

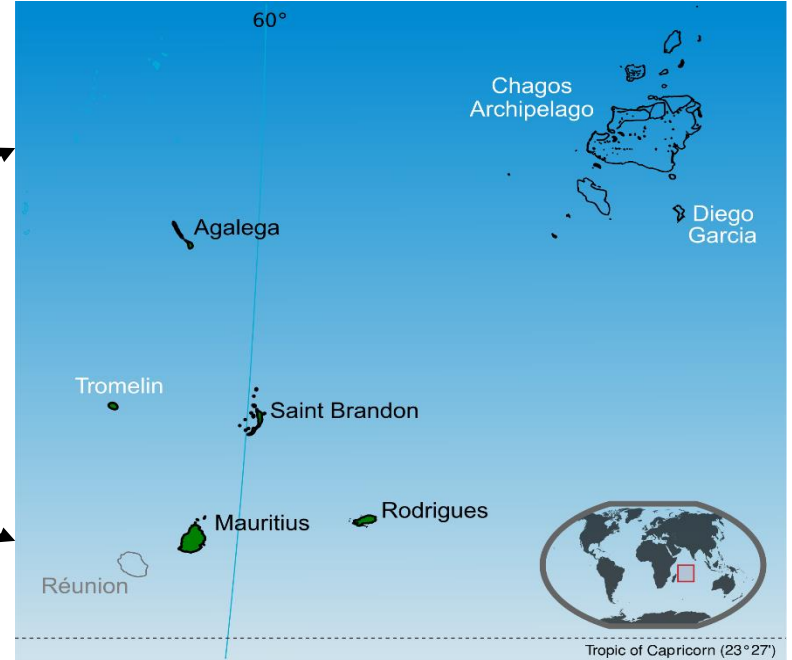
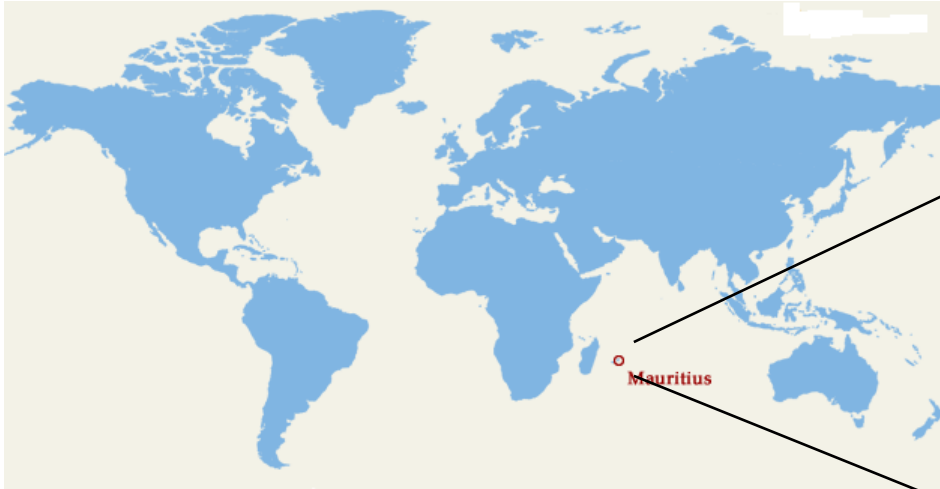
Ocean observation systems in the Republic of Mauritius

Krisna BUCHA

Mauritius

07 June 2022

Republic of Mauritius



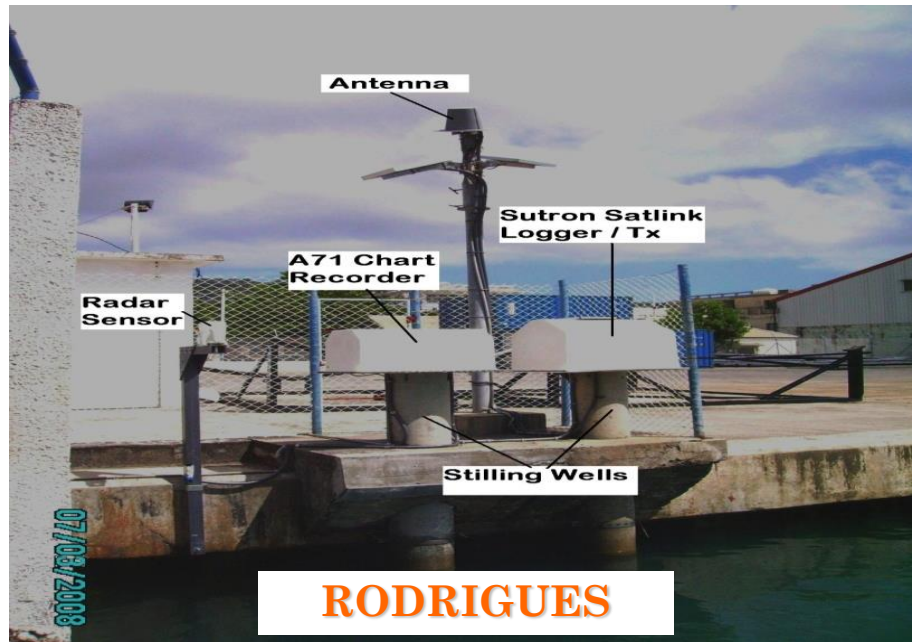
- Rep of Mauritius Includes the island of Mauritius, Rodrigues, the island of Agalega, and St. Brandon.
- Sovereignty: Chagos Archipelago and Tromelin
- Area: 2040 Sq Km (EEZ: 1.9 million Sq Km)
- Capital city: Port-Louis.
- Population: 1,266 Million (2020 estimate).



NETWORK OF TIDE GAUGES





Tide gauges at Port Louis, Blue Bay, Agalega and Port Mathurin monitor sea-level variations in the region.



Sea Level Monitoring

Sharing of real time sea level data

SEA LEVEL STATION MONITORING FACILITY

Intro
Map
Station lists
Station details
Services & FAQ
GLOSS
Catalog

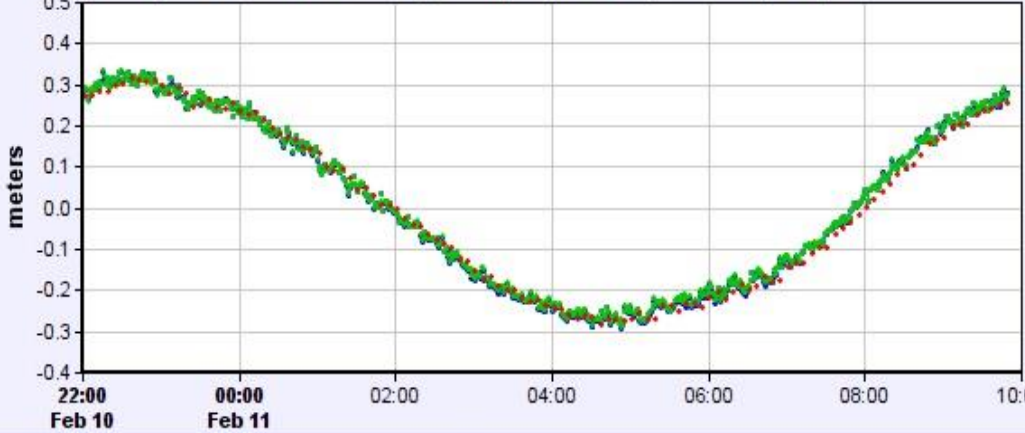
[previous station]
Station Pt.Louis at GMT
[next station]

