



2022 MEETING OF DIRECTORS OF METEOROLOGICAL SERVICES

Agenda-Document 4

OPERATIONAL MATTERS

“CLOSING GAPS TO BE WMO COMPLIANT”





WMO Climatological Standard Normal 1991–2020

WMO global Climatological Standard Normal (CLINO) data set, assembled from Members' submissions, is a WMO mandatory publication, which represents a fundamental flagship product of WMO.

WMO issued a call (August 2021) for submission of CLINO 1991–2020. The deadline for submissions was 31 March 2022. A second WMO call for submission was issued in May 2022, extending the deadline to 31 December 2022, the definite deadline for Members' CLINO submissions.

Publication of CLINO 1991–2020 is planned for the second half of 2023 with a final CLINO collection assessment report to be delivered to Cg-19.



Submissions of 1991-2020 Climatolog...



Countries and territories that successfully submitted their CLINO.

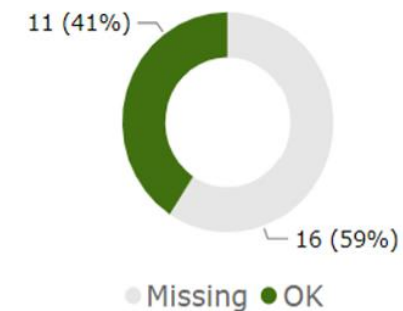


8 Members have submitted their CLINO 1991-2020

<https://community.wmo.int/wmo-climatological-normals>

Members are encouraged to finalize and submit Climate Normals by December 31, 2022 for inclusion in WMO mandatory publication.

RA IV: North America, Central America, and the Caribbean



Country or Territory

- Antigua and Barbuda
- Bahamas
- Barbados
- Belize
- British Caribbean Territories - Cayman Islands
- Costa Rica
- Dominica
- Grenada
- Saint Kitts
- Trinidad and Tobago
- United States of America



WMO Annual State of the Climate Report

August 2022, WMO announced the launch of the content preparation process for the Annual State of the Global Climate report for 2022.

Requested Members to provide a year-to-date climate summary for inclusion in a provisional statement, that was released during COP27 (November 2022).

Final statement scheduled to be published in March/April 2023.

All Members are urged to continue to populate their year-to-date statements, leading to an annual statement.

Develop a concise but informative overview of temperatures, rainfall, and significant weather events for submission to the WMO Annual State of the Global Climate Report, 2022.

WMO Provisional State of the Global Climate 2022 Contributors

WMO Members

Argentina, Australia, Bahrain, Bangladesh, **Barbados**, Belgium, Bosnia and Herzegovina, Brazil, **British Caribbean Territories**, Bulgaria, Canada, **Cayman Islands**, Chile, China, Colombia, Cote d'Ivoire, Croatia, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, Estonia, Finland, France, Georgia, Germany, Greece, **Grenada**, Guatemala, Hungary, Hong Kong (China), India, Indonesia, Iran, Iraq, Ireland, Italy, Japan, Jordan, Kenya, Latvia, Libya, Luxembourg, Macao (China), Madagascar, Maldives, Mali, Mauritius, Morocco, Myanmar, Namibia, New Zealand, North Macedonia, Norway, Pakistan, 21 Peru, Poland, Russian Federation, Rwanda, Saudi Arabia, Seychelles, Slovakia, Slovenia, South Africa, Sri Lanka, Sweden, Switzerland, Tanzania, Thailand, **Trinidad and Tobago**, Tunisia, Türkiye, Uganda,



Technical Guide On Tropical Cyclones

A new **“Guide No. 1 Tropical Cyclones”** under *Resolution 16 (Cg-18)* - *Guide(s) on the Support of NMHSs to their National Multi-hazard Early Warning procedures, Coordination Mechanisms, Systems and Service-* has been developed by the Expert team on Multi-Hazard Early Warning Technical Guidance.

https://wmoomm.sharepoint.com/:w:/s/wmocpdb/EcmFtn_ABoZNmABQ0F1jgd0BlfSWCTUamRggPVtJr2R7rg?e=zZDv89&CID=17237dd9-c962-e3d9-da64-a7383375540f

Expert Team included RA IV Experts Mr. John Tibbetts, of the Cayman Islands and Dr. José Maria Rubiera Torres, of Cuba.

“Guide No.1 — Tropical Cyclone” provides practical guides for Multi-Hazard Early Warning Systems (MHEWS) operations, along with effective and institutional support to national disaster risk management mandates.

Members are encouraged to implement the recommendations provided in Guide No.1 — Tropical Cyclone.



Progress on BUFR Migration

WMO encourages & recommends that global exchange of observations be done in Binary Universal Form for the Representation of meteorological data (BUFR) which represents a substantial paradigm shift away from TAC. Migration of surface observations to BUFR has been very slow, with only minor progress by CMO Members over past 5 years.

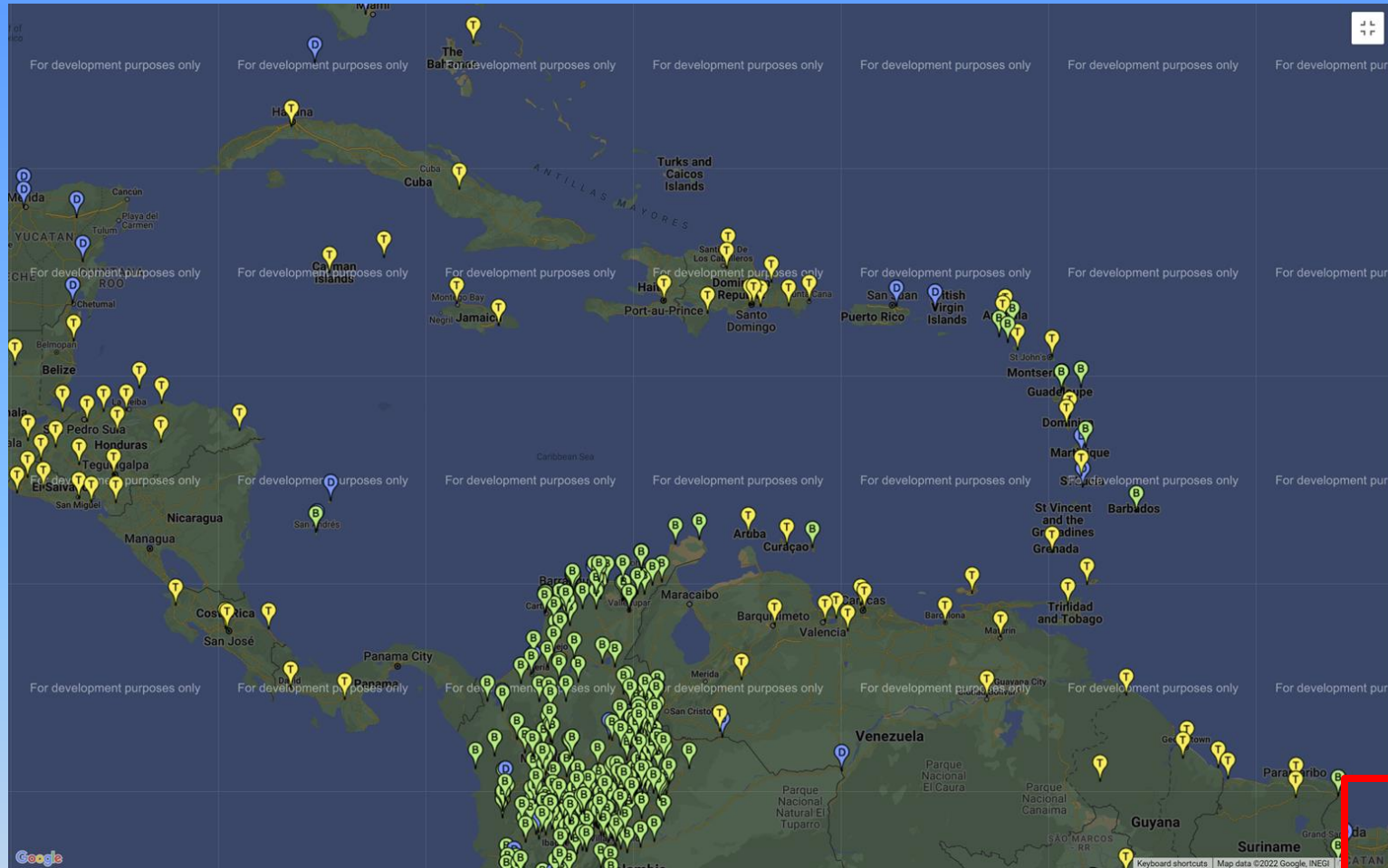
November 14, 2022: Only two (2) Member States reporting surface observations in BUFR, according to daily BUFR monitoring maps produced by NWP centers covering migration from TAC to BUFR. One Member completed the migration to BUFR and stopped TAC formats, while the one Member exchange observations using both BUFR & TAC.

<https://confluence.ecmwf.int/display/TCBUF/SYNOP+Coverage>

Recommendation:

- Strengthen and establish working relationships with Members who have already implemented BUFR capability with a view towards getting assistance for implementing BUFR.
- Establish parallel dissemination of TAC and BUFR as soon as possible, but only after providing all NWP centers with advanced warning.

Radiosonde observations achieve full migration to BUFR.



SYNOP Coverage

marker	description
T	TAC only
B	BUFR only
D	Dual: BUFR and TAC

81 %	TAC
19 %	BUFR

Radiosonde Coverage

marker	description
T	TAC only
B	BUFR only, high resolution and drift
D	BUFR only, low resolution and drift
T	BUFR only, no drift (reformatted TAC)
D	Dual: BUFR and TAC, high resolution and drift
D	Dual: BUFR and TAC, low resolution and drift
T	Dual: BUFR and TAC, no drift (reformatted TAC)

78954 GRANTLEY ADAMS

gts ISIE01 TBPB

last_tac 20151121-21

last_buftr 20221113-21

obs/day BUFR:8.0 TAC:None

min delay BUFR:6 TAC:None

78948 HEVANORRA INT'L AIRPORT

gts ISIE01 TLPL

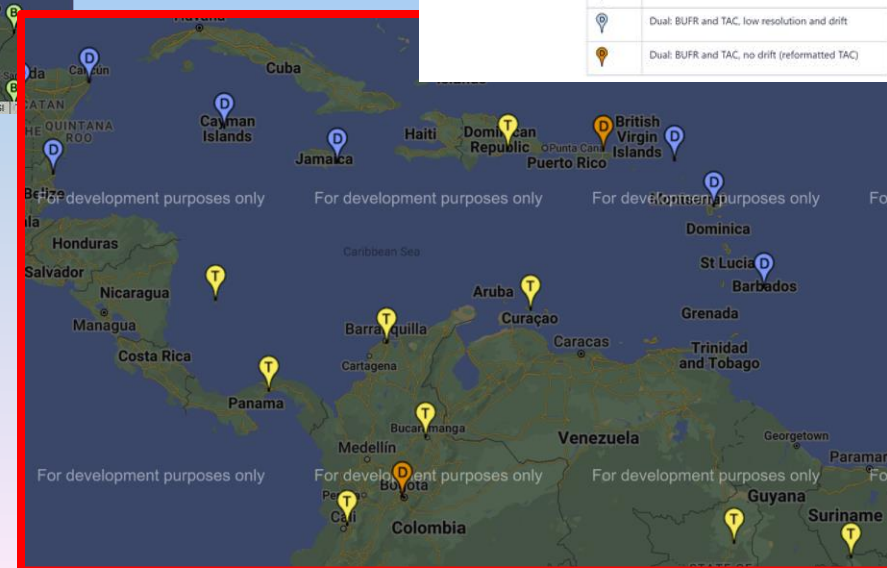
last_tac 20221113-15

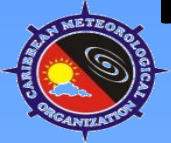
last_buftr 20221113-15

obs/day BUFR:6.0 TAC:6.3

min delay BUFR:12 TAC:12

<https://confluence.ecmwf.int/display/TCBUF/SYNOP+Coverage>





ICAO Meteorological Information Exchange Model (IWXXM)

WMO President through the fast-track procedure amended the WMO Manual on Codes Vol 1.3, WMO-NO. 306 and announced in [2022 WMO Operational Newsletter World Weather Watch](#), that IWXXM became a Standard in ICAO Annex 3, (WMO No. 49, Vol II Meteorological Service for International Air Navigation) on November 15, 2021.

