Weather-Ready Nation
National Oceanic and Atmospheric Administration
Aware

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The 2023 Winter Safety Campaign Has Launched!

By: NWS Staff

As we look forward to winter, remember to take precautions that keep you and your loved ones safe from potential winter hazards. The annual Winter Safety Campaign, which launched December 1, offers information on common winter weather hazards across a range of media. To view this year's resources, visit the Winter Safety page!

Pacific Region Represents U.S. at ESCAP/WMO Typhoon Committee Workshop and Forum

By: NWS Staff

The Session Hall at the United Nations Conference Center in Bangkok, Thailand. More than 120 attendees participated in the IWS 18 from across the Asia-Pacific Region.

The Economic and Social Commission for Asia and the Pacific (ESCAP)/World Meteorological Organization's (WMO's) Typhoon Committee recently concluded its 18th Integrated Workshop (IWS 18) and 4th Training and Research Coordination Group (TRCG 4) Forum in Bangkok, Thailand. The Typhoon Committee, an intergovernmental body established in 1968, is composed of 14 Member nations, including Cambodia, China, DPR Korea, Hong Kong China, Japan, Lao PDR, Macao China, Malaysia, Philippines, RO Korea, Singapore, Thailand, U.S., and Vietnam. The United States joined the Typhoon Committee in 1998.

The Committee consists of five Working Groups (WGs): Meteorology (M), Hydrology (H), Disaster Risk Reduction (DRR), Training and Research (TRCG), and the Advisory Working Group (AWG). Five attendees from the NWS Pacific Region make up the U.S. Delegation, each serving a role in each of the five WGs.

The IWS is an annual meeting of all committee members, first held in 2006 when representatives of WGM, WGH, and WGDRR met with the main goal of upgrading regional cooperation through the planning and implementation of crosscutting activities. These technical meetings are themed by the main issues to be addressed and rotate among Members who host the meeting. The IWS 14 was the last in-person meeting, held on Guam in 2019 prior to the COVID pandemic, with subsequent meetings held virtually. The IWS 18, which marked the return of in-person meetings, had the theme "Early Warnings for All Through Enhancement of Typhoon Standard Operating Procedures (SOPs)."

Since its beginning, the IWS has expanded to include the AWG and, every four years, the TRCG, with discussions including technical presentations from Members, progress of group Annual Operating Plans, cross-cutting issues, as well as the strategic plan, budget allocation, and governance of the committee.

Tom Evans, Acting RD, Pacific Region and AWG Co-Vice Chair, commented, "that providing early, actionable, understandable, updated and community specific information to those in harm's way saves lives and decreases effects on economic impacts. This year's IWS 18 and TRCG 4 addressed resiliency while building capacity so impending hazardous conditions can be warned on early and appropriately for everyone."

The resumption of in-person meetings provided the first opportunity for **Brian Strahl**, who became director of the Joint Typhoon Warning Center (JTWC) in 2020, to continue the Center's long-standing participation in the typhoon committee. The JTWC has long been seen as a leader in tropical cyclone analysis and forecasting throughout the Indian-Pacific region. "The IWS provides a valuable opportunity to maintain and build beneficial relationships with meteorological agency leads and forecasters throughout the region, as well as learning about new sources of data and technology that may benefit the JTWC," said Brian.

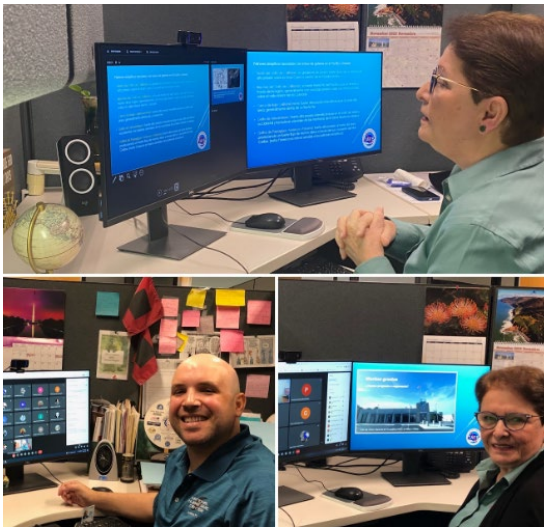
Landon Aydlett, who first participated in the 2019 Typhoon Committee's IWS 14 on Guam added, "Knowledge sharing and capacity building are key components of the IWS. This is especially evident in the DRR Working Group in which Members share about weather and climate impacts affecting their nations and their agency's actions to protect life and property. Despite our geopolitical and cultural differences, we are able to learn from each other."

