



# *Overview of Regional Activities*



**Dr. Abdullah CEYLAN**  
Regional Director  
Turkish State Meteorological Service

Republic of Turkey  
The Ministry of  
Forestry and Water  
Affairs











## PRESENTATION OUTLINE



Administrative Structure



Topographic Conditions



Observation Network



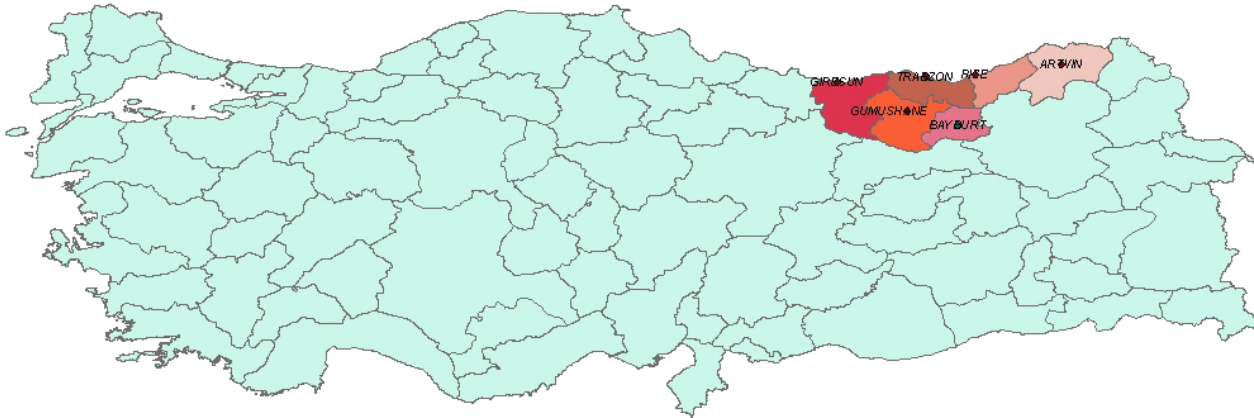
Research Studies







## Meteoroloji 11.Bölge Müdürlüğü (TRABZON)



0 70 140 280 420 560 km



**Meteorolojik Afetler Şube Müdürlüğü**

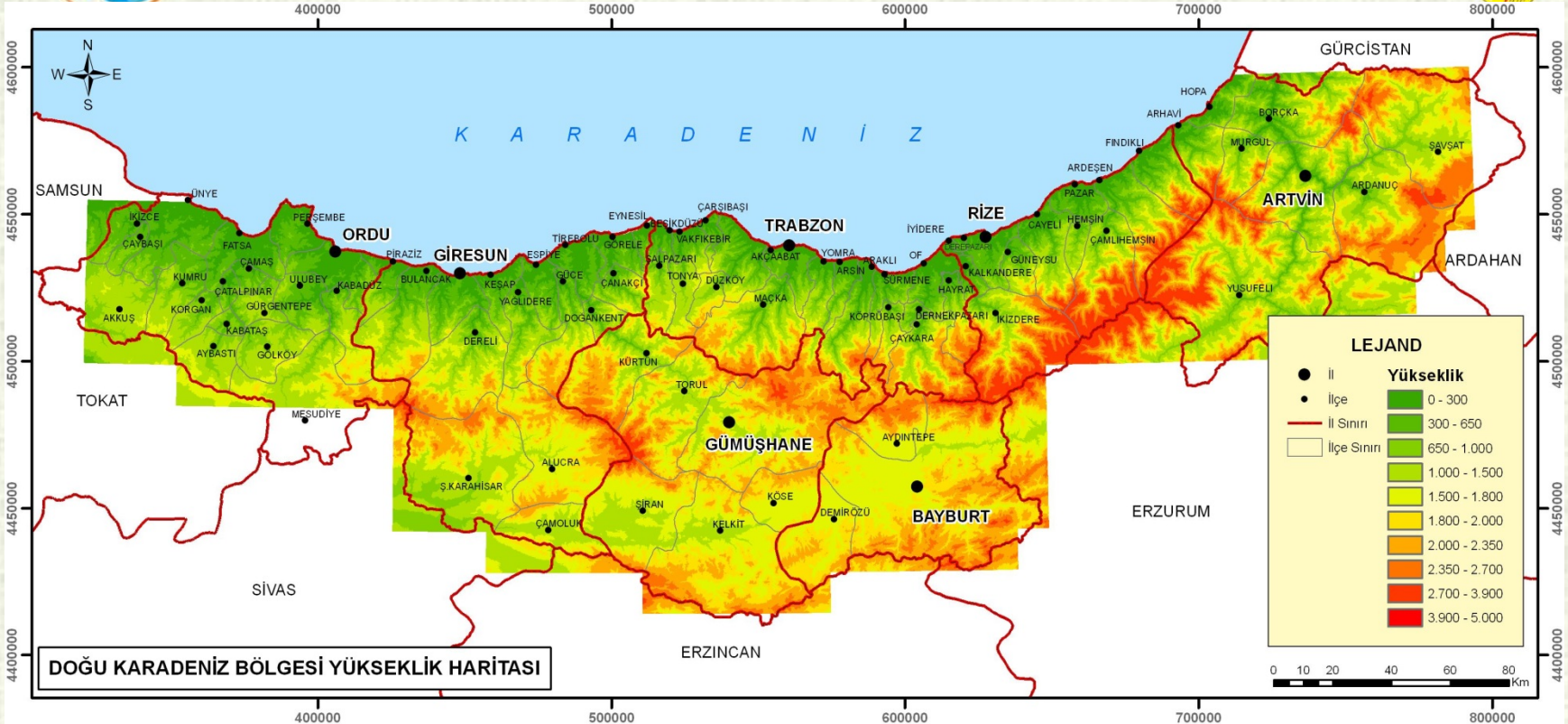
[afet@mgm.gov.tr](mailto:afet@mgm.gov.tr)





# Topographic Features

# TOPOGRAPHICAL CONDITIONS



- Very hard, sharply and suddenly changing topography
- Several micro-climatological regions
- Difficult for making the observations and weather forecasting



