



Ministry of Sustainable Development,
Climate Change & Disaster Risk Management

Belize Weather Station Network Enhancement (CCRIF Support)

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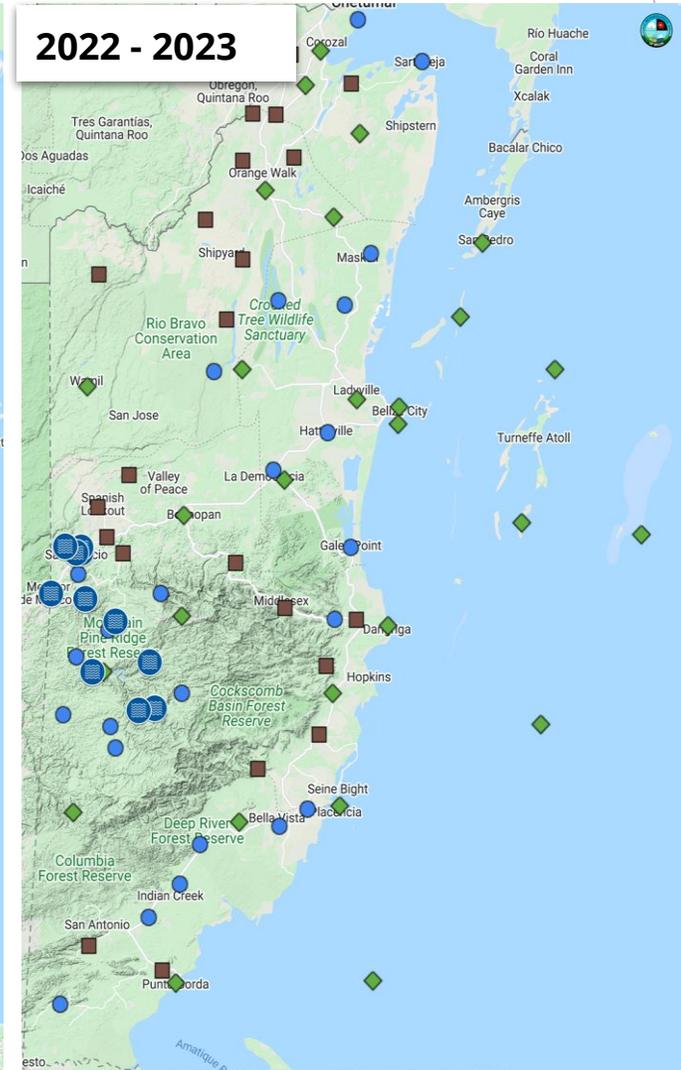
