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Oranjestad, Aruba

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Collaboration for Oil Satellite Tracking in the Americas (COSTA) Program Update

This meeting is being convened virtually. Delegates are kindly requested to access all meeting documents electronically for download as necessary.

COSTA (Collaboration for Oil Satellite Tracking in the Americas) Program Update

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1. Background

Oil spills in ocean and coastal regions are a major threat to the marine ecosystem, fishing and tourism industry and blue economy worldwide. In the Americas and Caribbean region, large oil spills such as the BP Deepwater Horizon spill in 2010, the Brazil oil spill in 2019 and the Peru oil spill in 2022 have caused billions of dollars in damages and long-lasting effects on ecosystems and wildlife, while smaller spills from oil drilling platforms and pipelines, shipping and cruise industry are far more common and also damaging for the environment.

To manage the risks related to oil spills, satellite remote sensing of oil spills provides an important tool for mapping and characterizing oil spills for spill response and mitigation. Recent developments in satellite remote sensing have resulted in more sensors in space with higher temporal and spatial resolution, as well as more affordable and often free imagery available for routine monitoring. Near real-time routine monitoring programs are crucial in the early detection of oil facility equipment failures and leaks, detection of intentional bilge dumping from vessels and providing time-critical information on the oil extents and movements during significant spill events.

During the Cartagena Convention IGM19/COP16 In July 2021, using satellites to detect oil spills was recognized as a regional priority in oil spill response and mitigation. Specifically, the final decisions of the IGM19 now include: 1) “Recommend that the UN Secretariat strengthen collaboration in the region on oil spill monitoring.” 2) “Request the Secretariat, RACs and other partner agencies to actively explore opportunities for replicating and upscaling training for detection of oil spills using remote sensing technology as well as other emerging pollutants.”

The COSTA program, which stands for Collaboration for Oil Satellite Tracking in the Americas, is an international effort to help nations stand up near real-time satellite oil spill monitoring capabilities in the Gulf of Mexico, Caribbean and Americas region. The program is supported by the United Nations Environment Programme (UNEP), Group for Earth Observation (GEO) and the Intergovernmental Oceanographic Commission (IOC). The satellite oil spill monitoring program was developed and led by the US National Oceanic and Atmospheric Administration (NOAA)’s Satellite Analysis Branch (SAB) based on their own operational monitoring for the US Exclusive Economic Zone (EEZ). In July 2021, Trinidad and Tobago joined NOAA to monitor the oil rigs, pipelines and vessel oil discharges in their exclusive economic zone (EEZ), following a 7-week extensive training course from NOAA.

2. **Activities**

Since the last COP19 meeting, COSTA partners have grown. The active partners now include Mexico, Peru and Colombia, in addition to the United States and Trinidad and Tobago.

In mid-2022, Mexico scientists from the Gulf of Mexico Research Consortium (CIGOM) and Interdisciplinary Center for Research and Studies on Environment and Development (CIIEMAD) received COSTA training and capability development support. CIGOM is now monitoring the southern part of the Gulf of Mexico where oil facilities are abundant, with future plans to cover a larger area.

Peru also joined COSTA in 2022 following a devastating tanker oil spill event in January 2022, where over 10,000 barrels of crude oil were spilt from a tanker into the Pacific Ocean off the coast of Lima. An International Disaster Charter was activated. With the coordination of the Group for Earth Observation in the Americas (AmeriGEO), NOAA worked to support Peru's oil spill response including satellite support. Realizing the importance of satellite oil spill monitoring, Peru and AmeriGEO arranged for Peru to do capability development with COSTA in 2022 and daily monitoring was successfully established in late 2022.

Colombia Maritime Authority DIMAR is the latest partner to join COSTA and their monitoring of their Caribbean and Pacific EEZ should start later in the year.

In addition to the new partners, the Institute of Marine Affairs (IMA) in Trinidad and Tobago has started to expand their monitoring area to cover eastern Caribbean countries, and the southern coast of the Caribbean spanning from Dutch overseas territories of Aruba, Bonaire and Curacao to Guyana. Regional marine pollution Emergency, information and Training Centre-Caribe (RAC-REMPEITC) and UNEP are coordinating with IMA and NOAA to ensure oil reports generated by IMA can be utilized by countries in a timely manner.

