



## I.R.IRAN NATIONAL REPORT for 26th session of

## **Coordination committee of Hydrometeorology of Caspian sea (CASPCOM)**

### Baku, Azerbaijan,1 Mar 2023







سازماننقشهبردارىكشور













Marine meteorological stations

1. Development of measurement network in southwestern coast of Caspian Sea

#### Mazandaran

Two meteorological stations are being built in Izadshahr Noor and Tonkabon near the sea and with direct access to the sea. These two stations are equipped with fully automatic stations and all communication lines.



Synoptic Station for the Caspian Coast





Coastal and marine meteorological monitoring network of Mazandaran province





#### Gilan

Monitoring of weather conditions on the southwestern shores of the Caspian Sea is done using the information obtained from 6 satellite stations located in the coastal province of Gilan. Investigations of long-term climatic fluctuations in this region are carried out using stations that are more than 30 years old and include Bandar Anzali and Rasht stations. The development and automation program of this monitoring network is underway in the coming years, and in this regard, two anemometer stations have been purchased for Astara and Lisar regions, which are in the setting up phase. The comprehensive plan for the development of coastal and marine stations in Gilan province can be shown in the figure.





Development of marine meteorology observation, Noor and Tonkabon, Mazandaran Province



#### 2-3- Meteorological Radar

#### Kiyashahr Meteorological Radar



Development of measurement network in southern coasts of Caspian Sea





- Golestan
- Location of the new automatic marine station in Golestan Mian Qale area:
- Considering the importance of the Caspian Sea and Gorgan Gulf in the environmental climate, health and economy of Golestan province, monitoring weather conditions and measuring and recording marine physical and chemical data and preparing a database of these data to analyze and review existing conditions and estimating the future conditions is very necessary for accurate planning in various fields related to it. Therefore, in addition to the conducted investigations and field research, and considering that most of the marine activities of fly fishing and sturgeon fishing in Golestan province are carried out in the Mian Qale region.





On the other hand, the lack of marine data in the region is one of the major problems in conducting research and marine studies and the accuracy of marine forecasts. After research and field studies in the region, the need of the province to build an automatic marine station was felt, and the preliminary studies were carried out and the location of the marine weather station was determined and the installation and commissioning stages of the station were carried out. Marine meteorology is being carried out in the Mian Qala area, the fishing center of Golestan province, with the follow-up of the General Director of Golestan Meteorology.





## Moving Farid Pak Gamishan Marine Station:













Marine Meteorological Buoys



#### Marin Meteorological Noshahr Buoys



سازمان مواشناسی I. R. OF IRAN

METEOROLOGICAL

• maximum wave height







• maximum wind speed









## • Caspian Sea Level (2000-2022)



According to the above diagram, the water level of the Caspian Sea has decreased by 1 meter during the mentioned years. Also, in 2022, the water level of the Caspian Sea has reached -27.34 meters, which shows a decrease of -32 cm compared to the previous year.

ience Centre

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METEOROLOGICAL



I.R.IRAN NATIONAL REPORT for 26th session of Coordination committee of Hydrometeorology of Caspian sanic & Almospheri ience Centre Baku, Azerbaijan, 1 Mar, 2023

Study of precipitation in southern coasts of Caspian Sea (2021-2022) Graph of the Precipitation the coastal stations of the Caspian Sea in 2021-2022 1313,01320,7 1400,0 1200,0 937.1 1103.44 1000,0 mm 800.0 600,0 529.5 503,61 400,0 Study and 200.0 0.0 SarilDasht." Bandart-Gal Babolsar Bandart 331031.5. Ramsar Bandart research — – Линейная (Prc) Anomaly of the Precipitation of the Prc normal Caspian Sea coasts (2021-2022)  $R^2 = 0,9238$ **Caspian Sea** Precipitation anomaly of the coastal provinces of the Caspian Sea 788.92 Low - 703 218 0 55 110 220 Kilometers 

sea (CASPCOM)

سازمان هواشناسی

I. R. OF IRAN METEOROLOGICAL ORGANIZATIC



• Investigating the humidity of stations on the southern of the Caspian Sea







• Investigating the evaporation of stations on the southern of the Caspian Sea







• Investigating the temperature of stations on the southern of the Caspian Sea



## Graph of the Evaporationof the coastal stations of the Caspian Sea in 2021-2022







 Investigating the maximum temperature of stations on the southern of the Caspian Sea









