

Goriški Kras 2022 wildfire reconstruction – research data V1.0

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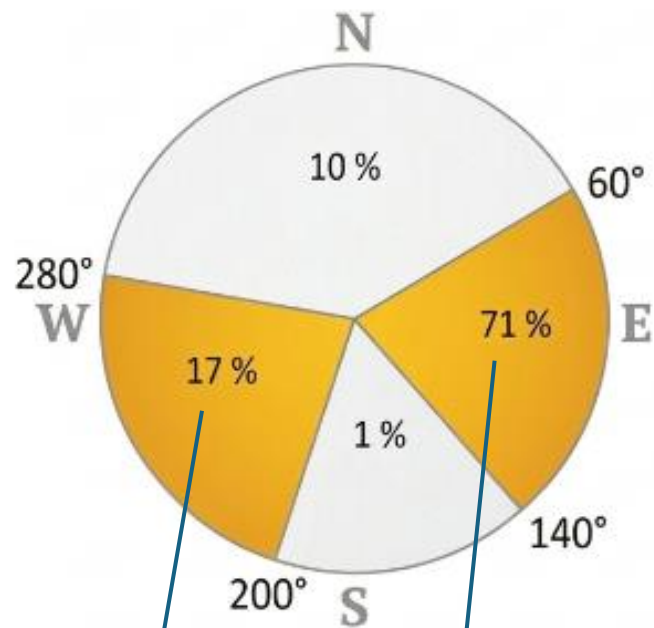
Slovenia, 19-06-2026



GOZDARSKI INŠTITUT SLOVENIJE
SLOVENIAN FORESTRY INSTITUTE

Observed winds between 15 July (16:00) and 24 July (13:00) at 2 meteo station (ARSO)