Amendment informs: [All](#) Members [shall](#) now use [IWXXM](#) for the provision of information regarding observations and forecasts, and reports thereof, for international civil aviation (including METAR, SPECI, TAF, SIGMET, AIRMET, Tropical Cyclone Advisory, Volcanic Ash, Space Weather Advisory, SIGWX Forecast).

ICAO plans to remove TAC as a Standard in ICAO Annex 3 by 2026 and establish IWXXM as the sole primary format for meteorological information exchange.

Recommendations:

- Download and implement the CMO developed software for the exchange of aviation meteorological information in IWXXM.

[https://www.dropbox.com/s/j7d81oqckgou32g/IXXWM Car.zip?dl=0](https://www.dropbox.com/s/j7d81oqckgou32g/IXXWM%20Car.zip?dl=0)

- Strengthen working relationships with Members who have already implemented IWXXM capability.



IWXXM Implementation Status

Example of METAR in IWXXM

Unlike Traditional Alphanumeric Code (TAC), IWXXM is intended for machine- to-machine information exchange

```
<iwxxm:MeteorologicalAerodromeObservationRecord gml:id="or1" cloudAndVisibilityOK="false">  
  <iwxxm:airTemperature uom="Cel">17.0</iwxxm:airTemperature>  
  <iwxxm:dewpointTemperature uom="Cel">16.0</iwxxm:dewpointTemperature>  
  <iwxxm:qnh uom="hPa">1018</iwxxm:qnh>  
  <iwxxm:surfaceWind>  
    <iwxxm:AerodromeSurfaceWind variableDirection="false">  
      <iwxxm:meanWindDirection uom="deg">240</iwxxm:meanWindDirection>  
      <iwxxm:meanWindSpeed uom="m/s">4.0</iwxxm:meanWindSpeed>  
    </iwxxm:AerodromeSurfaceWind>  
  </iwxxm:surfaceWind>  
  <iwxxm:visibility>  
    <iwxxm:AerodromeHorizontalVisibility>  
      <iwxxm:prevailingVisibility uom="m">600</iwxxm:prevailingVisibility>  
    </iwxxm:AerodromeHorizontalVisibility>  
  </iwxxm:visibility>  
</iwxxm:MeteorologicalAerodromeObservationRecord>
```

Example METAR in IWXXM (left) and TAC (below)

```
METAR YUDO 221630Z 24004MPS 0600  
R12/1000U DZ FG SCT010 OVC020 17/16 Q1018
```

All Member States are now required to disseminate aviation weather messages in digital IWXXM format.

Only one (1) Member is currently sending out aviation meteorological reports using IWXXM.



Common Alert Protocol (CAP)

In 2021, WMO implemented a fast-track initiative to implement CAP. In view of the progress made, **SERCOM-2** recommended amendments to the Technical Regulations, Volume 1, General Meteorological Standards and Recommended Practices (WMO-No. 49) that Members should apply the Common Alerting Protocol (CAP) for the dissemination of warning information.

WMO Severe Weather Information Centre (SWIC) 2.0 website displays all CAP alerts as a single and centralized source for the media and the general public to access.

Members are encouraged to:

- Register their NMHSs as alerting authorities in the WMO Register.
- Implement CAP, in line with the WMO CAP initiative, by seeking assistance through the WMO CAP fast-track initiative.
- Route existing CAP messaging or other warning formats through the Register of WMO Members Alerting Authorities.
- Register their CAP or warning messages URL Feeds with SWIC 2.0.



6 CMO Members on WMO Severe Weather Information Center

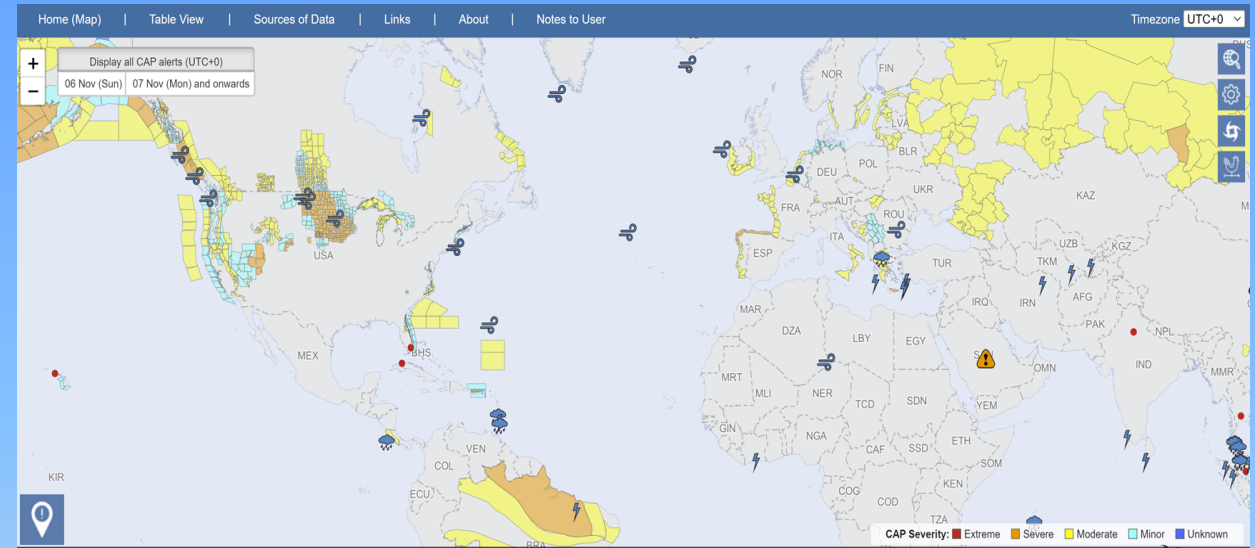
WORLD METEOROLOGICAL ORGANIZATION
Weather - Climate - Water

Severe Weather Information Centre 2.0 (Beta)

Home (Map) | Table View | Sources of Data | Links | About | Notes to User

CAP Warnings

ISSUING ORGANISATION (109 - All Regions)	LANGUAGE	RSS/ATOM FEED OF CAP ALERTS
Anguilla: Disaster Management Anguilla		https://axa-primary.capews.com/capews/public/atom?type=cap
Barbados: Department of Emergency Management		https://brb-secondary.capews.com/capews/public/atom?type=cap
British Caribbean Territories: Department of Disaster Management, British Virgin Islands		https://cap-sources.s3.amazonaws.com/uk-bviddm-en/rss.xml
Guyana: Hydrometeorological Service		https://hydromet.gov.gy/cap/en/alerts/rss.xml
Jamaica: Meteorological Service		https://alert.metservice.gov.jm/capfeed.php
Trinidad and Tobago: Trinidad and Tobago Meteorological Service		https://metproducts.gov.tt/tms/public/api/feed?type=rss



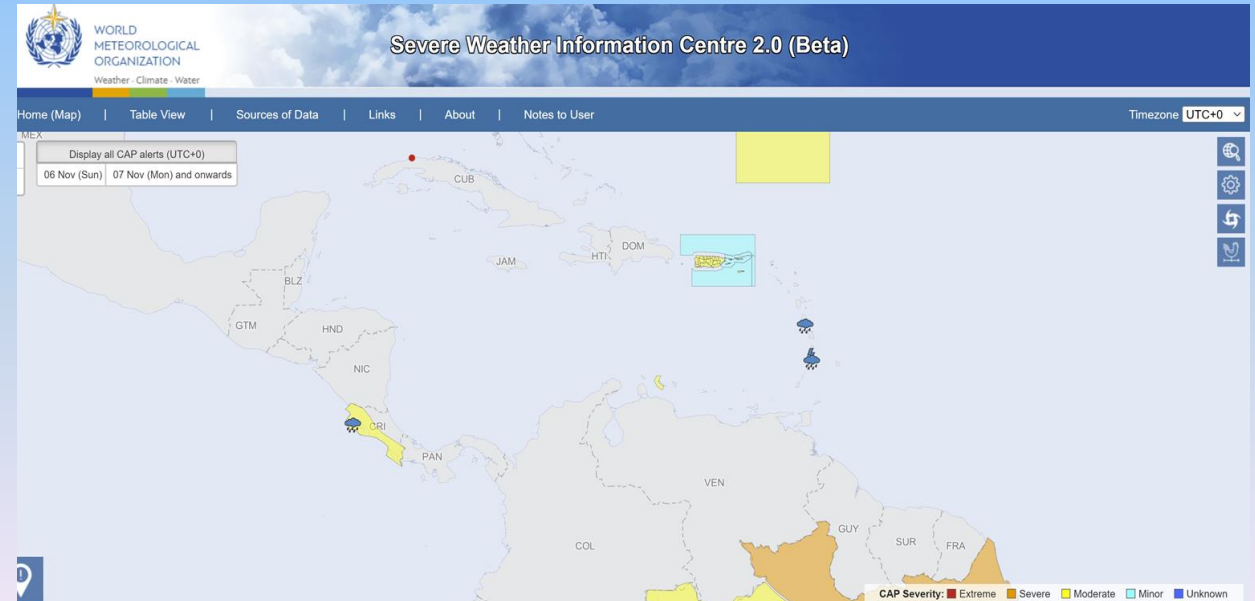
WORLD METEOROLOGICAL ORGANIZATION
Weather - Climate - Water

Severe Weather Information Centre 2.0 (Beta)

Home (Map) | Table View | Sources of Data | Links | About | Notes to User

Alert Hub CAP Feeds (Demo)

ISSUING ORGANISATION	FEED URL	NO. OF CAPs IN PAST 24 HOURS	NO. OF CAPs IN PAST 7 DAYS	NO. OF CAPs IN PAST 30 DAYS
Anguilla: Disaster Management Anguilla	ai-dma-en	0	0	1
Barbados: Department of Emergency Management	bb-dem-xx	2	3	13
British Caribbean Territories: Department of Disaster Management, British Virgin Islands	uk-bviddm-en	0	10	44
Guyana: Hydrometeorological Service	gy-hms-en	2	10	11
Jamaica: Meteorological Service	jm-jms-en	0	2	4
Trinidad and Tobago: Trinidad and Tobago Meteorological Service	tt-ttms-en	0	4	21



<https://severeweather.wmo.int/v2/index.html>



Transition to Regional Basic Observing Network (RBON)

On July 04, 2022, WMO informed Members that INFCOM decided on a transition plan to RBON, involving:

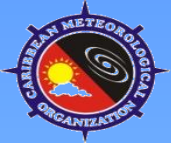
❑ Phase 1 (2022) — **Transition of existing RBSN, and RBCN stations to RBON.**

The task consists of transferring to RBON affiliation, all selected and relevant RBSN and RBCN stations. On 7 June 2022, WMO automatically transferred, the affiliation of all regions RBSN, and RBCN stations to RBON in the OSCAR/Surface database. OSCAR/Surface shows that the following CMO Members stations are on the Global Observing System (GOS) but not RBON stations: **Anguilla, British Virgin Islands, Montserrat, St Kitts and Nevis, St Vincent and the Grenadines, and Turks and Caicos.**

Key requirement for RBON stations in phase 1 transition plan are **(1)** international exchange of the data in real-time or near-real-time on the GTS/WIS to allow their data assimilation on the Global NWP before the model cut-off time; **(2)** This means keeping the station in operational compliance with RBON for at least 4 more years, but a 10-year commitment is recommended.

Member stations that are not on RBON but are already exchanging data internationally in real or near-real-time are readily set to become RBON stations.

❑ Phase 2 (2023) — Design and evolution of RBON at the regional level. None RBON Members are encouraged to designate & commit their stations during phase 2 of the RBON transition plan in 2023.