# TURKISH STATE METEOROLOGICAL SERVICE

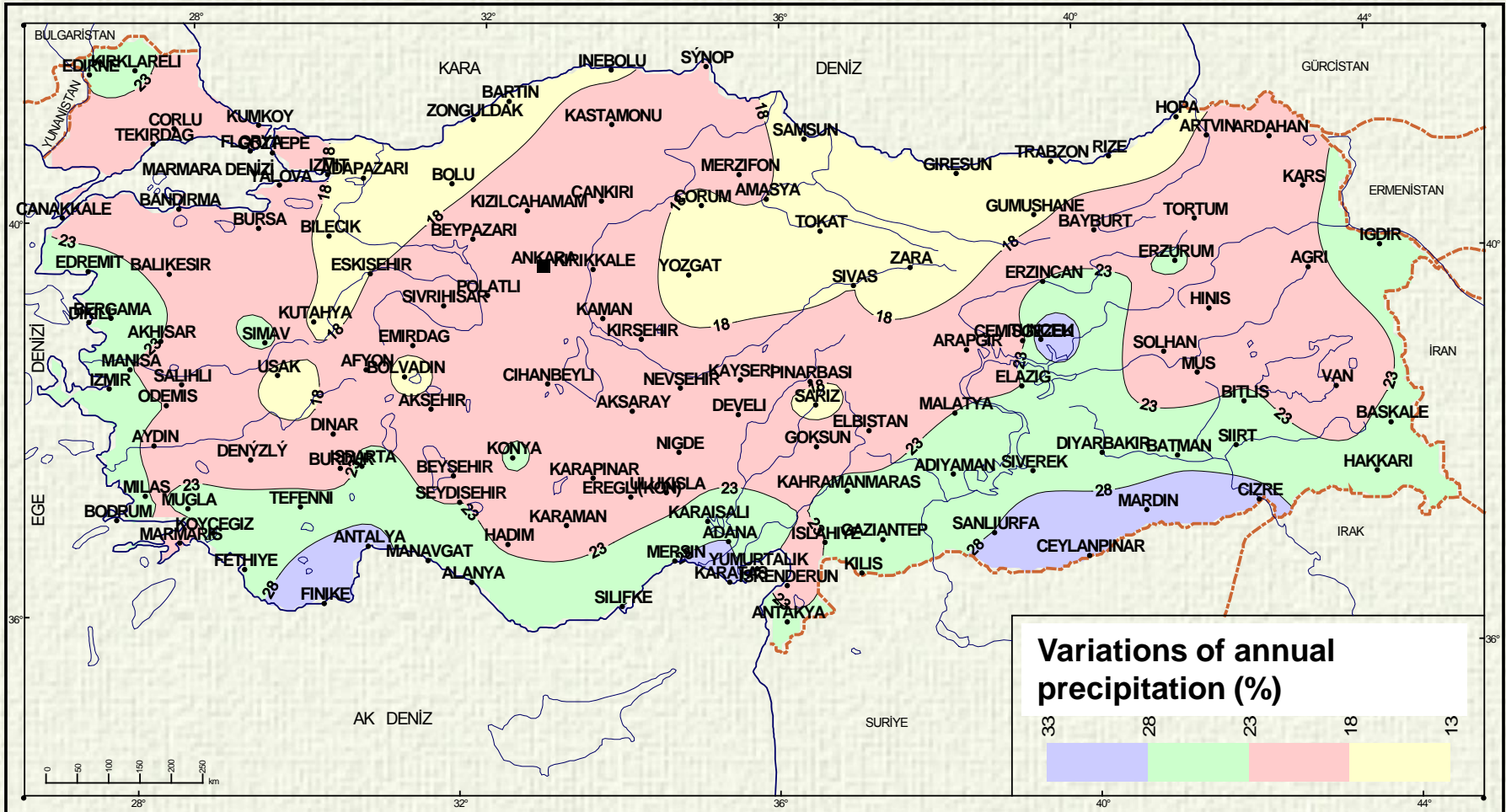


## PRECIPITATION NORMALS – SPATIAL DISTRIBUTION( 1981-2010 )

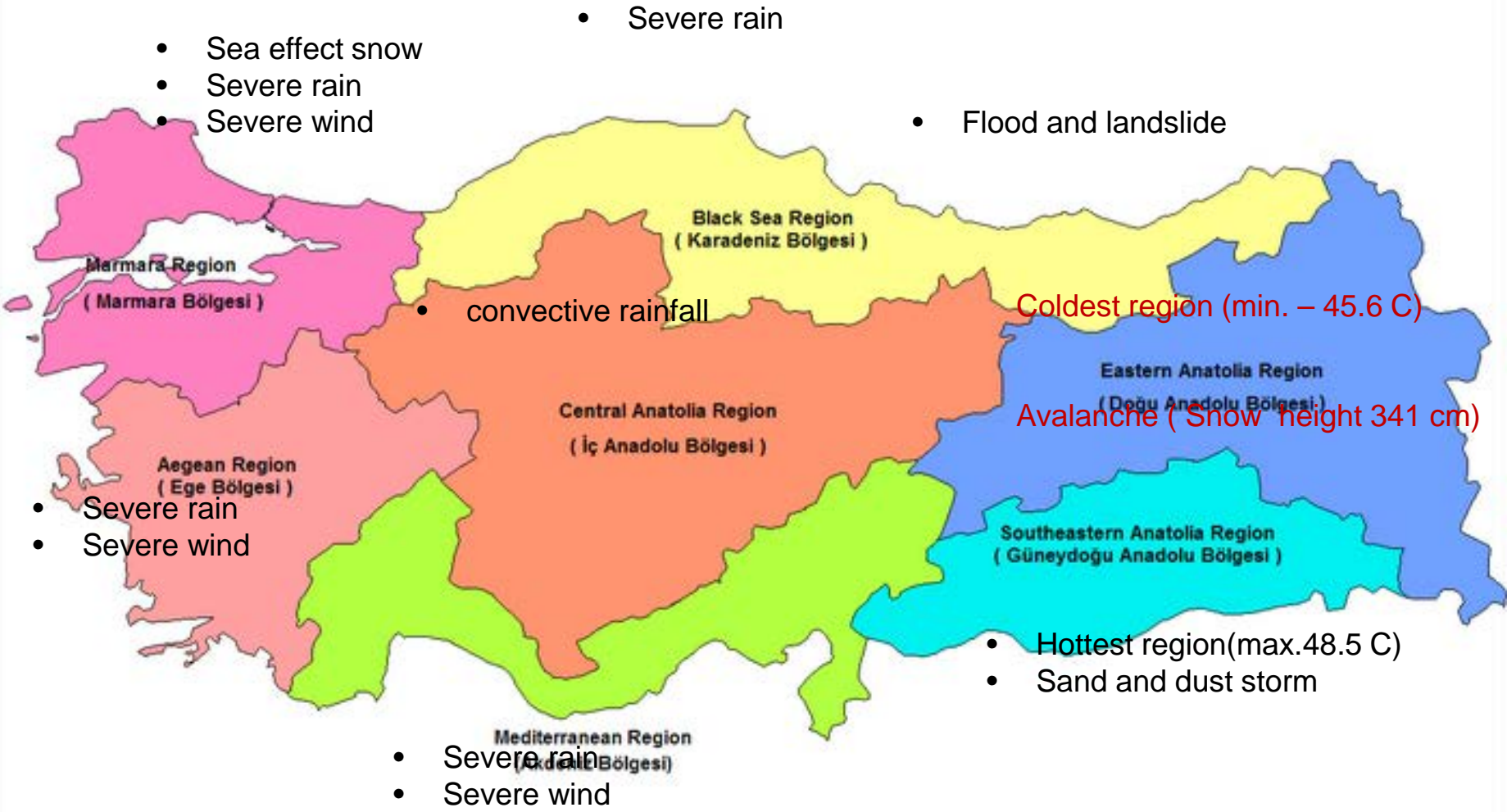


JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
67,3	62,9	60,4	59,0	49,1	30,8	16,7	13,9	21,7	49,2	70,0	78,3	574,0

