
Požární riziko

- zanedbatelné
- mírné
- střední
- středně vysoké
- vysoké
- data nejsou k dispozici

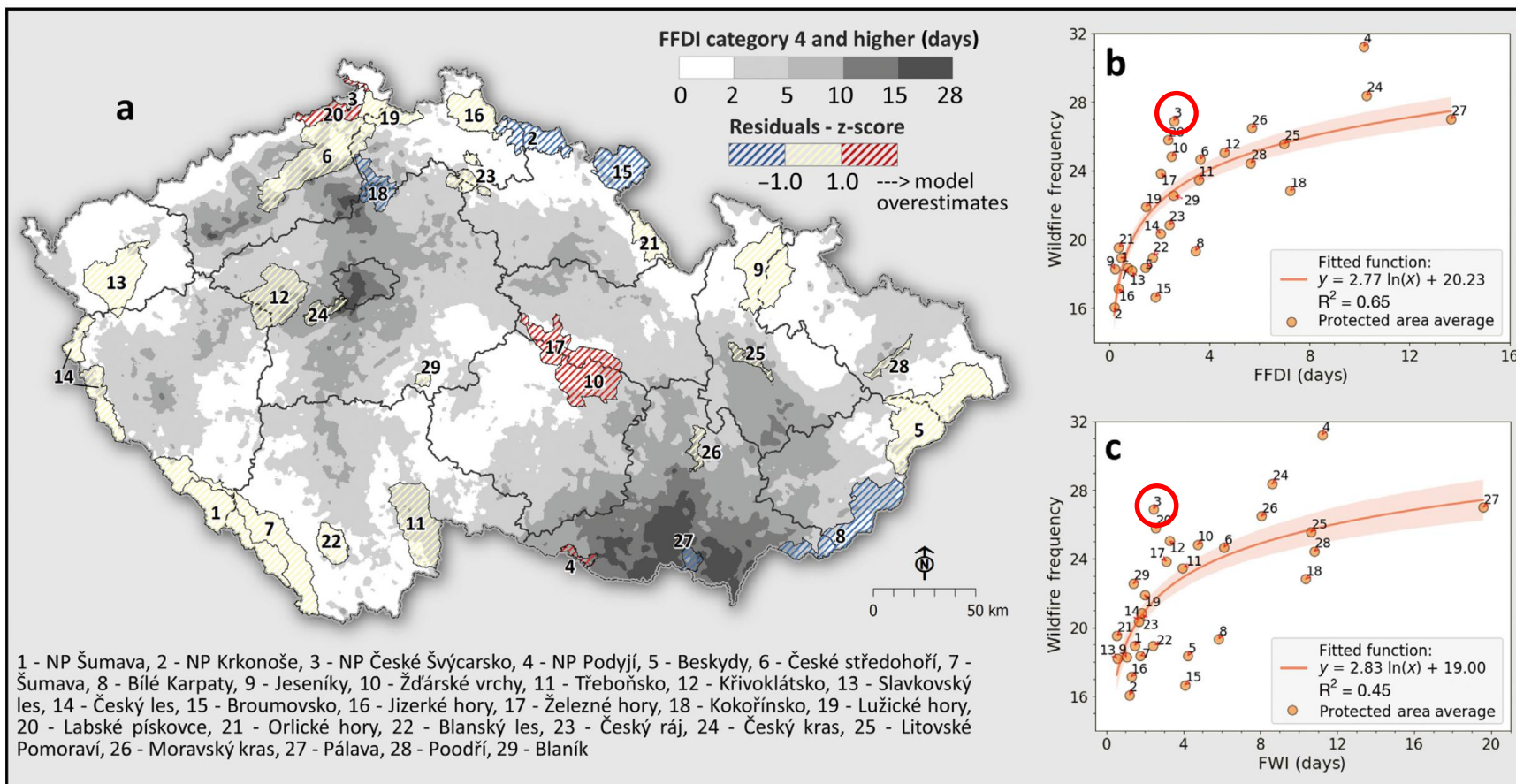


A tady bychom mohli skončit..... ale neuděláme to....

1. Riziko se s časem zvyšuje....

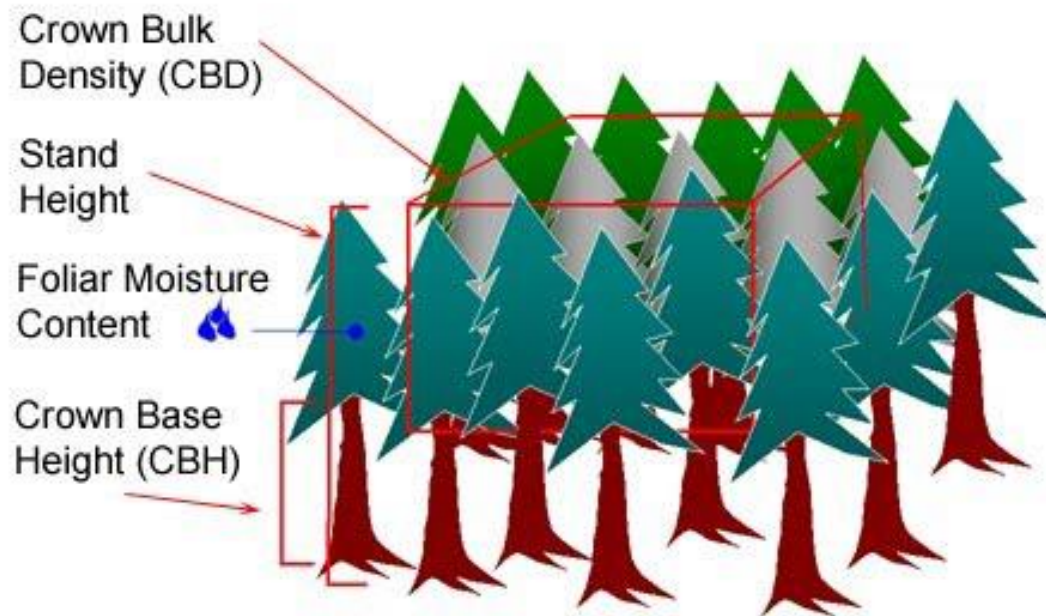


2. Není to jediné místo v Česku, kde lze takový požár čekat!



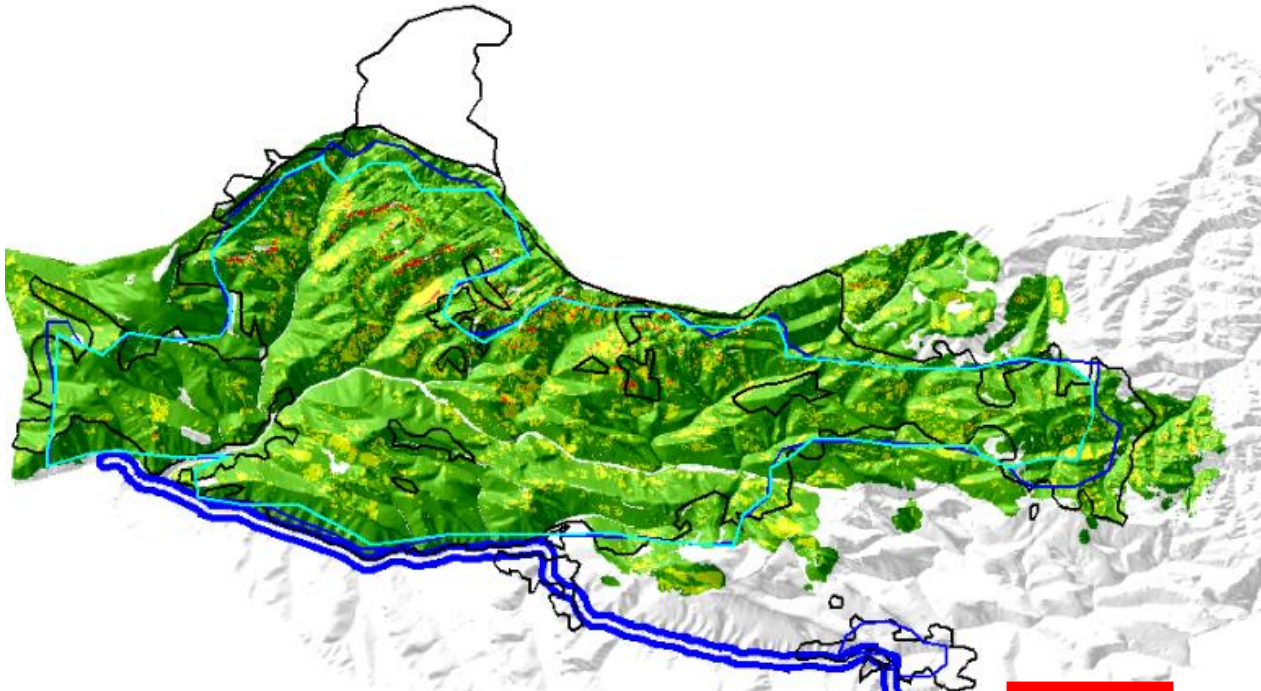
3. Z požáru se musíme poučit....tím že ho zanalyzujeme....

