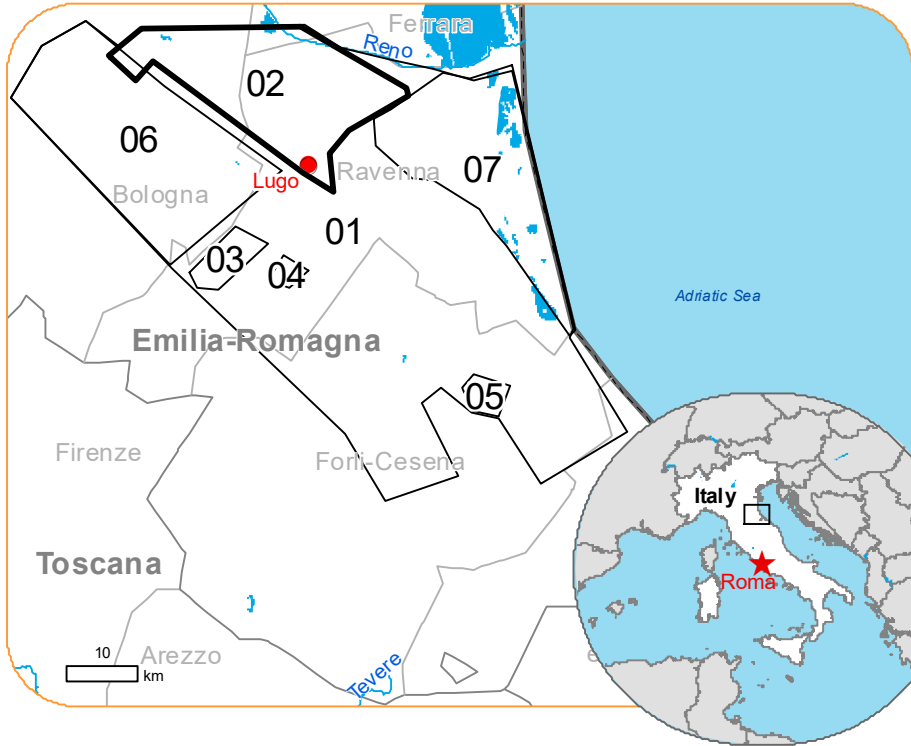




Situation as of 21/05/2023 10:08 UTC  
Grading - Overview map 01



Flood trace 4,850.4 ha  
Flooded area 8,685.5 ha  
Potentially affected population 10,000

Affected Built-up, Facilities and Transportations  
Built-Up 3,990 No.  
Facilities 57.5 ha  
Road 89.9 km  
Railway 1.3 km

**Crisis Information**

- Dike breach
- Flooded Area
- Landslide
- Flood trace

**Built-Up Grading**

- Residential Building, Damaged
- Residential Building, Possibly damaged
- Non residential Building, Damaged
- Non-residential Building, Possibly damaged
- Unclassified Building, Damaged
- Unclassified Building, Possibly damaged

**Facilities Grading**

- Damaged
- Possibly damaged

**Transportation Grading**

- Road, Possibly damaged
- Railway, Possibly damaged
- Highway, No visible damage
- Main road, No visible damage
- Local road, No visible damage
- Track, No visible damage
- Railway, No visible damage
- Airfield runway, No visible damage

**General Information**

- Area of Interest
- Detail map
- Not Analysed

**Administrative boundaries**

- Province
- Municipality

**Placenames**

- Placename

**Hydrography**

- River
- Stream
- Lake
- Land Subject to Inundation
- Reservoir

All data displayed on the map(s), as well as the Land Use -Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data). All products and data are also available for download on the

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

**Data sources and analysis:** Pre-event image: Pleiades-1A/B © CNES (2022,2023), distributed by Airbus DS (acquired on 04/11/2023 at 10:07 UTC, the 06/05/2023 at 10:48 UTC, resolution 0.5 m). WorldView-2 © Maxar Technologies, Inc. (2021), (acquired on 20/05/2021 at 10:09 UTC, the 02/07/2021 at 10:24 UTC, the 01/12/2021 at 10:23 UTC, resolution 0.5 m). Post-event image: SPOT6/7 © Airbus DS (2023), (acquired on 21/05/2023 at 10:08 UTC, resolution 1.5 m). UAS images (2023) © Rescue Drones Network ODV (acquired on 20/05/2023 00:00, GSD 0.04 m). All images are provided under COPERNICUS by the European Union and ESA, all rights reserved.

