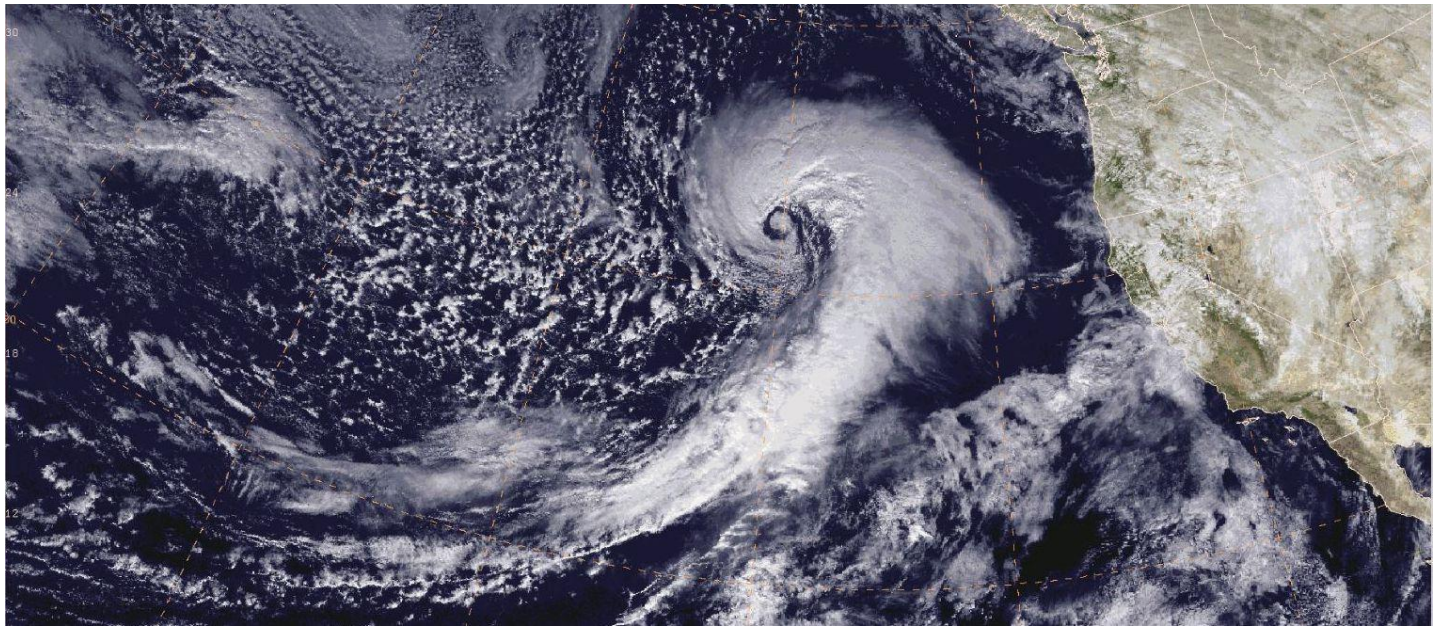
OCEAN PREDICTION CENTER

STRATEGIC PLAN
2017-2021

Achieving a Maritime Weather Ready Nation



APRIL 2017

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INTRODUCTION

Nearly $2 trillion worth of imports and exports are transported aboard 60,000 ocean-faring vessels through the nation's seaports each year, while over 11 million Americans board cruise ships from these same ports annually. Traveling on the high seas is often treacherous, with hazards such as high winds, large waves, fog, thunderstorms, sea ice, freezing spray, and even volcanic ash challenging mariners, threatening the safety of both life and property at sea.

The Ocean Prediction Center, one of 9 centers comprising the National Centers for Environmental Prediction, provides marine weather forecasts and warnings of hazardous weather over much of the northern Pacific and Atlantic Oceans. Our team of meteorologists, physical scientists, and computer scientists, using as their tools a suite of satellite and in situ observations along with weather and ocean models, collectively apply their hundreds of years of cumulative specialized experience in the maritime environment to provide the world's best marine forecasts and critical decision support services for mariners. We are a key service provider of the U.S. contribution to a global network of weather centers providing support to the International Maritime Organization's Global Maritime Distress and Safety System, transmitting forecasts and hazardous weather warnings via the World Meteorological Organization's Marine Broadcast System. These requirements are codified in amendments to the International Convention for the Safety of Life at Sea, the origin of which dates back to the 1912 Titanic disaster.