WIGOS, OSCAR/Surface, WDQMS STATUS

WIGOS is a WMO top-5 priority and member are required, to implement and operate their observing systems in accordance with WIGOS standards.

WIGOS initial Operational Phase spans the period 2020-2023.

To foster general compliance with WMO Regulations and ensure optimal performance of the system, WMO stipulates that all aspects of WIGOS implementation will be monitored and evaluated.



Basics of the WIGOS Station Identifiers (WSIs)

1 st block (number)	2 nd block (number)	3 rd block (number)	4 th block (character)
WIGOS Identifier Series	Issuer of Identifier	Issue number	Local Identifier
Allows future expansion	Allows to distinguish between identifiers issued by different organizations	Allows sub-delegation	Allocated to station
0	0...65534	0...65534	16 characters

Example of a WIGOS Station ID using existing WMO number

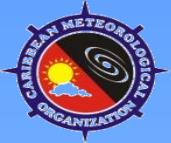
WIGOS Identifier Series (number)	Issuer of Identifier (number)	Issue Number (number)	Local Identifier (characters)
0	20000	0	78384

Example of station Owen Roberts Airport State (Cayman Islands)

ISO Country Code: <https://www.iso.org/iso-3166-country-codes.html>

WIGOS Identifier Series (number)	Issuer of Identifier (number)	Issue Number (number)	Local Identifier (characters)
0	136	100	18

New station at Camanian Island



General requirements for assigning WSIs

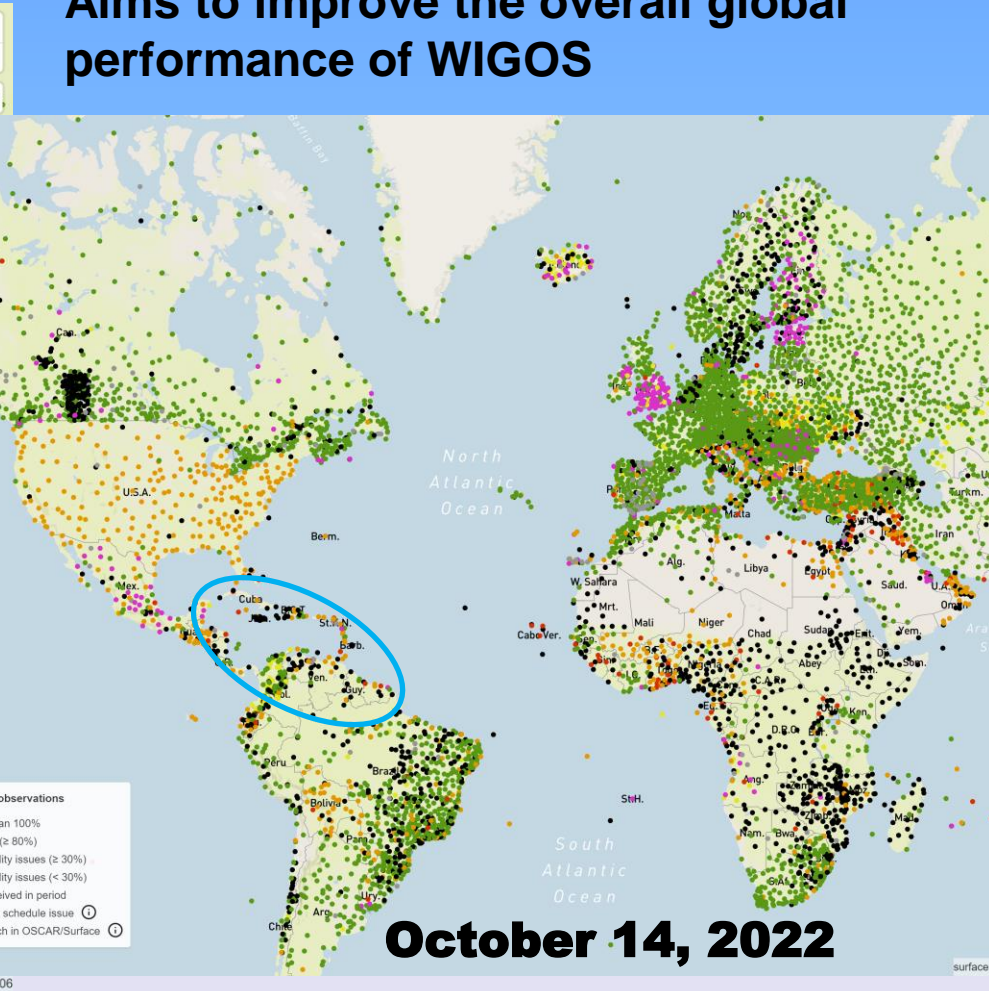
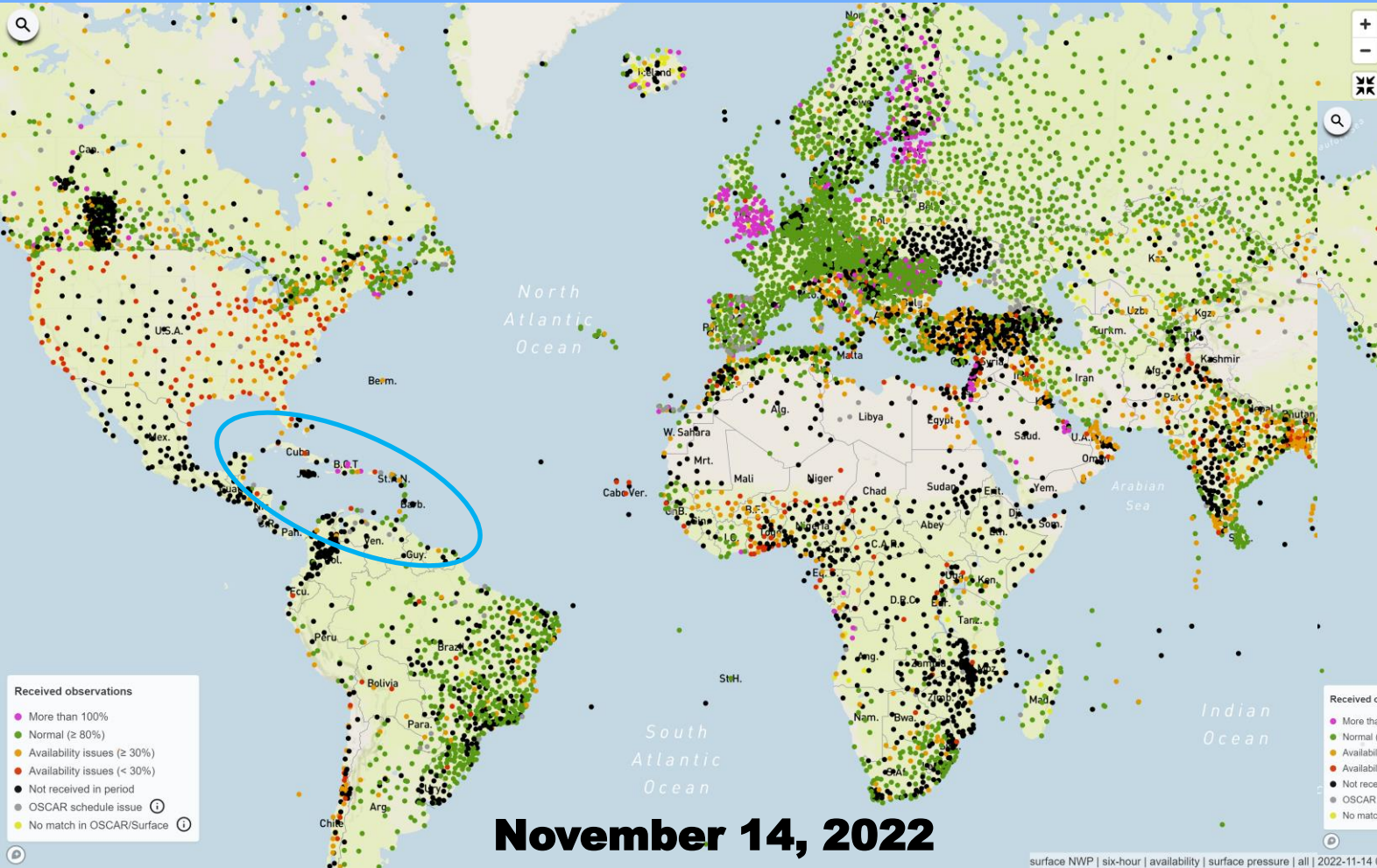
- **Members shall:**
 - issue WSIs for stations/platforms within their geographic area of responsibility that contribute to a WMO or co-sponsored programme
 - ensure that no WSI is issued to more than one station
 - make available to WMO the updated metadata each time a new WSI is issued
- **Members should (before issuing a station identifier):**
 - ensure that the operator of a station/platform has committed to providing and maintaining WIGOS metadata for that station/platform



WIGOS Data Quality Management System (WDQMS)

WDQMS describes how well WIGOS is functioning.

Aims to improve the overall global performance of WIGOS



In an ideal world all stations would turn into green color...

Caribbean: More green on November 14 2022 than October 14, 2022

https://wdqms.wmo.int/nwp/land_surface



WIGOS Data Quality Management System (WDQMS)

WDQMS web tool generates routine daily performance reports based on at least two performance indicators:

- Data availability.
- Data quality.

Data availability is affected by the **data quality** monitoring information received from all the NWP Centres. Data availability is determined by the total number of meteorological **observations (TAC/BUFR) received** by a NWP Centre during a certain period (e.g. 6 hours) compared to the required **number of observations for international exchange expected** during this period.

“Observations Received” means the observations that were made available to the **data assimilation system** of the NWP centre. Depends on size of departure between Observation and Background (**O-B**). Accepted surface pressure departures as defined in the OSCAR/Requirement is **0.5 hPa**.

Any O-B departure that is higher than 0.5 hPa is considered as poor quality.

“Expected number of 6-hourly” of daily observation totals are extracted from the **“Reporting Schedule”** recorded in **OSCAR/surface** and used as a reference on a daily basis. This means that if the metadata of the Members' station reporting interval in OSCAR/Surface is listed as hourly then the expected number of surface observations used to compute the 6-hourly availability performance is 6.

For upper-air observations, the daily availability performance maps are based on a total of 2 expected observations per day.



