

Readiness Level of Hurricane Research Division Projects and Products

Project/Product	Readiness Level
Improvements to operational statistical tropical cyclone intensity forecast models using wind structure and eye predictors Customers: National Hurricane Center, Central Pacific Hurricane Center, Joint Typhoon Warning Center	7
Tropical Cyclone Genesis Index Customers: National Hurricane Center	7
Improving dropsonde usage in NOAA operations: Accounting for dropsonde drift so that inner-core dropsondes can be assimilated Customers: Environmental Modeling Center	9
Improving dropsonde usage in NOAA operations: Adding dynamic observation errors into the Hurricane Weather Research and Forecasting model for dropsondes and flight level data Customers: Environmental Modeling Center	9
Improving dropsonde usage in NOAA operations: Assessment of the best practice for assimilating full resolution dropsonde data Customers: Environmental Modeling Center	5
Development and upgrades to the Hurricane Weather Research and Forecasting basin-scale model Customers: Environmental Modeling Center	8
Hurricane Weather Research and Forecasting model physics upgrade Customers: Environmental Modeling Center	9
Airborne tail Doppler radar data for G-550 aircraft evaluation Customers: NOAA's Observing System Council	9

Readiness Level Definitions

- 1:** Basic principles have been observed and reported.
- 2:** Technology concept and/or application has been formulated.
- 3:** Analytical and experimental critical function and/or characteristic proof-of-concept.
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- 5:** System/subsystem validation in relevant environment.
- 6:** System/subsystem model or prototyping demonstration in a relevant end-to-end environment.
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- 9:** Actual system "mission proven" through successful operations.

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Assessment of dropsondes that have the most impact on forecast errors Customers: Environmental Modeling Center	8
Aircraft reconnaissance weather forecast model impact assessment Customers: Environmental Modeling Center	8
NOAA hurricane seasonal outlook Customers: NOAA	9
Development and testing of the Hurricane Analysis Forecasting System (HAFS)—Global nesting system in real-time Customers: Environmental Modeling Center	6
Hurricane Analysis Forecasting System (HAFS)—Multiple nest processing code in repository Customers: Environmental Modeling Center	4
Hurricane Weather Research and Forecasting model basin-scale transition to the Weather and Climate Operational Supercomputing System (WCOSS) Customers: Environmental Modeling Center	8
Recalibration of the stepped-frequency microwave radiometer Customers: National Hurricane Center, Aircraft Operations Center, Air Force 53rd Weather Reserve Squadron	4
Hurricane Weather Research and Forecasting model impact assessment: Addition of end-point dropsondes on Air Force C-130 missions Customers: Environmental Modeling Center, National Hurricane Center, Air Force 53rd Weather Reserve Squadron	9

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Hurricane Weather Research and Forecasting (HWRP) model 2018 implementation: Assimilation of frequency microwave radiometer and G-IV tail Doppler radar data into the operational HWRP model Customers: Environmental Modeling Center, National Hurricane Center	9
Hurricane Field Program: Engineering transmissions to enable assimilation into multiple tropical cyclones Customers: Environmental Modeling Center, National Hurricane Center	9
Hurricane Field Program: Assessment of feasibility of assimilating single-antenna airborne tail Doppler radar from the NOAA P-3 and G-IV aircraft Customers: Environmental Modeling Center, National Hurricane Center	4
Change G-IV aircraft flight paths to include two circumnavigation circles for improvement of inner-core model data assimilation Customers: Environmental Modeling Center, National Hurricane Center	9

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Readiness Level of Ocean Chemistry and Ecosystems Division Projects and Products

Project/Product	Readiness Level
Subsurface automatic samplers Customers: Research community, academia, STEM educators	7
Environmental automated underwater vehicle (eAUV) testing in the California Current Customers: National Marine Fisheries Service, National Ocean Service	7
Quantitative polymerase chain reaction (qPCR) assay for detection of eDNA from green turtles Customers: National Marine Fisheries Service	3
Enhancing fisheries management with 'Omics research Customers: National Marine Fisheries Service, South Atlantic Fish Management Council, Gulf of Mexico Fishery Management Council	5
Microbial source tracking technology for land-based sources of pollution impacts in Saipan Customers: Bureau of Environmental and Coastal Quality (Commonwealth of the Northern Mariana Islands), Pall-Gelman Corporation	7
Proteomics coral stress test Customers: All entities responsible for shallow-water coral reefs	2
Integrated ecosystem assessment application for the Florida Keys National Marine Sanctuary Customers: Florida Keys National Marine Sanctuary, other national marine sanctuaries, marine protected areas	7
Florida Bay juvenile sportfish performance measure Customers: US Army Corps of Engineers, South Florida Water Management District, South Florida Ecosystem Restoration Task Force	8

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Readiness Level of Physical Oceanography Division Projects and Products

Project/Product	Readiness Level
US Argo Data Assembly Center Customers: National Weather Service, US Naval Oceanographic Office, National Centers for Environmental Information, scientific community, operational numerical modeling community	9
Mandatory ship reporting system Customers: National Marine Fisheries Service, US Coast Guard	9
State of the Climate articles Customers: NOAA	9
Underwater glider operations for tropical cyclone intensification studies and forecasts Customers: National Weather Service, US Naval Oceanographic Office	9
Iridium satellite transmission of XBT observations Customers: Scientific community, operational numerical modeling community	9
NOAA Climate Prediction Center experimental seasonal severe weather outlook Customers: NOAA Climate Prediction Center, NOAA Storm Prediction Center	7
CoastWatch OceanViewer Customers: NOAA hurricane field operations	8
Sargassum inundation risk reports Customers: Local, state, and international governments in the Caribbean, Gulf of Mexico, and Florida coast	8
CoastWatch Global Vibrio risk fields Customers: National Ocean Service, European Center for Disease Prevention and Control	7

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Readiness Level of Physical Oceanography Division Projects and Products

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Environmental conditions in the Gulf of Mexico for Bluefin Tuna stock assessments Customers: National Marine Fisheries Service	7
Climate Diagnostics Bulletin Customers: National Weather Service, National Centers for Environmental Prediction	9
CoastWatch satellite-derived currents and tropical cyclone heat potential Customers: Scientific community, weather services	9

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