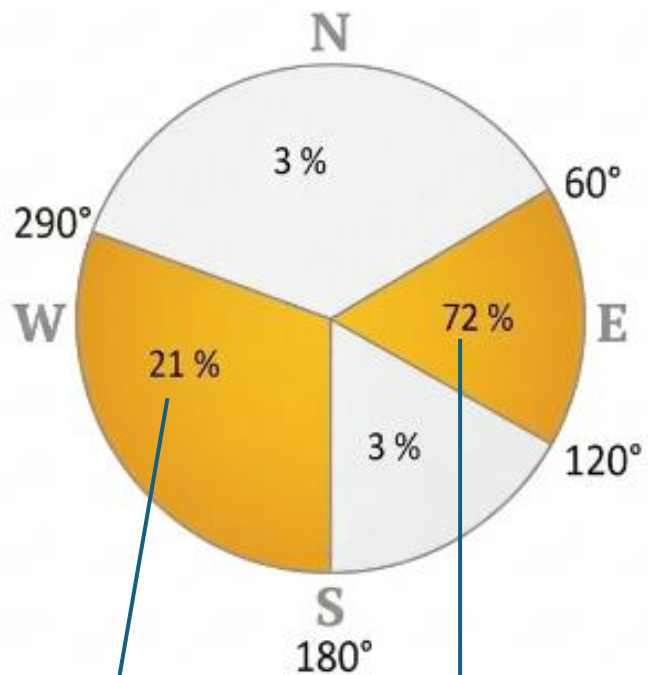
GODNJE



Average speed: 12 km/h

8 km/h

BILJE



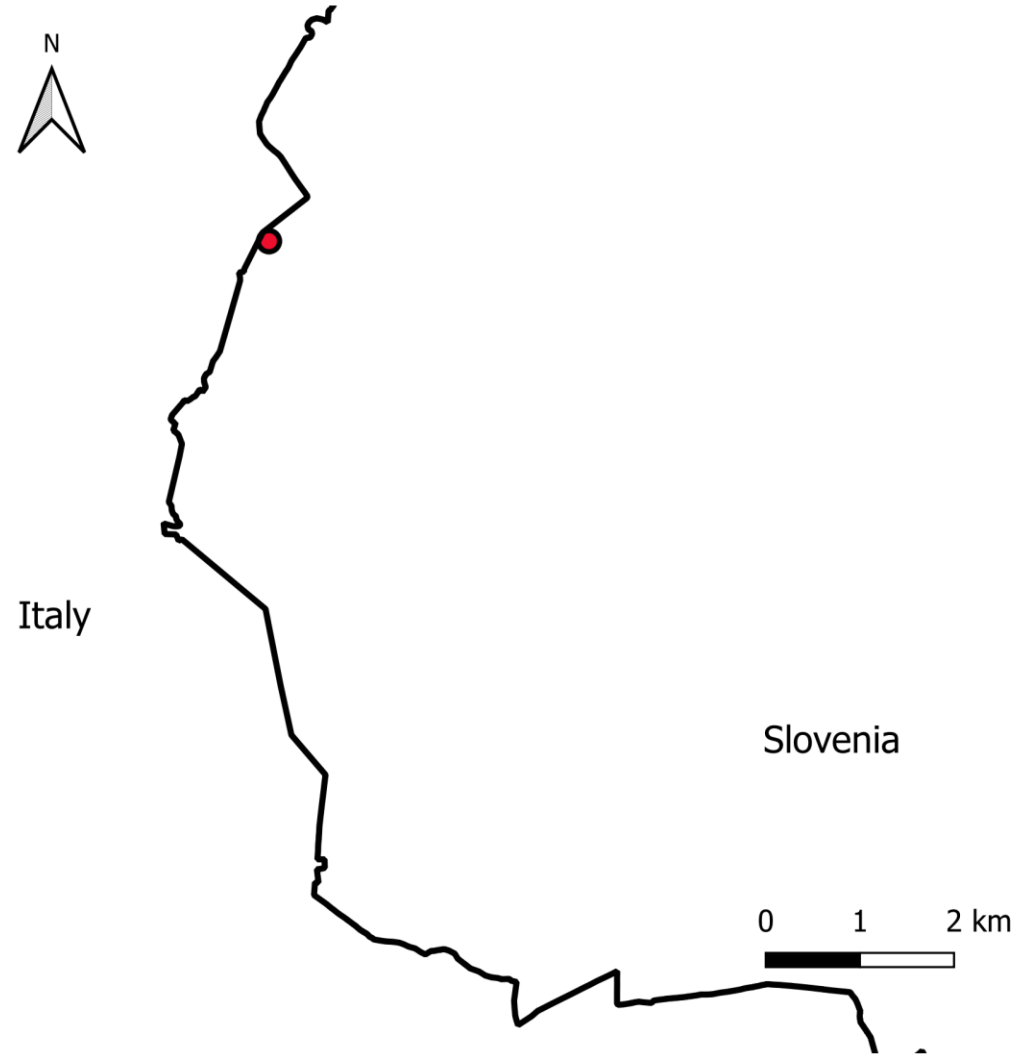
12 km/h

13 km/h(max 60 km/h)

Date: 15-07-2022

Time (CEST): 16:11

Source: SLO Incident commanders report



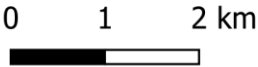
Date: 15-07-2022
Time (CEST): 22:00
Source: SLO Incident commanders report

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
11,4	11,4	500



Italy

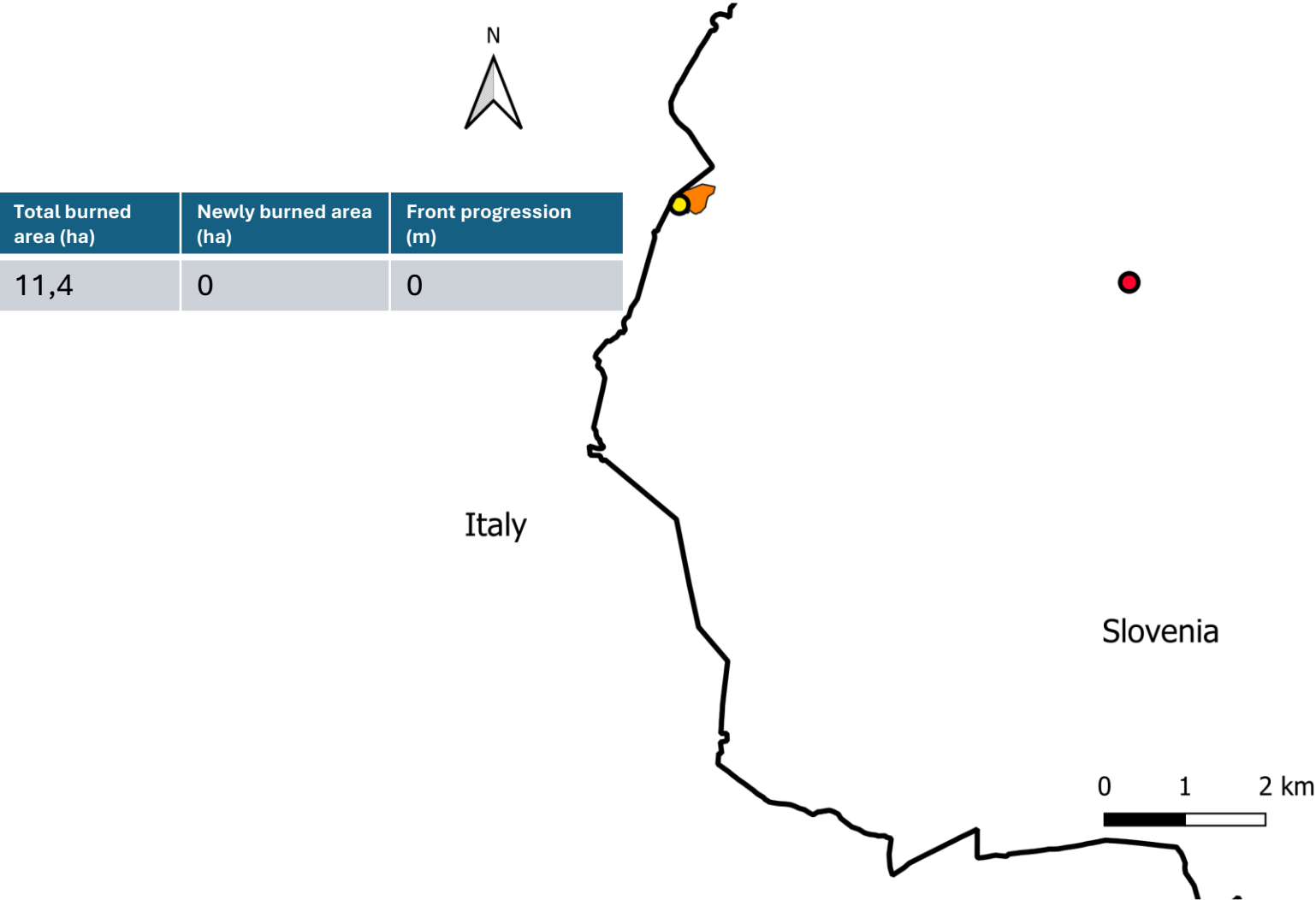
Slovenia



Main contributing wind: west winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	-	0	-	-
Bilje	16:00 – 16:50	1	212	3.9
Max ROS	500 m/h			