Typhoons across the region are devastating. Forward thinking leaders from each of the Member countries gathered for the first time in 4 years since the pandemic. Great discussions ensued, focused on disaster risk reduction, climate change, and various emerging technologies like artificial intelligence and machine learning.

TAFB Holds Winter Weather Workshop for Spanish-speaking Countries

By: NWS Staff

The Tropical and Analysis Forecast Branch (TAFB) at the National Hurricane Center (NHC) in Miami, Florida, organized a virtual workshop with Spanish-speaking countries in their area of responsibility. Forecaster **Gladys Rubio** provided a complete overview of the weather patterns that TAFB tracks during the late fall, winter, and spring months that impact our region. Gladys focused on the areas where gale and storm-force winds are more prevalent during these months, disrupting the commerce that traverses those waters. However, our partner weather offices in the Caribbean and Central America also deal with significant swells from large North Atlantic storms, coastal flooding after strong cold fronts, and heavy rainfall events, among other weather impacts.



*Forecasters **Gladys Rubio** and **Sandy Delgado** talking to meteorologists from the Spanish-speaking countries in TAFB's area of responsibility about the winter weather patterns that affect the region.*

Forecaster **Sandy Delgado** followed with a quick review of TAFB's website, focusing on how to access our products. Sandy also mentioned the spot forecast page, which can be quite useful for the countries in the region, and our social media presence. Afterward, **Ernesto Rodriguez**, the MIC of WFO San Juan, presented a thorough run-through of his office and the weather and marine conditions that impact his archipelago. It was enlightening to learn how the bathymetry around Puerto Rico subjugates some areas of the island more than others during significant swell events. Finally, the Meteorological Institute of Cuba had three presentations on the climatology of cold fronts that have affected the island and what the forecasters expect for the 2023-2024 season. Not surprisingly, El Niño has a marked impact on the number and intensity of fronts that affect Cuba.

Overall, the workshop was a great success! Around 40 forecasters participated from countries like Cuba, the Dominican Republic, Mexico, Colombia, and Nicaragua. The forecasters indicated that the interaction achieved was much appreciated and valuable. These workshops serve as a refresher for experienced forecasters in the transition from the summer months into the winter season, as well as providing a great learning opportunity for new forecasters.

WFO Las Vegas Supports Core Partners During Inaugural Formula 1 Las Vegas Grand Prix

By: NWS Staff

The Weather Forecast Office (WFO) in Las Vegas just wrapped up an exciting multi-day deployment to provide IDSS for Core Partner supporting the inaugural Formula 1 Las Vegas Grand Prix. The 2023 race, which took place from November 16-18, brought in over 300,000 visitors from destinations across the world! Given that fall weather across the Desert Southwest can be quite unpredictable, a robust deployment footprint was essential to ensure the safety of spectators and racers alike.

WFO Las Vegas meteorologists were deployed to four different locations: The Multi-agency Coordination Center (MACC), Las Vegas Metro Police Headquarters (LVMPD), the Las Vegas data center known as Switch, and the Harry Reid International Airport TRACON. Additionally, a dedicated Deployment Section Lead was housed at the WFO to be the primary point of contact between deployed meteorologists and the forecast office. WFO Las Vegas made heavy use of the Incident Command System (ICS) in support of this complex and expansive event, employing an organizational chart to clarify roles and responsibilities.