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Population data: GHS Population Grid © European Commission, 2022 [https://ghsljrc.ec.europa.eu/ghs\\_pop2022.php](https://ghsljrc.ec.europa.eu/ghs_pop2022.php)

The thematic layer has been derived from post-event satellite image by means of visual interpretation.  
The scale of analysis is 1:10000. The estimated geometric accuracy (RMSE) is 3 m or better, from native positional accuracy of the background satellite image. The minimum mapping unit (MMU) is 225 sq. m.

Map produced by CLS released by e-GEOS on the 22/05/2023.

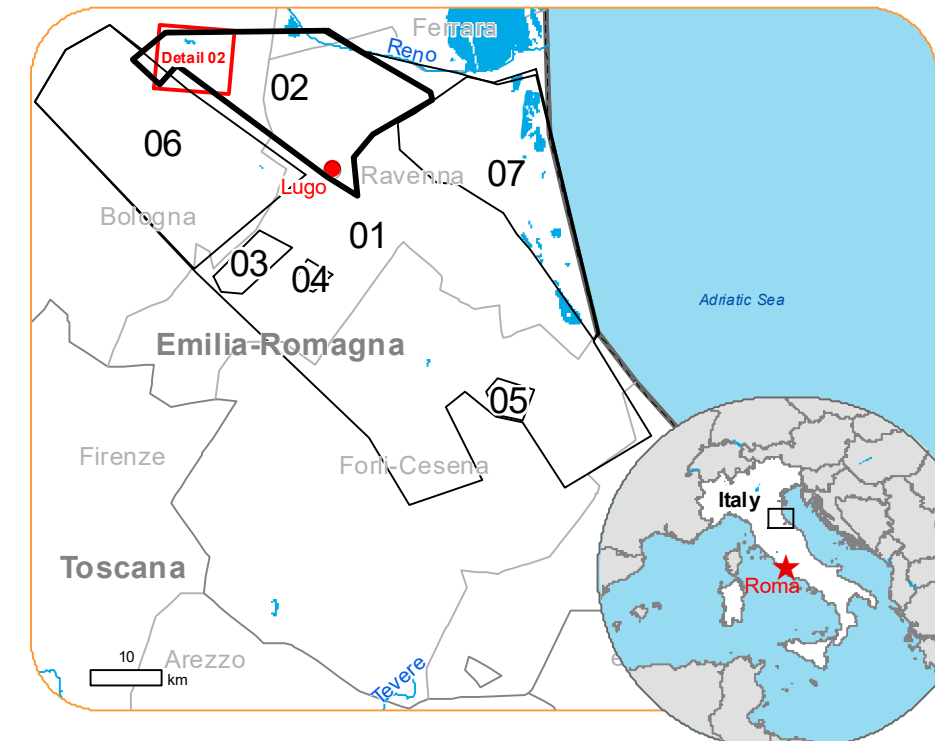
Details on this activation and service conditions available through the QR code or at the link: <https://emergency.copernicus.eu/EMSR664>







Situation as of 21/05/2023 10:08 UTC  
Grading - Detail map 02



Flood trace 1,043 ha  
22% of potentially affected  
Flooded area 2,454 ha  
28% of potentially affected