Quality of surface land observations (global NWP)

Type of Period
Six-hour

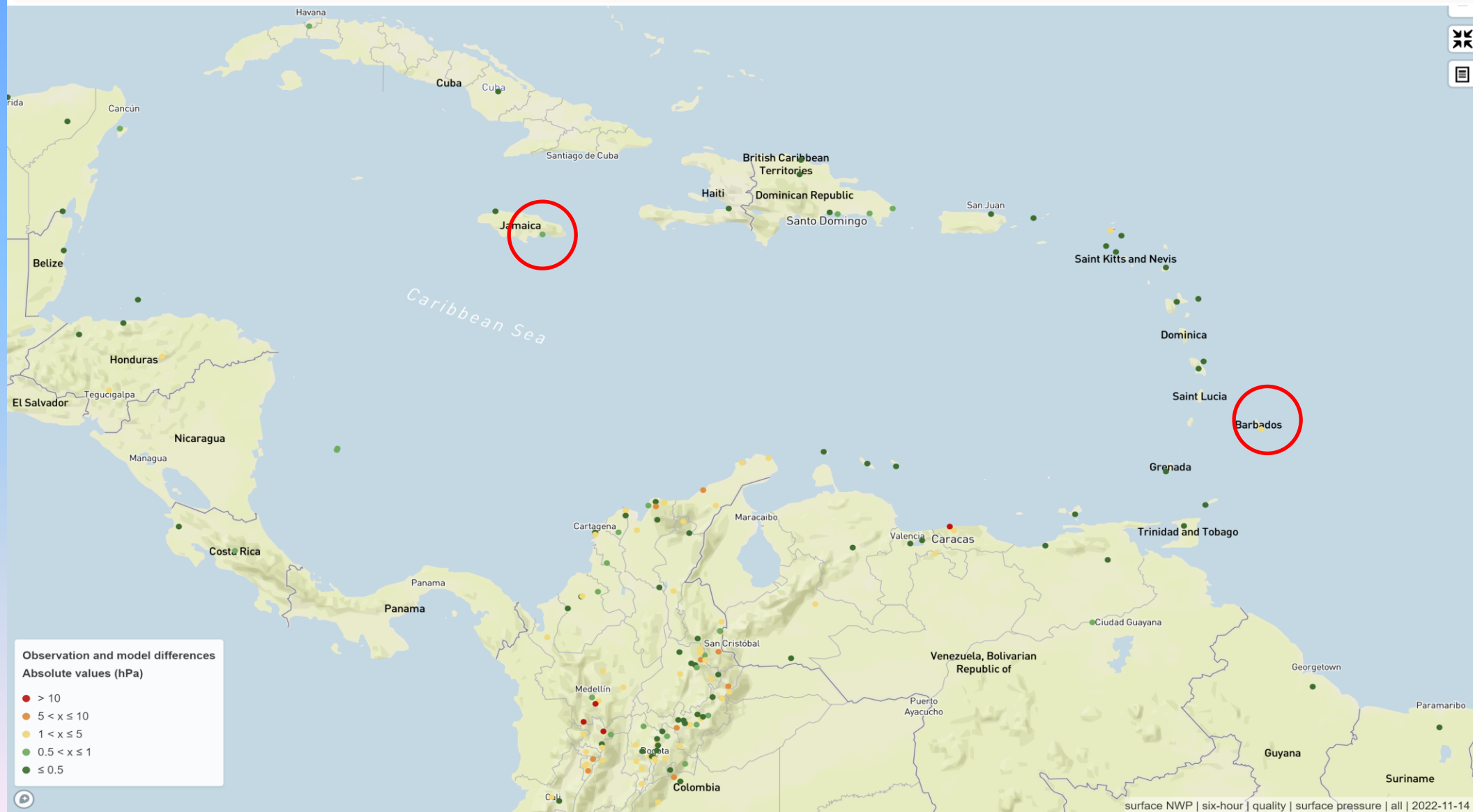
Monitoring category
Quality

Variable
Surface pressure

Monitoring Centre
All

Date
2022-11-14

Six-hour period
00 06 12 18



Availability of surface land observations (global NWP)



Type of Period: Six-hour
Monitoring category: Availability
Variable*: Surface pressure
Monitoring Centre: All
Date: 2022-11-14
Six-hour period: 00, 06, 12, 18
Baseline: OSCAR, GBON*

🔍 If the number of obs.. Expected is 6, and number received is 7, which is greater than 100 (>100%). then the station is turned pink like in Cuba and the Dominican republic.

The latter may be the reason for Jamaica and Barbados painted black. Member may considered changing yes to no



Black means not received. This could be due to:

1. A routing issue
2. Station was not accepted due to a data quality issue
3. BUFR issue
4. OSCAR metadata has yes for international exchange but station is not exchanging data internationally



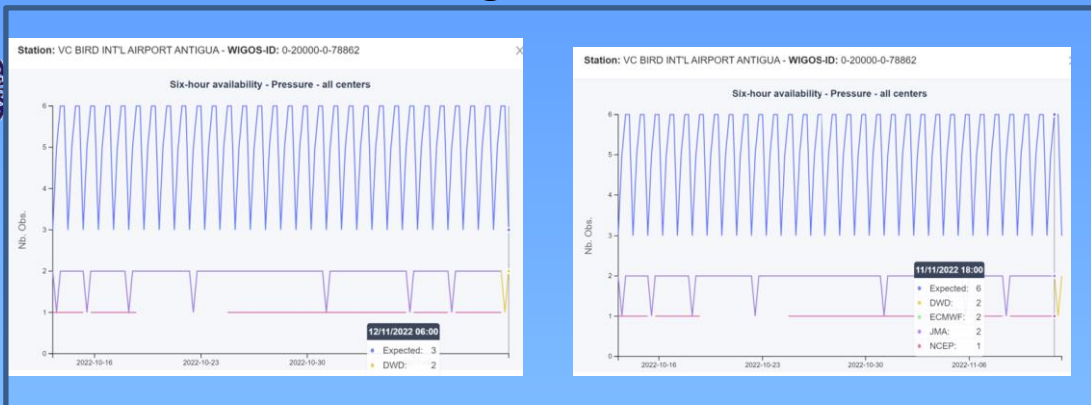
OSCAR/Surface Metadata

Member Country	Reporting Intended for International Exchange	Oscar/Surface Metadata Expect Pressure Reported Hourly	Frequency of Pressure Disseminated	OSCAR/Surface Metadata Declared Status	OSCAR/Surface Assessed Status	WDQMS Status
Anguilla	Yes	1-Hourly	3-Hourly	Operational (GOS)	Partly Operational (GOS)	No Presence
Antigua & Barbuda	Yes	1-Hourly & 3-Hourly (11:00UTC-04:59UTC, 00:00UTC-21:59UTC)	3-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 30%)
Barbados	Yes	1-Hourly	3-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 30%)
Belize	Yes	1-Hourly & 3-Hourly (12:00UTC-06:59UTC, 00UTC-21:59UTC)	3-Hourly	Operational (RBON)		
British Virgin Islands				Operational(GOS)	Unknown	No Presence
Cayman Islands	Yes	3-Hourly (12:00UTC-21:59UTC)	3-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 30%)
Dominica	Yes	3-Hourly (12:00UTC-21:59UTC)	3-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 30%)
Grenada	Yes	1-Hourly & 3-Hourly (00:00UTC-23:59UTC, 00UTC-23:59UTC)	3-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 30%)
Guyana	Yes	3-Hourly (00:00UTC-21:59UTC)	3-Hourly	Operational (RBON)	Operational (RBON)	● Availability issues (≥ 80%)
Jamaica	Yes	1-Hourly	3-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 30%)
Montserrat		3-Hourly 12:00UTC - 21:59UTC	3-Hourly	Operational(GOS)	Unknown	No Presence
Saint Lucia	Yes	1-Hourly (00:00UTC-23:59UTC)	3-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 30%)
St Kitts & Nevis	Yes	1-Hourly	3-Hourly	Operational (GOS)	Operational (GOS)	● Availability issues (≥ 30%)
St Vincent & Grenadines	Yes	1-Hourly	3-Hourly	Operational (GOS)	Operational (GOS)	No Presence
Trinidad & Tobago	Yes	1-Hourly	1-Hourly	Operational (RBON)	Partly Operational (RBON)	● Availability issues (≥ 80%)
Turks & Caicos		3-Hourly	3-Hourly	Operational(GOS)	Unknown	No Presence

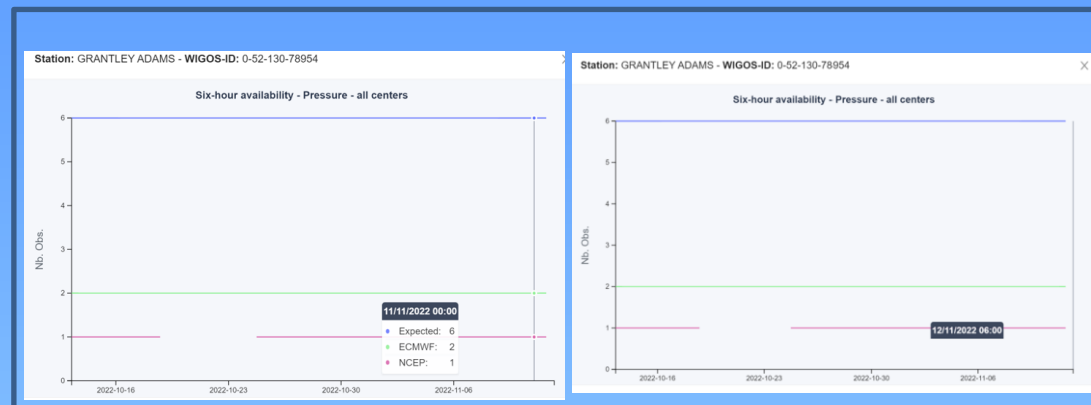
Members OSCAR/Surface NFPs need to pay attention to station metadata