# TURKISH STATE METEOROLOGICAL SERVICE





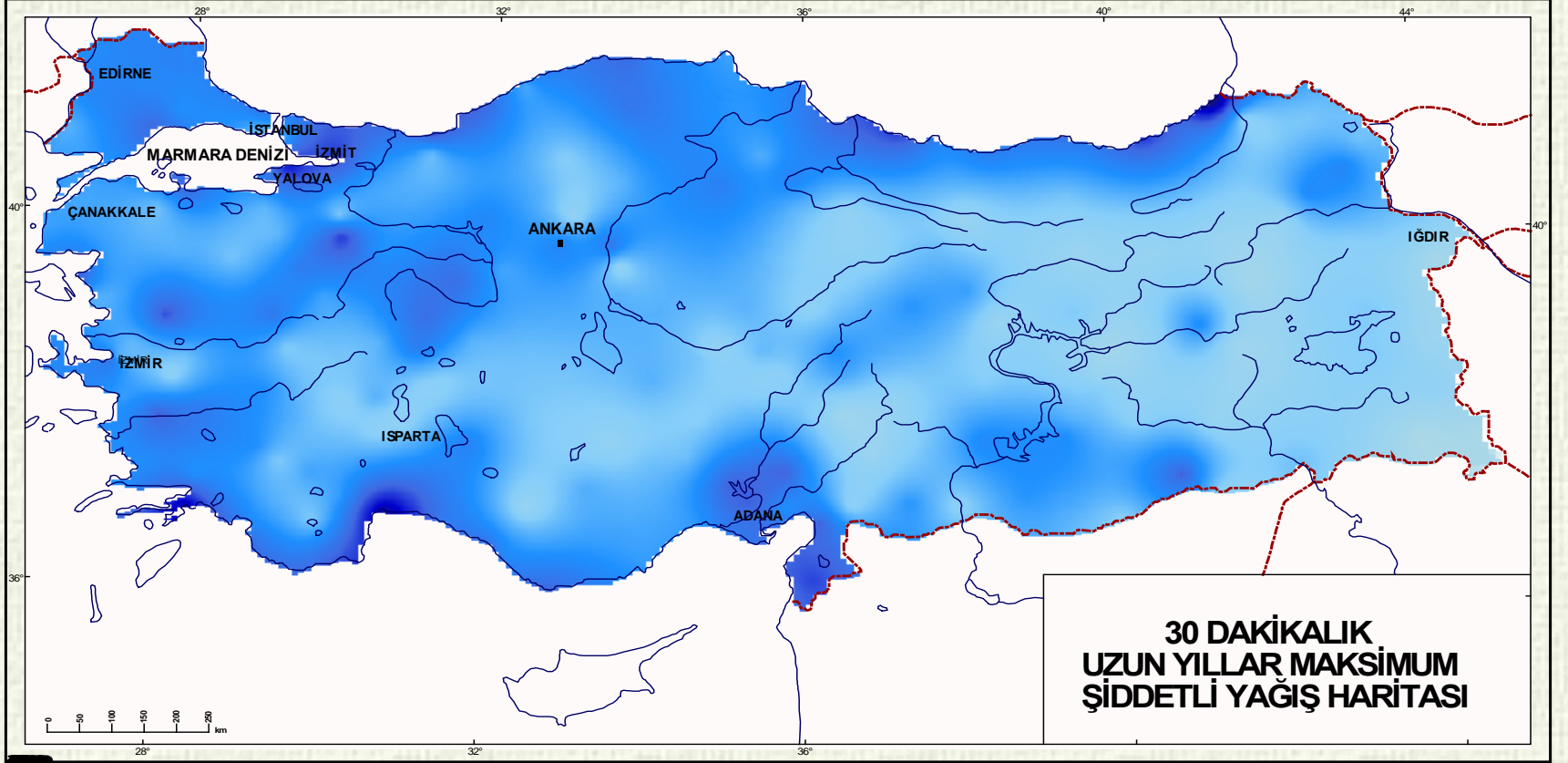


Province / Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AnnualA vg.
TRABZON	81,9	63,1	59,9	56,1	51,3	49,9	36	45,3	79,7	116,1	97,2	82,3	818,8
RİZE	233,1	186,3	161,9	96,5	94,9	135,8	152,8	194,9	255,1	295,8	258,3	238,7	<b>2304,1</b>
GİRESUN	127,5	101,5	97,5	76,1	66,8	77,5	79,4	89,5	129,2	164,7	151,9	126,8	<b>1288,4</b>
ARTVİN	85,8	72,3	60,8	54,2	52,2	50	30,9	29,6	37,5	61,4	77	88,5	700,2
BAYBURT	27,1	27,9	40,4	62,9	69,2	50	20,4	14,2	21,5	44,5	33,5	29,2	<b>440,8</b>
GÜMÜŞHANE	36,6	32,8	43,8	60,4	68	46,8	12,4	12,9	22,2	45,2	42,3	40,8	<b>464,2</b>