- Tým InterSucha/FireRisku tuto analýzu provedl s využitím modelu FlamMap;
- A začal už v průběhu požáru;
- Ve spolupráci zejména s NP České Švýcarsko a vlastní leteckou laboratoří ale také dalšími poskytovateli dat....
- Vytvořili jsme 7 scénářů...



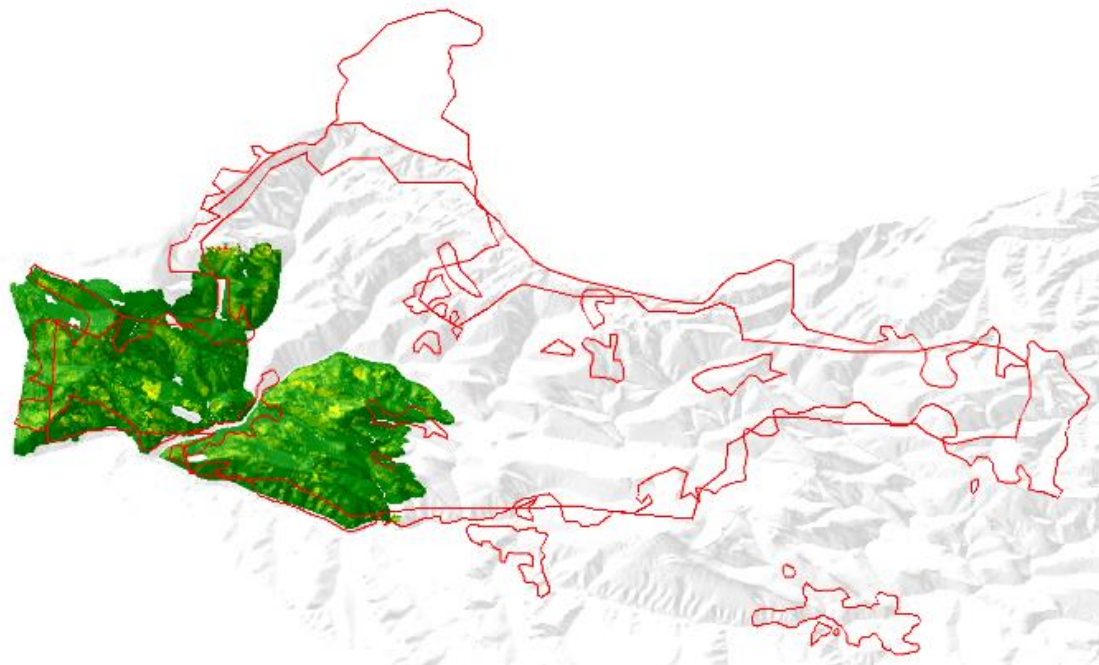
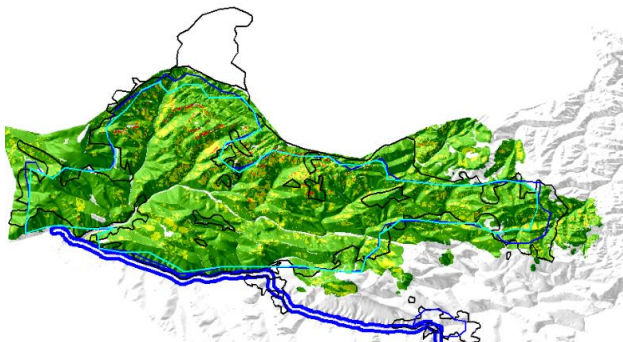
Crown Fuel Data Used in FARSITE

Scénář 1. – reálné podmínky



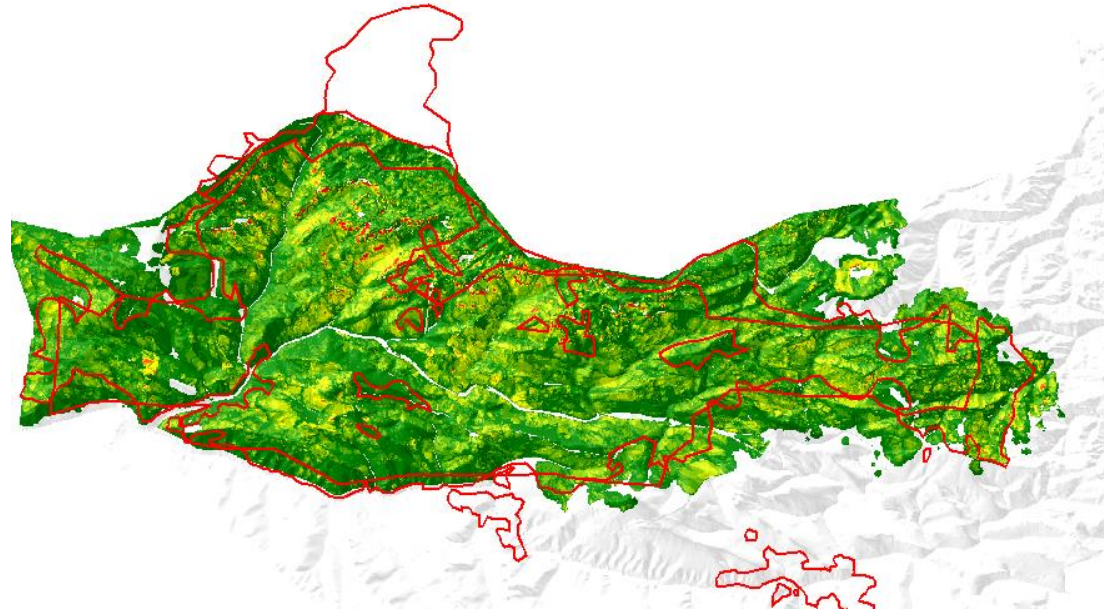
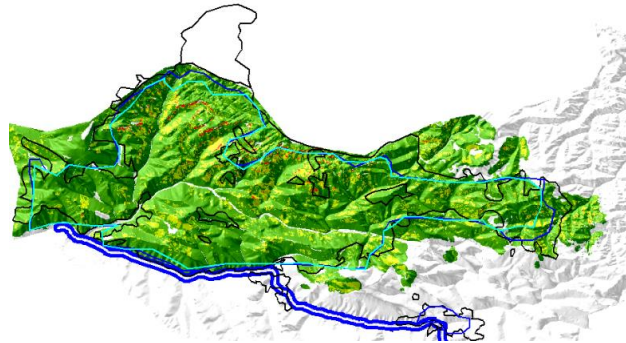
Scenario	1	2A	2B	3	4A	4B	5	6	7
reality	reality	measured average wind	maximum wind gust	teplota (t-50 %)	no drought (moderate)	no drought (high)	healthy standing spruce forest	clearcuts	native mixed forest
fuel types	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	change	change	change
Canopy cover and crown layers	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	corresponding to fuel types	corresponding to fuel types	corresponding to fuel types
dead fuel moisture [%]	6,7,8 outside the forest; 3,4,5 in the forest	scenario 1	scenario 1	scenario 1	9, 10, 11	12, 13, 14	scenario 1	scenario 1	scenario 1
live fuel moisture [%]	60, 90	scenario 1	scenario 1	scenario 1	90, 120	120, 150	scenario 1	scenario 1	scenario 1
temperature [°C]	real	scenario 1	scenario 1	reduced by 50 %	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
wind [km/h]	maximum wind gust + 7	measured average wind	maximum wind gust	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
average area from 5 m [ha]	1234	319	895	1315	1188	1188	461	975	0
comparison of modeled average area and reality (1060 ha) in [%] (ha)	+16 (174)	-70 (730)	-16 (165)	+24 (254)	+12 (128)	+12 (128)	-56 (599)	-8 (85)	
95% confidence interval [ha]	1147–1321	312–326	855–935	1236–1393	1104–1271	1106–1270	414–508	609–1340	
average Final Number Fires (FlamMap)	346	36	234	368	346	378	60	222	
average Number Spot Fires Created (FlamMap)	5511	91	3667	5988	5321	5050	332	572	

