



# National Transportation Safety Board

Washington, D.C. 20594  
Office of Marine Safety

## Meteorology Summary

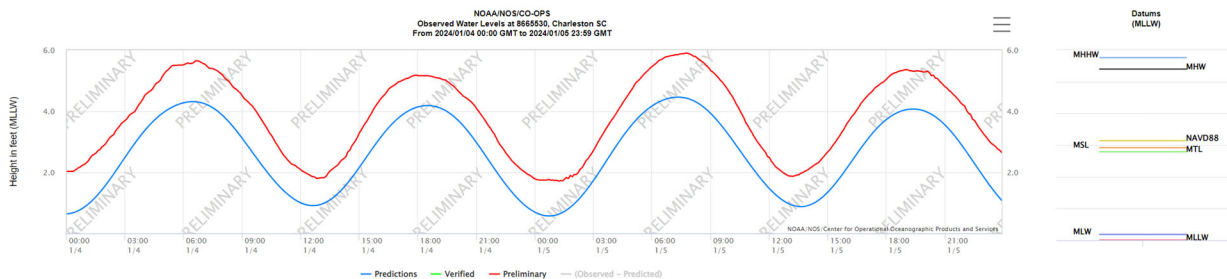
**Retrieved by:** Marcel Muise, NTSB  
**Casualty Date/time:** January 4, 2024 16:20 EST  
**Location:** Charleston, SC  
**Case:** DCA21MM024

## Water levels

Retrieved 08Jan2024 from [Water Levels - NOAA Tides & Currents](#)

Home / Products / Water Levels / 8665530 Charleston, SC ☑ Favorite Stations ▾

Station Info ▾ Tides/Water Levels ▾ Meteorological Obs. Phys. Oceanography PORTS®



Options for  
8665530 Charleston

From:  
Jan 4 2024

To:  
Jan 5 2024

Units  
Standard

Timezone  
GMT

Datum  
MLLW

Shift dates

Back 1 Day Forward 1 Day

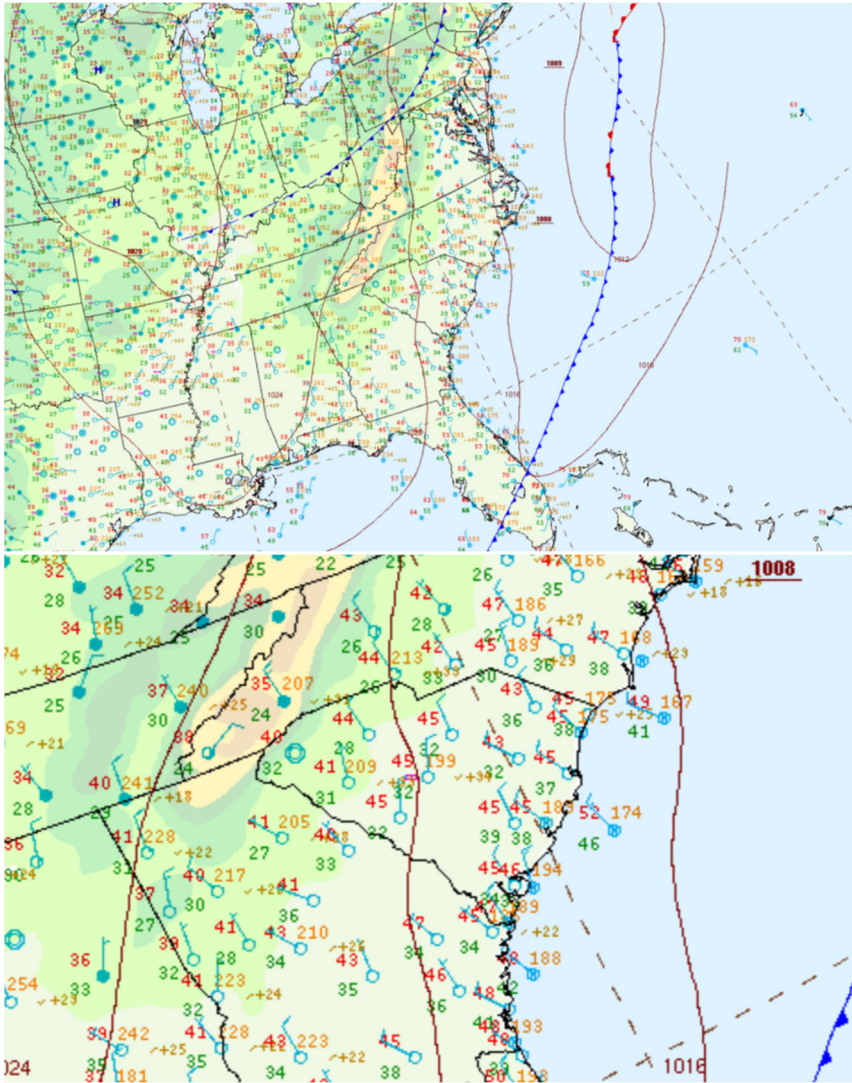
Interval  
6 min 1 hr H/L Day Month

Update

Plot Data Only

# Surface Analysis

Retrieved 08Jan2024 from



## Coastal Waters Forecast

Retrieved 08Jan2024 from [IEM :: CWF from NWS CHS \(iastate.edu\)](#)