[more details]
[GTS message]
[show data]
[show on map]
[monitor]

Station metadata	
Code	ptlu
Country	Mauritius
Location	Pt.Louis
Status	Operational
Local Contact	Mauritius Meteorological Services (Mauritius)
Other Contact	University of Hawaii Sea Level Center (USA)
GLOSS ID	18 [goto handbook]
QC data	UHSLC 103 (1942-2018) PSMSL 1673 (1986-2018) PSMSL 477 (1942-1965)
Latitude	-20.15716
Longitude	57.5043
Connection	GTS message
GTS message type	SXXX32
Sensor 1	
Type of sensor	prs (pressure)
Sampling rate (min)	1
Sensor 2	

Sealevel at Pt.Louis station (offset: 6.3485 m)

• enc (float sensor with encoder)
• prs (pressure)
• rad (radar)

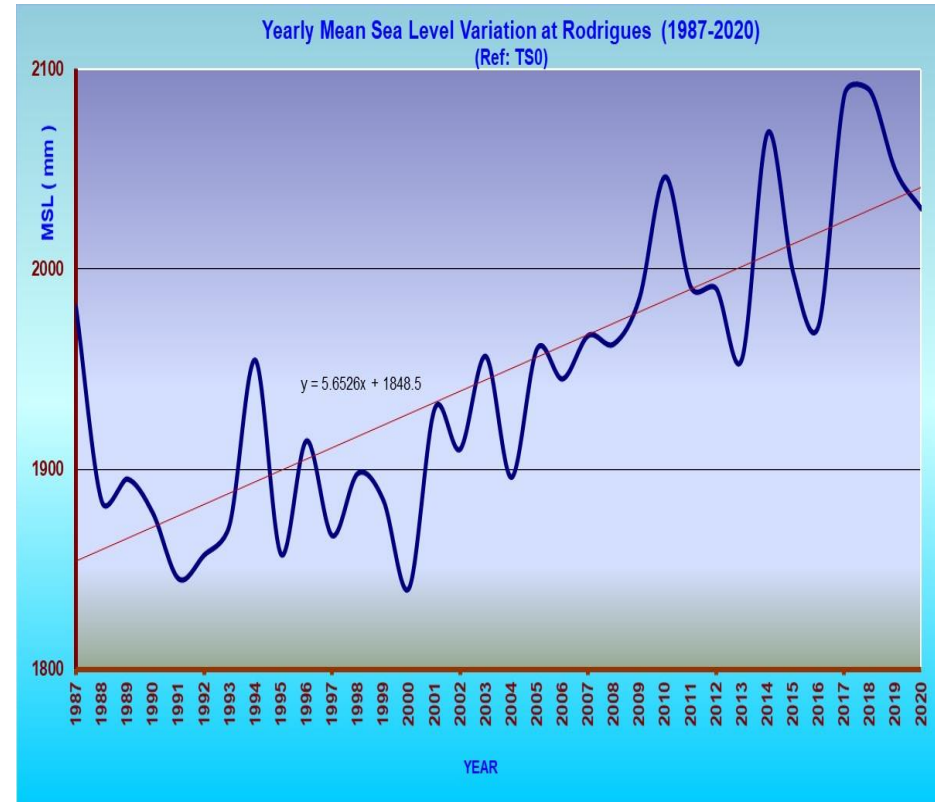
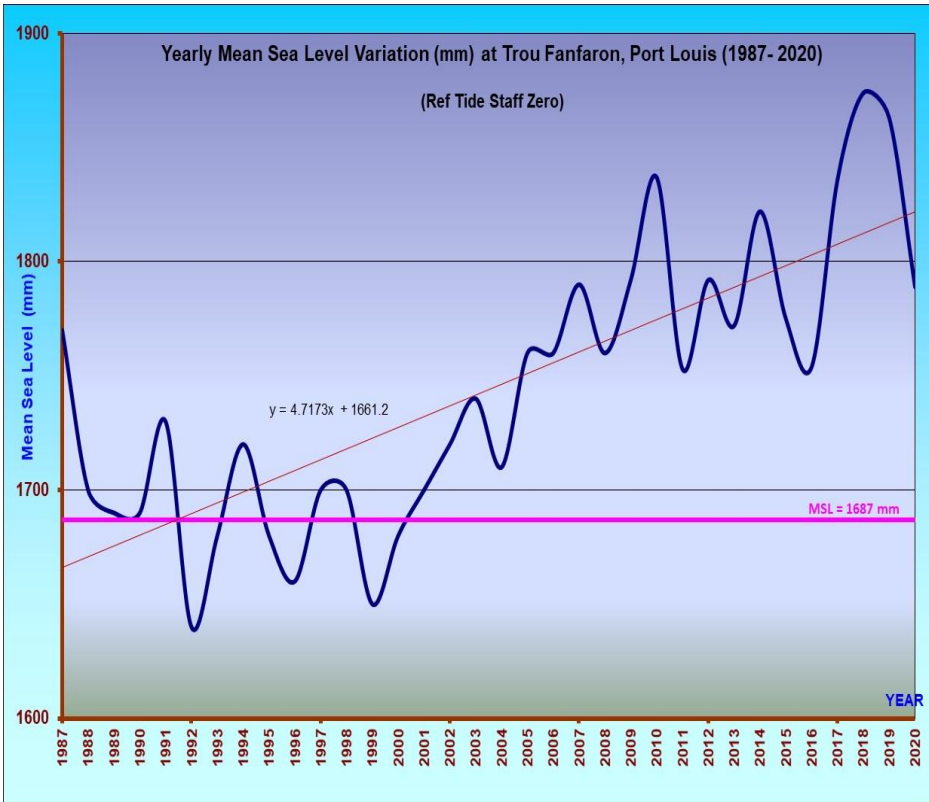