Scénář 2. – normální vítr



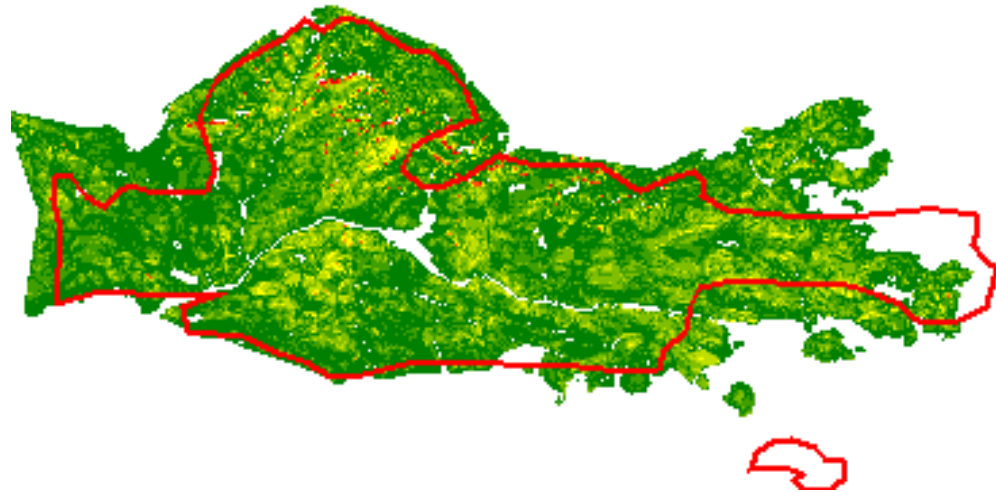
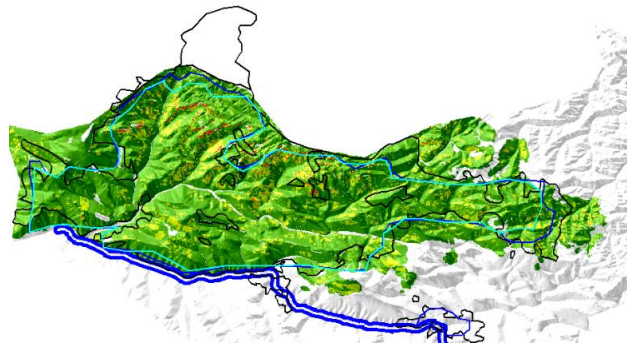
Scenario	1	2A	2B	3	4A	4B	5	6	7
	reality	measured average wind	maximum wind gust	teplota (t-50 %)	no drought (moderate)	no drought (high)	healthy standing spruce forest	clearcuts	native mixed forest
fuel types	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	change	change	change
Canopy cover and crown layers	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	corresponding to fuel types	corresponding to fuel types	corresponding to fuel types
dead fuel moisture [%]	6,7,8 outside the forest; 3,4,5 in the forest	scenario 1	scenario 1	scenario 1	9, 10, 11	12, 13, 14	scenario 1	scenario 1	scenario 1
live fuel moisture [%]	60, 90	scenario 1	scenario 1	scenario 1	90, 120	120, 150	scenario 1	scenario 1	scenario 1
temperature [°C]	real	scenario 1	scenario 1	reduced by 50 %	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
wind [km/h]	maximum wind gust	measured average wind	maximum wind gust	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
average area from 5 runs [ha]	1234	319	895	1315	1188	1188	461	975	0
comparison of modeled average area and reality (1060 ha) in [%], (ha)	+16 (174)	-70 (730)	-16 (165)	+24 (254)	+12 (128)	+12 (128)	-56 (599)	-8 (85)	
95% confidence interval [ha]	1147–1321	312–326	855–935	1236–1393	1104–1271	1106–1270	414–508	609–1340	
average Final Number Fires (FlamMap)	346	36	234	368	346	378	60	222	
average Number Spot Fires Created (FlamMap)	5511	91	3667	5988	5321	5050	332	572	

Scénář 4. – snížená teplota vzduchu



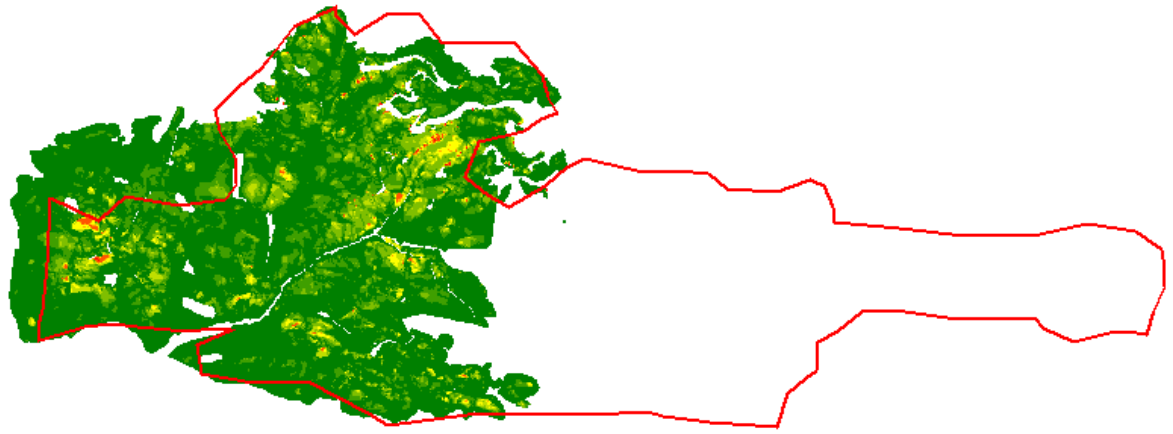
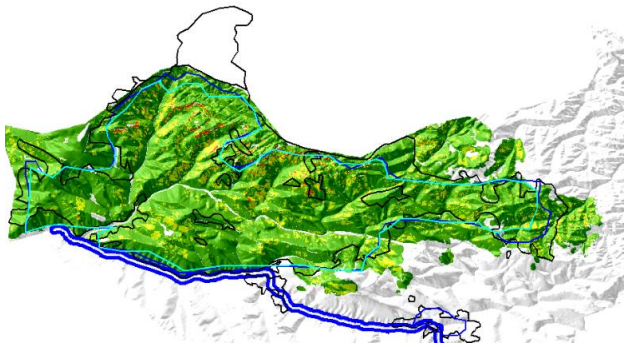
Scenario	1	2A	2B	3	4A	4B	5	6	7
	reality	measured average wind	maximum wind gust	teplota (t-50 %)	no drought (moderate)	no drought (high)	healthy standing spruce forest	clearcuts	native mixed forest
fuel types	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	change	change	change
Canopy cover and crown layers	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	corresponding to fuel types	corresponding to fuel types	corresponding to fuel types
dead fuel moisture [%]	6,7,8 outside the forest; 3,4,5 in the forest	scenario 1	scenario 1	scenario 1	9, 10, 11	12, 13, 14	scenario 1	scenario 1	scenario 1
live fuel moisture [%]	60, 90	scenario 1	scenario 1	scenario 1	9, 10, 11	120, 150	scenario 1	scenario 1	scenario 1
temperature [°C]	real	scenario 1	scenario 1	reduced by 50 %	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
wind [km/h]	maximum wind gust + 7	measured average wind	maximum wind gust	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
average area from 5 runs [ha]	1234	319	895	1315	1188	1188	461	975	0
comparison of modeled average area and reality (1060 ha) in [%], (ha)]	+16 (174)	-70 (730)	-16 (16)	+24 (254)	+12 (128)	+12 (128)	-56 (599)	-8 (85)	
95% confidence interval [ha]	1147–1321	312–326	855–910	1236–1393	1106–1271	1106–1270	414–508	609–1340	
average Final Number Fires (FlamMap)	346	36	234	368	378	378	60	222	
average Number Spot Fires Created (FlamMap)	5511	91	3667	5988	5050	5050	332	572	