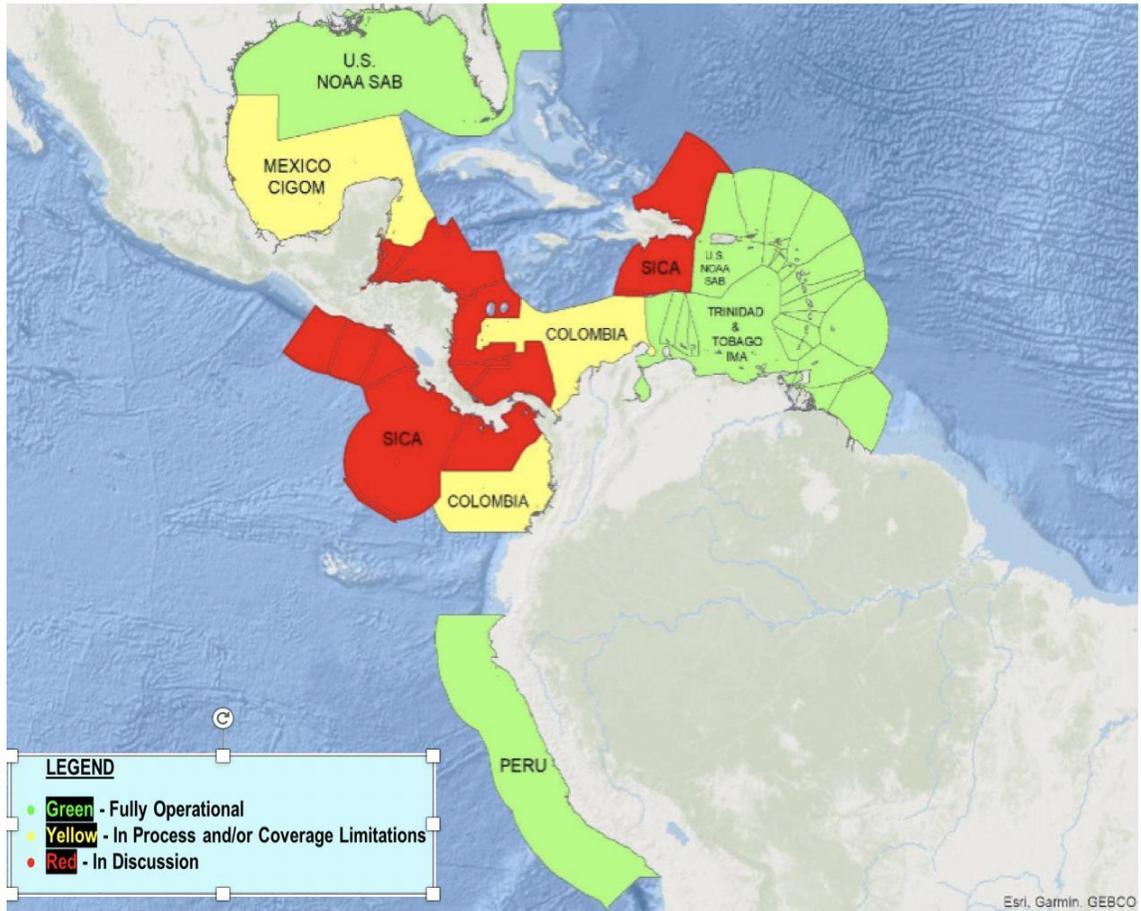


Figure 1. The current coverage of satellite oil spill monitoring through the COSTA program as of April 2023.

3. Next Steps/Future

In the near future, COSTA is focused on capacity development in the Caribbean and Americas region. COSTA works with organizations or agencies that can serve as regional centers covering large areas including multiple nations' EEZs. This assures a reasonable number of COSTA participants that can work closely and effectively together and also encourages collaborations between countries. The COSTA vision focuses on regional centers as a more practical approach than each individual nation standing up oil monitoring capabilities. For instance, SICA (Central American Integration System) has reached out with interest to join, with an area covering eight Central American countries' waters. Jamaica Maritime Authority have also shown interest in joining COSTA and possibly cover Jamaica and surrounding areas.

As COSTA partners grow, there are opportunities for sharing new technology and techniques among COSTA partners and supporting each other for major spills. For example, Trinidad and Tobago's Institute of Marine Affairs will soon explore SAR

(Synthetic Aperture Radar) Towers (radar towers on land near high oil risk coastal waters), which might provide valuable data to validate satellite oil detection. Also NOAA is exploring satellite assessments of oil thickness in water and satellite identification of beached oil. These newly identified oil characteristics can be added to the oil spill report once the techniques mature. To communicate and collaborate effectively, quarterly or semi-annual meetings are to be held between COSTA partners to provide program updates, solve issues and collaborate on common challenges and technologies. Shared Google Drive or web pages can be used to organize meetings and collaborations.

In the long term, COSTA might work to help other global areas in need of satellite oil spill monitoring. AfriGEO members have informally approached COSTA about developing similar satellite-based oil monitoring capabilities. As COSTA solidifies and grows, it will consider reaching out to African nations to help with their oil monitoring development. Finally, in addition to oil spills, other environmental parameters might be added for satellite monitoring. For instance, NOAA SAB is preparing to operationally monitor for methane leaks from offshore oil and gas rigs and other members of COSTA are interested in doing the same. Other examples include satellite-based vessel monitoring and fire monitoring, which COSTA members have shown interest in.

4. **Recommendation/Decision**

We thank the secretariat for the continued support of the COSTA program. We encourage member countries in the Wider Caribbean region (WCR) to support and benefit from the IMA's monitoring effort in the Eastern and Southern Caribbean region. We also encourage WCR countries and territories to engage with COSTA about establishing a regional oil spill monitoring program where currently there are none (e.g., Bahamas, Turks and Caicos and near the Great Antilles region). The COSTA program is also gauging the region's interest in other environmental satellite monitoring such as vessel detection, fire, marine debris and methane detection.