Date: 17-07-2022
Time (CEST): 09:32
Source: SLO Incident commanders report

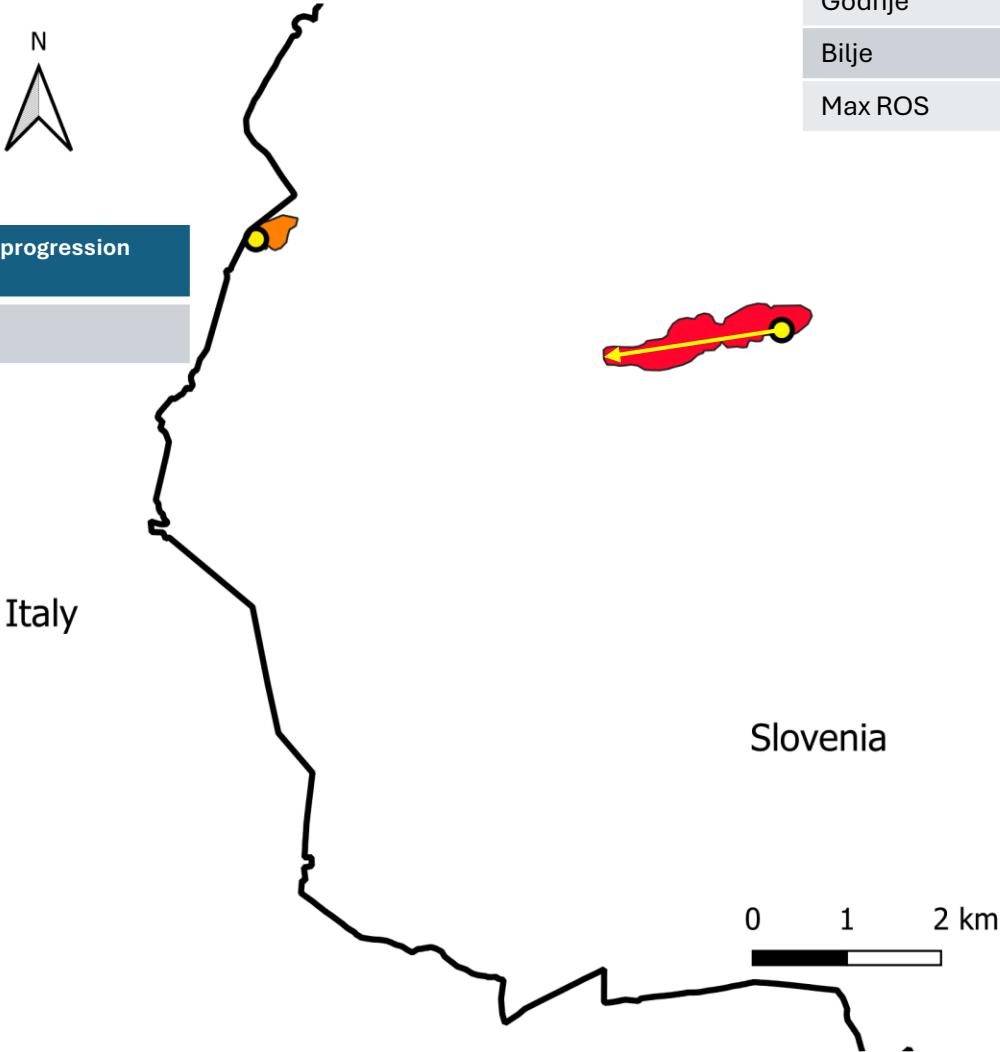


Date: 17-07-2022
Time (CEST): 12:06
Source: Sentinel

Main contributing wind: east winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	09.40 – 12.10	2.5	102	4.0
Bilje	09.40 – 12.10	2.5	106	7.2
Max ROS	760 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
11,4	0	0

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
70,1	70,1	1900



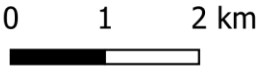
Date: 17-07-2022
Time (CEST): 22:00
Source: SLO Incident commanders report
+ adjustment with Sentinel on 19 July