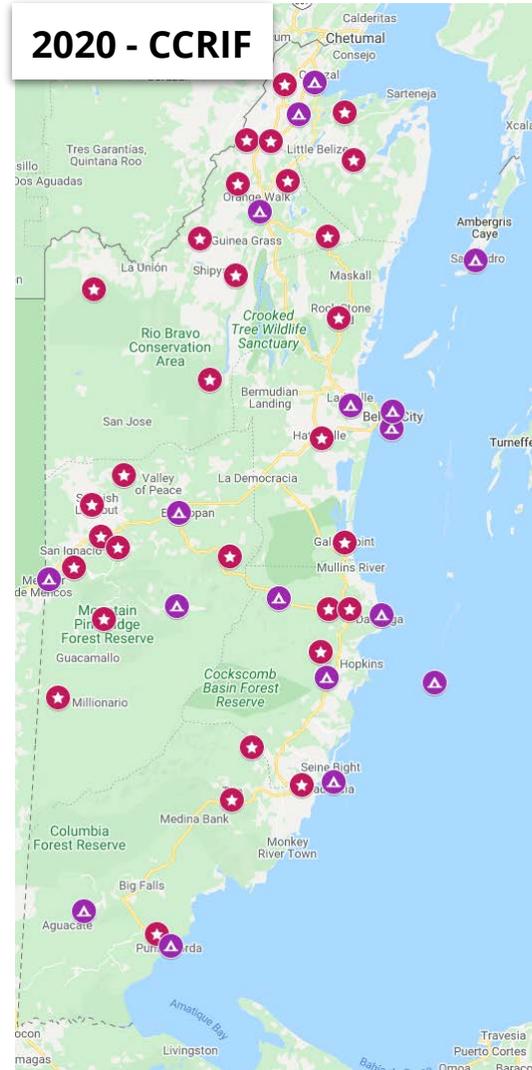
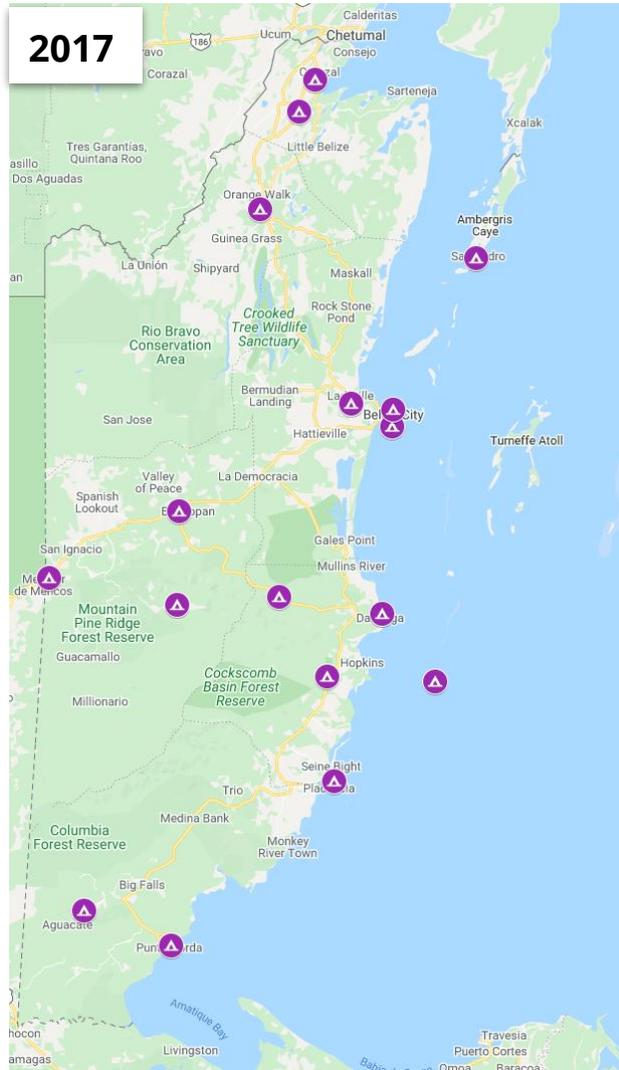
Caribbean Regional Technical Workshop on CCRIF Models
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Outline