Scénář 5. – zvýšená vlhkost „paliva“



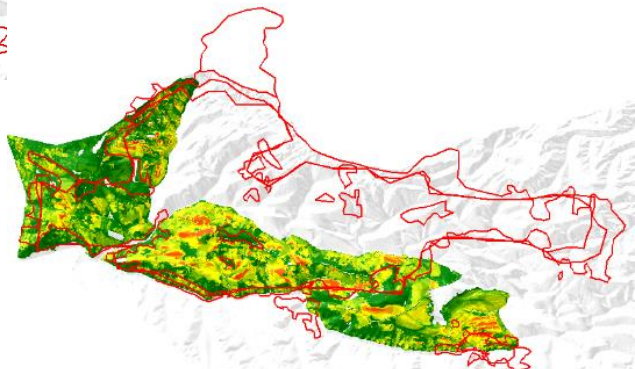
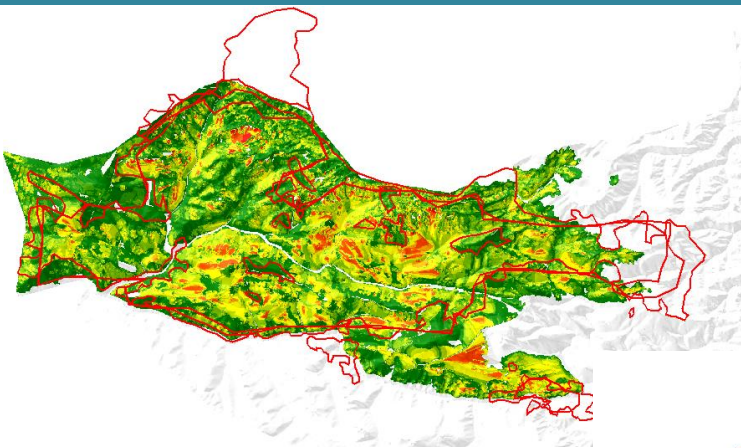
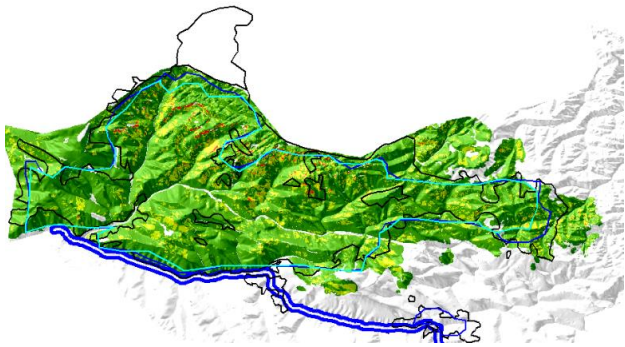
Scenario	1	2A	2B	3	4A	5	6	7	
	reality	measured average wind	maximum wind gust	temperature (t-50)	no drought (moderate)	no drought (high)	healthy standing spruce forest	clearcuts	native mixed forest
fuel types	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	change	change	change
Canopy cover and crown layers	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	corresponding to fuel types	corresponding to fuel types	corresponding to fuel types
dead fuel moisture [%]	6,7,8 outside the forest; 3,4,5 in the forest	scenario 1	scenario 1	scenario 1	9, 10, 11	12, 13, 14	scenario 1	scenario 1	scenario 1
live fuel moisture [%]	60, 90	scenario 1	scenario 1	scenario 1	90, 120	150	scenario 1	scenario 1	scenario 1
temperature [°C]	real	scenario 1	scenario 1	reduced by 50%	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
wind [km/h]	maximum wind gust + 7	measured average wind	maximum wind gust	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
average area from 5 runs [ha]	1234	319	895	1015	1188	1288	461	975	0
comparison of modeled average area and reality (1060 ha) in [%], (ha)]	+16 (174)	-70 (730)	-16 (165)	+4 (254)	+12 (128)	+4 (128)	-56 (599)	-8 (85)	
95% confidence interval [ha]	1147–1321	312–326	855–935	1212–1393	1104–1271	1112–1270	414–508	609–1340	
average Final Number Fires (FlamMap)	346	36	234	168	346	178	60	222	
average Number Spot Fires Created (FlamMap)	5511	91	3667	1988	5321	1950	332	572	

Scénář 6. – zapojený smrkový les



Scenario	1	2A	2B	3	4A	4B	5	6	7
	reality	measured average wind	maximum wind gust	teplota (t-50 %)	no drought (moderate)	no drought (high)	healthy standing spruce forest	clearcuts	native mixed forest
fuel types	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	change	change	change
Canopy cover and crown layers	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	corresponding to fuel types	corresponding to fuel types	corresponding to fuel types
dead fuel moisture [%]	6,7,8 outside the forest; 3,4,5 in the forest	scenario 1	scenario 1	scenario 1	9, 10, 11	12, 13	scenario 1	scenario 1	scenario 1
live fuel moisture [%]	60, 90	scenario 1	scenario 1	scenario 1	90, 120	120, 150	scenario 1	scenario 1	scenario 1
temperature [°C]	real	scenario 1	scenario 1	reduced by 50 %	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
wind [km/h]	maximum wind gust + 7	measured average wind	maximum wind gust	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
average area from 5 runs [ha]	1234	319	895	1315	1188	1106	461	975	0
comparison of modeled average area and reality (1060 ha) in [%], (ha)	+16 (174)	-70 (730)	-16 (165)	+24 (254)	+12 (128)	+12 (128)	-56 (599)	-8 (85)	
95% confidence interval [ha]	1147–1321	312–326	855–935	1236–1393	1104–1271	1106–1270	414–508	909–1340	
average Final Number Fires (FlamMap)	346	36	234	368	346	346	60	222	
average Number Spot Fires Created (FlamMap)	5511	91	3667	5988	5321	5321	332	572	