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
11,4	0	0



Italy

Slovenia

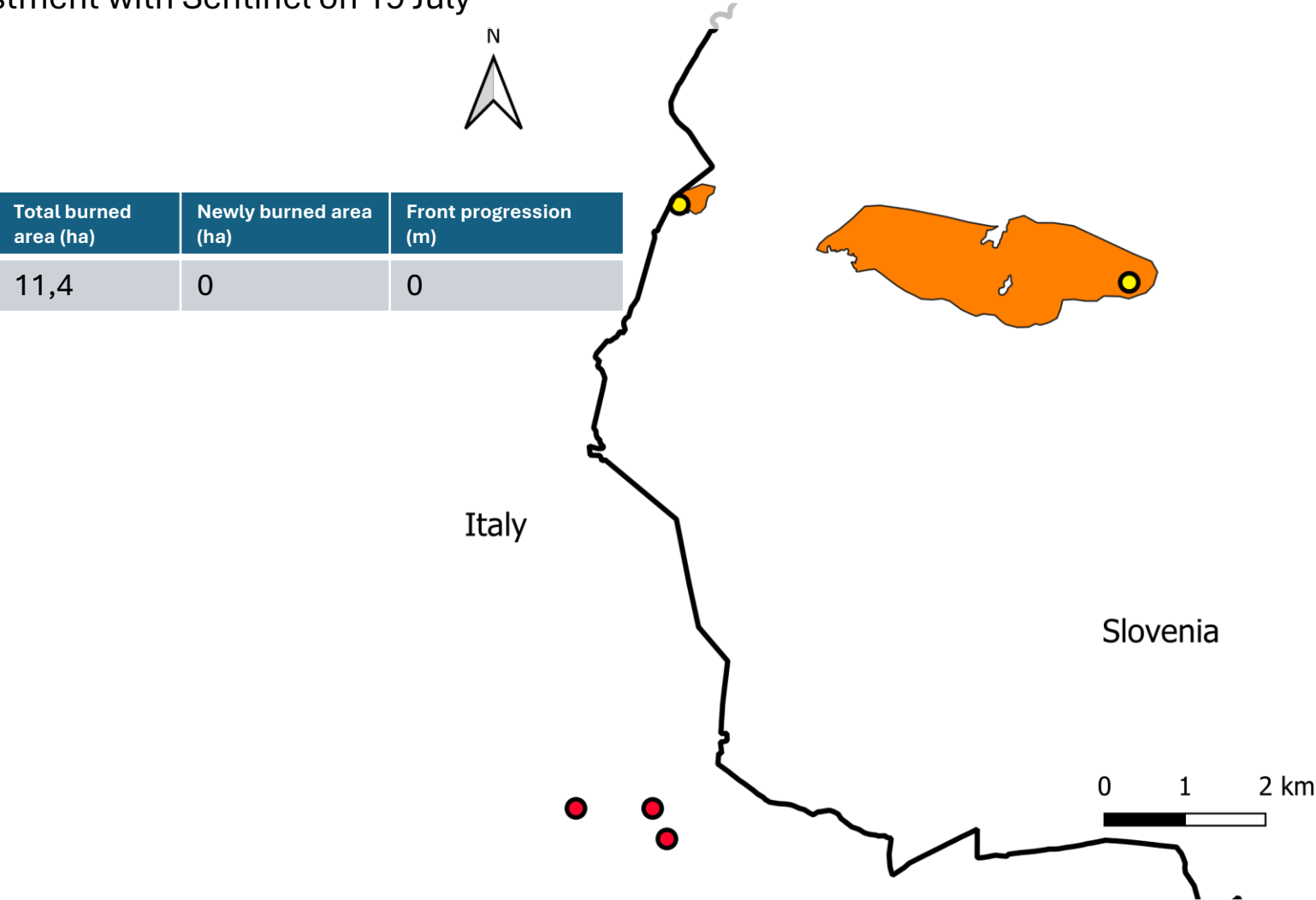


Main contributing wind: east winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	12.20 – 22.00	10	96	2.8
Bilje	12.20 – 22.00	10	98	5.0
Max ROS	210 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
362,1	292,0	2100



Date: 19-07-2022
Time (CEST): 11:00
Source: SLO Incident commanders report
+ adjustment with Sentinel on 19 July



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
11,4	0	0

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
362,1	0	0

Date: 19-07-2022
Time (CEST): 11:55
Source: Sentinel
+ reignition notification on 12:06

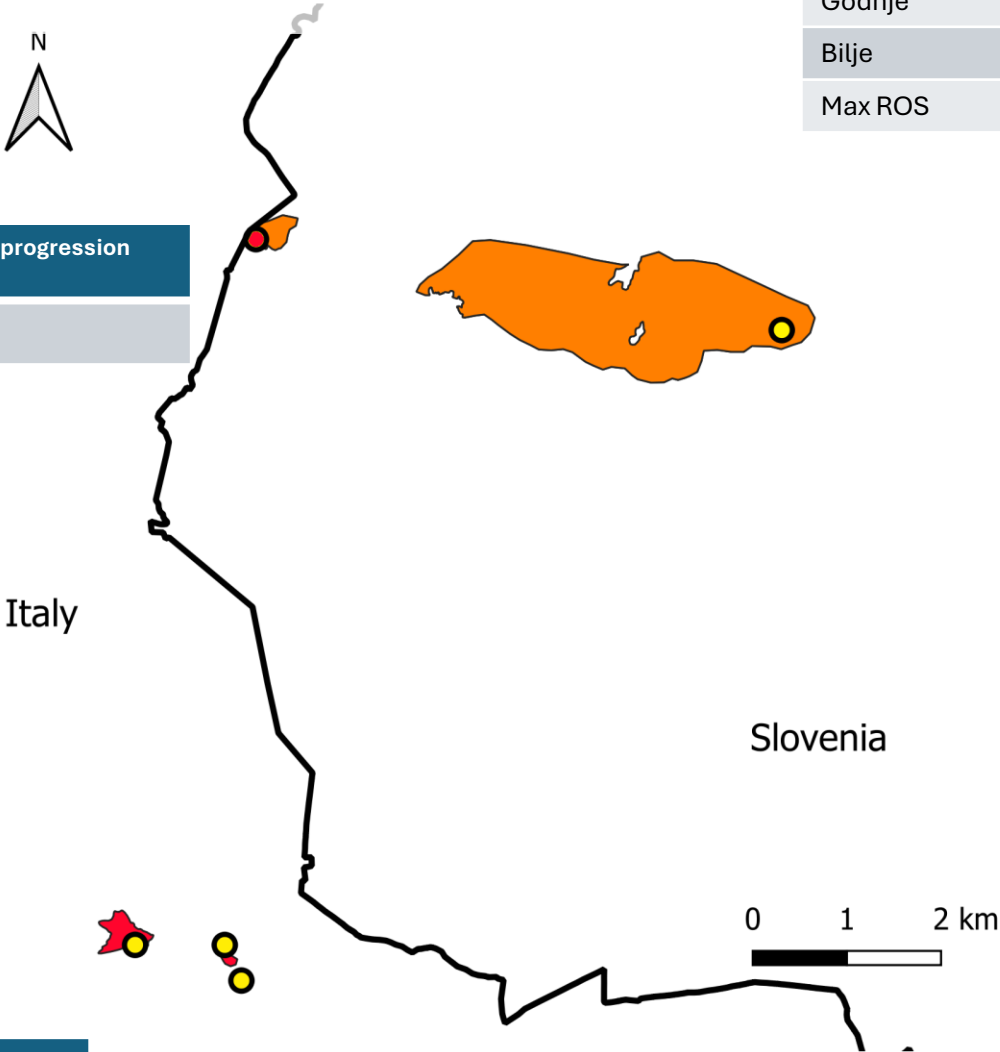
Main contributing wind: east winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	11.00 – 12.00	1	107	3.1
Bilje	11.00 – 12.00	1	88	3.6
Max ROS	- m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
362.1	0	0