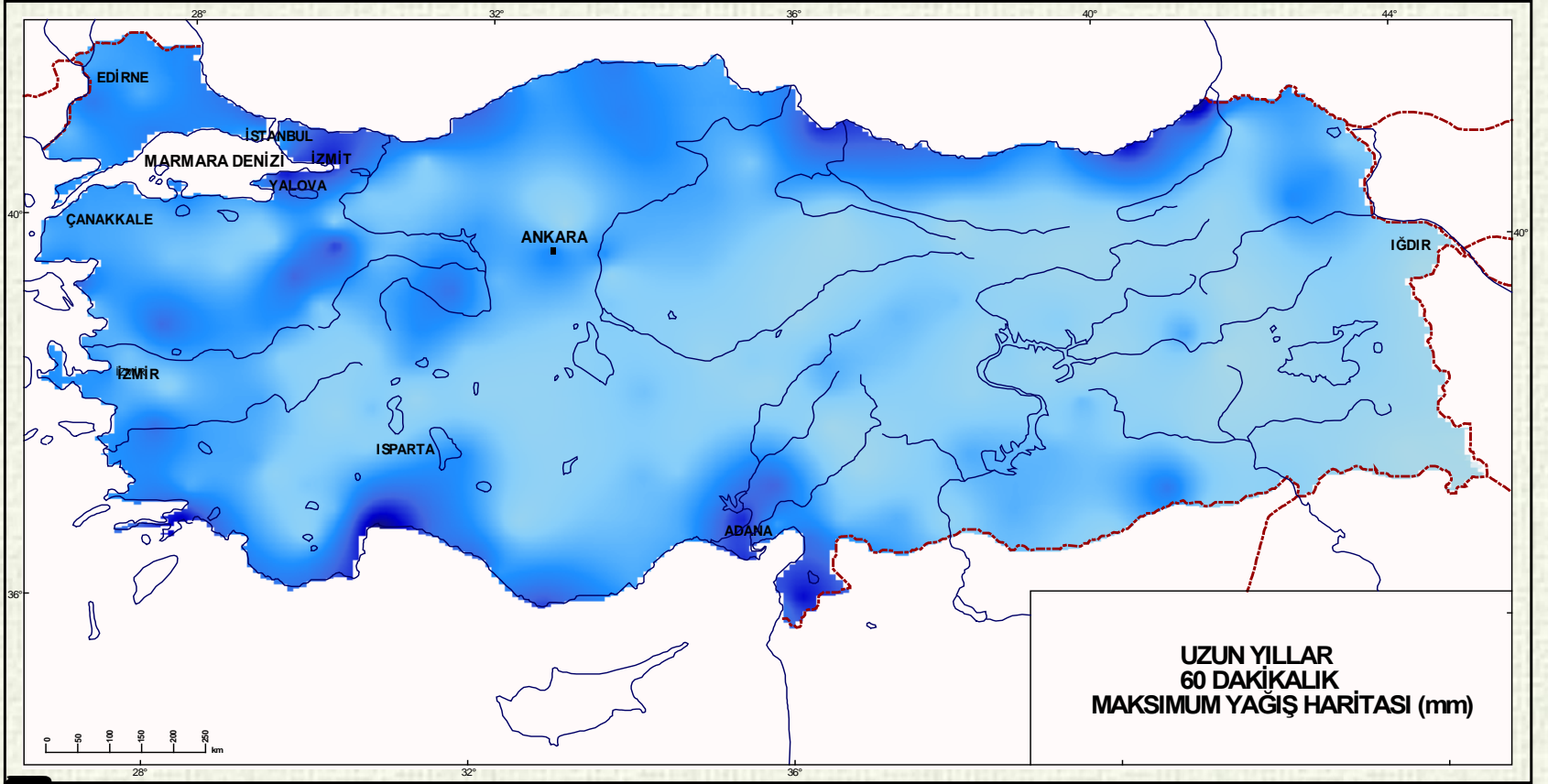
# KISA SÜRELİ MAKSİMUM ŞİDDETLİ YAĞIŞLAR – 30 DAKİKA



15 20 25 30 35 40 45 50 55 60 65 70 75 80 85



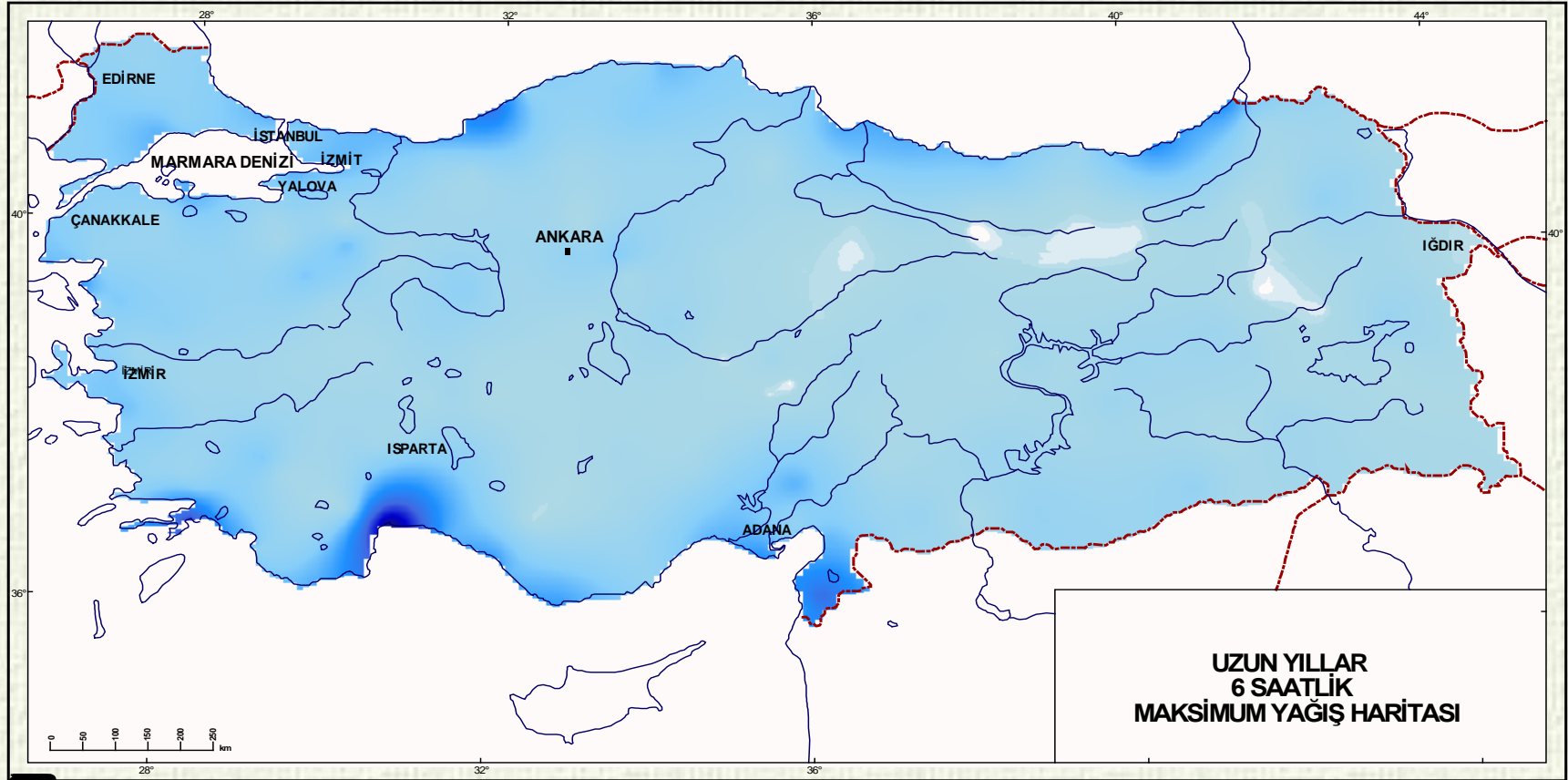
# KISA SÜRELİ MAKSİMUM ŞİDDETLİ YAĞIŞLAR – 60 DAKİKA