Potentially affected population 850  
9% of potentially affected

Affected Built-up, Facilities and Transportations

Built-Up  
393 No.  
10% of potentially affected

Facilities  
7.8 ha  
14% of potentially affected

Road  
43.6 km  
49% of potentially affected

#### Crisis Information

Dike breach

Flooded Area

Flood trace

#### Built-Up Grading

Non residential Building, Damaged

Non-residential Building, Possibly damaged

Unclassified Building, Damaged

Unclassified Building, Possibly damaged

Damaged

#### Facilities Grading

Damaged

#### Transportation Grading

Road, Possibly damaged

Main road, No visible damage

Local road, No visible damage

Track, No visible damage

#### General Information

Area of Interest

Not Analysed

#### Administrative boundaries

Municipality

#### Placenames

Placename

#### Hydrography

River

Stream

Lake

Land Subject to Inundation

Reservoir

All data displayed on the map(s), as well as the Land Use -Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data). All products and data are also available for download on the

#### Event:

A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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Population data: GHS Population Grid © European Commission, 2022 [https://ghsl.jrc.ec.europa.eu/ghs\\_pop2022.php](https://ghsl.jrc.ec.europa.eu/ghs_pop2022.php)

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The scale of analysis is 1:10000. The estimated geometric accuracy (RMSE) is 3 m or better, from native positional accuracy of the background satellite image. The minimum mapping unit (MMU) is 225 sq. m.

Map produced by CLS released by e-GEOS on the 22/05/2023.

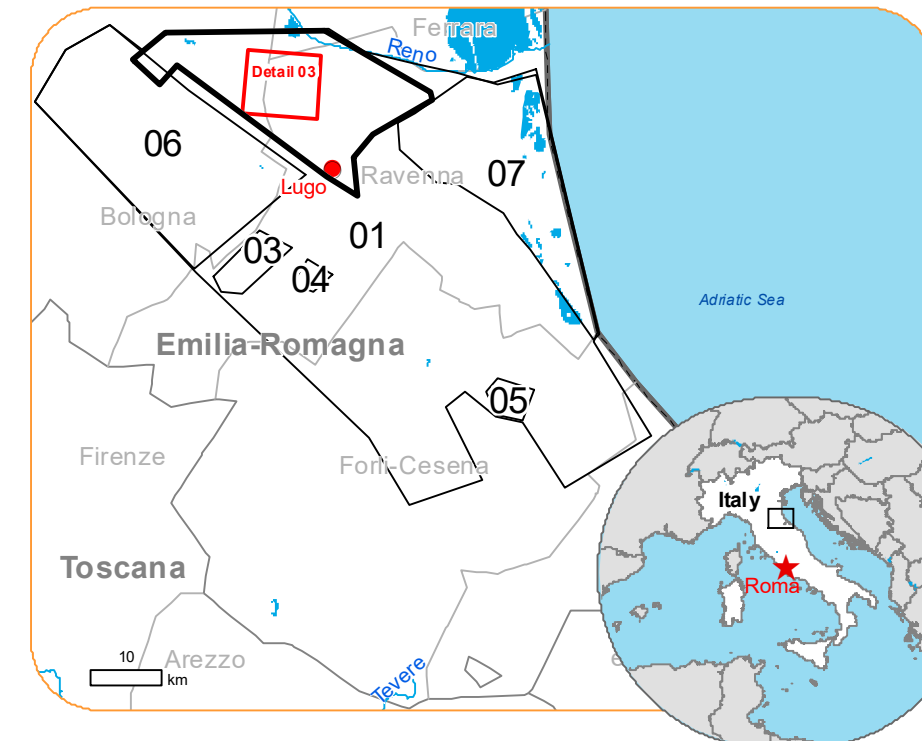
Details on this activation and service conditions available through the QR code or at the link: <https://emergency.copernicus.eu/EMSR664>