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
11.4	0	0

Total burned area (ha)
13.8

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
2.5	2.5	-



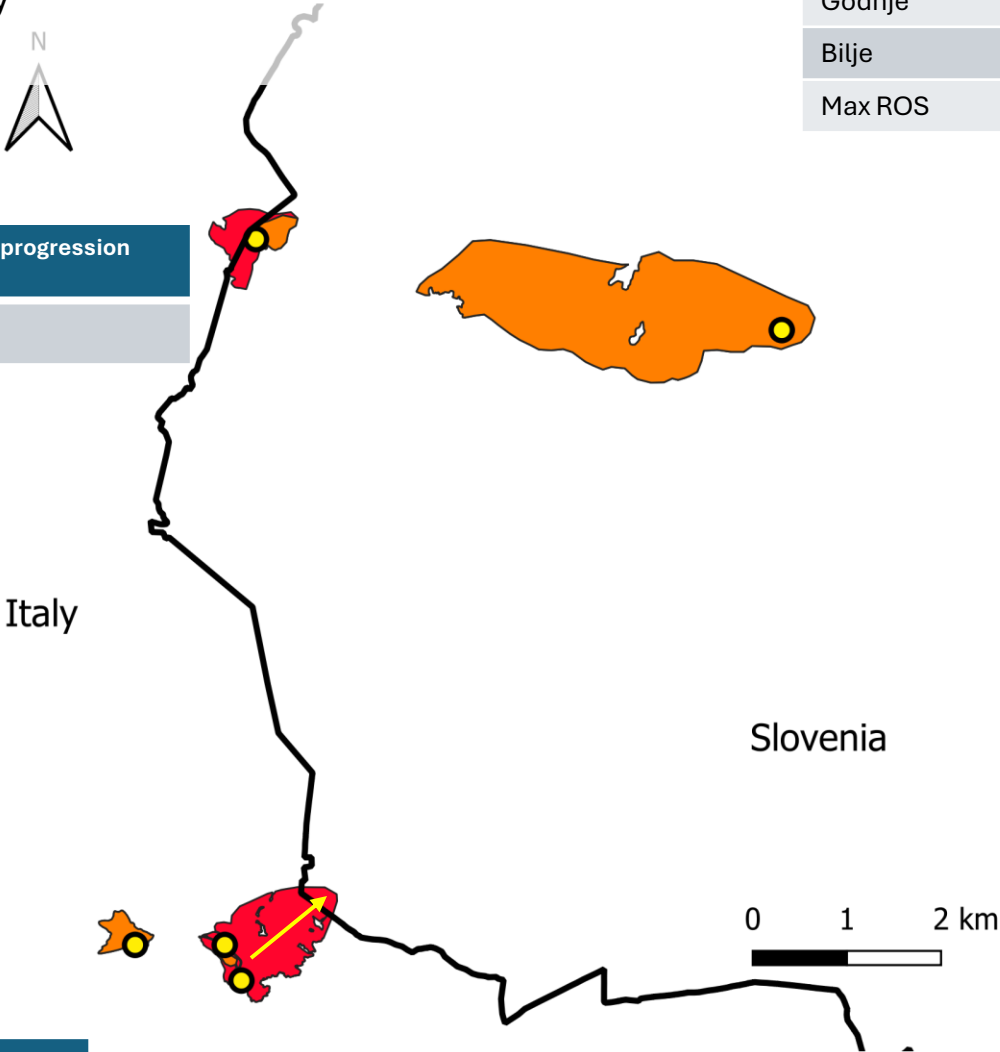
Date: 19-07-2022
Time (CEST): 22:00
Source: SLO Incident commanders report
+ adjustment with Landsat on 20 July

Main contributing wind: west + south winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	16.20 - 19.30	3	216	2.9
Bilje	17:00 – 20:30	3.5	179	2.9
Max ROS	370 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
39.6	28.2	-

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
362.1	0	0

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
96.4	93.9	1300



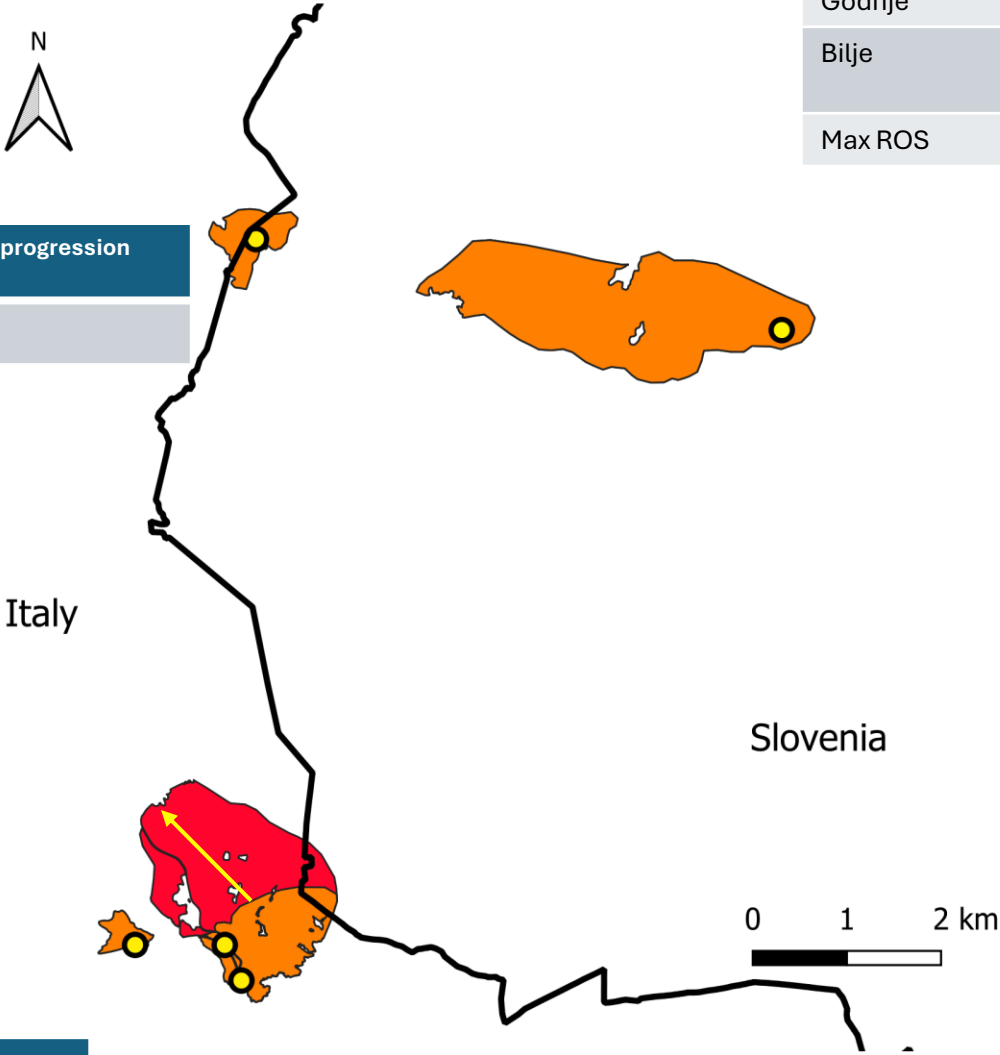
Date: 20-07-2022
Time (CEST): 11:52
Source: Landsat