22:00 Feb 10
00:00 Feb 11
02:00
04:00
06:00
08:00
10:00

From 2020-02-10 22:00+00:00 to 2020-02-11 10:00+00:00
© IOC-VLIZ

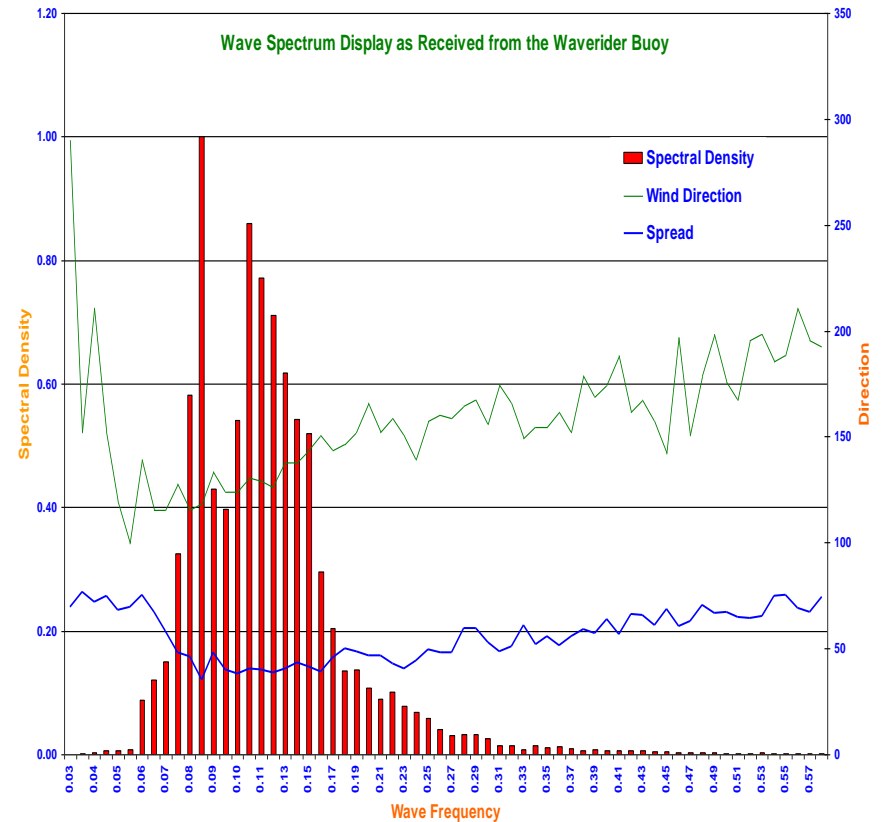
Period	Signals	Data
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<input checked="" type="radio"/> 12h		

Evidence of Sea Level Rise



WAVERIDER

The directional wave rider is a spherical, 0.9 m diameter buoy measuring wave height, wave direction and sea surface temperature at about 1 km off the SE coast of Blue Bay since August 1996. The data generated is used to forecast the state of the sea especially for the local fishermen.



Monitoring of High Waves



Argo floats and Drifters to monitor the ocean

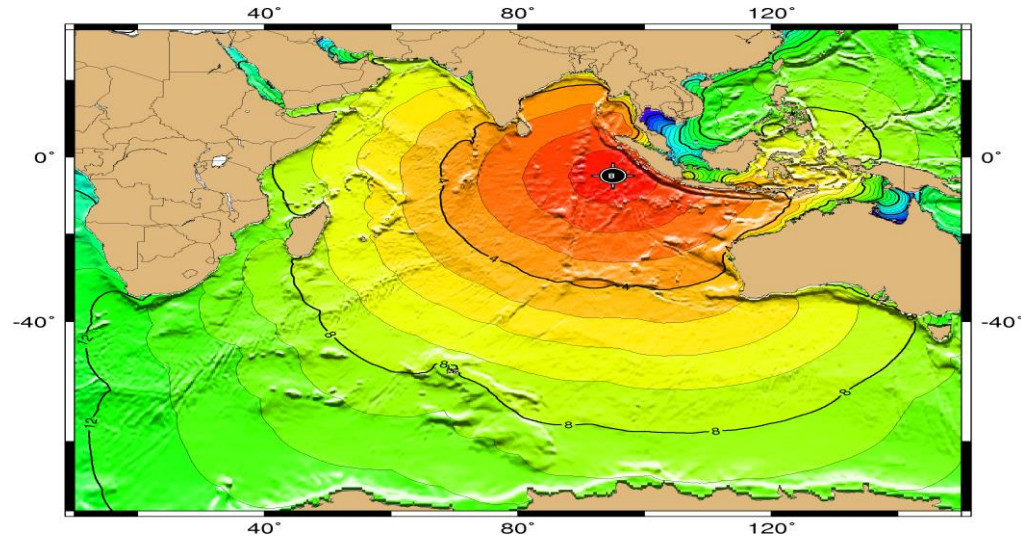


Deployment of profiler floats of the Array of Real time Geostrophic Oceanography (ARGO) and Drifters obtained from the National Oceanic and Atmospheric Administration (NOAA). Deployment are usually carried out by National Coast Guard (NCG) vessels. Data collected (Temperature and salinity profile) are transmitted to weather and climate forecasting centres around the world through satellite.