15 25 35 45 55 65 75 85 95 105 115 125



# UZUN SÜRELİ MAKSİMUM ŞİDDETLİ YAĞIŞLAR – 6 SAAT



40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380

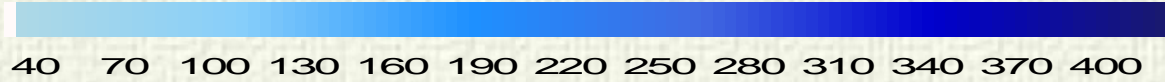
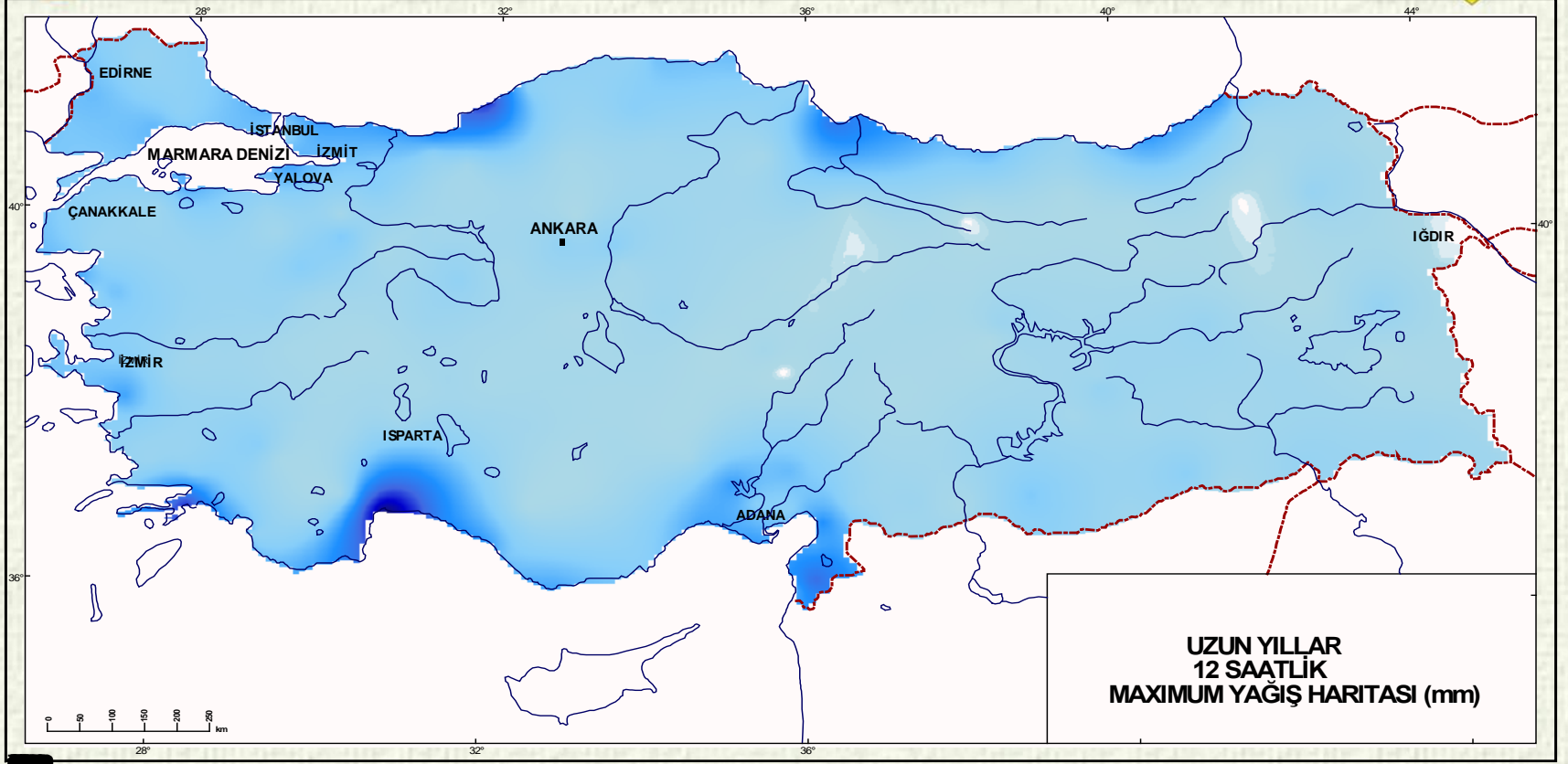