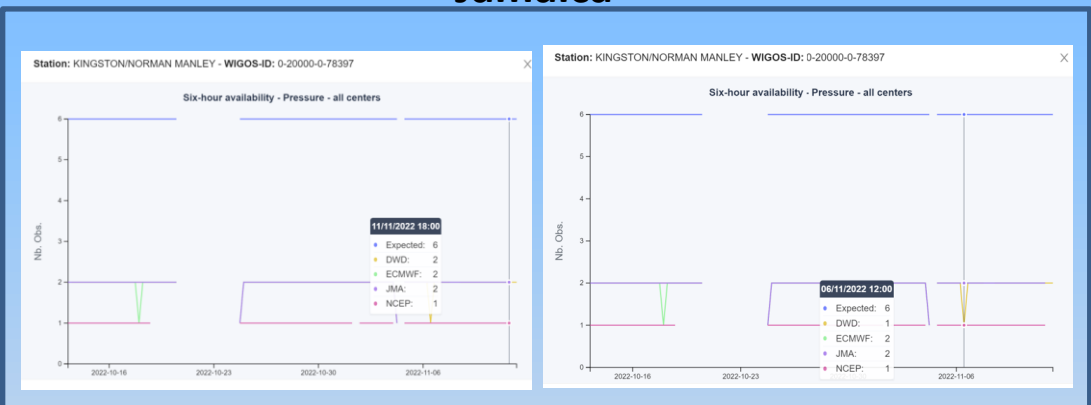
Antigua & Barbuda



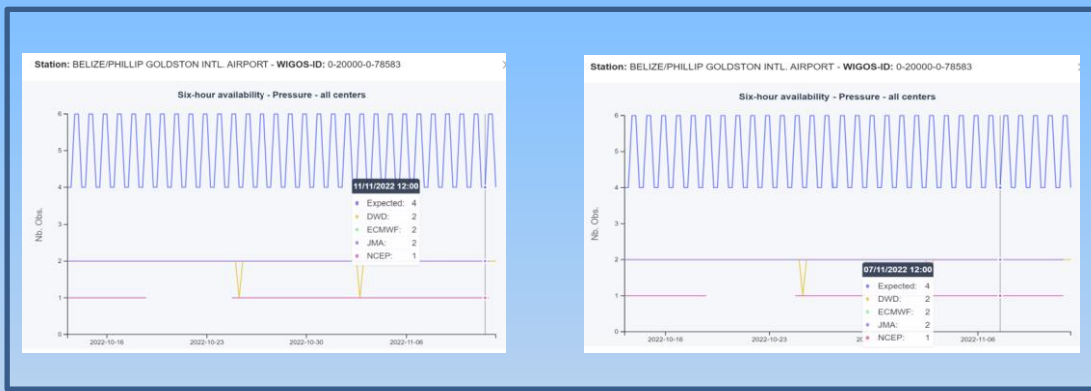
Barbados



Jamaica



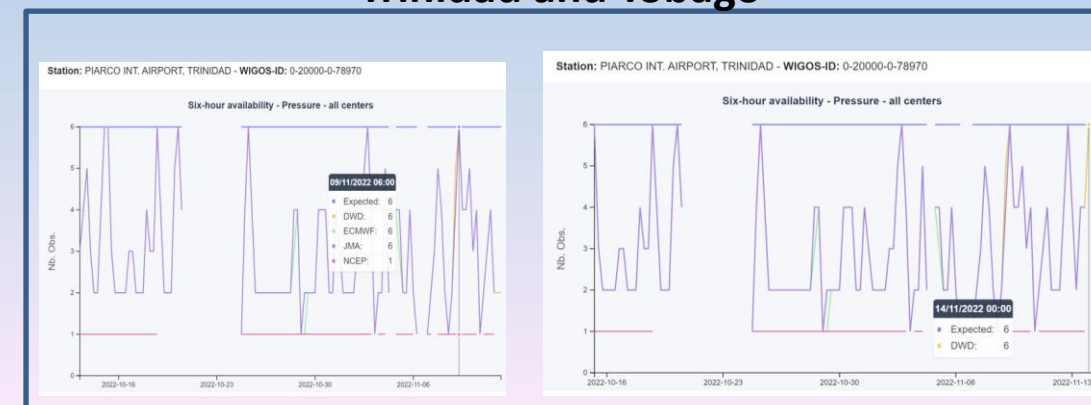
Belize



Guyana



Trinidad and Tobago





CMO SURVEY on WMO Priorities & Focus Areas

Questions

Responses **16**

Settings

Summary

Question

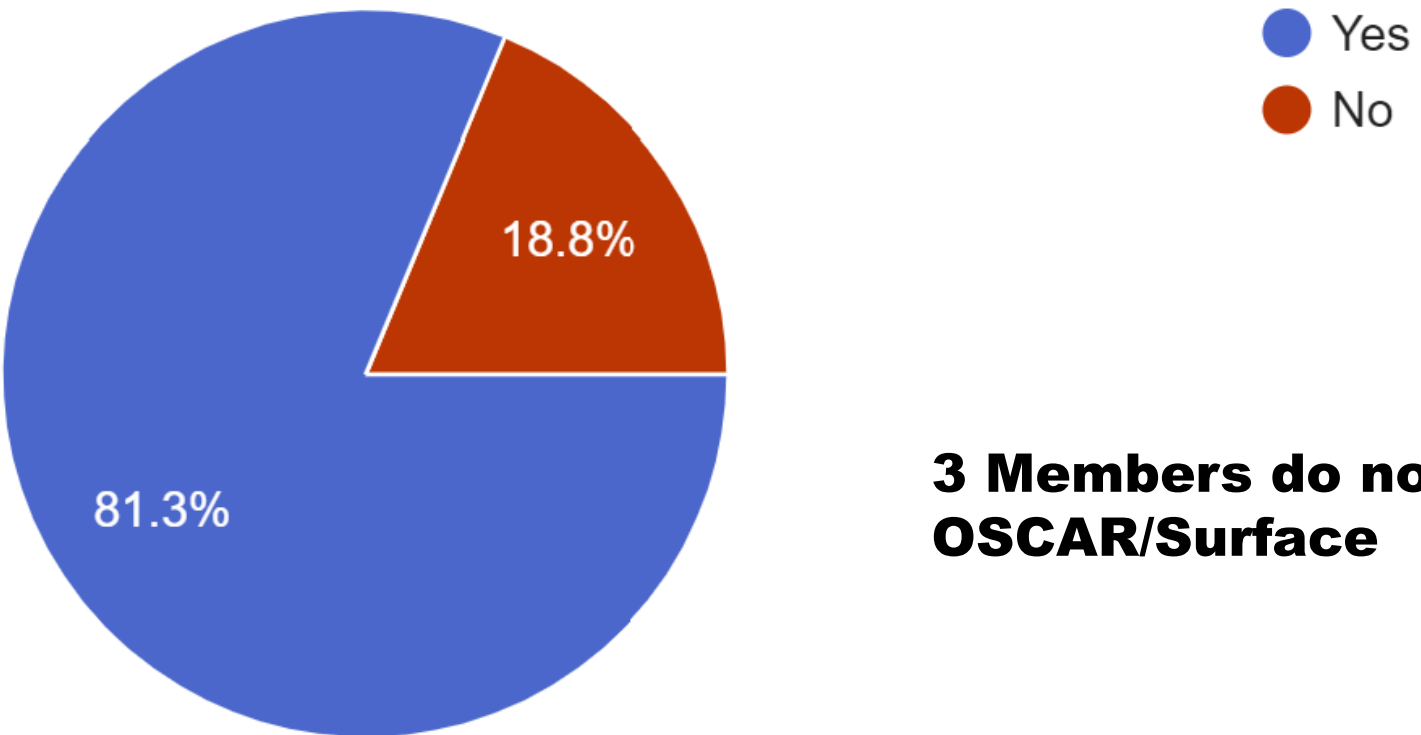
Individual

Name of CMO Member State

16 responses

1.0 Does your National Meteorological/Hydrometeorological Service (NMHS) have a functional National Focal Point (NFP) for OSCAR/Surface nominated with WMO?

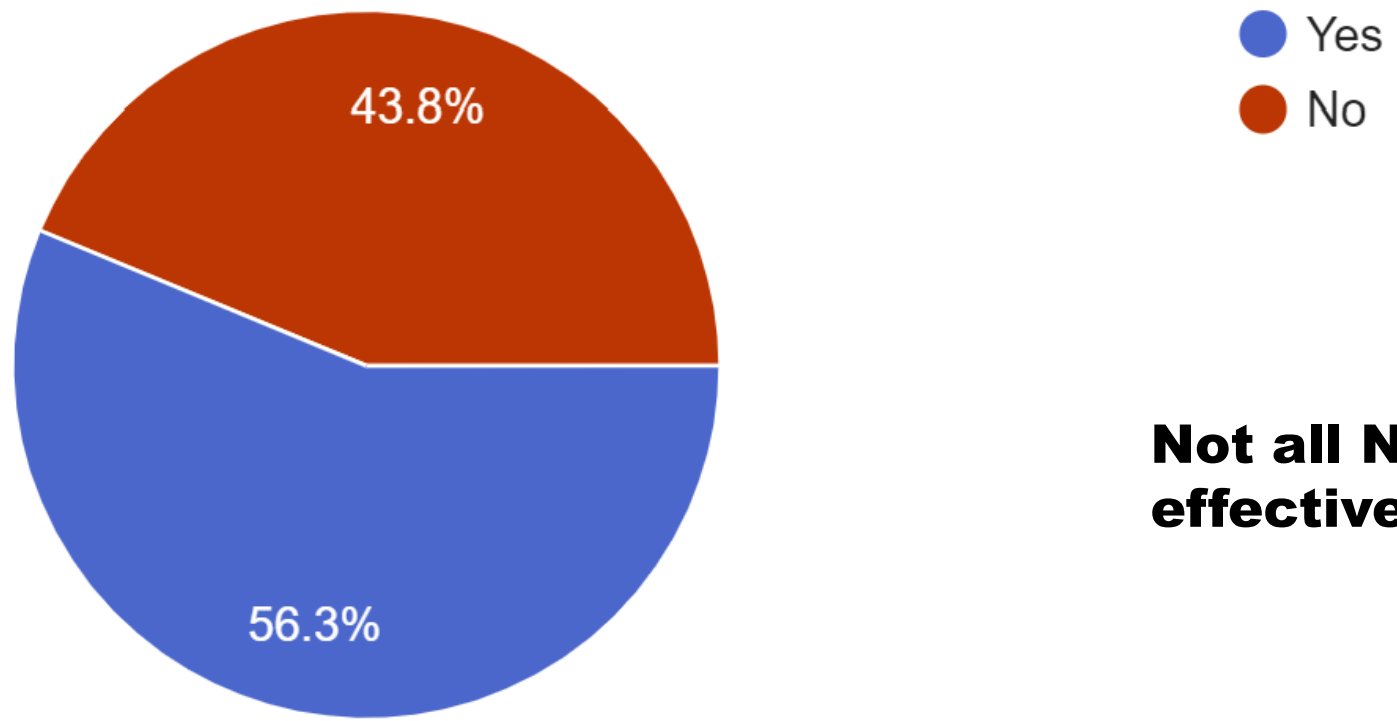
16 responses



3 Members do not have a NFP OSCAR/Surface

2.0 Has your NFP for Oscar/Surface reviewed your station(s) information relevant for your country in OSCAR/Surface to determine if any metadata from your station(s) exchanging data internationally is available and updated, missing or erroneous?