 Investigating the minimum temperature of stations on the southern of the Caspian Sea









Caspian National Day was held virtually on August 13, 2022 by the Environmental Protection Organization. The lectures are as follows:



Caspian Sea National Day





Caspian Sea National Day Mrs. Dr. Bani Hashemi stated that the Caspian Sea monitoring system has been established in that center since 2019, that this system is in cooperation with the five countries bordering the Caspian Sea and they share their data in this system. This year, they pointed out that the reason for this is the decrease in the flow of water from the Volga River to the Caspian Sea. In order to protect the environment of the Caspian Sea, the Marine Geological Organization of the country has started maps of sedimentary geochemistry and environmental pollutants of the coastal and shallow areas of the Caspian Sea on a scale of 150,000. It covers the Caspian Sea. In addition, Caspian Sea water level fluctuations and its impact on coastal sediments and geophysical data collection are being implemented





Marine prediction Marine TAHAK and aims of its institution In order to implement the Applied Meteorological Development Plan (Tahak) in the seaplane section, seven steps are considered below:

- 1. Identify the end users of the Marine Tahak (including the list of individuals and groups of applications)
- 2. Requirements for marine users, such as completing the need-assessment form (design by total chart) and resource-based identification
- 3. Production of marine data and product
- 4. Ways to communicate with end users
- 5. Capacity building
- 6. Survey based on the feedback form designed by the General Directorate
- 7. Documentation and Value Added





Sample of proceeding form of marine "TAHAK" for capacity building and needs assessment







**Marine prediction** Marine TAHAK and aims of its institution

In session held at 97/09/07 at RADAR station of Amirabad port







مرکز علوم جوی و اقبانوسی Construct & Admonspheric Science Center			Marine Weather Bulletin Gilan						
_	12-Hours Marine Forecast From Sat 09-24-2022, 08 To Sat 09-24-2022, 20								
SYNOPSIS:									
	Astara	Istara							
Visibility LES Condition SE		NEARSHORE		OFFSHORE					
		LESS THAN 2.2 nmi LOC		LESS THAN 2.2 nmi LOC					
		SEMI CLOUDY TO CLOUDY/THUNDER & SH LOC		SEMI CLOUDY TO CLOUDY/THUNDER & SH LOC					
I	Wind Dir & Spd	W TO NE	20 Knot	N 22 Knot					
I	Wave Height 5FT			8FT					
I	Water Temp 25C			25C					
I	Outlook	DECR 5 Hpa THEN INCR 1 Hpa - MODERATE WAVES		DECR 5 Hpa THEN INCR 1 Hpa - LARGE WAVES					
ſ	Anzali, Kiashahr								
Ì			NEARSHORE	OFFSHORE					
Visibility		LESS THAN 2.2 nmi LOC		LESS THAN 2.2 nmi LOC					
I	Condition P.CLOUD Wind Dir & Spd W TO NE		Y TO CLOUDY/THUNDER & SH LOC P.CLOUDY TO CLOUDY/THUNDER &		UDY/THUNDER & SH LOC				
I			22 Knot	N 24 Knot					
Wave Height 5FT		5FT		8FT					
Water Temp 26C		26C		26C					
Outlook DECR 5 Hpa THEN INCR 1 Hpa - MODERATE DECR 5 Hpa THEN INCR 1 H		INCR 1 Hpa - LARGE WAVES							
ſ	Chamkhaleh, Roo	odsar							
1			NEARSHORE	OFFSHORE					
Visibility Condition Wind Dir & Spd Wave Height		LESS THAN 2.2 nmi LOC		LESS THAN 2.2 nmi LOC					
		P.CLOUDY TO CLOUDY/THUNDER & SH LOC		P.CLOUDY TO CLOUDY/THUNDER & SH LOC					
		W TO N 24 Knot		W TO N 28 Knot					
		5FT		8FT					
	Water Temp	26C		26C					
Outlook		DECR 5 Hpa THEN INCR 1 Hpa - MODERATE WAVES		DECR 5 Hpa THEN INCR 1 Hpa - LARGE WAVES					

Forecaster: samira mohammadi











Training and support of sea Tahak users (fly fishers) during the fishing season:













مرکز علوم جوی و اقیانوسی Oceanic & Atmospheric Science Center		Marine Weather Bulletin Gilan							
12-Hou	urs Mari	ne Forecast From Mon 08-29-2	022, 20 To Tue	08-30-2022, 08					
Astara									
		NEARSHORE	OFFSHORE						
Visibility	2.2-4.4nm	ii LOC	2.2-4.4nmi LOC						
Condition	CLEAR T	O P.CLOUDY/CLOUDINESS INCR OCNL	CLEAR TO P.CLOUDY/CLOUDINESS INCR OCNI						
Wind Dir & Spd	SE TO W	12 Knot	SE TO W 12 Knot						
Wave Height	1.5FT		2FT						
Water Temp	29C		29C						
Outlook	INCR 2 H	pa - SMALL WAVELETS	INCR 2 Hpa - LARGE WAVELETS						
Anzali, Kiashahr									
		NEARSHORE	OFFSHORE						
Visibility	1.7-4.4nm	ii LOC	1.7-4.4nmi LOC						
Condition	CLEAR T	O P.CLOUDY/CLOUDINESS INCR OCNL	CLEAR TO P.CLOUDY/CLOUDINESS INCR OCNI						
Wind Dir & Spd	Dir & Spd E TO SW 14 Knot E TO S 14 Knot								
Wave Height	1.5FT		2.5FT						
Water Temp	29C		29C						
Outlook	INCR 2 H	pa - SMALL WAVELETS	INCR 2 Hpa - LARGE WAVELETS						
Chamkhaleh, Ro	odsar								
		NEARSHORE		OFFSHORE					
Visibility	sibility 2.8-5nmi		2.8-5nmi						
Condition	Ition CLEAR TO P.CLOUDY/CLOUDINESS INCR OCNL CLEAR TO P.CLOUDY/CLOUDINESS INC		IDY/CLOUDINESS INCR OCNL						
Wind Dir & Spd	E TO SW 14 Knot E TO S 14 Knot								
Wave Height	1.5FT		2.5FT						
Water Temp	29C		29C						
O all a all	INCR 2 H	Da - SMALL WAVELETS	INCR 2 Hpa - LARG	E WAVELETS					

Forecaster: samira mohammadi











- Report of Anzali lagoon

The effects of decrease water level of the Caspian Sea and the coasts of Iran

Factors of Bandar Anzali lagoon drying up Unfortunately, the drying factors of Anzali lagoon cannot be reduced to one or two specific cases. This crisis did not arise in the last few years and it is not limited to one or two cases of wrong policies. Another issue that makes this crisis more sad is that the destruction of the environment and the disturbance in the cycle of the ecosystem will not be resolved soon; Even if citizens and officials suddenly decide to fix the problems. But there is still hope and the right solutions can be applied to the Anzali lagoon drying crisis.





- Anzali lagoon environmental crisis
- Anzali lagoon wildlife







• The depth of Bandar Anzali lagoon from April 1400 to July 1401 at four fixed points (meters)

Month	Pol ghazian	Talabe gharb	Sarkhankal	Pirbazar
Apr	4	1.2	0.8	0.4
May	6	1.1	0.6	0.5
Jun	4	1.3	0.7	0.2
Jul	6	0.5	0.4	0.4
Aug	4.5	0.6	0.4	0.5
Sep	5	1	0.9	0.6
Oct	4	1.3	0.7	0.2
Nov	4	1.3	0.7	0.2
Dec	6	1	1	0.5
Jan	4	1.3	0.7	0.2
Feb	4.5	1.2	0.8	0.3
Mar	5	0.8	0.6	0.8
Apr	5.5	0.9	0.6	1
May	5	0.6	0.4	0.6
Jun	5	0.5	0.5	0.75





• The depth of Bandar Anzali lagoon at fixed points determined on the map (based on meters) - 05/13/1401







 The depth of the Bandar Anzali wetland at a fixed point in a period of about 6 years (2016 to 2022)





Abkenar WLM

The above pictures are related to a platform at a fixed point, with a measure installed on the platform and in a period of about six years, the depth of the lagoon is about 60 cm.





#### Report of Gorgan Gulf







• The drying up of Gorgan Bay in the spring of 1400









# Thankyou