T.C.  
Orman ve Su İşleri  
Bakanlığı



# UZUN SÜRELİ MAKSİMUM ŞİDDETLİ YAĞIŞLAR – 12 SAAT

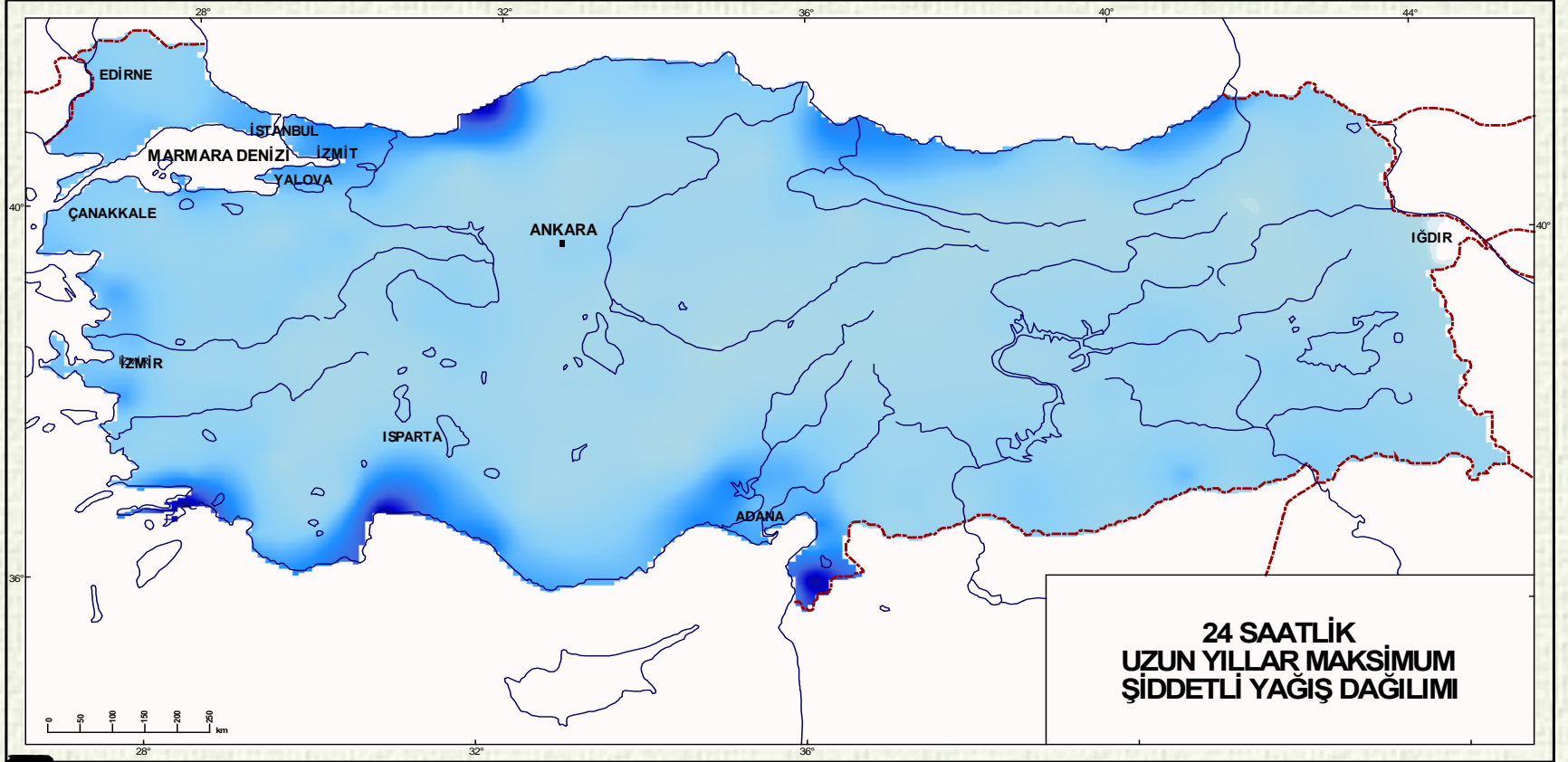




T.C.  
Orman ve Su İşleri  
Bakanlığı



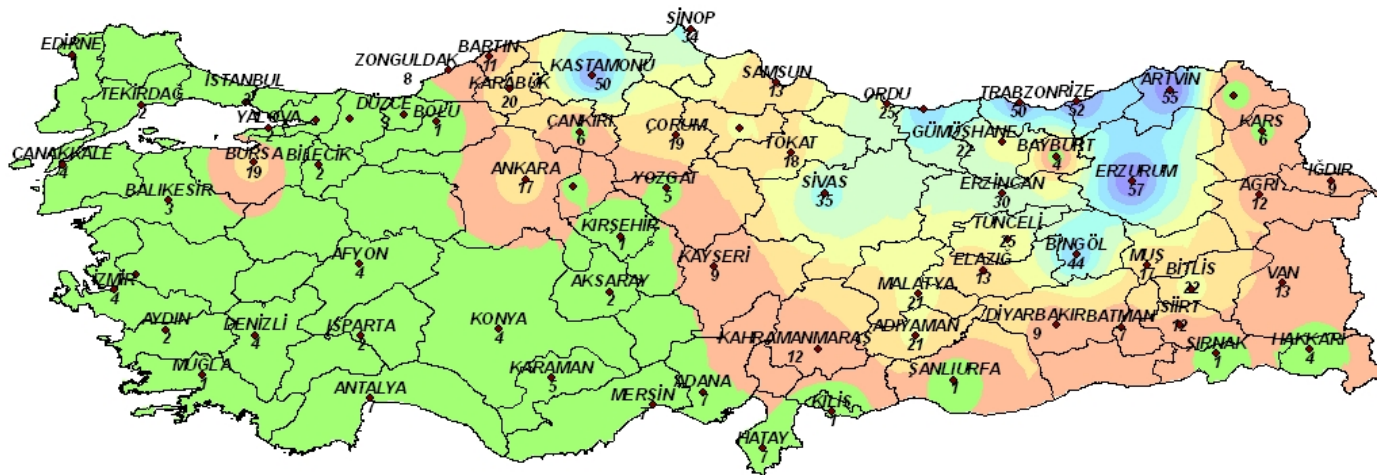
# UZUN SÜRELİ MAKSİMUM ŞİDDETLİ YAĞIŞLAR – 24 SAAT



40 70 100 130 160 190 220 250 280 310 340 370 400 430 460



## HEYELAN AFETİ GÖRÜLME SAYILARININ İLLERE GÖRE DAĞILIMI ( MEVSİMSSEL TOPLAM) (1950-2010)



0 80 160 320 480 640 km

Meteorolojik Afetler Şube Müdürlüğü



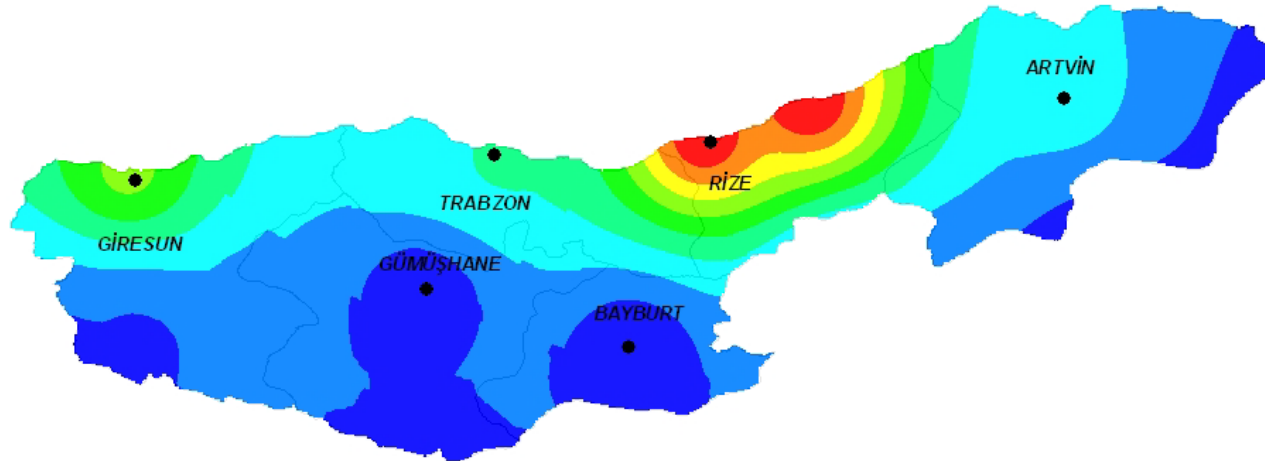
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# Recurrence Period Analysis