- Timeline of Automatic Weather Station (AWS) Network Development
- **CCRIF's** support
- Benefits of AWS Network
- Lessons Learnt /Challenges
- Opportunities
- Next Steps

Timeline of AWS Network Development

- Serious effort to develop an AWS Network started in 2010 when only 1 AWS and about 20 manual stations were available across the country



CCRIF Support (Initial Grant)

Initial Grant in 2017 used to install 30 more AWS across the country with the basic core components shown below:

Data logger – CR300



Weather sealed enclosure



Battery



Data Modem – RV50



Rain Gauge – TB4



Solar Panel



Charge Controller



CCRIF Support (Second Grant)

Second Grant in 2021 used to purchase additional sensors. At that time, **the department's network totaled 52 AWS**

Equipment purchased and installed:

- Air Temperature Sensors and Radiation Shields at all 52 stations
- Enclosure Monitor Sensors at all 52 stations
- Rain Gauge Bird Spikes at 38 stations that currently had Rain Gauges
- Rain Gauge and Rain Gauge Bird Spikes at 12 other stations

Air Temp Sensor



Radiation Shield



RH Sensor

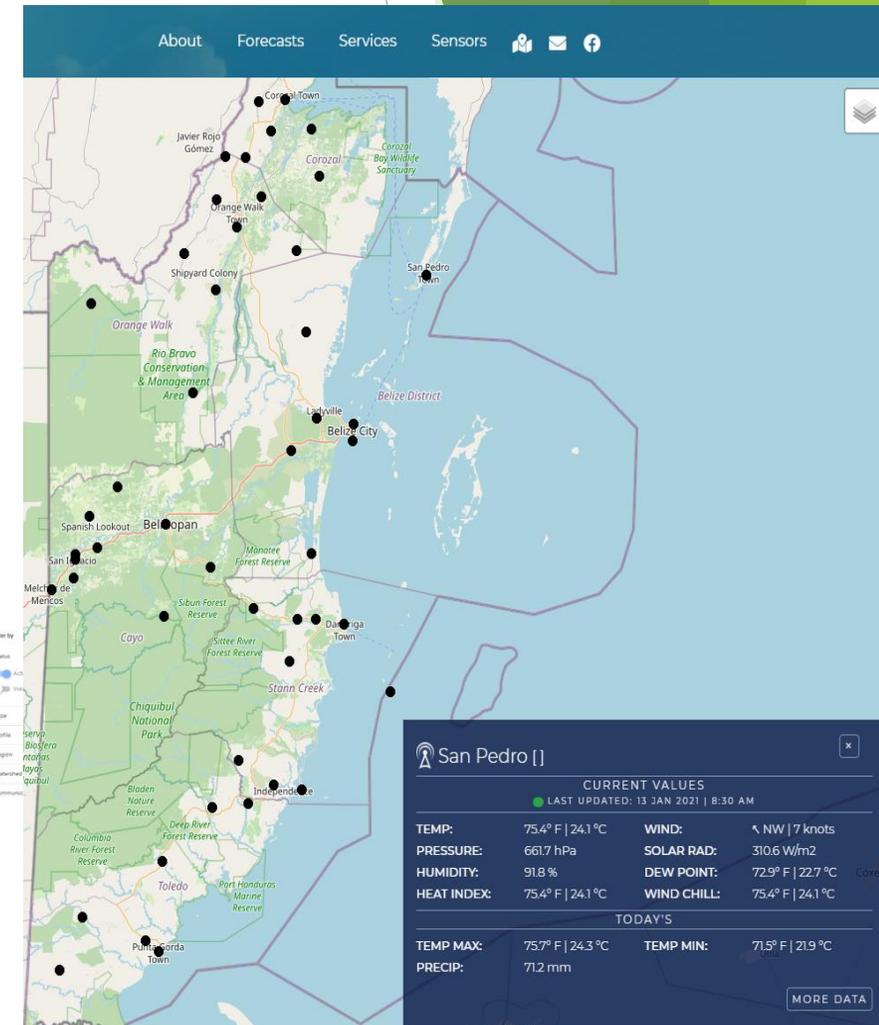
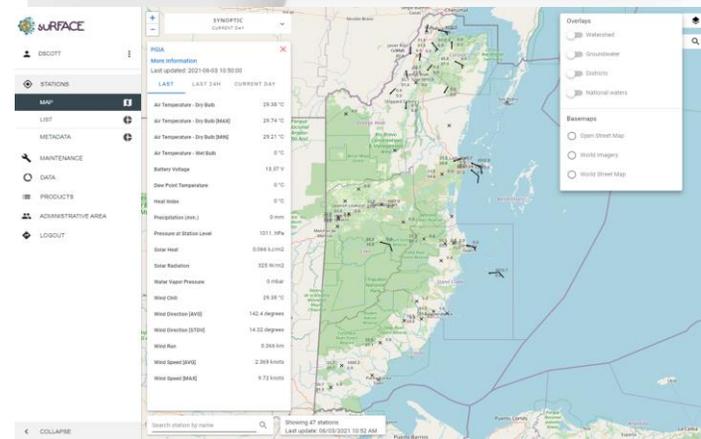


Rain Gauge & Bird Spikes



Benefits of having a functioning AWS Network

- Ease of accessing real-time data from remote locations
- Ability to provide warning/alerts
- Ability to develop climate records for different areas of the country with varying micro-climates
- Sharing of data with various users through database and API
- Data publicly available in real-time on NMS website/frontpage