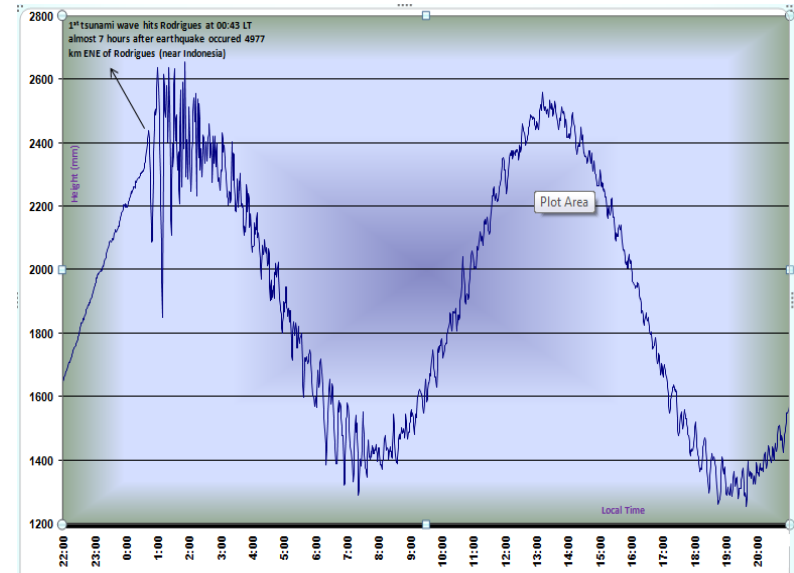
Tsunami Monitoring



Seismometer at Vacoas and Citronelle



TSUNAMI TRAVEL TIME SCENARIO

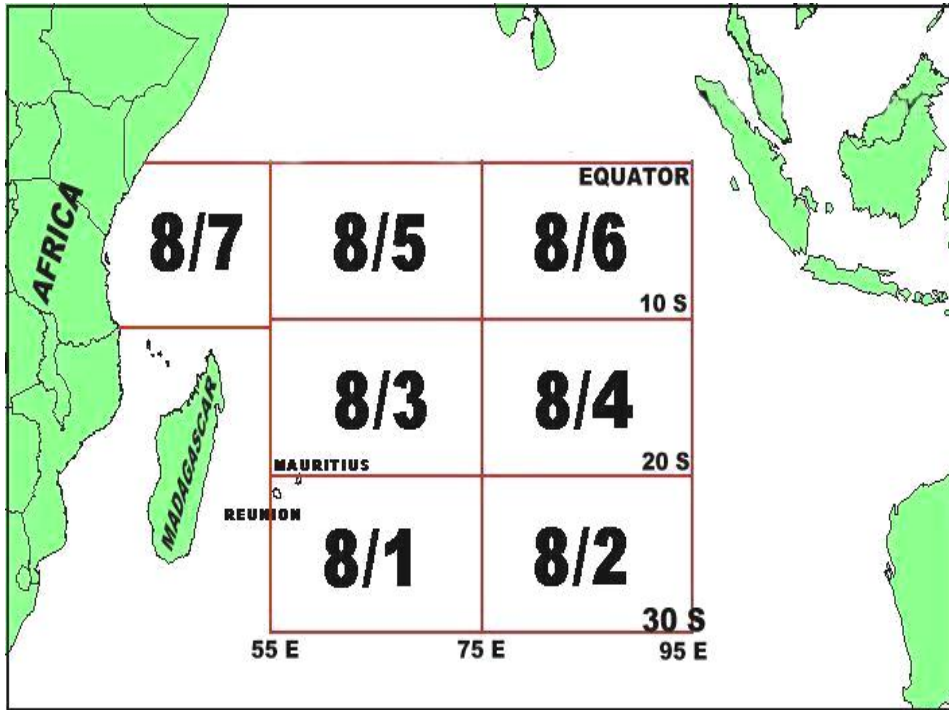


Tide Gauge Monitoring

During the tsunami of 26 October 2010, at St Francois, in the east of Rodrigues (some 2 km South of Cotton Bay Hotel) fishermen's boats, anchored in the lagoon, were carried inland by waves as shown by pictures above

Global Maritime Distress Safety System (GMDSS)

The MMS has the responsibility to issue weather and sea forecast for the high seas in Met Area VIII (S). Weather and sea forecasts are issued for the region bounded by the Equator and latitude 30° S and from longitude 55° E to 95° E under the framework of **Global Maritime Distress Safety System (GMDSS)**.



Met Area VIII (S)



Caution: This website uses information that is transmitted by Meteorological Offices via the World Meteorological Organization's Information System (WIS), and the availability of products may be interrupted or delayed from time to time. Please refer to the respective Meteorological Office websites as the authoritative source.

Global
Maritime
Distress and
Safety
System

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HOME PAGE - Metarea VIII_S

METAREA VIII S :

The east African coast from the equator south to 10°30'S, thence to 55°E, to 30°S, to 95°E, to the equator, to the east African coast

Issuing Service
Mauritius (Scheduled forecast)
La Reunion (Tropical Cyclone Warning)
Australia (Tropical Cyclone Warning East of 90E)

For tropical cyclone warning East of 90°E, see Metarea 10 (Perth)

NAME	DATE
HIGH SEAS FORECAST	February 11 2020 - 01:04:13 UTC

Mauritius National Meteorological Service Website French National Meteorological Service Website Australia National Meteorological Service Website	General information (including maps)
--	--

Page Date: February 11 2020 - 09:30:24 UTC

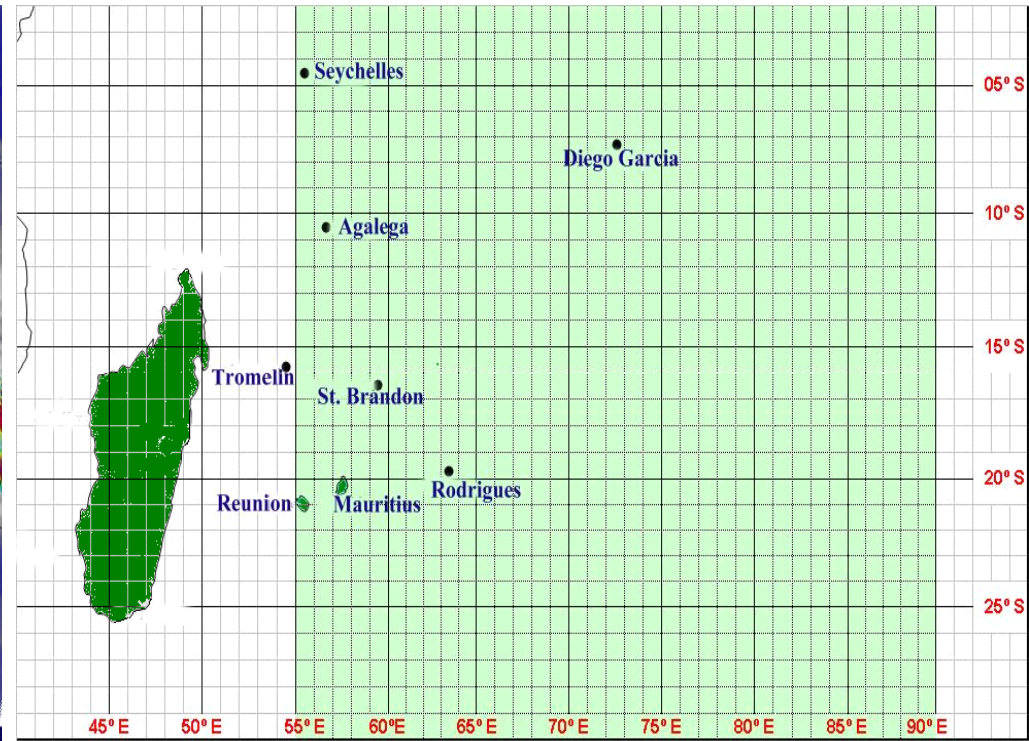
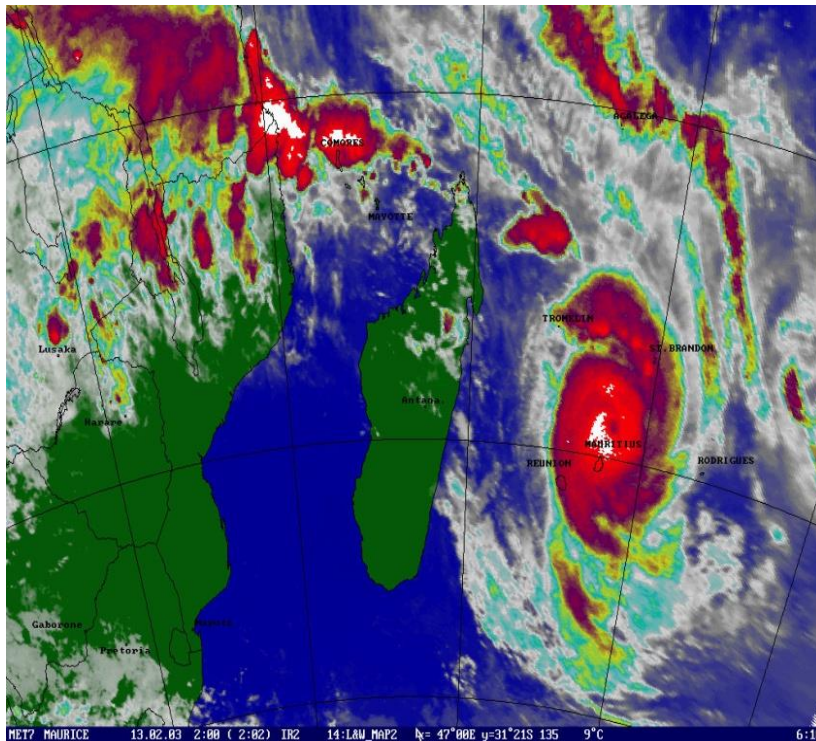
You can bookmark this page for future direct access