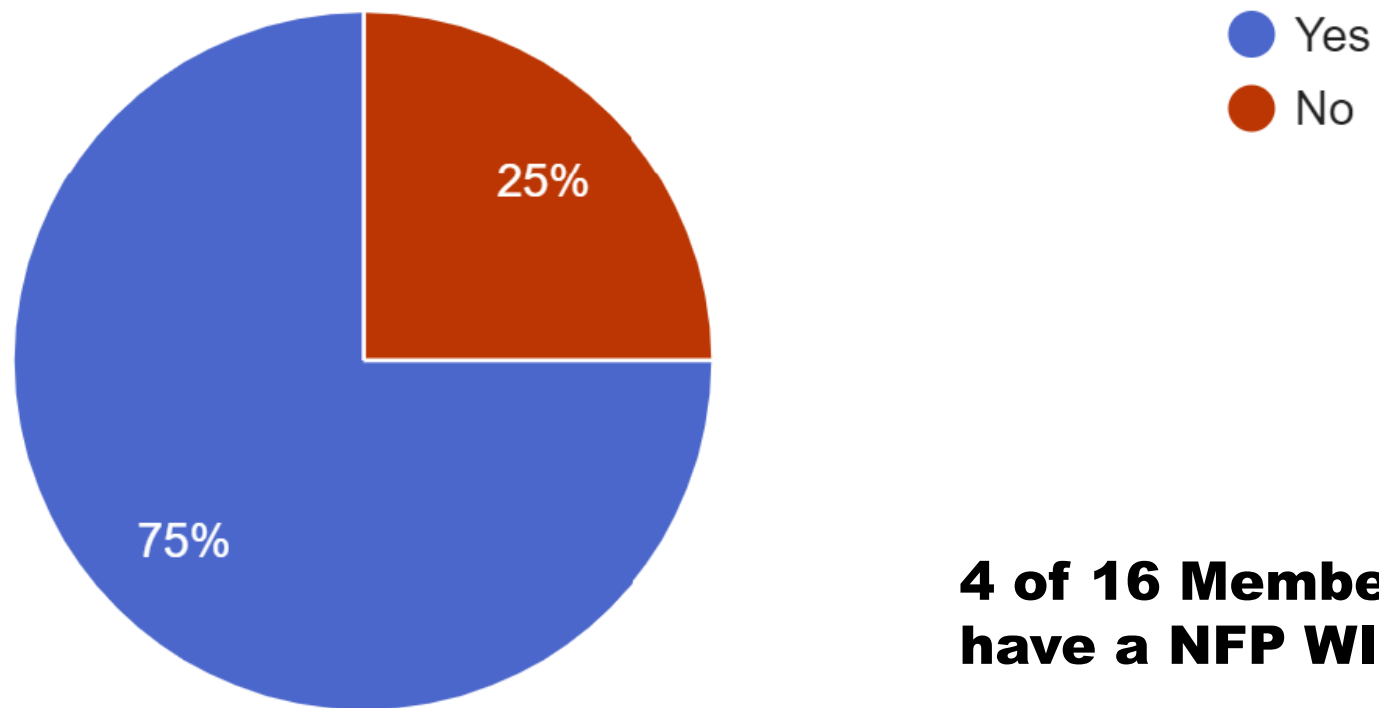
16 responses



Not all NFP functioning effectively

3.0 Does your NMHS have a functional National Focal Point (NFP) for WIGOS nominated with the WMO?

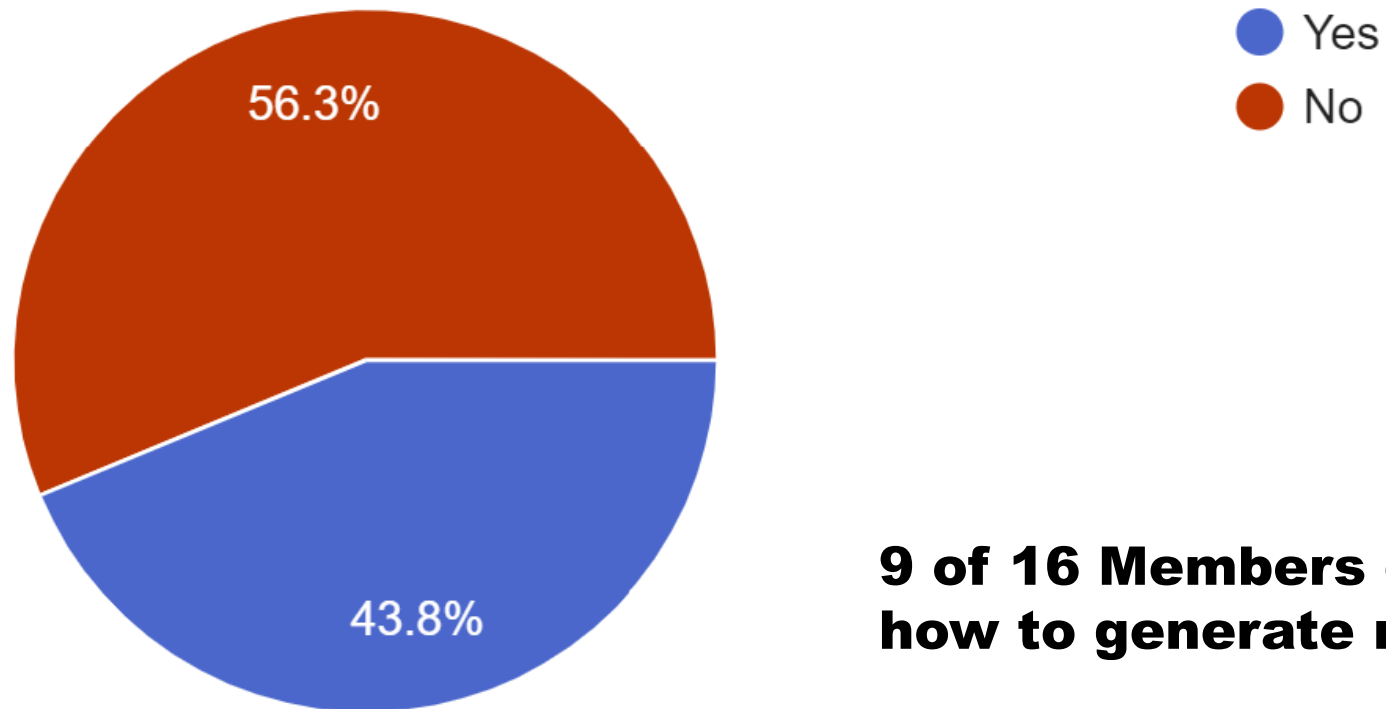
16 responses



4 of 16 Members do not have a NFP WIGOS

4.0 Does the Member NMHS know how to generate the WIGOS Station Identifier for observing stations within its geographic area of responsibility ?

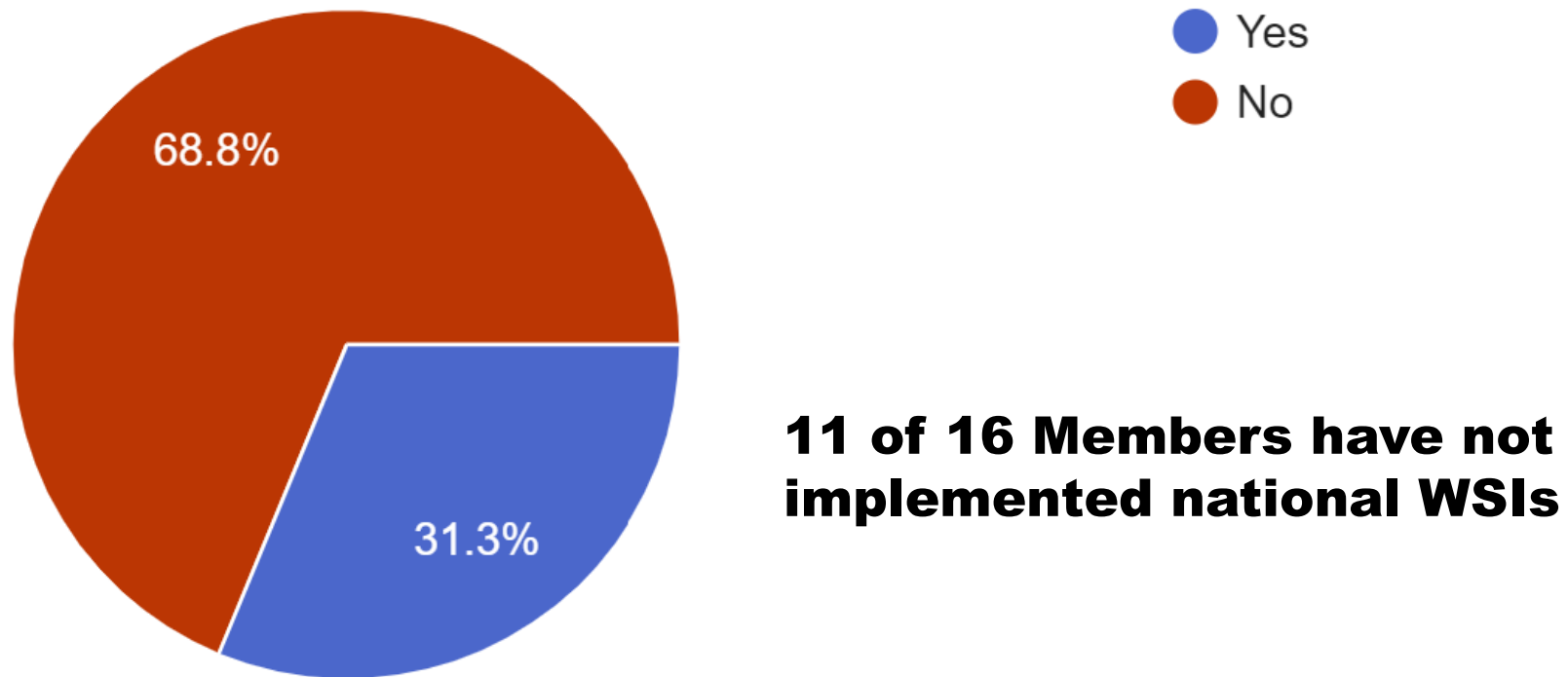
16 responses



9 of 16 Members do not know how to generate national WSIs

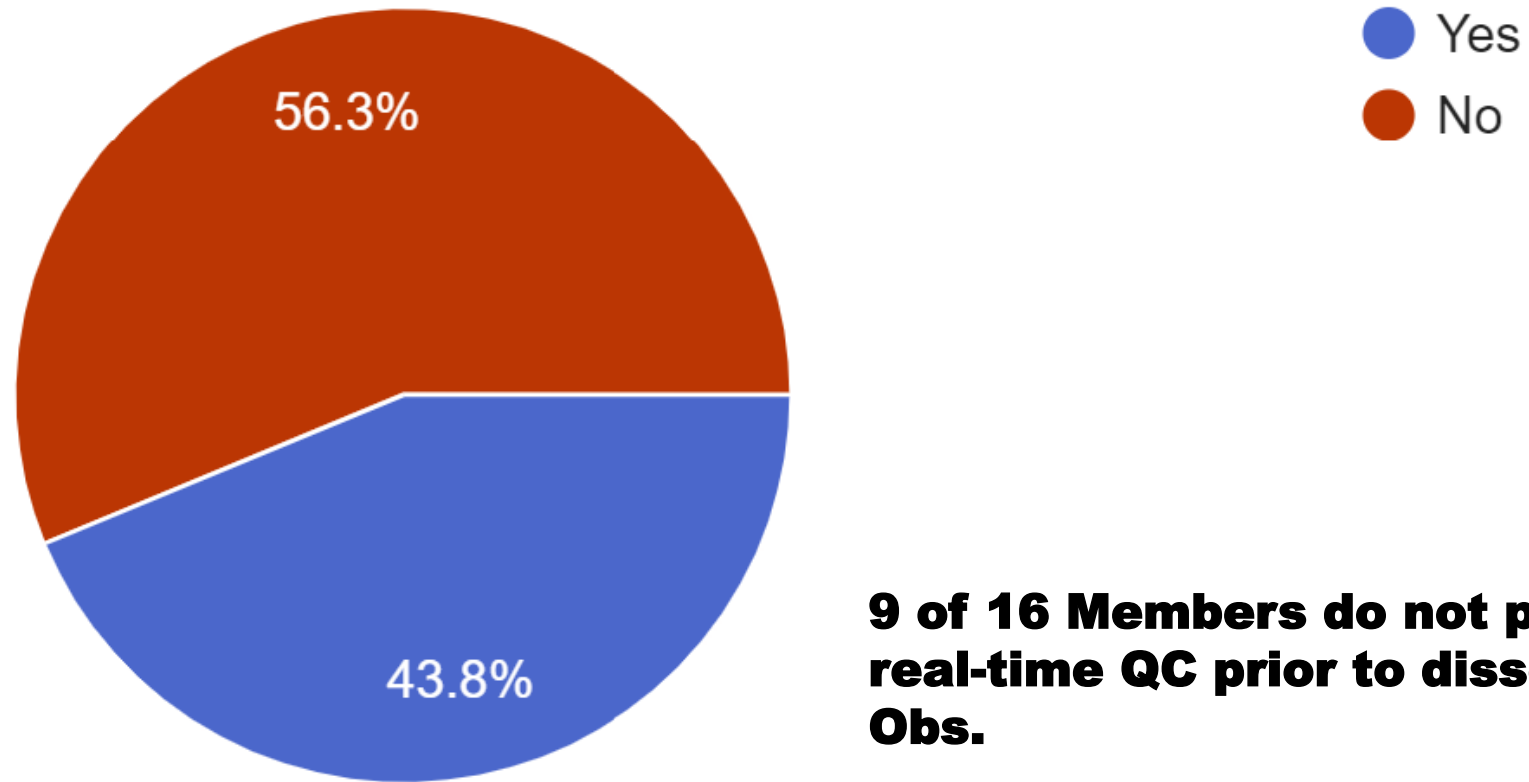
5.0 Has the Member implemented a National WIGOS Station Identifier system, which issues unique WIGOS Station Identifiers for observing station(s) within their geographic area of responsibility?

16 responses



6.0 Has the Member implemented real-time quality control prior to exchange of observations via the WMO Information System ([WIS](#))?

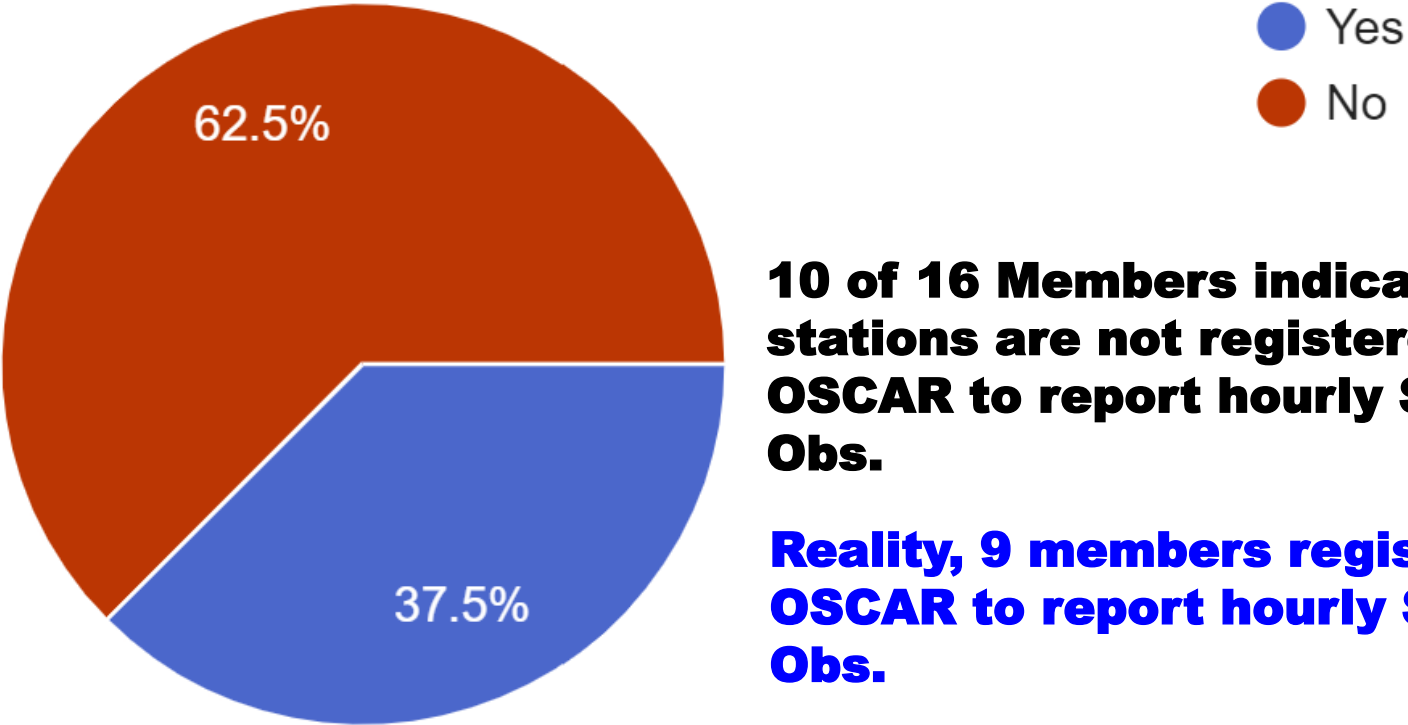
16 responses



9 of 16 Members do not perform real-time QC prior to disseminating Obs.