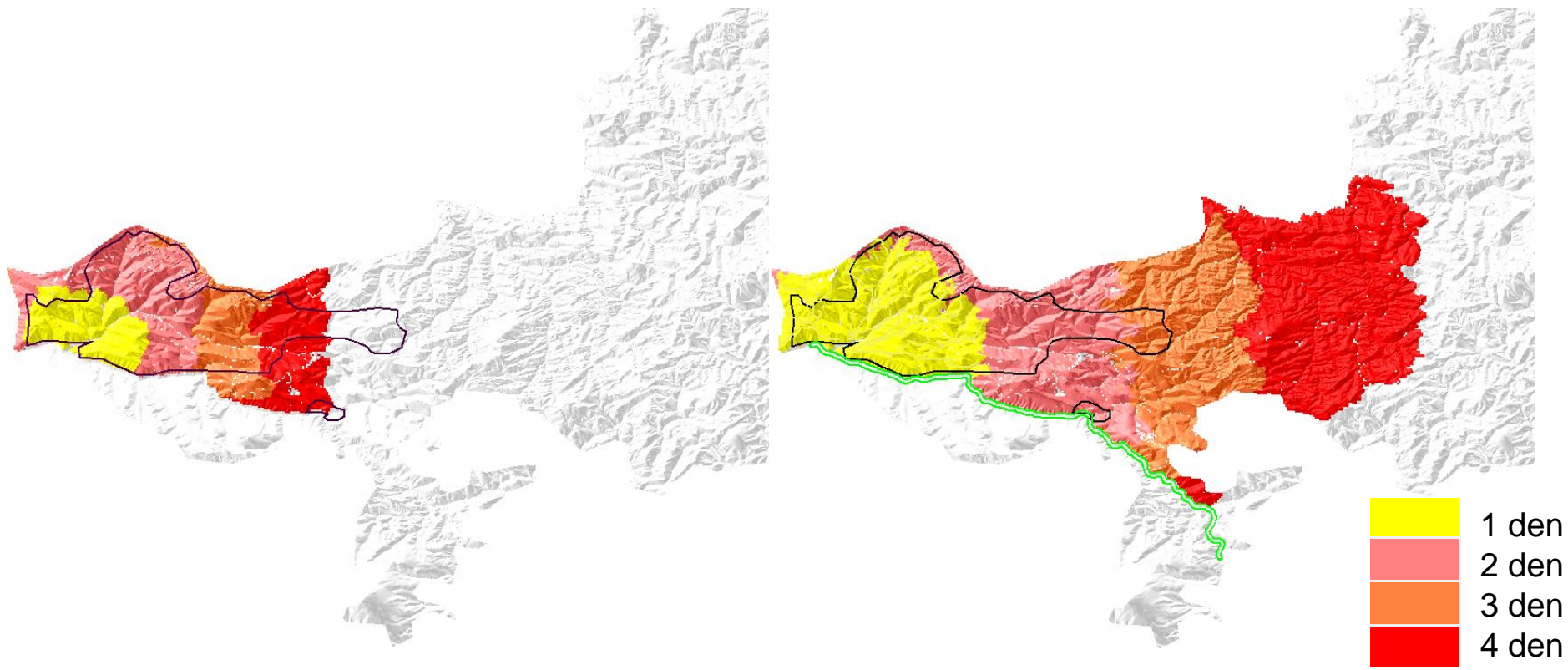
Scénář 7. – Holina



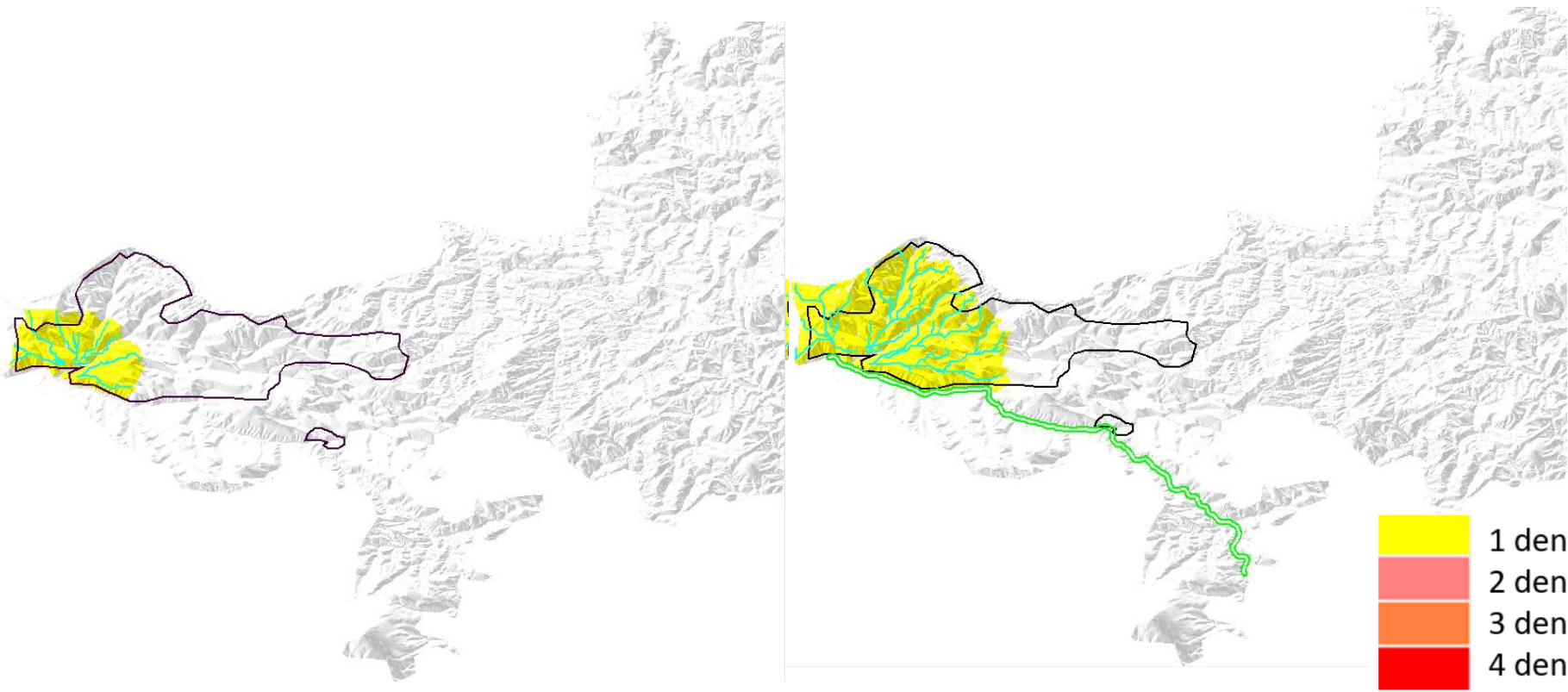
Scenario	1	2A	2B	3	4A	4B	5	6	7
	reality	measured average wind	maximum wind gust	teplota (t-50 %)	no drought (moderate)	no drought (high)	healthy standing spruce forest	clearcuts	native mixed forest
fuel types	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	change	change	change
Canopy cover and crown layers	real	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	corresponding to fuel types	corresponding to fuel types	corresponding to fuel types
dead fuel moisture [%]	6,7,8 outside the forest; 3,4,5 in the forest	scenario 1	scenario 1	scenario 1	9, 10, 11	12, 13, 14	scenario 1	scenario 1	scenario 1
live fuel moisture [%]	60, 90	scenario 1	scenario 1	scenario 1	90, 120	120, 150	scenario 1	scenario 1	scenario 1
temperature [°C]	real	scenario 1	scenario 1	reduced by 50 %	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
wind [km/h]	maximum wind gust + 7	measured average wind	maximum wind gust	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1	scenario 1
average area from 5 runs [ha]	1234	319	895	1315	1188	1188	461	975	0
comparison of modeled average area and reality (1060 ha) in [%], (ha)	+16 (174)	-70 (730)	-16 (165)	+24 (254)	+12 (128)	+12 (128)	-56 (599)	-8 (85)	
95% confidence interval [ha]	1147-1321	312-326	855-935	1236-1393	1104-1271	1106-1270	414-508	609-1340	
average Final Number Fires (FlamMap)	346	36	234	368	346	378	60	222	
average Number Spot Fires Created (FlamMap)	5511	91	3667	5988	5321	5050	332	572	

FlamMap – nástroj MTT (minimum travel time), konst. rychlost 32 km/h, směr 245°, doba hoření 4 dny (5760 min), **výstup ArrivalTime [min]**