Meteoroloji 11.Bölge Müdürlüğü ( TRABZON )  
24 Saatlik Maksimum Yağışların 2 Yıllık Tekerrür Analizi



## 2 Yıllık Tekerrür

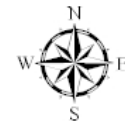
mm



29.1 - 33.2  
33.3 - 41.3  
41.4 - 49.4  
49.5 - 57.5  
57.6 - 65.6  
65.7 - 73.7  
73.7 - 81.7  
81.8 - 89.8  
89.9 - 97.9

0 25 50 100 150 200  
km

Meteorolojik Afetler Şube Müdürlüğü



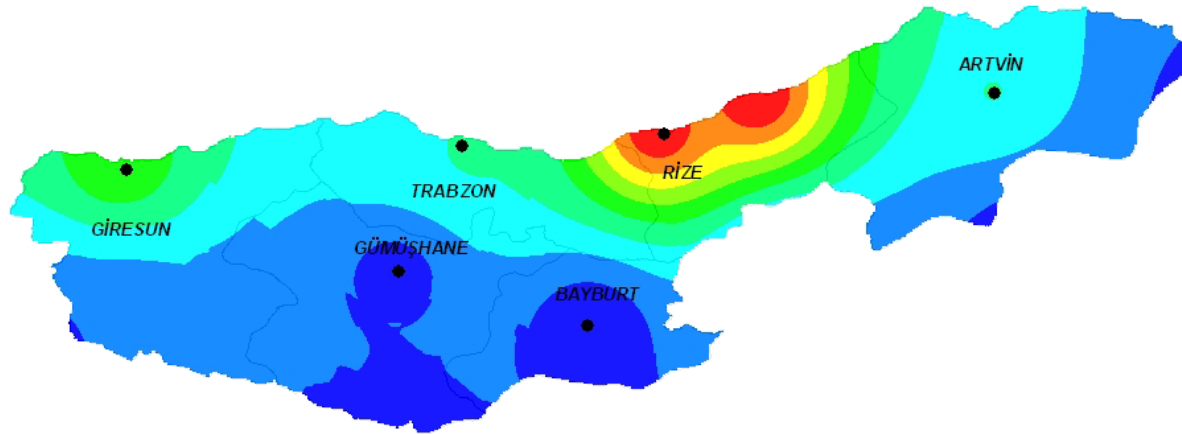
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# Recurrence Period Analysis

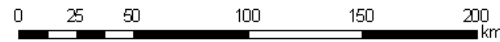
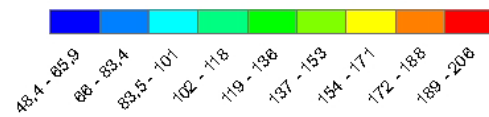


Meteoroloji 11.Bölge Müdürlüğü( TRABZON )  
24 Saatlik Maksimum Yağışların 100 Yıllık Tekerrür Analizi



100 Yıllık Tekerrür

mm



Meteorolojik Afetler Şube Müdürlüğü



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Artvin / Arhavi, Hopa and Borçka