Situation as of 21/05/2023 10:08 UTC  
Grading - Detail map 03



**Flood trace** 1,155 ha  
24% of potentially affected  
**Flooded area** 2,593 ha  
30% of potentially affected

**Potentially affected population**  
4600  
46% of potentially affected

Affected Built-up, Facilities and Transportations

**Built-Up**  
1,648 No.  
41% of potentially affected

**Facilities**  
1.5 ha  
3% of potentially affected

**Road**  
29.7 km  
33% of potentially affected

**Railway**  
1.3 km  
100% of potentially affected

**Crisis Information**

- Dike breach

**General Information**

- Area of Interest
- Not Analysed

**Administrative boundaries**

- Province
- Municipality

**Placenames**

- Placename

**Hydrography**

- River
- Stream
- Lake
- Land Subject to Inundation

**Facilities Grading**

- Damaged

**Transportation Grading**

- Road, Possibly damaged
- Railway, Possibly damaged
- Main road, No visible damage
- Local road, No visible damage
- Track, No visible damage
- Railway, No visible damage
- Airfield runway, No visible damage

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Voltre, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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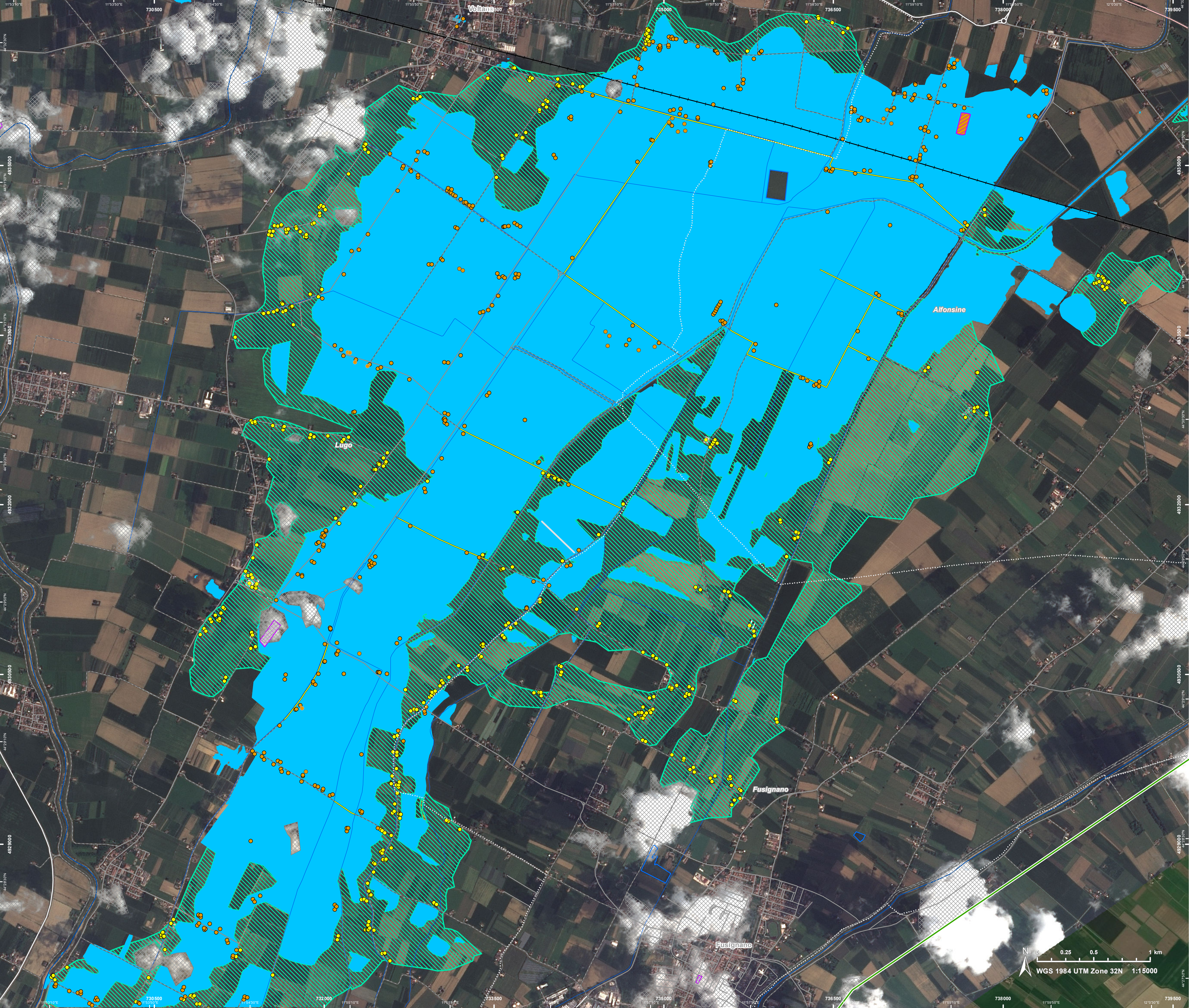
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Map produced by CLS released by e-GEOS on the 22/05/2023.