7.0 Are any of the Member surface observations station(s) registered in OSCAR/Surface to report Synoptic observations every hour during the period of operations?

16 responses

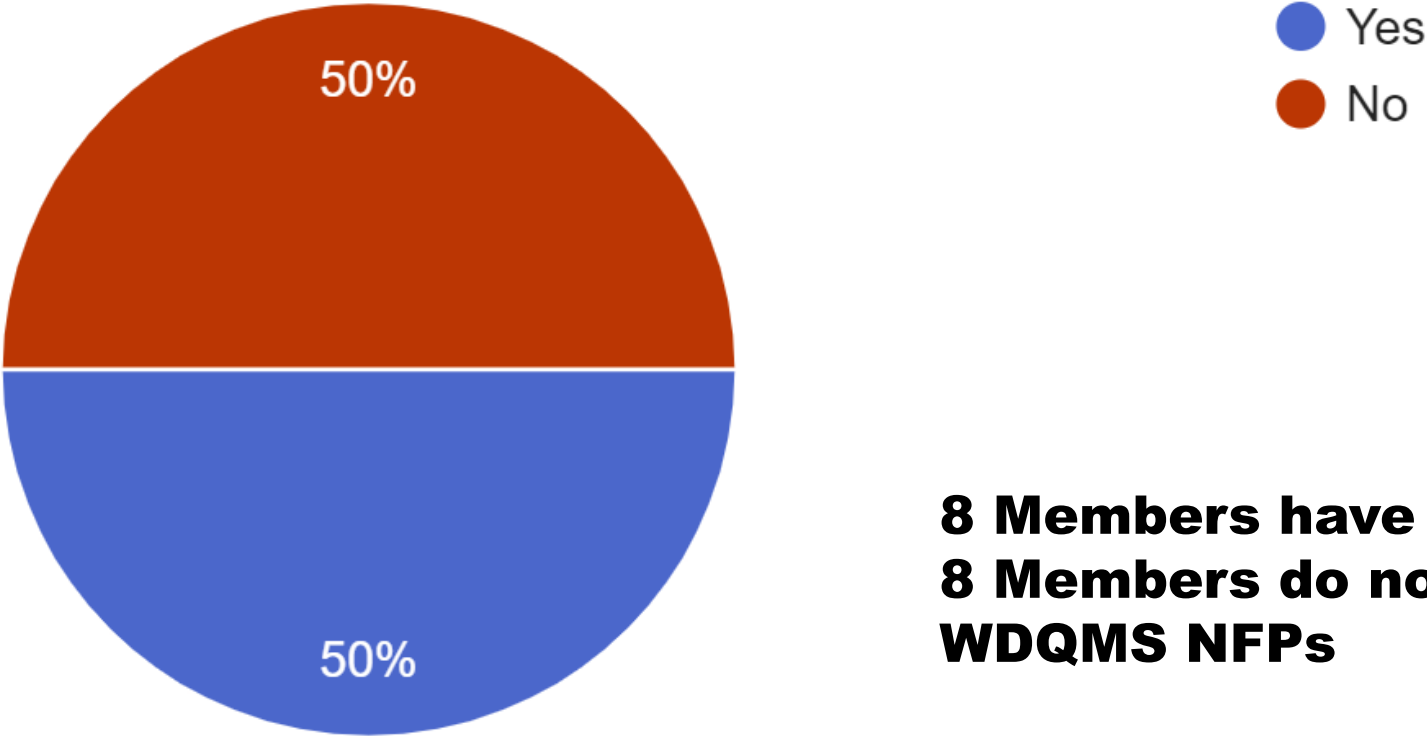


10 of 16 Members indicated their stations are not registered in OSCAR to report hourly Synoptic Obs.

Reality, 9 members registered in OSCAR to report hourly Synoptic Obs.

8.0 Does your NMHS have a functional National Focal Point (NFP) for WDQMS nominated with the WMO?

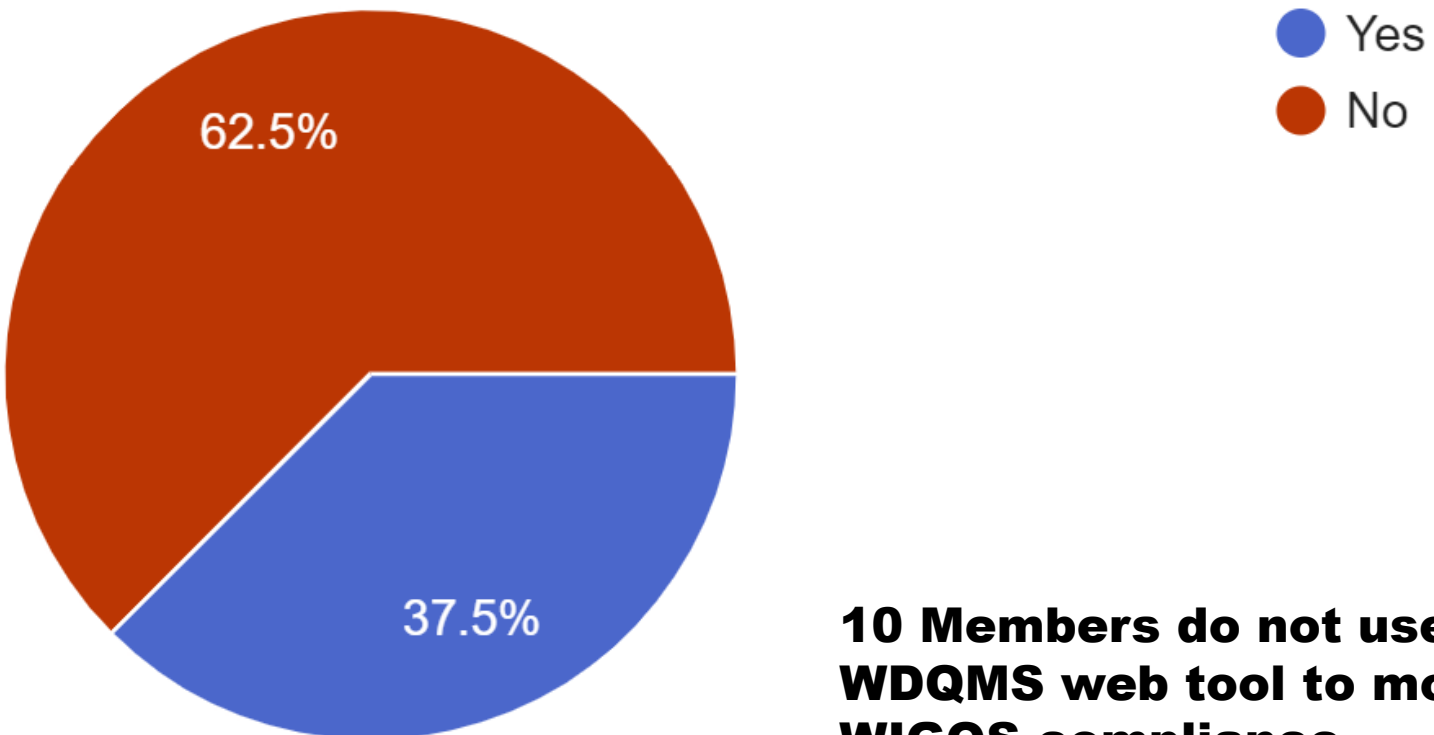
16 responses



**8 Members have
8 Members do not have a
WDQMS NFPs**

9.0 Has your NFP been engaged in performance monitoring using the [WDQMS](#) webtool to determine if the requirements of WIGOS are been met by your NMHS?

16 responses

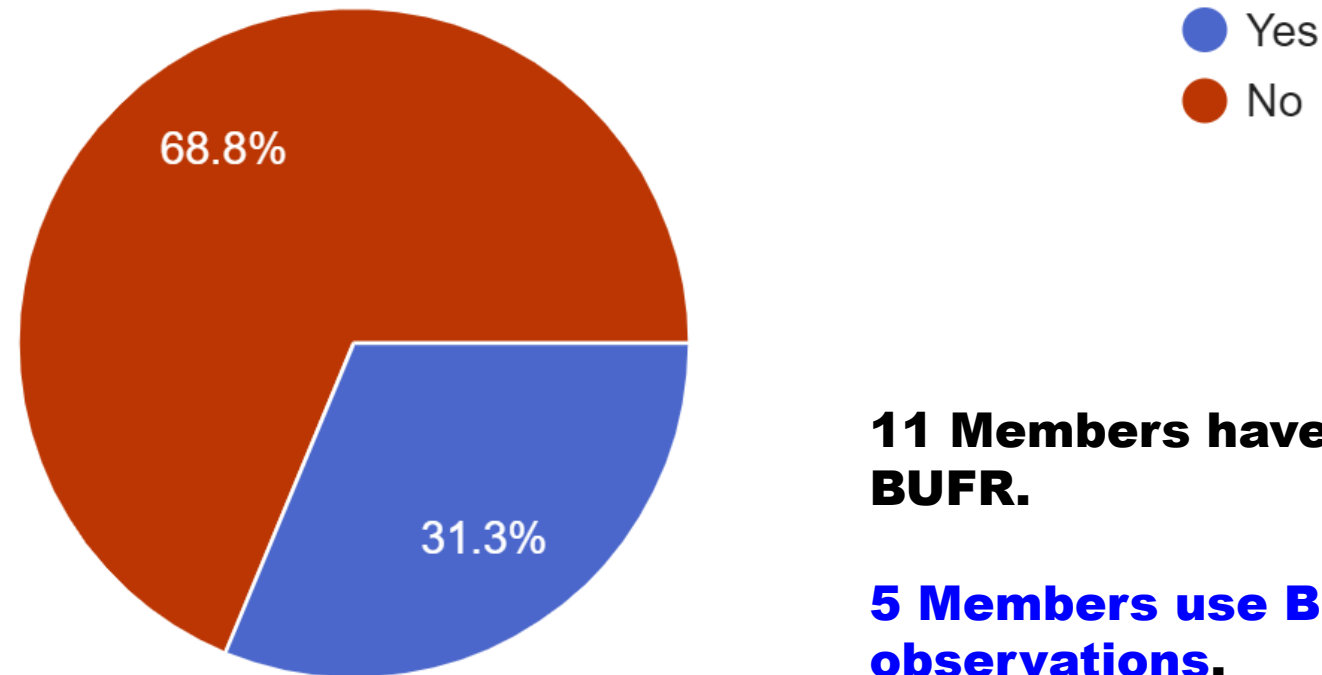


10 Members do not use the WDQMS web tool to monitor WIGOS compliance

Migration from Traditional Alphanumeric Codes (TAC) - FM12 SYNOP to Table-driven Code Form-FM94 BUFR (Binary Universal Form for data Representation).