The MSG Sphere welcomes racers and spectators alike to Fabulous Las Vegas

In the leadup to the event, it was apparent that Mother Nature may throw a curveball, with ensemble guidance depicting a large upper trough affecting the southwest U.S. right around the race festivities. This brought about a lot of uncertainty, encouraging the office to develop a probabilistic weather briefing for safety entities concerned about the incoming system. This highlighted three potential scenarios: dry, somewhat wet and windy, and very wet and windy. Lead meteorologists **Chris Outler** and **Trevor Boucher** collaborated on the briefing, which was delivered early in the week so that preparations could be made for the potential scenarios and their potential impacts to property and life safety.

Thankfully, a less impactful scenario played out, with light wind gusts and showers occurring mostly outside of the main event hours. However, the late evening timing of the event did make the deployments unique, running from mid/late afternoon through the wee morning hours at most locations, aside from the TRACON, which was focused more on routine air traffic.

In total, WFO Las Vegas deployed eight meteorologists to the four dedicated sites, enabling eye-to-eye coordination with key decision-makers and public safety officials. These in-person interactions facilitate greater awareness of partner needs and an increased sense of NWS capabilities on the part of those who rely heavily on our information to keep people safe. The office also benefited from hosting two neighboring meteorologists, **Glenn Lader** from WFO Tucson, Arizona, and **Valerie Meola** from WFO Flagstaff, Arizona, who assisted in forecast operations. This freed up more deployment-ready resources for local needs and made the operational flow run more smoothly.

The weather largely remained quiet for the main events, but things did take a rather sharp turn as a compact but powerful system brought strong north/northwest winds to the Las Vegas Valley on Sunday, the day after the main race. This would be disruptive on a normal day, as it wreaks havoc on aviation, but given this was the day following the main race, air traffic was at capacity with departures. Meteorologists deployed to the TRACON, through coordination with the CWSU in Palmdale, California, were able to provide timely updates on the winds and how they were expected to evolve through the day. Wind gusts of 50 to 60 mph were observed, and blowing dust even caused a closure of I-15 for nearly four hours just south of Las Vegas. The high winds resulted in a ground delay program at Harry Reid International Airport. Having a dedicated meteorologist at the TRACON proved essential in managing airport operations as winds were so impactful. Even though it came after the height of Formula 1 festivities, the wind event proved how essential it is to keep aviation partners in mind for large scale events such as these.

The Las Vegas Grand Prix is now set to be an annual event for the next ten years, yielding more opportunities for WFO Las Vegas to provide dedicated deployment support to core partners, develop better probabilistic forecasting and messaging techniques, and improve deployment capabilities.

Alaska Sea Ice Program Deploys Aboard the R/V Sikuliaq for Five Week Mission

By: NWS Staff

From October 10 to November 15, NWS Anchorage/Alaska Sea Ice Program meteorologist **Michael Lawson** deployed onboard the R/V Sikuliaq in support of the Arctic Mobile Observing System cruise into the ice-covered waters of the Beaufort Sea. The Arctic Mobile Observing System is an Office of Naval Research project that will enable study of sea ice dynamics and thermodynamics. The endeavor was the first embedded deployment for the program.

This DOD research was supported by the research vessel Sikuliaq, owned by the National Science Foundation and operated by the University of Alaska - Fairbanks, and is the only ice-capable vessel in the U.S. Academic Research fleet. In collaboration with the U.S. National Ice Center, Michael provided multiple daily briefings on ice and meteorological conditions, as well as daily ice analysis support graphics and forecasts for the ship's bridge crew

and science party.

The Sikuliaq has the ability to break ice up to 2.5 feet thick. Ice thickness, ice pressure, ridging, rafting, lead opening, and snow cover all affect the ship's speed and effectiveness of breaking ice. Multi-year sea ice, which is thicker and harder than first-year ice, cannot be broken by the ship. Decision support services included tracking the above elements and the position of multi-year ice, giving the opportunity for the ship to avoid or exploit such features.

Decision support also extended to the needs of the science party onboard, including identification of open water for vehicle testing and suitable areas for buoy deployment.

Questions about the Alaska Sea Ice Program? Contact the ASIP at nws.ar.ice@noaa.gov.

Michael giving a briefing on ice and weather conditions

Aware

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