GMDSS Website
<http://weather.gmdss.org>

Monitoring of Tropical Cyclones

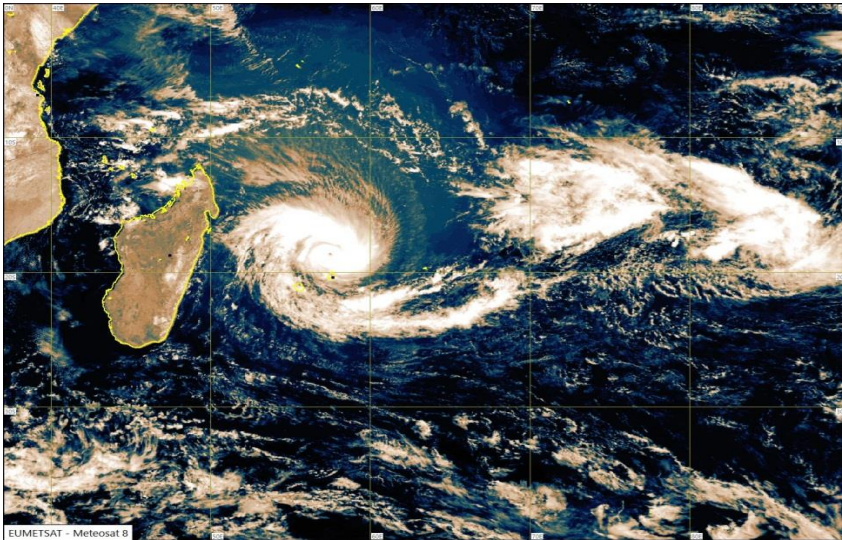
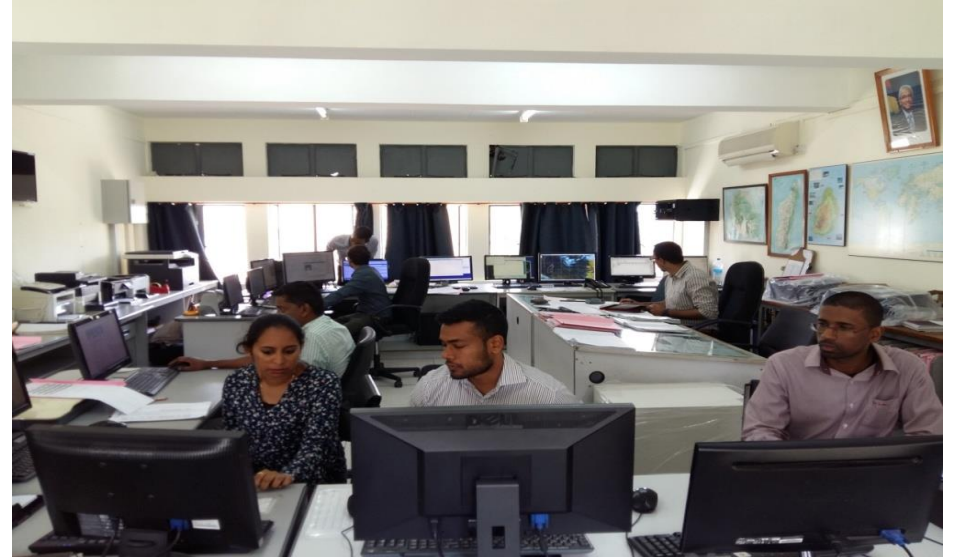
EQUATOR to 30° S

55° E to 90° E



Tropical Cyclones normally occur in summer months. In the South West Indian Ocean (SWIO) basin, the cyclone season starts on 01 November and ends on 15 May of the following year. On average about 10 storms form in the SWIO basin each summer season

Cyclone Warning Centre – MMS HQ, Vacoas



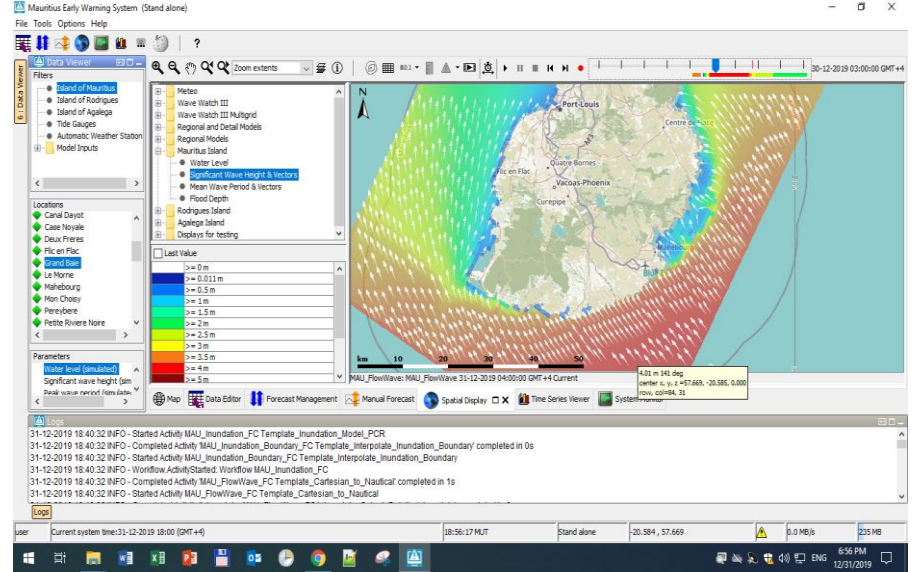
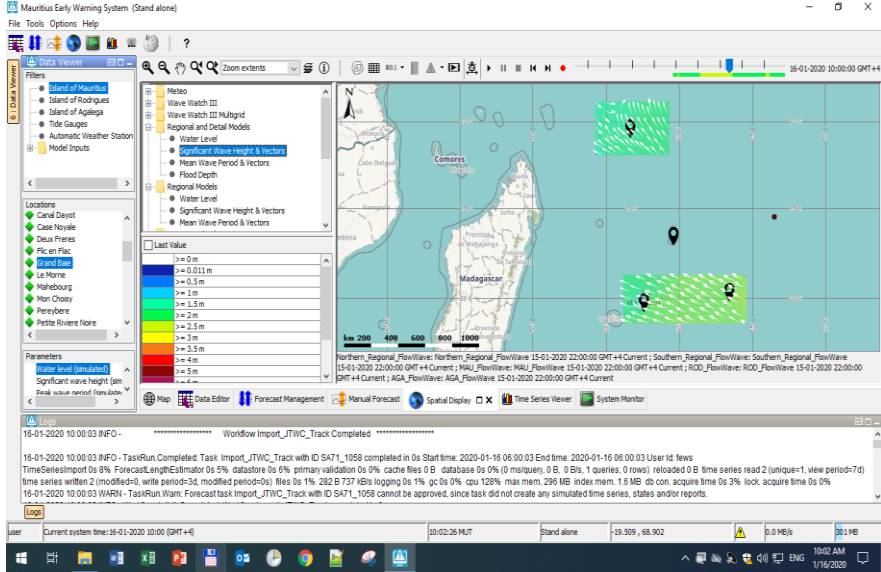
Contribution of Satellite images in issuance of Marine Warnings