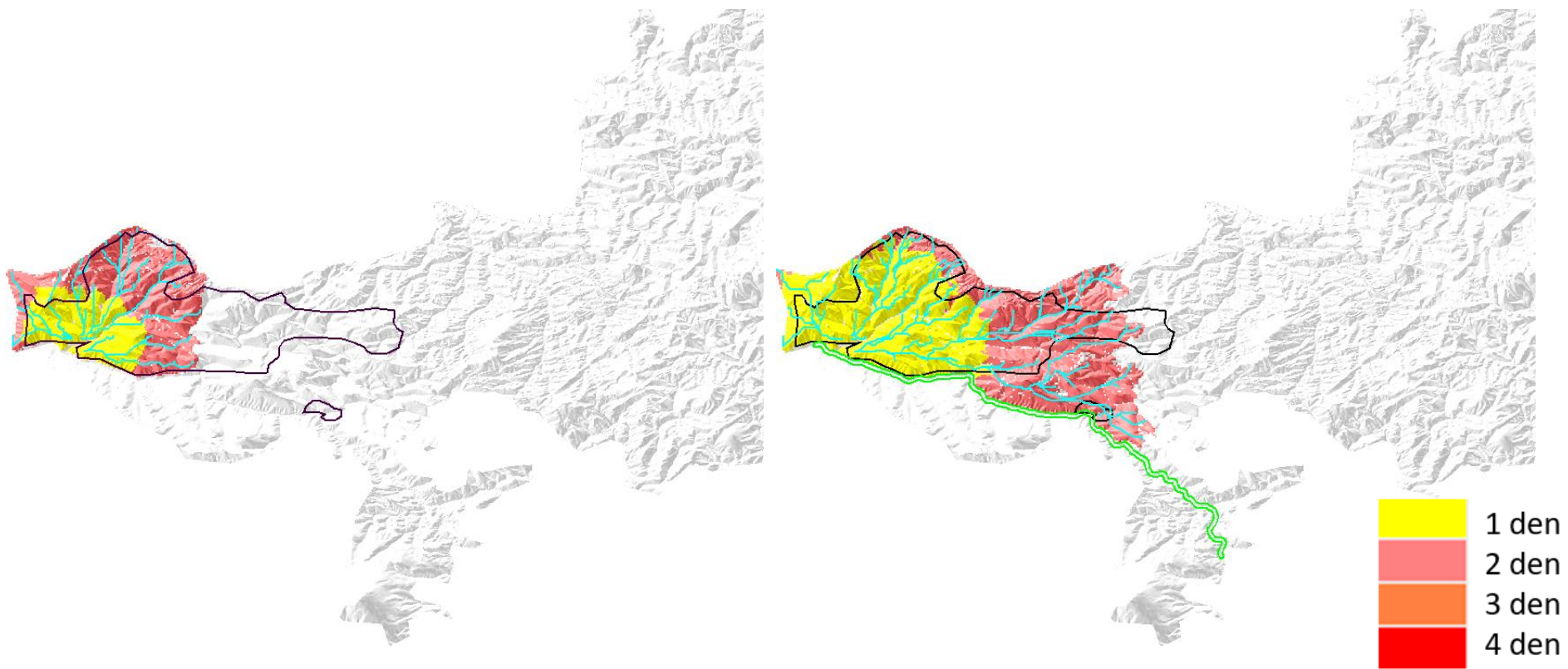
realita vs. holina



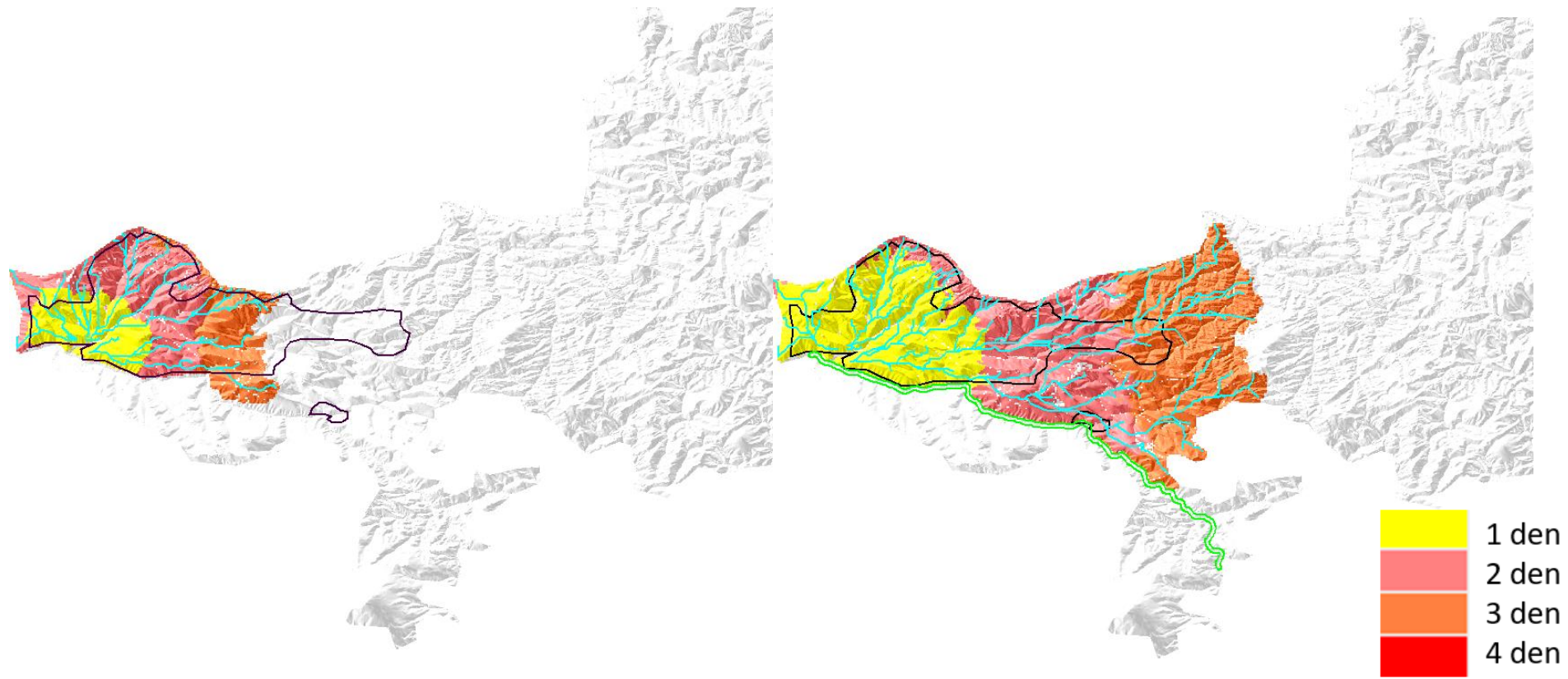
FlamMap – nástroj MTT (minimum travel time), konst. rychlost 32 km/h, směr 245°, doba hoření 1 den (1440 min), výstup ArrivalTime [min] s hlavními dráhami šíření, realita vs. holina



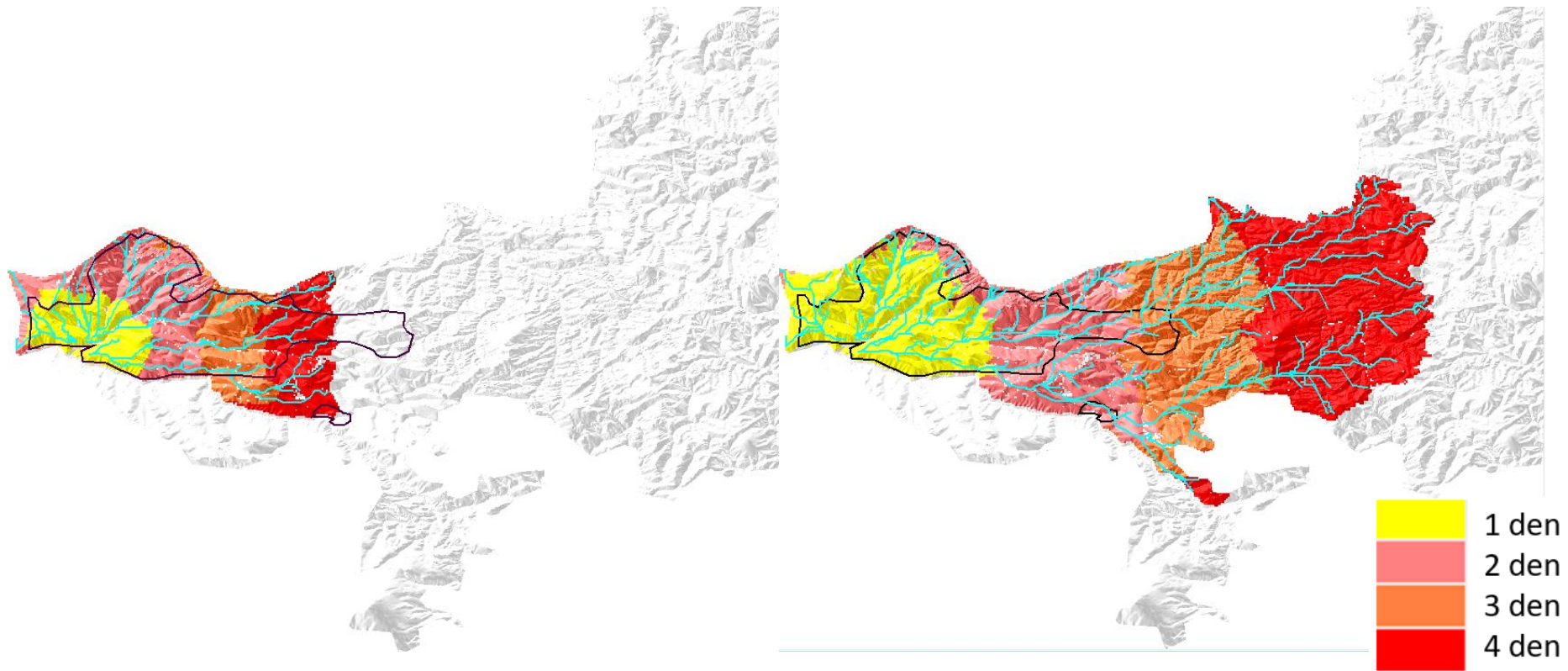
FlamMap – nástroj MTT (minimum travel time), konst. rychlost 32 km/h, směr 245°, doba hoření 2 dny (2880 min), výstup ArrivalTime [min] s hlavními dráhami šíření, realita vs. holina