Main contributing wind: east winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	22.00 – 12.00	14	103	2.1
Bilje	22.00 - 7.10 + 9.10 – 12.00	12	90	1.7
Max ROS	100 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
362.1	0	0

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
39.6	0	0

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
283.8	187.4	1400



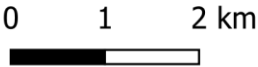
Date: 20-07-2022
Time (CEST): 14:00
Source: SLO Incident commanders report
+ adjustment with VIIRS at 14:01 CEST
+ Copernicus on 21 July



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
160.3	120.7	1500

Italy

Slovenia



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
858.4	574.6	2200

Main contributing wind: west winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	13.00 – 14.00	1	225	4.5
Bilje	13.10 – 14.00	1	228	3.3
Max ROS	2200 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
362.1	0	0



Date: 20-07-2022
Time (CEST): 22:00
Source: SLO Incident commanders report
+ adjustment with Copernicus EMS on 21 July + confirmed with VIIRS at 02:16 CEST



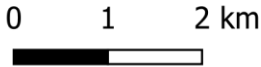
Total burned area (ha)	Newly burned area (ha)	Front progression (m)
160.3	0	-

Main contributing wind: west winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	14.10 – 17.50	4	226	3.9
Bilje	14.10 – 19.40	5	208	3.9
Max ROS	540 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
362.1	0	0

Italy

Slovenia



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
1529.5	671.1	2700



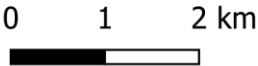
Date: 21-07-2022
Time (CEST): 11:54
Source: Copernicus EMS rapid mapping
(SLO only!)
+ VIIRS at 02:16 (ITA)



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
177.2	16.9	-

Italy

Slovenia



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
1824.5	295.0	1000

Main contributing wind: west winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	09.10 – 12.00	3	245	1.7
Bilje	10.30 – 12.00	1.5	266	2.4
Max ROS	330 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
380.4	18.3	-



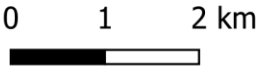
Date: 21-07-2022
Time (CEST): 22:00
Source: SLO Incident commanders report
+ adjustment with Sentinel on 22 July
+ VIIRS at 03:38 CEST



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
177.2	0	-

Italy

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Total burned area (ha)	Newly burned area (ha)	Front progression (m)
2889.4	690.6	2800

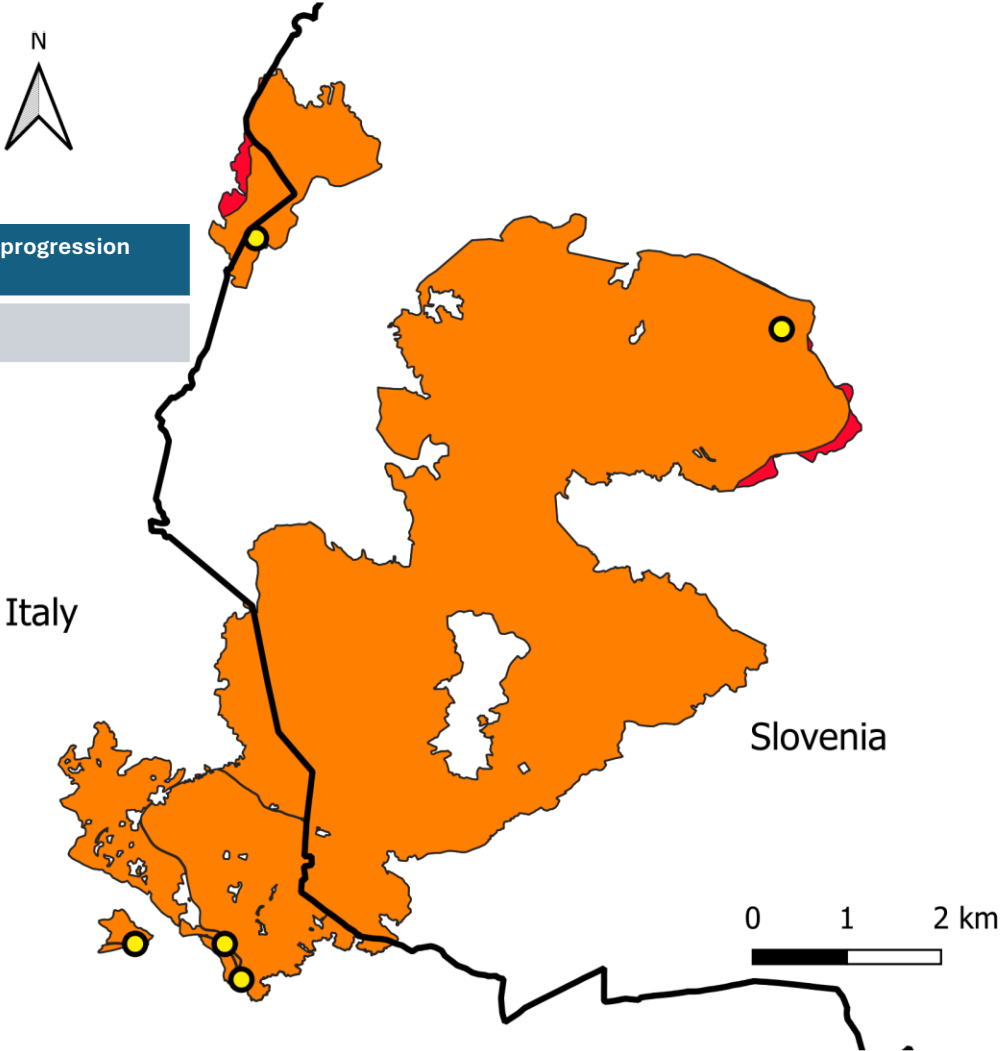
Main contributing wind: west winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	12.00 – 18.00	6	254	3.7
Bilje	12.00 – 18.30	6	273	3.7
Max ROS	470 m/h			