The CWC provides advisories and warnings to ensure the protection and safety of :
maritime navigation within Metarea VIII (S);

Bulletins with warnings for the high seas are issued as per WMO Publication No. 9, Volume D.

Marine warnings include: **Near gale warning, Gale warning, Storm warning, Hurricane warning.**

Mauritius Early Warning Storm Surge Model



Water level forecast for specific sites along Mauritius Island. Effects of tide, storm surge, and wave set-up are included.

Location	0-6h	6-12h	12-18h	18-24h	24-30h	30-36h	36-42h	42-48h	48-54h	54-60h	60-66h	66-72h
Port Louis	0.36	0.43	0.37	0.37	0.36	0.36	0.36	0.29	0.29	0.27	0.28	0.23
Alibon	0.34	0.42	0.36	0.36	0.35	0.35	0.34	0.28	0.23	0.27	0.27	0.22
Canal Dayot	0.35	0.42	0.37	0.37	0.36	0.36	0.35	0.29	0.29	0.27	0.28	0.22
Port Louis Mahour	0.36	0.43	0.37	0.37	0.36	0.36	0.35	0.29	0.29	0.27	0.28	0.23
Port Louis Mahour Entrance	0.36	0.43	0.36	0.37	0.36	0.36	0.35	0.29	0.29	0.27	0.28	0.23
Pointe aux Piments	0.36	0.43	0.36	0.38	0.37	0.36	0.35	0.29	0.29	0.27	0.28	0.23
Mon Chouly	0.36	0.43	0.37	0.37	0.36	0.36	0.35	0.29	0.29	0.27	0.27	0.22
Pointe aux Canonniers	0.36	0.44	0.39	0.39	0.38	0.37	0.36	0.30	0.31	0.28	0.28	0.23
Grand Baie	0.36	0.43	0.37	0.39	0.38	0.37	0.36	0.30	0.31	0.28	0.29	0.23
Pereybere	0.36	0.44	0.38	0.39	0.38	0.37	0.36	0.30	0.31	0.28	0.29	0.23
Poudre d'Or	0.44	0.61	0.67	0.59	0.53	0.53	0.53	0.47	0.46	0.46	0.44	0.39
Pointe des Lascars	0.41	0.60	0.51	0.56	0.50	0.50	0.51	0.45	0.44	0.43	0.43	0.38
Pointe de l'Embarcadere	0.39	0.42	0.48	0.54	0.48	0.53	0.49	0.44	0.43	0.43	0.42	0.37
Pointe de Roche Noire	0.38	0.48	0.45	0.50	0.44	0.51	0.45	0.41	0.40	0.40	0.40	0.35
Pointe d'Etany north	0.40	0.60	0.49	0.53	0.47	0.53	0.48	0.43	0.42	0.42	0.41	0.36
Belle Mare	0.37	0.48	0.45	0.50	0.43	0.51	0.45	0.41	0.40	0.40	0.40	0.35
Trou d'Eau Douce	0.41	0.64	0.50	0.54	0.47	0.54	0.48	0.43	0.42	0.42	0.41	0.36
Deux Freres	0.49	0.69	0.57	0.56	0.49	0.59	0.50	0.43	0.42	0.42	0.41	0.36
Quatre Bornes	0.48	0.66	0.56	0.54	0.49	0.54	0.50	0.43	0.42	0.42	0.41	0.36
Pointe aux Feuilles	0.47	0.62	0.54	0.53	0.47	0.53	0.48	0.42	0.41	0.41	0.41	0.36
Anse du Grand Saibie	0.47	0.61	0.56	0.53	0.47	0.53	0.48	0.42	0.41	0.41	0.41	0.36
Bambous Vireux	0.46	0.66	0.53	0.52	0.47	0.53	0.49	0.42	0.41	0.41	0.40	0.36
Bois des Anouettes	0.46	0.64	0.53	0.53	0.47	0.53	0.48	0.41	0.40	0.40	0.40	0.34
Riviere des Croiles	0.47	0.68	0.56	0.56	0.50	0.55	0.51	0.43	0.42	0.42	0.41	0.36
Mahbourg	0.45	0.66	0.54	0.54	0.49	0.59	0.50	0.43	0.41	0.41	0.41	0.35
Pointe d'Etany south	0.33	0.66	0.40	0.46	0.38	0.47	0.40	0.37	0.35	0.36	0.36	0.31
Blut Bay	0.32	0.54	0.38	0.44	0.37	0.46	0.39	0.36	0.34	0.36	0.35	0.31
Bouillac	0.31	0.52	0.37	0.42	0.36	0.44	0.38	0.34	0.33	0.34	0.33	0.29
Riambel / Surinam	0.31	0.51	0.37	0.42	0.36	0.44	0.38	0.34	0.33	0.34	0.33	0.29
Riviere des Galets	0.31	0.51	0.37	0.42	0.36	0.43	0.37	0.34	0.32	0.34	0.33	0.29
Bay Jaccotes	0.31	0.51	0.37	0.42	0.36	0.43	0.37	0.34	0.32	0.34	0.33	0.29
Baie du Cap	0.29	0.46	0.34	0.38	0.33	0.40	0.36	0.31	0.30	0.31	0.30	0.27
Le Morne	0.31	0.41	0.35	0.36	0.35	0.38	0.34	0.28	0.28	0.27	0.27	0.23
Case Noyale	0.30	0.39	0.33	0.36	0.34	0.35	0.34	0.28	0.28	0.27	0.27	0.22
Petite Riviere Noire	0.32	0.41	0.34	0.36	0.34	0.35	0.33	0.28	0.28	0.27	0.27	0.22

Water level forecast for specific sites along Rodrigues Island. Effects of tide, storm surge, and wave set-up are included.