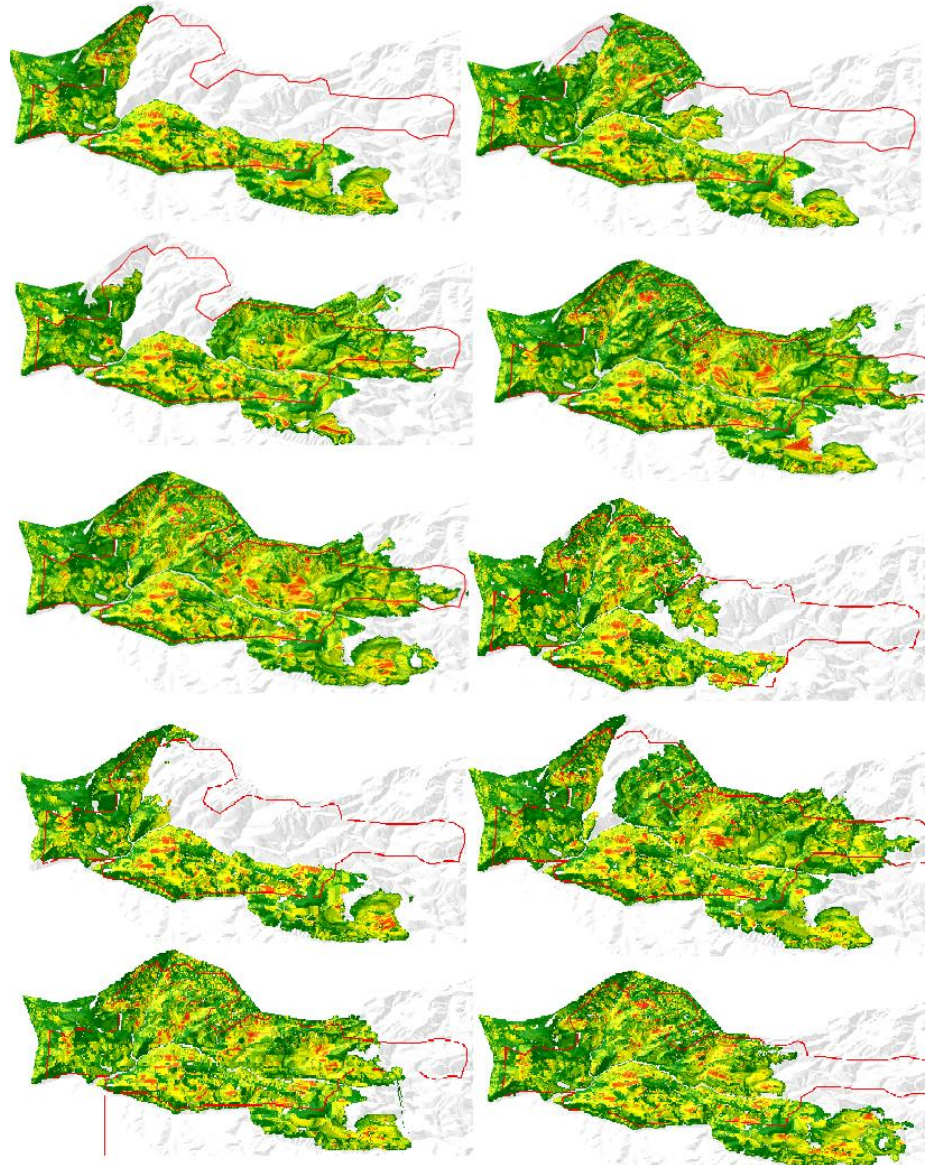
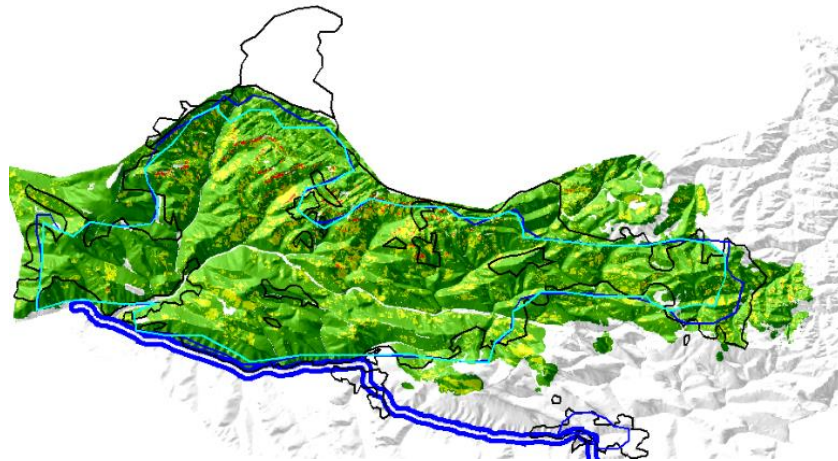
FlamMap – nástroj MTT (minimum travel time), konst. rychlost 32 km/h, směr 245°, doba hoření 3 dny (4320 min), výstup ArrivalTime [min] s hlavními dráhami šíření, realita vs. holina



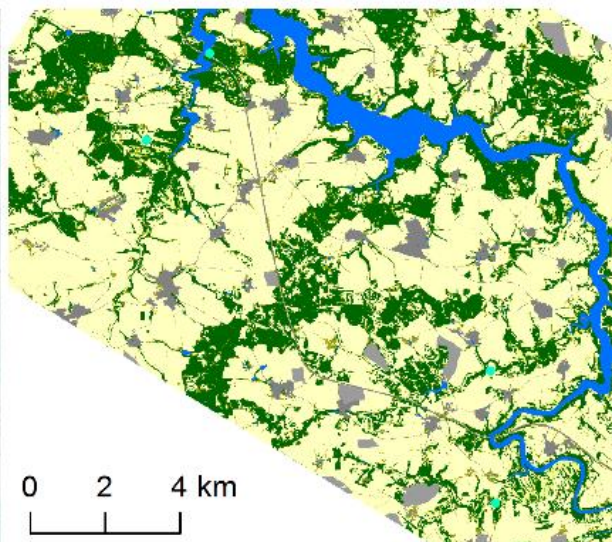
FlamMap – nástroj MTT (minimum travel time), konst. rychlost 32 km/h, směr 245°, doba hoření 4 dny (5760 min), výstup ArrivalTime [min] s hlavními dráhami šíření, realita vs. holina



Poučení – ne vše je tak jasné jak se na první pohled jeví.....



A je zásadním problémem i v zemědělské krajině!!

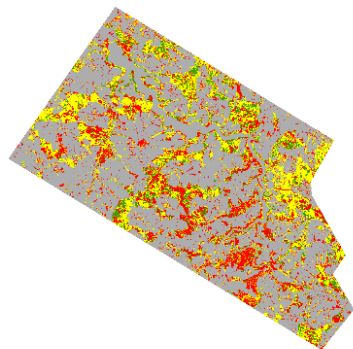
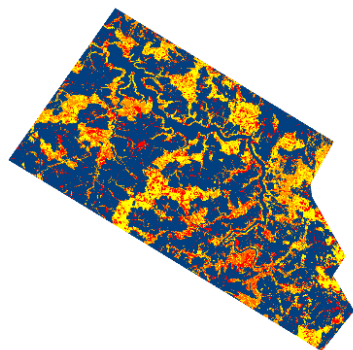
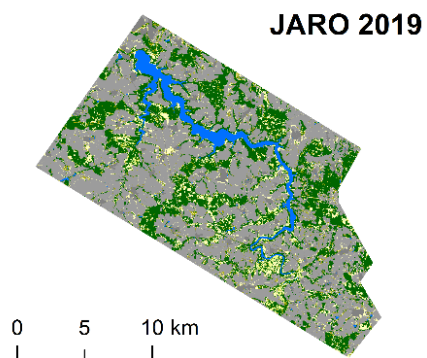


• bod vznícení

Palivové typy (dle Scott a Burgan, 2005):

- no data, nehořlavé oblasti (91, 93)
- voda (98)
- tráva, zeměděl. plodiny (101-124)
- keř, křoví (141-149)
- les (161-202)

Riziko trvá obvykle krátce ale je podstatné!



Palivové typy (dle Scott a Burgan, 2005):

- no data, nehořlavé oblasti (91, 93)
- voda (98)
- tráva, zeměděl. plodiny (101–124)
- keř, křoví (141–149)
- les (161–202)

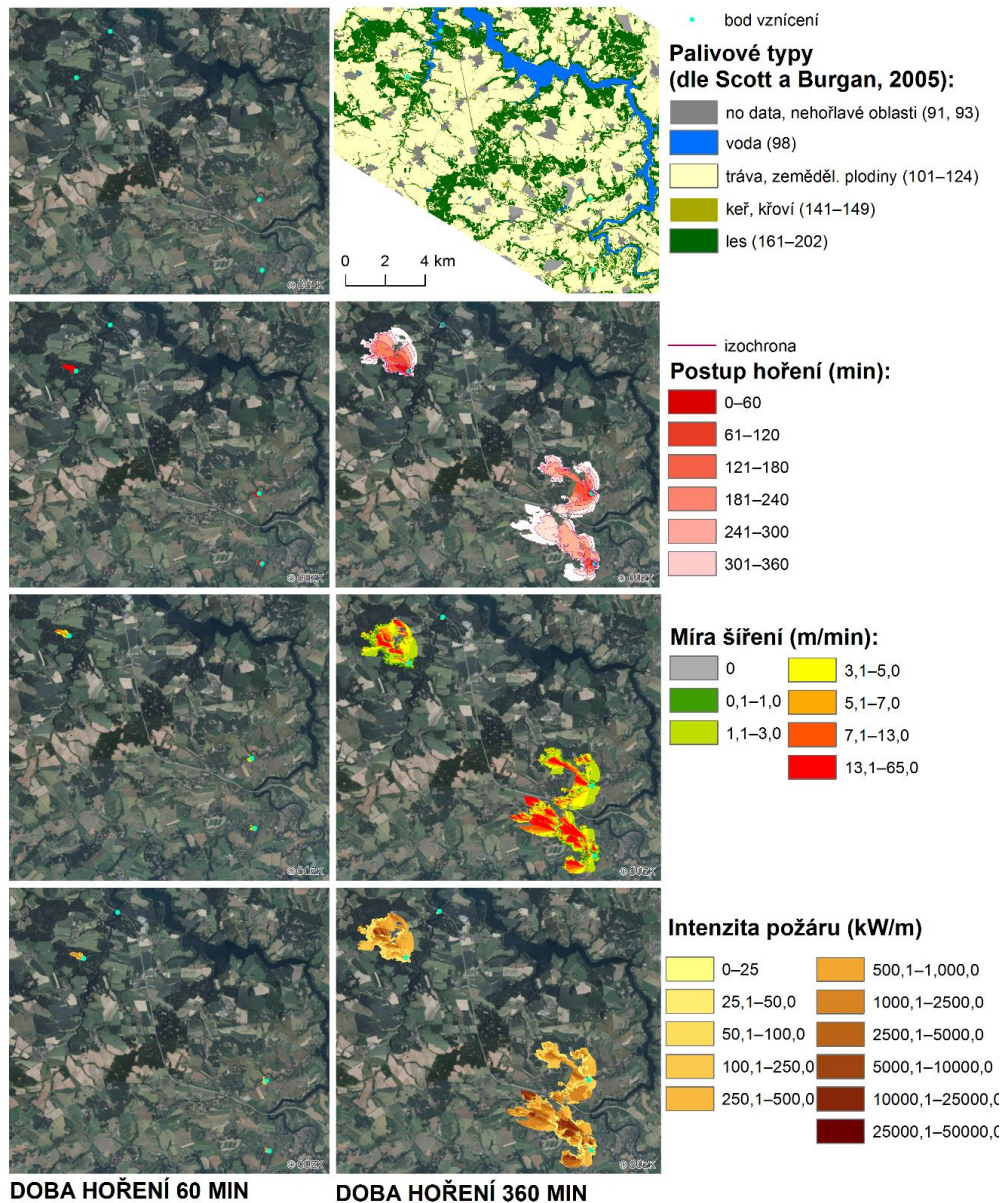
Délka plamene (m):