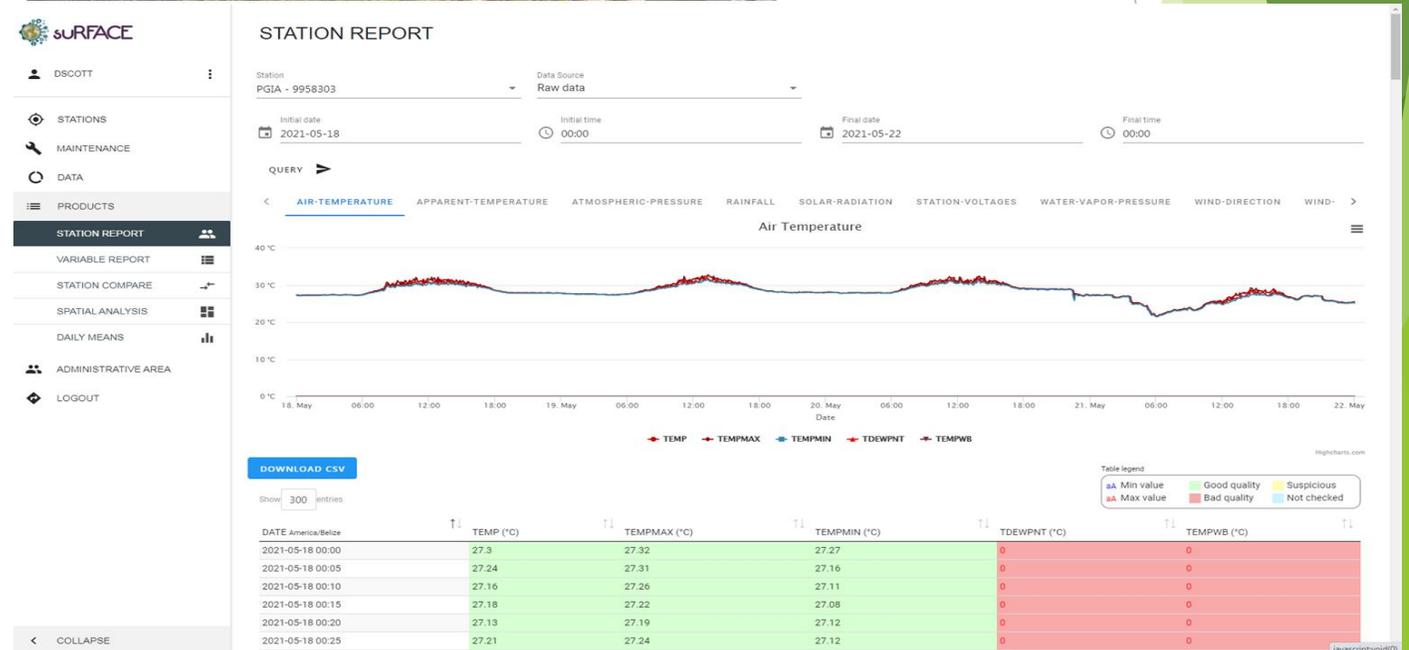
Lessons Learnt/Challenges

- Not all AWS providers are the same; good to standardize with one company
- It is quite challenging to maintain/service such a vast network of AWS.
- Financial and Human resource constraints
- Analyzing vast amounts of data requires state of the art database system
- **“Vandalism”** both from animals and humans.



Opportunities

- Developing good working relationship with one standard provider
- Cooperation with different government and non-government agencies to do field maintenance
- Leveraging project and donor funding to procure spare parts and training
- Developing a very good database system in partnership with WMO
- Work closely with communities to ensure ownership and protection of equipment



Next Steps

- Continue collaboration with CCRIF to ensure good quality rainfall data is available that can be incorporated in Excess Rainfall Model.
- Build Capacity and ensure long-term sustainability through GOB support as well as leveraging external opportunities such as SOFF
- Regional Collaboration with other NMSs through WMO initiatives such as GBON

Thank You for your attention!!!
Questions? Comments?
Suggestions?

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