National Weather Service Charleston SC

256 PM EST Thu Jan 4 2024

South Santee River SC to Savannah GA out 20 NM and Savannah GA to  
Altamaha Sound GA out 60 NM, including Charleston Harbor and  
Grays Reef National Marine Sanctuary

AMZ300-050815-

256 PM EST Thu Jan 4 2024

.Synopsis for the coastal waters of south coastal South Carolina  
and north coastal Georgia...

High pressure will prevail through Friday morning. A large storm  
system will bring impacts to our region late Friday into  
Saturday, followed by more high pressure through early next week.  
Another storm system will impact our region Monday night through  
Tuesday night.

\$\$

AMZ330-050815-

Charleston Harbor-

256 PM EST Thu Jan 4 2024

.TONIGHT...N winds 10 to 15 kt with gusts to 20 kt.

.FRI...NE winds 10 to 15 kt.

.FRI NIGHT...E winds 15 kt, becoming SE after midnight. A chance

of showers in the evening, then showers with a slight chance of  
tstms after midnight.

.SAT...S winds 20 to 25 kt, becoming SW in the afternoon. Waves  
2 to 3 ft. Showers with a slight chance of tstms in the morning,  
then a slight chance of showers in the afternoon.

.SAT NIGHT...W winds 15 kt.

.SUN...W winds 15 to 20 kt. Waves 1 to 2 ft.

.SUN NIGHT...NW winds 10 to 15 kt.

.MON...NE winds 10 to 15 kt.

.MON NIGHT...E winds 20 to 25 kt. Waves 2 to 3 ft. Showers.

.TUE...S winds 25 to 30 kt. Waves 2 to 4 ft. Showers with a  
chance of tstms.

.TUE NIGHT...SW winds 25 to 30 kt. Waves 2 to 4 ft. A chance of  
showers.

Winds and waves higher in and near tstms.

Unless otherwise noted, waves 1 foot or less.

Charleston Harbor water temperature 54 degrees.

\$\$

## Zone Forecast Product

(Retrieved 08Jan2024 from [IEM :: ZFP from NWS CHS \(iastate.edu\)](#))

Edited by NTSB for brevity

National Weather Service Charleston SC

250 PM EST Thu Jan 4 2024

SCZ050-050930-

Charleston-

Including the cities of Charleston, North Charleston,  
and Mount Pleasant

250 PM EST Thu Jan 4 2024

.TONIGHT...Clear. Lows in the lower 30s, except in the upper 30s  
near the immediate coast. North winds 5 to 10 mph.

.FRIDAY...Sunny. Highs in the upper 50s. Northeast winds 5 to  
10 mph.

.FRIDAY NIGHT...Mostly cloudy. A chance of showers in the  
evening, then showers with a slight chance of thunderstorms after  
midnight. Lows in the mid 40s. Temperature rising into the mid  
50s after midnight. Northeast winds 5 to 10 mph, becoming east  
10 to 15 mph after midnight. Chance of rain 90 percent.

.SATURDAY...Showers with a slight chance of thunderstorms in the  
morning, then a slight chance of showers in the afternoon. Breezy  
and more humid with highs in the upper 60s. South winds 15 to  
20 mph, becoming southwest 20 to 25 mph in the afternoon. Chance  
of rain near 100 percent.

.SATURDAY NIGHT...Mostly cloudy. Lows in the upper 40s. West  
winds 10 to 15 mph.

.SUNDAY...Mostly sunny. Highs around 60.

.SUNDAY NIGHT...Partly cloudy. Lows around 40.

.MONDAY...Partly sunny. Highs in the lower 60s.

.MONDAY NIGHT...Showers with a slight chance of thunderstorms.

Lows around 50. Temperature rising into the upper 50s after  
midnight. Chance of rain 90 percent.

.TUESDAY...Showers with a slight chance of thunderstorms. Windy  
with highs around 70. Chance of rain near 100 percent.

.TUESDAY NIGHT...Partly cloudy with a 50 percent chance of  
showers. Windy with lows in the lower 40s.

.WEDNESDAY...Sunny, breezy with highs in the mid 50s.

.WEDNESDAY NIGHT...Partly cloudy. Lows in the upper 30s.

.THURSDAY...Mostly sunny. Highs in the upper 50s.

\$\$

## Area Forecast Discussion

(Retrieved 08Jan2024 from [IEM :: AFD from NWS CHS \(iastate.edu\)](#))

National Weather Service Charleston SC

325 PM EST Thu Jan 4 2024

.SYNOPSIS...

High pressure will prevail through Friday morning. A large storm system will bring impacts to our region late Friday into Saturday, followed by more high pressure through early next week. Another storm system will impact our region Monday night through Tuesday night.