- 0
- 1
- 2
- 3
- 6

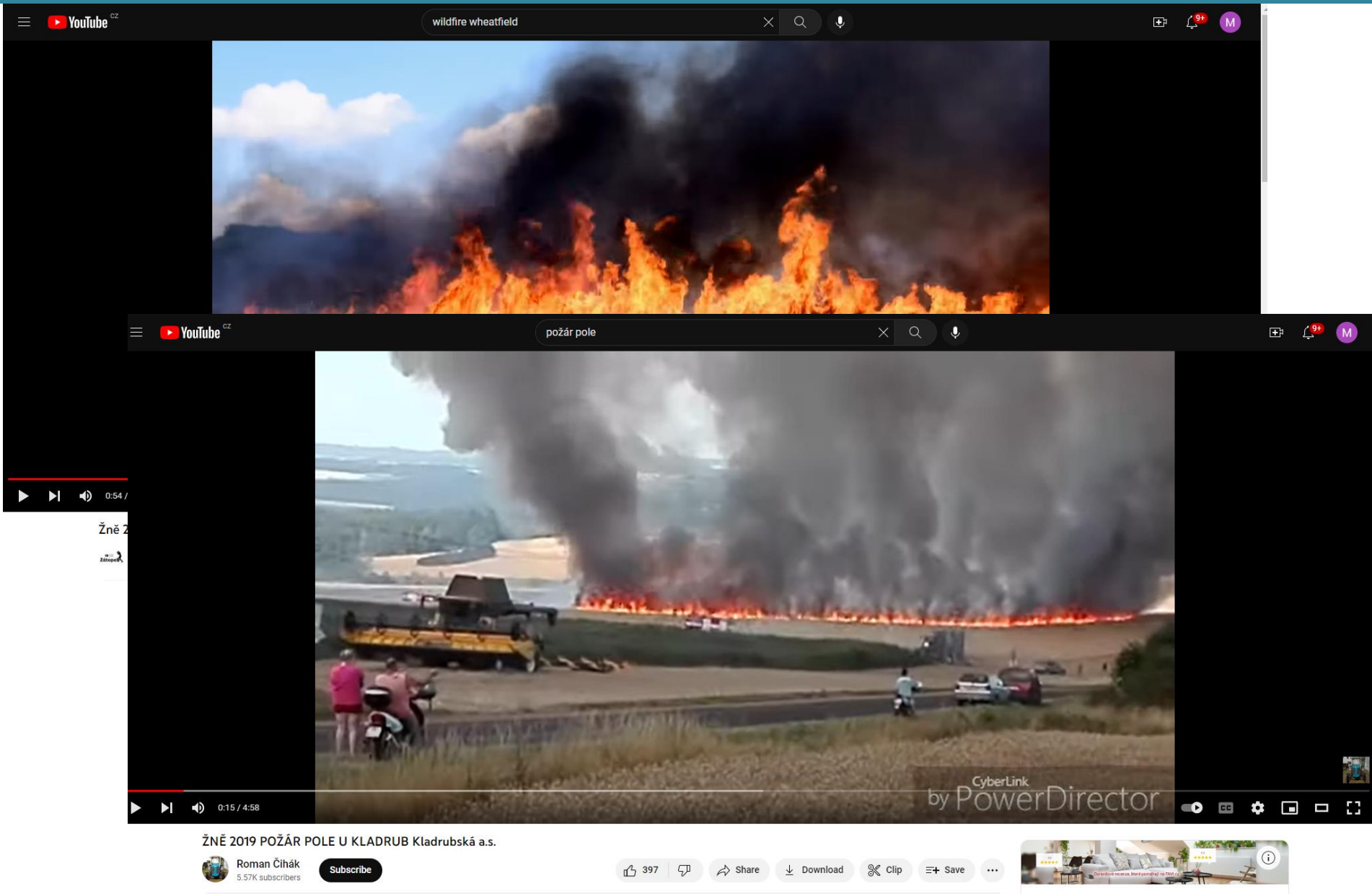
Míra šíření (m/min):

- 0
- 0,1–1,0
- 1,1–3,0
- 3,1–5,0
- 5,1–7,0
- 7,1–13,0
- 13,1–65,0

A potenciál k velkému požáru tu je....



A může dost podstatně komplikovat situaci....



The image shows a screenshot of a YouTube video player. The video title is "wildfire wheatfield" and the search bar contains "wildfire wheatfield". The video content shows a large fire in a field with thick black smoke rising into the sky. The video player interface includes a progress bar at 0:54 / 4:58, a volume icon, and a play button. The video is from the channel "Roman Čihák" with 5.57K subscribers. The video description is "ŽNĚ 2019 POŽÁR POLE U KLADRUB Kladrubská a.s.". The video player also shows a "CyberLink by PowerDirector" watermark and a "92+" notification icon.

YouTube CZ

wildfire wheatfield

YouTube CZ

požár pole

0:54 / 4:58

Žně 2019

ŽNĚ 2019 POŽÁR POLE U KLADRUB Kladrubská a.s.

Roman Čihák
5.57K subscribers

Subscribe

397

Share

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Clip

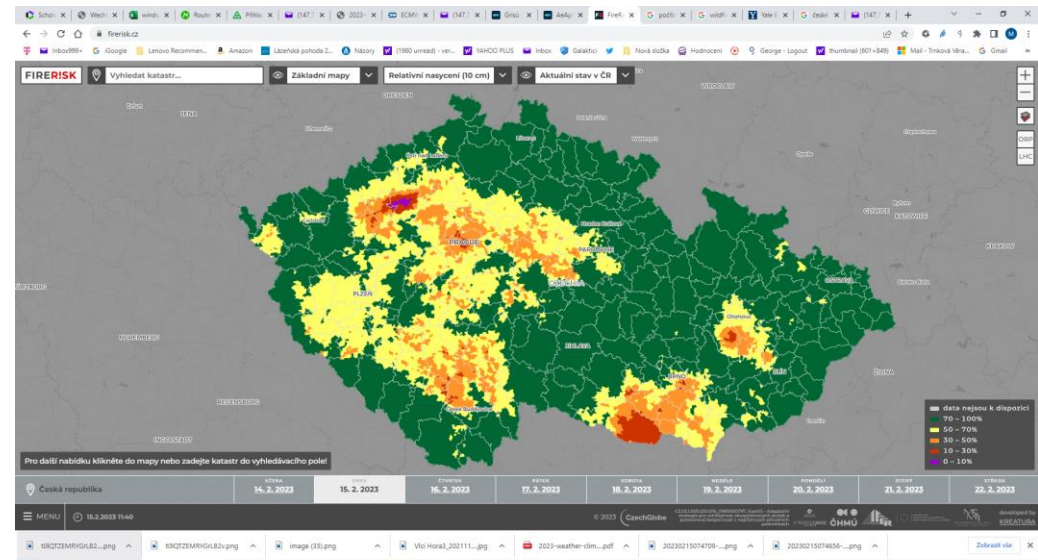
Save

CyberLink
by PowerDirector

92+

A právě proto vznikl portál FireRisk....

- Předpověď požárního počasí pro příštích 8 dní;
- Hodinové rozlišení;
- Možnost vlastního zhodnocení situace;
- A přijetí konkrétních opatření pro snížení rizika a také řešení mimořádných situací....
- Vše je **zdarma, bez registrace a pro Vás!!**



Děkuji všem kolegům za spolupráci a Vám za pozornost!!