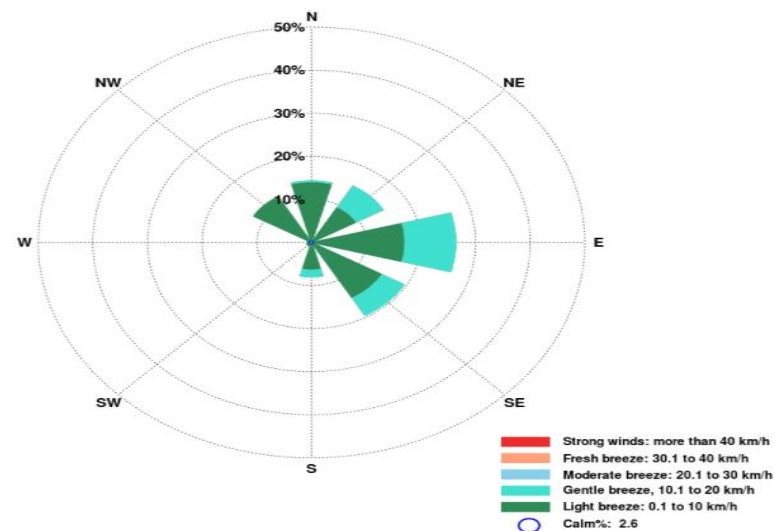
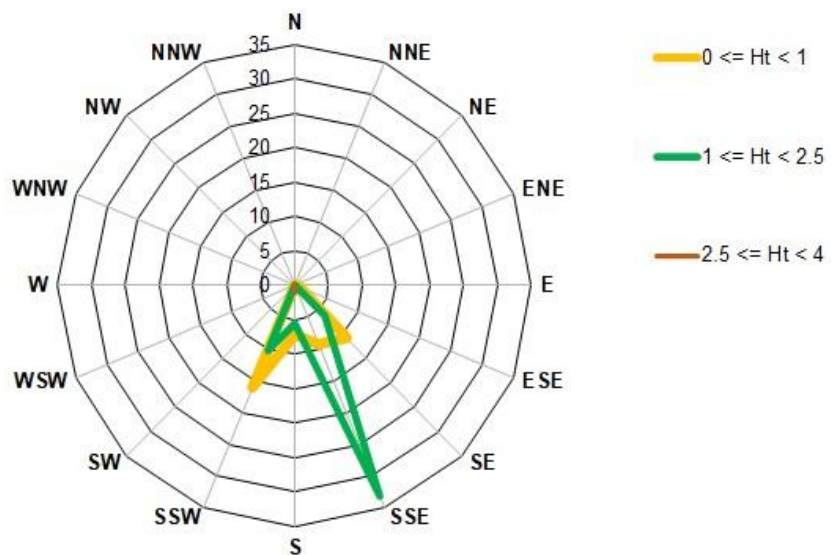
Location	0-6h	6-12h	12-18h	18-24h	24-30h	30-36h	36-42h	42-48h	48-54h	54-60h	60-66h	66-72h
Port Mathurin	0.44	0.82	0.54	0.71	0.55	0.74	0.62	0.64	0.59	0.63	0.61	0.57
Grand Baie	0.44	0.82	0.55	0.71	0.55	0.74	0.63	0.64	0.59	0.63	0.61	0.57
Saint Francois	0.42	0.83	0.53	0.72	0.54	0.75	0.62	0.64	0.59	0.64	0.61	0.57
Petit Gravier	0.45	0.87	0.57	0.74	0.56	0.77	0.63	0.66	0.60	0.66	0.63	0.59
Port Sud-Est	0.42	0.85	0.54	0.71	0.52	0.76	0.61	0.64	0.57	0.64	0.60	0.58
Riviere Cocos	0.49	0.85	0.61	0.72	0.57	0.77	0.65	0.65	0.61	0.66	0.64	0.60
Plaine Corail	0.55	0.84	0.65	0.69	0.60	0.74	0.67	0.63	0.61	0.63	0.62	0.56
Baie Topaze	0.55	0.85	0.66	0.69	0.60	0.74	0.68	0.63	0.61	0.63	0.62	0.56
Ile aux Cocos	0.58	0.83	0.67	0.70	0.62	0.74	0.69	0.62	0.62	0.62	0.62	0.54

Water level forecast for specific sites along Agaléga Island. Effects of tide, storm surge, and wave set-up are included.

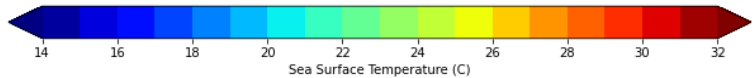
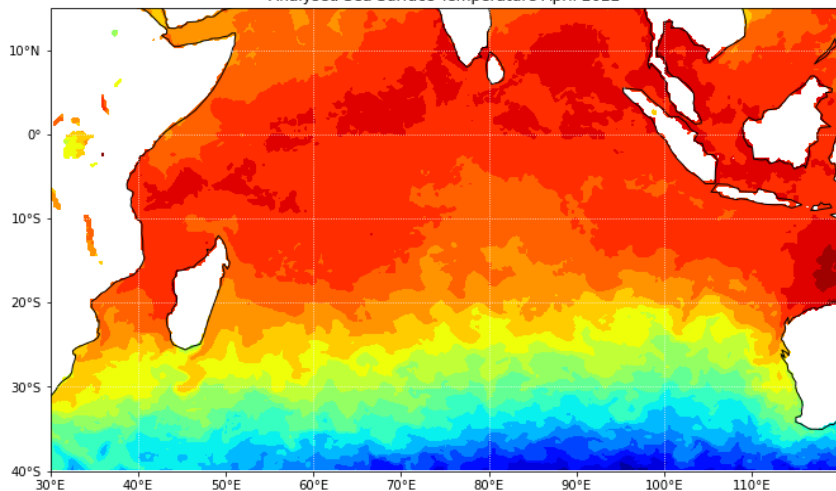
Location	0-6h	6-12h	12-18h	18-24h	24-30h	30-36h	36-42h	42-48h	48-54h	54-60h	60-66h	66-72h
Agaléga Port St James	0.66	0.25	0.44	0.30	0.63	0.13	0.48	0.12	0.53	0.01	0.47	0.13
Vingt Cinq	0.65	0.26	0.45	0.34	0.61	0.15	0.48	0.12	0.52	0.02	0.47	0.12
Sainte Rita	0.64	0.26	0.44	0.34	0.60	0.15	0.47	0.12	0.51	0.02	0.46	0.11
Agaléga La Passe	0.65	0.26	0.45	0.33	0.61	0.13	0.48	0.11	0.52	0.03	0.47	0.13