This strategy will guide the evolution of the Ocean Prediction Center through 2021 within the NWS overall strategic effort to build a "Weather Ready Nation." Developed with substantial input from key stakeholders and our staff, this Strategic Plan sets a course for the Center to further strengthen our core partnerships, enhance our decision support services, and improve maritime weather collaboration across NWS. It highlights our plans to expand our forecast horizon from the present 4 days to 14 days, collaborate with Navy Fleet Weather Centers, build on the use of technology to improve our dissemination, and – most importantly – maintain a workforce second to none in marine weather forecasting.

This plan also incorporates the realignment of NOAA's component of the National Ice Center as a key part of the Ocean Prediction Center. A strategic decision made jointly in 2016 by leadership at NOAA, NESDIS, and NWS, this ongoing realignment will lead to an integrated approach for marine weather prediction and impact-based decision support services across the Arctic and Antarctic, as well as in the Great Lakes and the Chesapeake and Delaware Bays.

The staff of the Ocean Prediction Center is committed to our vision of eliminating all weather-related losses of life and property at sea, building a *maritime* Weather Ready Nation that is ready, responsive, and resilient to extreme weather events at sea.

Thomas J. Cuff, Director
Ocean Prediction Center

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OCEAN PREDICTION CENTER

MISSION

The Ocean Prediction Center (OPC)
provides timely and accurate marine weather warnings and forecasts,
enhancing the Nation's maritime weather readiness
and protecting life and property at sea,
while enhancing the economic viability of the maritime community and Nation.

VISION

Provide the world's best marine weather decision support services,
preventing loss of life and property at sea.

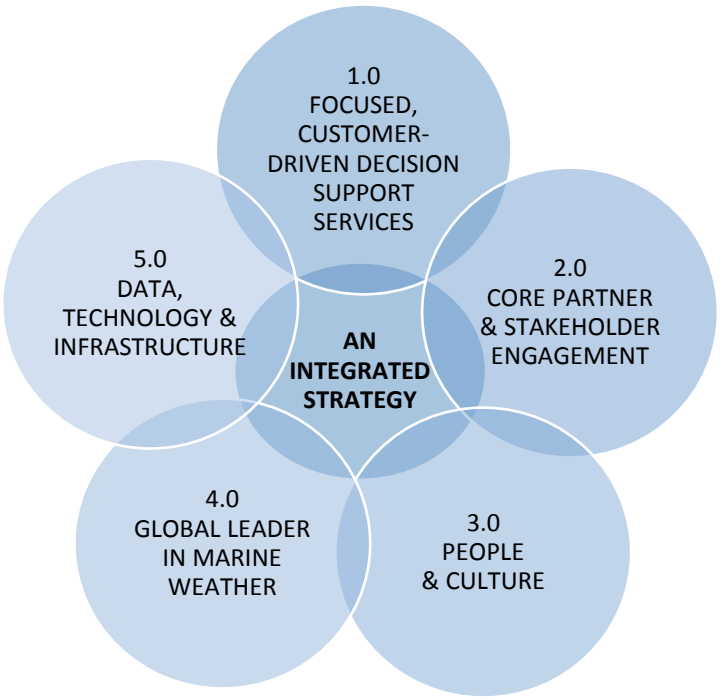
UNIQUE VALUE PROPOSITION

OPC's forecasts, warnings, and decision support services,
produced by the world's best marine forecasters and
incorporating the latest advancements in science and technology,
are foundational to the national and global maritime weather enterprise
and essential to the safe transportation of goods and people on the high seas.