Date: 22-07-2022
Time (CEST): 12:05
Source: Sentinel

Main contributing wind: -

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
189.4	12.2	-



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
2914.0	12.2	-

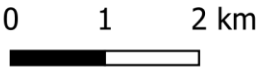


Date: 22-07-2022
Time (CEST): 22:00
Source: SLO Incident commanders report
+ adjustment with Copernicus EMS on 23 July
+ VIIRS at 15:04 CEST



Italy

Slovenia

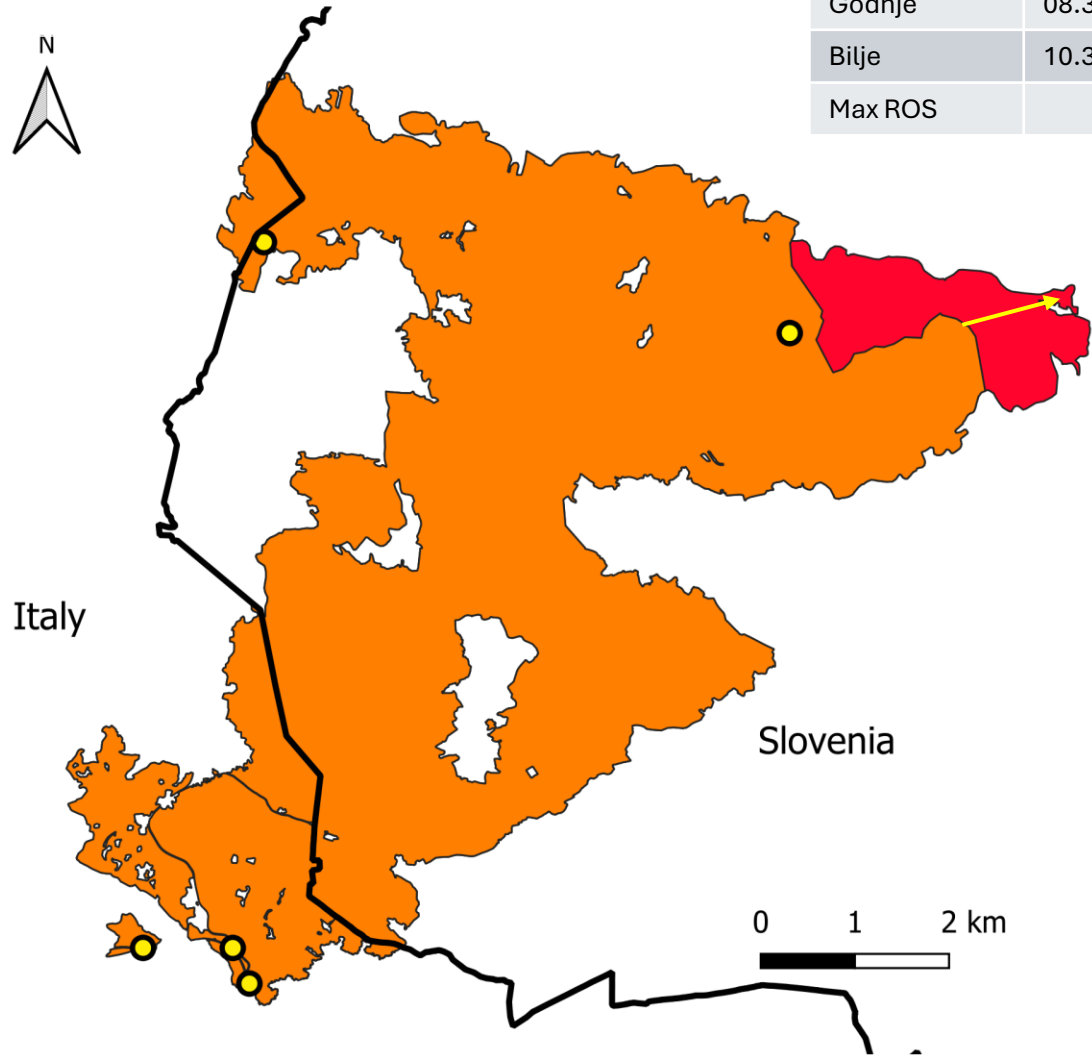


Total burned area (ha)	Newly burned area (ha)	Front progression (m)
3914.2	810.8	1500

Main contributing wind: west winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	12.10 – 20.20	10	237	3.8
Bilje	12.10 – 20.20	10	226	3.7
Max ROS	150 m/h			



Date: 23-07-2022
Time (CEST): 11:40
Source: Copernicus EMS rapid mapping
(SLO only!)