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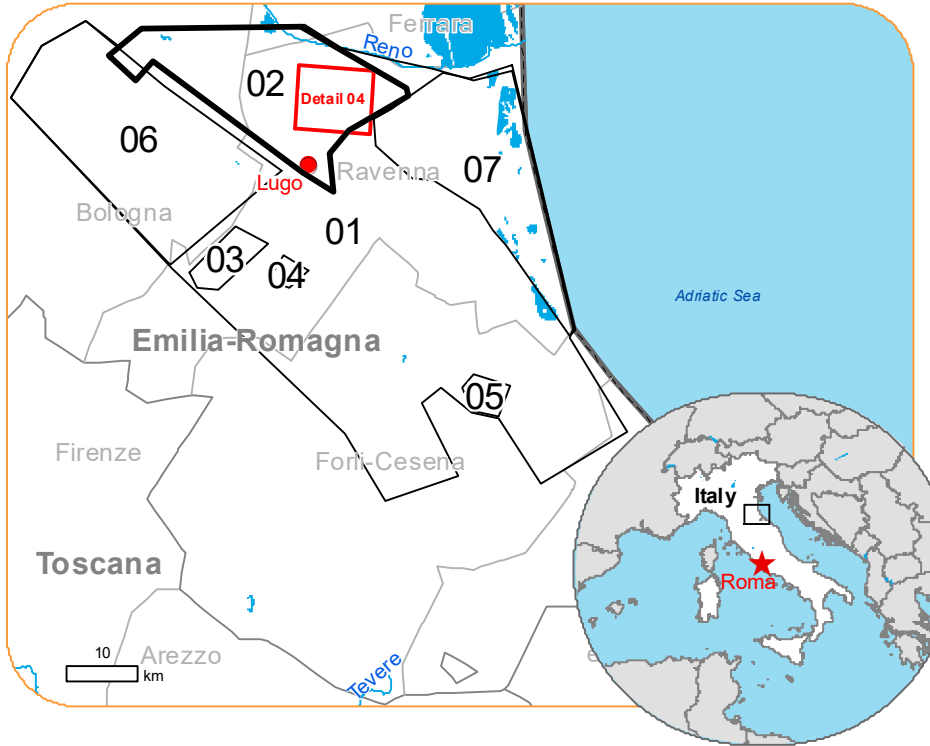






Situation as of 21/05/2023 10:08 UTC

Grading - Detail map 04



Flood trace 1,467 ha  
30% of potentially affected  
Flooded area 2,547 ha  
29% of potentially affected



Potentially affected population 800  
8% of potentially affected

Affected Built-up, Facilities and Transportations



Built-Up  
850 No.  
21% of potentially affected



Facilities  
1.5 ha  
3% of potentially affected



Road  
13.1 km  
15% of potentially affected

Flooded Area

Landslide

Flood trace

Residential Building, Damaged

Non residential Building, Damaged

Non-residential Building, Possibly damaged

Unclassified Building, Damaged

Unclassified Building, Possibly damaged

Damaged

Road, Possibly damaged

Highway, No visible damage

Main road, No visible damage

Local road, No visible damage

Track, No visible damage

Railway, No visible damage

Airfield runway, No visible damage

Area of Interest

Not Analysed

Municipality

Placename

River

Stream

Lake

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**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Voltre, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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EMSR664 AOI: 02 Lugo Grading