CORE VALUES

Excellence in Public Service
Personal Accountability
Scientific Integrity
Teamwork
Trust

STRATEGIC GOALS



1.0 FOCUSED, CUSTOMER-DRIVEN DECISION SUPPORT SERVICES

Advance integrated, real-time, collaborative forecasts and impact-based decision support services to prevent loss of life and property at sea.

2.0 CORE PARTNER & STAKEHOLDER ENGAGEMENT

Promote a culture of maritime weather readiness through more effective engagement and collaboration with core partners, customers, and stakeholders, to better understand their evolving needs.

3.0 PEOPLE & CULTURE

Enable the Evolve NWS initiative by retaining and growing a highly skilled and professionally satisfied workforce with a culture of collaboration and adaptability to changing conditions and customer needs.

4.0 GLOBAL LEADER IN MARINE WEATHER

Through innovation and international collaboration, demonstrate global leadership in the provision of marine weather decision support services.

5.0 DATA, TECHNOLOGY & INFRASTRUCTURE

Enhance the capacity and capability to offer, integrate, display, and disseminate data and information to all customers.

1.0 FOCUSED, CUSTOMER-DRIVEN DECISION SUPPORT SERVICES

Advance integrated, real-time, collaborative forecasts and impact-based decision support services to prevent loss of life and property at sea.

REALIGN THE NATIONAL ICE CENTER

1.1 Complete the realignment of NOAA's component of the National Ice Center (NIC) from NESDIS[1] to NWS as the Ice Services Branch of OPC, to provide the nation with integrated marine hazard products and services in the Arctic, Antarctic, and Great Lakes regions.

IMPROVE IMPACT-BASED DECISION SUPPORT SERVICES

1.2 Extend the forecast range from the present 4 days to 14 days by incorporating the latest available science and technology, enhancing our ability to provide decision support services to the maritime weather enterprise.

1.3 Extend severe thunderstorm watches and warnings to the offshore zones by leveraging the new capability of the GOES-16 series of satellites.

1.4 Develop and issue wind against current guidance products in the vicinity of major ocean currents (e.g. the Gulf Stream) to improve forecasts of rapidly changing hazardous wind and wave conditions in these areas.

1.5 Develop and implement a suite of integrated marine weather products to better highlight hazardous weather conditions at sea.

1.6 Ensure forecaster access to more real-time or near real-time quality-controlled marine weather and ice observations, to enhance situational awareness of maritime activity near hazardous weather and improve the quality of our decision support services.

1.7 Establish and lead a marine weather hotline with key decision makers, to include NOAA Operations Centers, U.S. Coast Guard (USCG) districts, and other marine forecast centers, to provide information and protocols for offshore, high seas, and significant weather events.

1.8 In collaboration with our core partners and stakeholders, continually review legacy products for their relevance by assessing product use and labor requirements.

1.9 Develop and implement a verification process to assess and inform improvements to the accuracy of OPC forecasts and warnings.

[1] NESDIS: National Environmental Satellite, Data, and Information Service

ENHANCE COLLABORATIVE FORECASTING

1.10 Implement a fully integrated field structure in marine weather across national centers, Regional Operations Centers, and Weather Forecast Offices (WFO) to create a more consistent forecast and eliminate geographic seams.

1.10.1 Develop and implement procedures for routine collaboration in advance of high impact marine weather events to ensure consistent forecasts and messaging.

1.10.2 Develop and implement a collaborative forecast process with the NWS Alaska Region (AR) to integrate marine wind, wave, and sea ice products issued by OPC, AR WFOs, and the NIC.

1.10.3 Strengthen collaboration in high latitude analysis and forecasting by hosting a forecaster or member of the development staff from NWS AR and visiting AR at least every other year.

1.10.4 Engage a forecaster or member of the development staff to visit the National Hurricane Center's (NHC) Tropical Analysis and Forecast Branch at least annually.

1.10.5 Alternate hosting a forecaster or member of the development staff from WFO Honolulu and visiting WFO Honolulu every other year.

1.10.6 Engage the forecasters and development staff to ensure OPC visits each coastal WFO at least once by the end of 2021.