Main contributing wind: west winds				
meteo station	Time (CEST)	Time difference	Average direction	Speed (m/s)
Godnje	08.30 – 11.40	3	241	2.7
Bilje	10.30 – 11.40	1	218	1.5
Max ROS	400 m/h			

Total burned area (ha)	Newly burned area (ha)	Front progression (m)
4185.9	269.7	1200



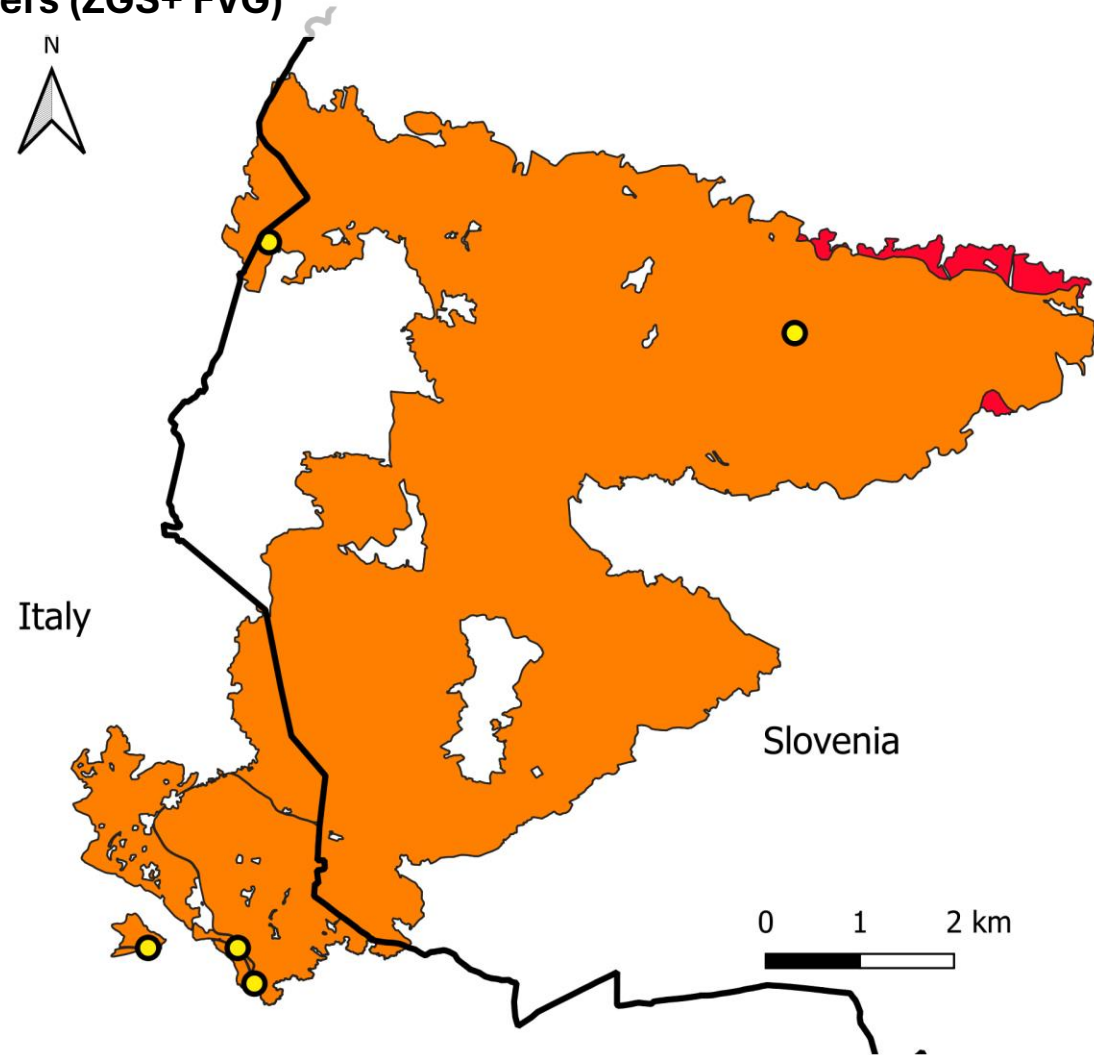
Date: 24-07-2022

Time (CEST): 12:00

Source: Sentinel

+ adjusted to final official perimeters (ZGS+ FVG)

Main contributing wind: -



Total burned area (ha)	Newly burned area (ha)	Front progression (m)
4248.9	63.0	-



Data sources

- Sentinel: European Space Agency (ESA). (2022). Sentinel-2 MSI Level-2A.
- Landsat: U.S. Geological Survey (2022). Landsat 8 Level 2.
- SLO Incident commanders report: Vendramin Simon (2022). Incident report (SI) and personal communication
- Copernicus EMS (2025). Emergency Management Service - On Demand Mapping
- VIIRS: Schroeder, W., Giglio, L., & Hall, J. (2025). *Collection 2 Visible Infrared Imaging Radiometer Suite (VIIRS) 375-m active fire product user's guide (Version 1.2)*. NASA Earthdata.
- Final official perimeters (ZGS+FVG):
 - Zavod za gozdove Slovenije (2026). Reports on forest fires 2022 and
 - Regione autonoma Friuli Venezia Giulia (2026) Perimeters of forest fires 2022
- ARSO (2025). Historical wind data from Slovenian Environment Agency weather stations Godnje and Bilje.

Acknowledgement

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