Consequences within the AOI								
	Unit of measurement			Destroyed	Damaged	Possibly damaged*	Total affected**	Total in AOI
Dike breach		No.						3
Flood trace		ha						4,850.4
Flooded area		ha						8,685.5
Landslide		ha						0.4
Estimated population	Number of inhabitants						~ 10,000	~ 71,000
Built-up	Residential Buildings	No.		0	29	1	30	99
	Office buildings	No.		0	0	0	0	2
	Institutional	No.		0	0	0	0	2
	Wholesale and retail trade buildings	No.		0	0	0	0	11
	Industrial buildings	No.		0	155	59	214	1,111
	Reservoirs, silos and warehouses	No.		0	0	20	20	39
	Public entertainment buildings	No.		0	0	0	0	3
	School, university and research buildings	No.		0	0	1	1	13
	Hospital or institutional care buildings	No.		0	0	0	0	10
	Other non-residential buildings	No.		0	13	8	21	21
	Buildings used as places of worship and for religious activities	No.		0	1	5	6	70
	Other buildings not elsewhere classified	No.		0	0	1	1	1
Hotel buildings	No.		0	0	0	0	1	
Communication buildings, stations, terminals and associated buildings	No.		0	1	2	3	9	
Unclassified	No.		0	1,878	1,816	3,694	25,420	
Transportation	Helipad	ha		0.0	0.0	0.0	0.0	0.0
	Airfield runways	km		0.0	0.0	0.0	0.0	1.4
	Highways	km		0.0	0.0	0.0	0.0	10.8
	Primary Road	km		0.0	0.0	0.0	0.0	47.9
	Secondary Road	km		0.0	0.0	2.3	2.3	61.2
	Local Road	km		0.0	0.0	8.5	8.5	446.6
	Cart Track	km		0.0	0.0	79.0	79.0	779.6
	No Driveway	km		0.0	0.0	0.2	0.2	133.4
	Long-distance railways	km		0.0	0.0	1.3	1.3	63.2
	Bridges and elevated highways	No.		0	0	0	0	11
Facilities	Settling Basin	ha		0.0	0.0	0.0	0.0	7.7
	Power plant constructions	ha		0.0	15.0	11.2	26.1	142.6
	Sport and recreation constructions	ha		0.0	31.3	0.0	31.3	125.6
	Other civil engineering works not elsewhere classified	ha		0.0	0.0	0.0	0.0	3.2
	Long-distance pipelines, communication and electricity lines	km		0.0	0.0	0.0	0.0	165.1
	Local pipelines and cables	km		0.0	0.0	0.0	0.0	5.1
			Very high damage	High damage	Moderate damage	Negligible to slight damage	Total affected**	Total in AOI
Land use	Arable land	ha	NA	NA	NA	NA	9,954.9	28,252.7
	Heterogeneous agricultural areas	ha	NA	NA	NA	NA	2,342.3	12,954.5
	Inland wetlands	ha	NA	NA	NA	NA	819.2	1,724.6
	Other	ha	NA	NA	NA	NA	300.5	2,263.3
	Permanent crops	ha	NA	NA	NA	NA	100.9	329.4
	Forests	ha	NA	NA	NA	NA	18.5	42.3
* Presence of damage proxies and proximity with destroyed/damaged asset								
** Sum of all damage classes								

\* Presence of damage proxies and proximity with destroyed/damaged asset

\*\* Sum of all damage classes

Disclaimer:

Full disclaimer and other helpful information available in the online manual:

<https://emergency.copernicus.eu/mapping/ems/online-manual-rapid-mapping-products>

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PROGRAMME OF THE  
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