1.10.7 Expand the Marine Synergy Program, as appropriate.

1.11 Provide backup tropical storm surge support for the NHC.

1.12 Implement extratropical storm surge guidance.

1.13 Strengthen collaboration with international partners involved in the provision of maritime weather information to reduce geographic seams and create a more consistent forecast.

MODERNIZE PRODUCT DELIVERY

1.14 Implement full basin grid production to support a future transition to a fully digital product suite.

1.15 Enhance oceanographic analysis and forecast products such as ocean temperatures and currents with global and basin scale ocean forecasting models.

1.16 Continue investments in improving access to OPC products and services via mobile devices and an enhanced web presence, promoting ease of use and better communications.

ENHANCE RESEARCH TO OPERATIONS & OPERATIONS TO RESEARCH

1.17 Establish a marine test bed to transition science and technology advancements into enhanced marine weather and ice products and services.

1.18 Establish a mechanism to regularly engage with NOAA and other government research activities, as well as academia, to identify candidate marine weather research and development efforts suitable for transition into operations.

1.19 Support scientific research that improves the predictive capabilities of extratropical cyclones and maritime weather hazards.

2.0 CORE PARTNER & STAKEHOLDER ENGAGEMENT

Promote a culture of maritime weather readiness through more effective engagement and collaboration with core partners, customers, and stakeholders, to better understand their evolving needs.

STRENGTHEN RELATIONSHIPS WITH CORE PARTNERS

2.1 Strengthen relationships with the maritime weather enterprise, including NOAA Corps, USCG districts, Navy, maritime training academies, and maritime associations, to better understand user requirements and improve maritime weather readiness.

2.2 Expand collaboration with U.S. Navy Fleet Weather Centers.

2.2.1 Conduct regular meetings and technical exchanges with Navy Fleet Weather Centers, identifying opportunities for coordinating forecasts and warnings and sharing decision support services.

2.2.2 Host a forecaster or member of the development staff from a Navy Fleet Weather Center and visit a Navy Fleet Weather Center at least annually.

2.3 Strengthen the maritime weather enterprise by building vibrant partnerships with private sector marine weather providers.

2.3.1 Understand private sector weather provider requirements, to ensure we provide a suite of guidance products with NWS data that support their ability to develop tailored forecasting services for the maritime community.

2.3.2 Work with private sector weather providers to ensure timely delivery of authoritative NWS hazardous marine weather warnings to their customers.

ENHANCE COMMUNICATIONS & OUTREACH

2.4 Implement the Weather Ready Nation (WRN) Ambassador initiative at OPC, to strengthen core partnerships and increase preparedness for extreme maritime weather events.

2.4.1 Tailor the WRN Ambassador message to focus on the needs of OPC's user community, with support from the WRN program manager.

2.4.2 Identify and recruit 50 WRN Ambassadors from the maritime weather enterprise, to include maritime educators, coastal and port organizations, cargo and cruise ship lines, and private sector maritime weather providers.

2.5 Showcase OPC products and services through participation in at least three key professional conferences and maritime stakeholder events annually.

2.6 Collaborate with the USCG, maritime academies, and universities to provide expert training and education on marine meteorology.

2.7 Compete annually for a Sea Grant Knauss Policy Fellow, strengthening connectivity between the maritime weather enterprise and the marine policy community.

2.8 Enhance the use of social media to improve maritime weather readiness.

IMPLEMENT CUSTOMER REQUIREMENT & FEEDBACK SYSTEMS

2.9 Implement a routine process for identifying marine weather requirements from core partners and stakeholders.

2.10 Develop mechanisms for encouraging regular feedback from customers to continually improve our decision support services.

3.0 PEOPLE & CULTURE

Enable the Evolve NWS initiative by retaining and growing a highly skilled and professionally satisfied workforce with a culture of collaboration and adaptability to changing conditions and customer needs.

IMPLEMENT THE "EVOLVE NWS" WORKFORCE CULTURE

3.1 Leverage OPC's diverse workforce to foster innovative ideas and products.

3.2 Engender an adaptive workforce through operating practices that reduce workflow silos and prioritize activities to optimally meet demand.