Forecast time: 11/02/2020 04:00 GMT+4

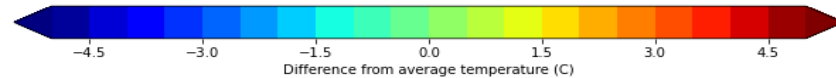
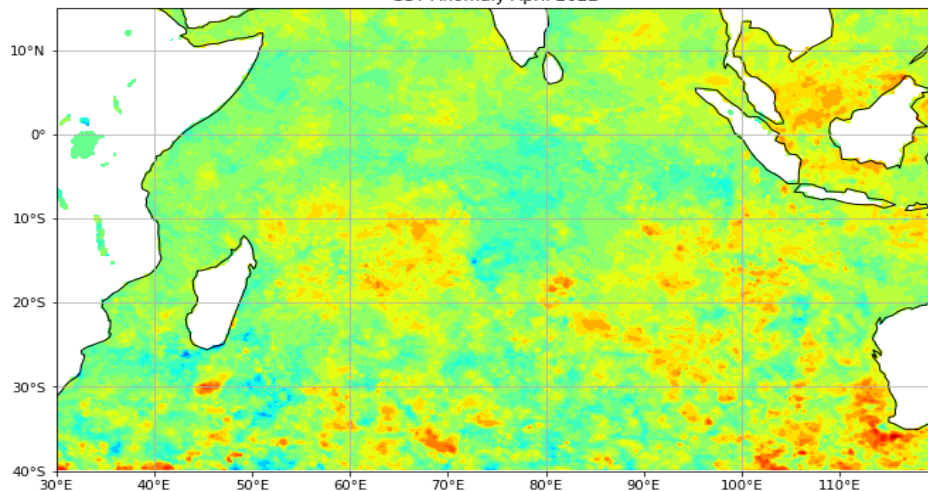
Operational Products



Analysed Sea Surface Temperature April 2022



SST Anomaly April 2022

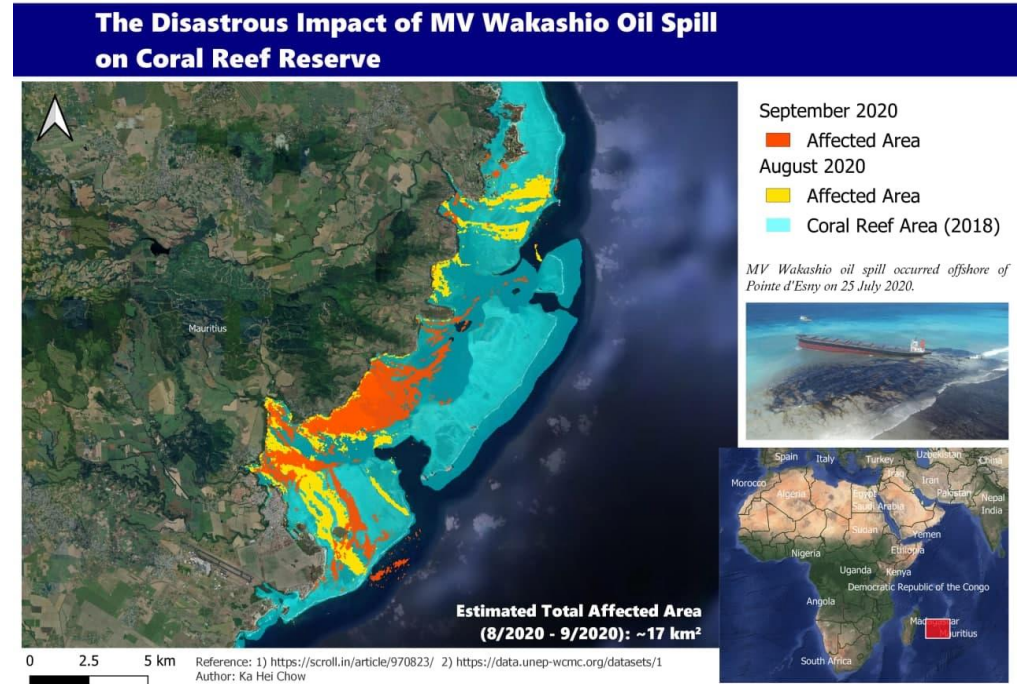


Other Agencies

- **Ministry of Blue Economy, Marine Resources, Fisheries and Shipping**
- **MOI** (Mauritius Oceanography Institute)
- **NCG** (National Coast Guard)
- **Dept for CSMZAE** (Continental Shelf, Maritime Zones Administration & Exploration)

Other Agencies

Ministry of Blue Economy, Marine Resources, Fisheries and Shipping



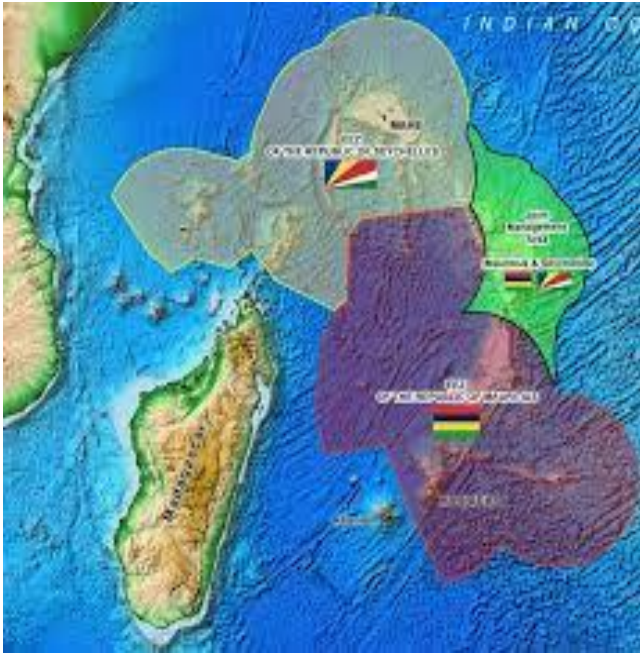
Monitoring of marine pollution and oil spills.

The satellite images show polluted water off the mouths of rivers being swept by the currents, in the lagoon and beyond the coral reefs.

The **MV *Wakashio*** oil spill occurred offshore of Pointe d'Esny, after the bulk carrier *Wakashio* ran aground on a coral reef on 25 July 2020. An estimated 1,000 tons of oil spilled into the ocean in what was called by some scientists the worst environmental disaster ever in Mauritius.

Other Agencies

National Coast Guard (NCG)



The NCG has under its responsibility the surveillance of an EEZ of about 1.9 million square Km

Dept for Continental Shelf, Maritime Zones Administration & Exploration



Deployment of Directional Wave Spectra Drifter (DWSD) instrument received from the National Oceanic and Atmospheric Administration (NOAA) in the South East region of Mauritius.

Mauritius Oceanography Institute (MOI)



The CTD is an essential tool that provides important information about physical, chemical, and even biological properties of the water column.

A serene sunset scene over a calm body of water. The sun is low on the horizon, creating a bright orange glow that reflects on the water's surface. The sky transitions from a deep orange near the horizon to a soft, pale blue at the top. The water is still, mirroring the colors of the sky and the sun. The overall mood is peaceful and contemplative.

Thank you

Merci