10.0 Does your NMHS disseminate Synoptic observations using the BUFR format?

16 responses

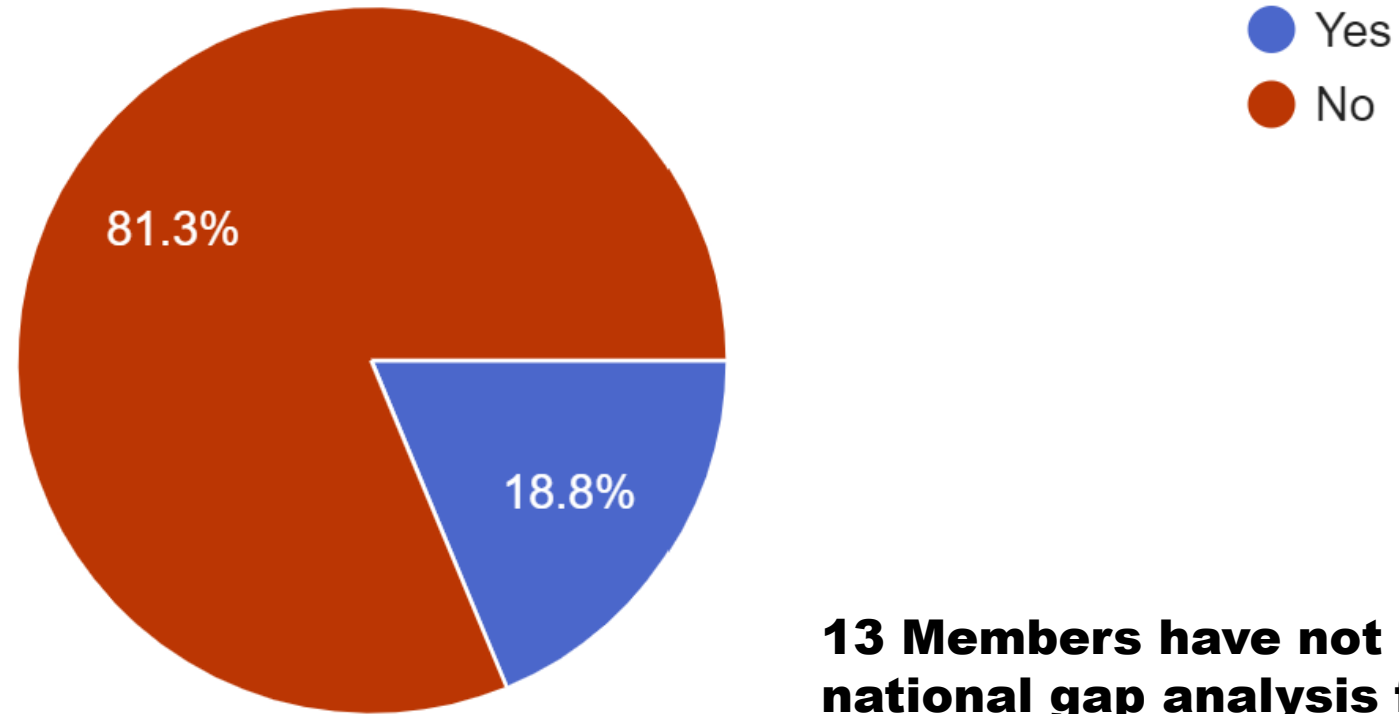


11 Members have not migrated to BUFR.

5 Members use BUFR to exchange observations.

12.0 Has your NMHS conducted a national gap analysis against GBON requirements, as requested by the WMO?

16 responses

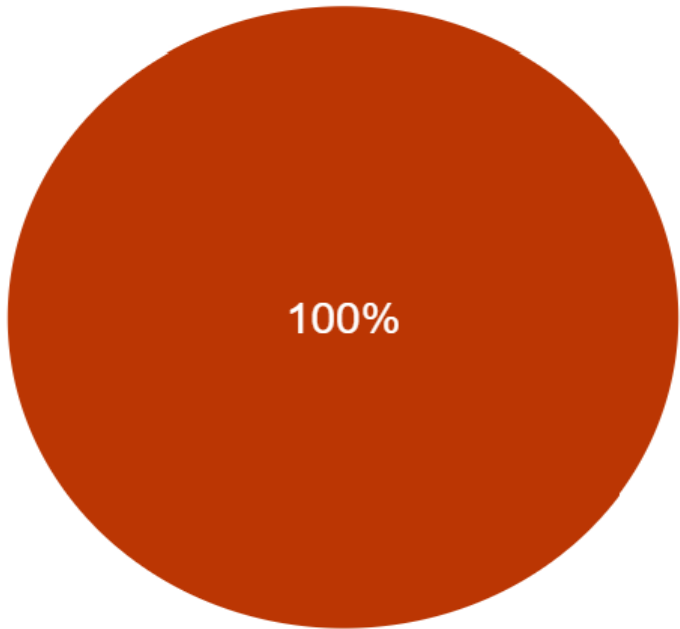


13 Members have not conducted national gap analysis for GBON requirements

GBON requirements demand transmission of observations data on an hourly basis during your NMHS hours of operations, however current practice averages around 3 to 6 hours.

13.0 Does the Member NMHS currently disseminate Synop observations hourly?

16 responses



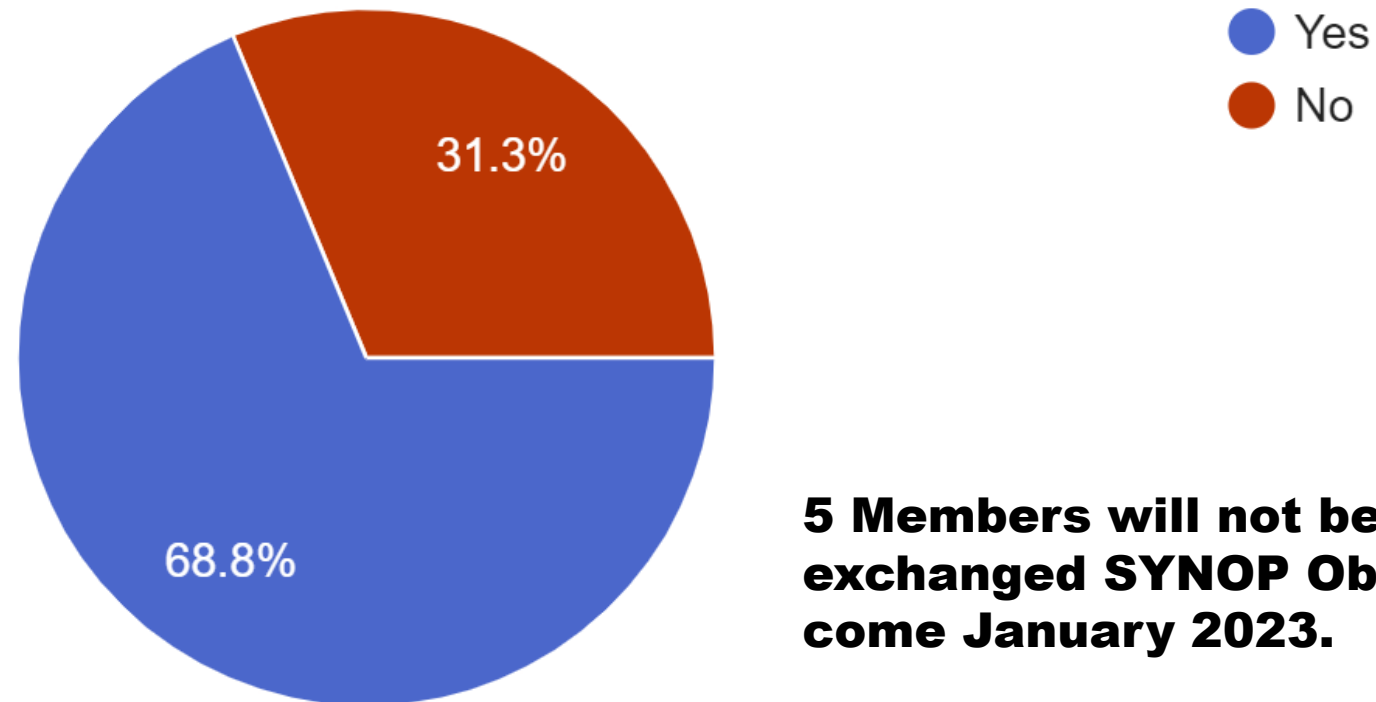
- Yes
- No

**At time of completing survey
no Member exchanged SYNOP Obs.
hourly**

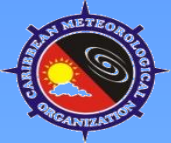
This has since changed.

14.0 Will the Member NMHS be able to disseminate Synoptic observations hourly during operational hours when the Technical Regulations of GBON kicks in on January 01, 2023?

16 responses



5 Members will not be able exchanged SYNOP Obs. Hourly, come January 2023.



WIGOS Operational Plan 2020-2023

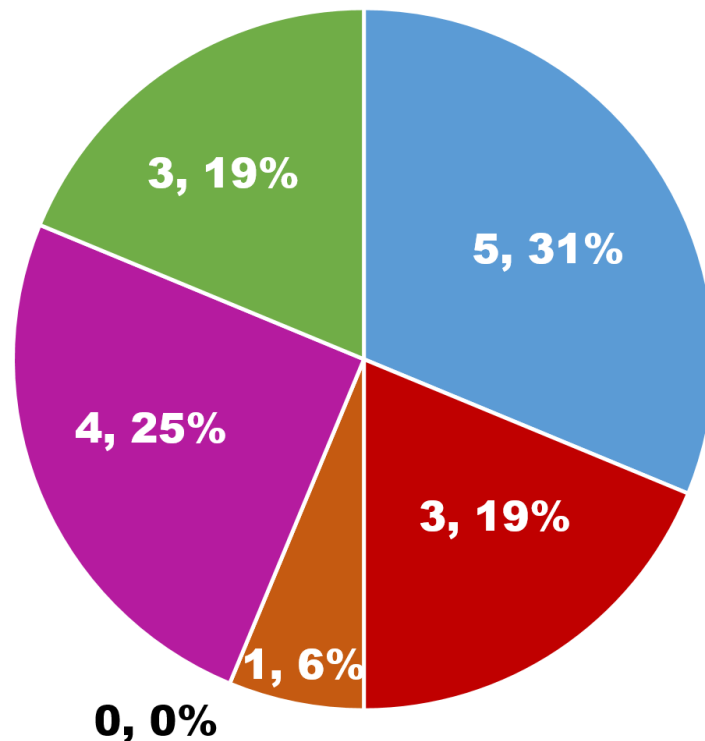
WIGOS Operational Plan 2020-2023 expects the following key deliverables, among others from Members:

1. Nomination of National Focal Points (NFP) for OSCAR/Surface, WIGOS and WDQMS completed.
2. NFPs are actively updating and maintaining members station(s) metadata in the OSCAR/Surface database, for which observations are exchanged internationally.
3. New National WIGOS Station Identifiers system and policy for issuing IDs defined, adopted and implemented.
4. National processes for acting on issues and incidents received from the WDQMS are in place.
5. WIGOS metadata compliance achieved.



21.0 At what level is your NMHS in terms of implementing WIGOS operationally?

16 responses



- Level 1 : National Focal Point (NFP) for OSCAR/Surface in place and functioning.
- Level 2 : NFPs for OSCAR/Surface, WIGOS , and WDQMS in place and functioning.
- Level 3 : Member achieved Level 2 and implemented WIGOS Station Identifiers for observing station (s).
- Level 4 : Member achieved Level 3 and WIGOS station observation quality controlled in real-time.
- Level 5 : Member observations are made and reported in real time through WMO Information System (WIS).
- Level 0 : None of the above.

5 Members or 31 % indicated Level 1

3 Members or 19% indicated Level 2

1 Member or 6% indicated Level 3

No Member indicated Level 4

4 Members or 25% indicated Level 5

3 Members or 19% indicated none of the above



Thank You

QUESTIONS?