25 August 2015



**8 people died, 17 people injured**



**222,0 kg/m<sup>2</sup> 24 hours**





## Beşikdüzü / Trabzon

22 September 2016

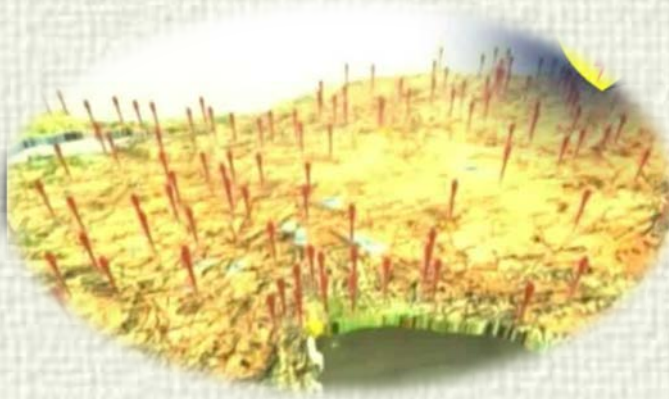


271,5 kg/m<sup>2</sup> 24 hours

2 people died



# Observation Network

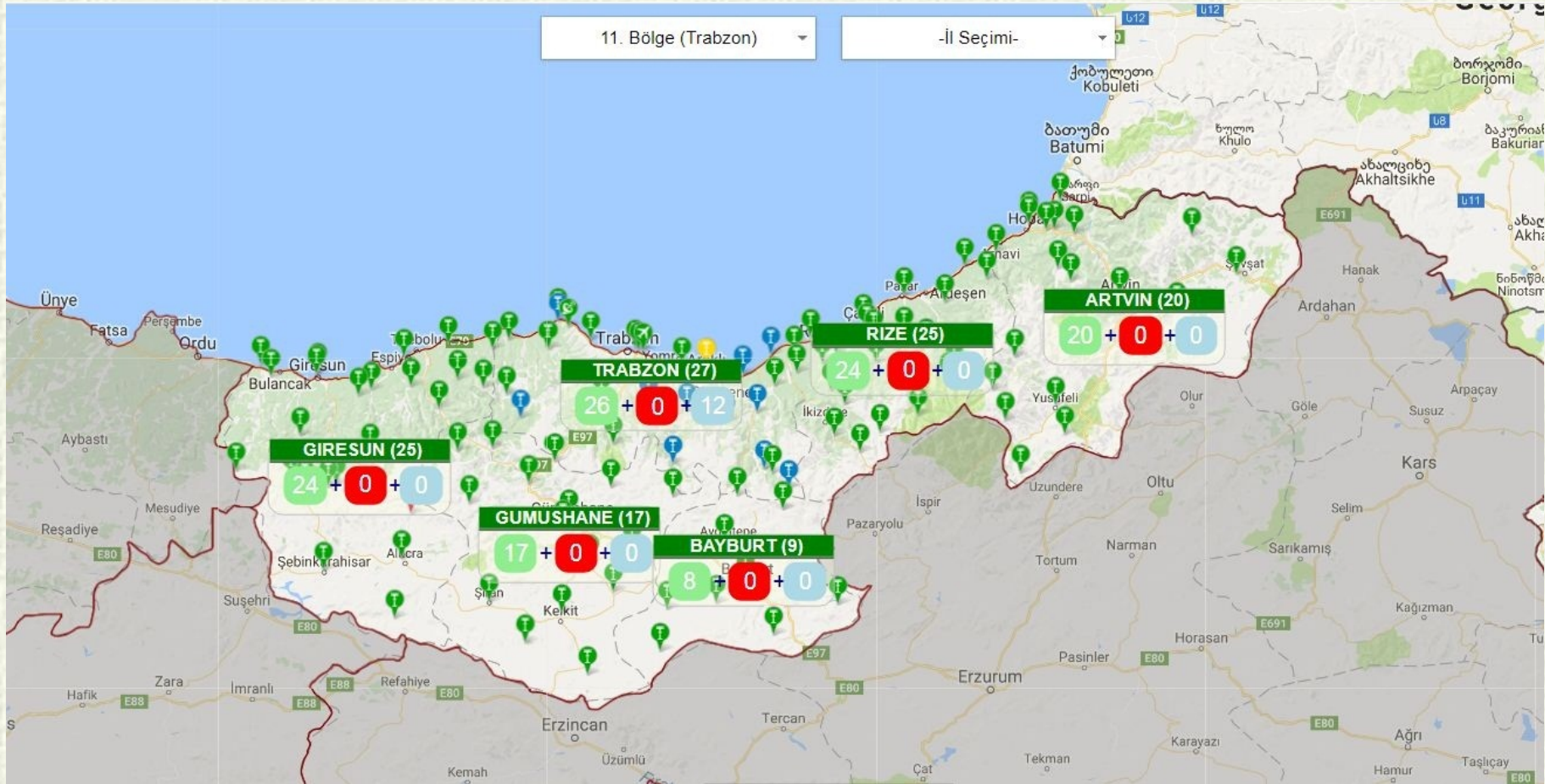








# AWOS Spatial Distribution 11<sup>th</sup> Regional Directorate





# 11<sup>th</sup> Regional Directorate



Province	AWOS	M-AWOS	A-AWOS	RADAR	Lightning Detection	Mo-OMGİ
Trabzon	22	3	1	1		1
Artvin	19	1				
Bayburt	9					
Giresun	23	2				
Gümüşhane	17					
Rize	24	1			1	
<b>TOTAL</b>	<b>114</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

























# 11<sup>th</sup> Regional Directorate

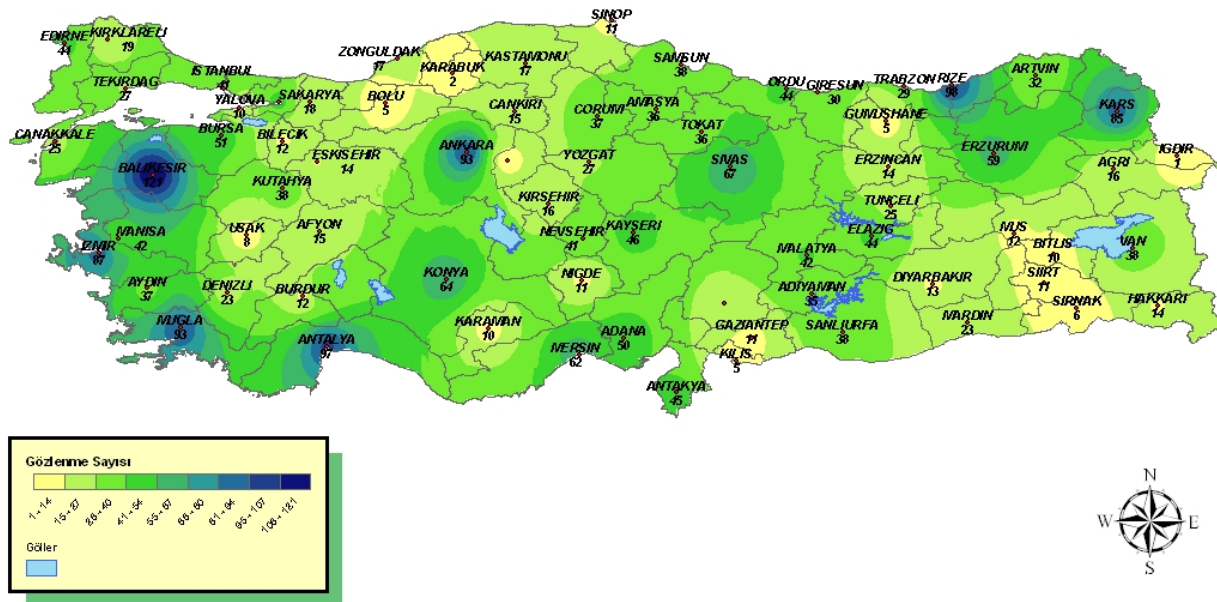


## AWOS in Harsit River Basin

Station Name	Lat.	Long.	Elevation
Sarginkaya	40.3608	39.7375	1814 m.
Gümüşhane	40.4598	39.4653	1216 m.
Süleymaniye	40.4274	39.4397	2227 m.
Torul	40.5686	39.2989	1009 m.
Kürtün	40.6825	39.1456	739 m.
Kürtün- Elceğiz	40.6750	38.9936	1931 m.
Doğankent	40.8106	39.9128	117 m.
Güce	40.9015	38.8040	390 m.
Tirebolu (Sahilde)	40.9775	38.7658	5 m.

# Flood Hazards / No. of occurrence

## SEL-TAŞKIN-ŞİDDETLİ YAĞIŞ AFETLERİ 1940-2010 YILLARI ARASINDAKİ GÖZLENME SAYILARI



Meteorolojik Afetler Şube Müdürlüğü

afet@mgm.gov.tr





# RECORDED EXTREME VALUES (1926 – 2016 ) - Trabzon

## Ext. Max. Temp.



**38,2**

**25.05.1941**

## Ext. Min. Temp.



**-7.4**

**09.02.1929**

## Max. Rainfall (24 Hours)



**115.1 mm**

**10.07.1992**

## Max. Snow Height



**115 cm**

**15.01.1950**

## Max. Wind



**116.3 km/saat**

**12.03.1968**





# Thank you for your kind attention...



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