3.3 Develop and implement a training plan, ensuring it meets the demands of Evolve NWS by identifying future gaps in skills and roles.

3.4 Develop and implement succession plans, to ensure business continuity and long term viability.

ENHANCE TRAINING AND DEVELOPMENT

3.5 Develop and implement a formal plan to refresh our employees' key skills annually.

3.6 Leverage NCEP's[2] Visiting Scientist Program and our partnership with the University of Maryland, to infuse novel concepts and the latest science into OPC operations.

3.7 Provide opportunities for mentoring and/or partnering with a visiting scientist/student.

3.8 Participate in at least one key professional conference per year, with at least one forecaster or member of the development staff.

3.9 Participate in at least one regional maritime stakeholder event per year, with at least one forecaster or member of the development staff.

3.10 Pursue participation of at least one staff member in a leadership development program by the end of 2020.

IMPROVE WORKFORCE SATISFACTION & WELL-BEING

3.11 Develop and implement a process to share customer feedback and accomplishments with OPC staff.

3.12 Increase workflow efficiency through technology and improved use of the Procedures Review Team, to allow for more time engaging in professional development, training, and outreach.

[2] NCEP: National Centers for Environmental Prediction

4.0 GLOBAL LEADER IN MARINE WEATHER

Through innovation and international collaboration, demonstrate global leadership in the provision of marine weather decision support services.

DEMONSTRATE GLOBAL LEADERSHIP

4.1 Establish or strengthen a leadership presence by OPC in relevant international marine weather and sea ice organizations, to include:

4.1.1 North American Ice Service

4.1.2 International Ice Charting Working Group

4.1.3 NOAA-Environment and Climate Change, Canada, Bilateral Agreement

4.1.4 WMO[3] - IOC[4] Joint Technical Commission for Oceanography and Marine Meteorology and its management and expert entities

DEVELOP STANDARDS & REQUIREMENTS

4.2 Contribute to the advancement of maritime weather safety information, including the modernization of standards for maritime weather safety information and broader utilization of digital products, through engagement with the IMO[5] and the WMO.

4.3 Increase involvement with IMO and the WMO, to improve requirements and standards to strengthen the GMDSS. [6]

4.4 Develop recommendations for the IMO and the WMO to drive requirements for mandatory reporting of basic weather information by ships.

4.5 Develop and implement standards for integrating marine weather data into shipboard navigation systems in accordance with IHO[7] standards.

SUPPORT CAPACITY BUILDING

4.6 Provide expertise for WMO capacity building efforts in marine weather and sea ice analysis and forecasting.

[3] WMO: World Meteorological Organization
[4] IOC: Intergovernmental Oceanographic Commission
[5] IMO: International Maritime Organization
[6] GMDSS: Global Maritime Distress and Safety System
[7] IHO: International Hydrographic Organization

5.0 DATA, TECHNOLOGY & INFRASTRUCTURE

Enhance the capacity and capability to offer, integrate, display, and disseminate data and information to all customers.

ICE CENTER INTEGRATION

5.1 Integrate the NIC IT infrastructure into that of NWS for complete operational compatibility, to support interoperability and collaborative forecasting among OPC, NIC, NWS AR, and Navy Fleet Weather Centers.

5.2 Develop and implement a plan for refreshing the NIC ice and snow analysis and prediction systems.

TECHNICAL SUPPORT AND INFRASTRUCTURE

5.3 Build capacity in the Ocean Applications Branch, to allow OPC to integrate the latest science and technology into operations, thereby remaining at the forefront of marine weather and in sea and freshwater lake ice analysis and forecasting.

DATA INTEGRATION

5.4 Develop tools that will enable forecasters to seamlessly integrate remotely sensed and model data from all relevant sources, transitioning new sensing and predictive capabilities into operations.

OPERATING PRACTICES

5.5 Establish regularly scheduled exercises to fully test continuity of operations plans and backup programs.

5.6 Establish a capability and process to monitor all broadcasts which transmit OPC data, for quality assurance.