&&

.NEAR TERM /UNTIL 6 AM FRIDAY MORNING/...

Tonight: Canadian high pressure initially centered in eastern Indiana and western Ohio will build east and southeast through the night, becoming centered in West Virginia overnight. The position of the high and geostrophic winds of at least 15 kt in the local area will prevent most places from fully decoupling. Even so, given such dry air in place (PWat less than 1/4 inch) and mainly clear or clear skies, many communities near and west of US-17 will experience a freeze for up to 3-7 hours late tonight and early Friday, with lows 28-32F. Closer to the coast, in the Charleston, Savannah, and Beaufort regions, plus the edges of Lake Moultrie will be in the mid 30s to around 40F. Marine stratocumulus will advect toward coastal areas late as the synoptic flow veers to northeast, and a few of these clouds will make it onshore of southeast Georgia closer to

daybreak.

&&

.SHORT TERM /6 AM FRIDAY MORNING THROUGH SUNDAY/...

Cool and dry high pressure will be centered over NC Friday morning, then begin retreating to the northeast Friday afternoon. Cool northeast flow will prevail across the local area, though surface dewpoints will gradually rise through the day from the south. Mostly sunny skies in the morning will give way to mostly cloudy by afternoon as high cirrus increases in coverage and thickness and some stratocumulus moves into coastal SC. A weak coastal trough is forecast to develop off the coast during the afternoon, with isolated showers over the Atlantic waters approaching the coast by Friday evening.

Several shortwaves will lift northeast through the area Friday night, then a surface low will move up the coast on Saturday. 40-50 kt southerly 0-6km flow Friday night into Saturday morning will advect deep moisture into the area with PWs rising to 1.5" Saturday morning. Strong forcing will support widespread moderate to heavy rain showers overspreading the area from the west late Friday night, continuing through midday Saturday before moving offshore. Most areas are expected to receive 1-1.5" of rainfall. Instability will be quite meager, though isolated thunder is possible over the eastern half of the area where greater low-level warming is expected Saturday morning. Saturday highs are expected to climb into the upper 60s to near 70. Fairly deep mixing and strong low-level jetting will result



in breezy south winds on Saturday.

Cool, dry high pressure will build in Saturday night into Sunday. Some stratocumulus may persist across inland SC Saturday evening, then we'll mainly just have some high cirrus for the rest of the night into Sunday. Highs on Sunday will range from upper 50s to lower 60s.

Lake Winds: The warm southerly winds on Saturday will not be particularly favorable for mixing over the cold lake waters, but we can't rule out some 25 kt gusts. A Lake Wind Advisory is more likely late Saturday night into Sunday as cold air advection develops and low-level winds remain fairly strong.

&&

.LONG TERM /SUNDAY NIGHT THROUGH THURSDAY/...

High pressure will move northeast Sunday night and Monday as a deep upper trough digs over the central United States. A southerly flow will develop late in the day Monday, with moisture beginning to increase from the south. Weak isentropic ascent could support isolated showers along the Altamaha River late in the day Monday, though most locations should remain dry. The brunt of the forcing arrives late Monday night through Tuesday as a closed upper low approaches from the west and a strong surface low moves into the Ohio Valley, bringing a cold front through the local area Tuesday evening. Strong southerly flow will bring unseasonably moist air into the region with PWs potentially approaching 1.7". Widespread showers will overspread

the area during this period, and there could be enough instability on Tuesday to support isolated thunderstorms. Severe weather cannot be ruled out given the very strong bulk shear and low-level wind fields. Current QPF from WPC shows most areas picking up about 2" of rain. Windy conditions expected with 25-30 mph sustained winds gusting close to 40 mph.

Cool and dry weather expected by late Tuesday night continuing through Thursday.

&&

.AVIATION /20Z THURSDAY THROUGH TUESDAY/...

VFR conditions will prevail at KCHS, KJZI, and KSAV through 18z Friday. Northerly winds will be a little gusty this afternoon, peaking at 15 or 20 kt, before dropping off around sunset.

Extended Aviation Outlook: VFR will prevail into Friday evening.

A large storm system will bring flight restrictions and gusty winds to our area late Friday through Saturday. VFR returns later Saturday through early next week. Another more powerful storm system will impact the area Monday night through Tuesday evening, with flight restrictions and strong winds.

&&

.MARINE...

Tonight: A 1030 mb high shifts through the Ohio Valley and to the central Appalachians after midnight, with the resulting

gradient across the immediate waters to become more pinched with steady isallobaric pressure climbs of about 1 mb every 3 hours. Winds that are initially N will veer more NE as the night progresses, except holding more northerly in Charleston Harbor and near the immediate coast as land breeze influences try to prevent the veering of the winds. Speeds will reach at least 15 or 20 kt with higher gusts throughout. While we are not showing any Small Craft Advisories, winds will be close at times over AMZ350 and AMZ374 to advisory thresholds. Seas will build as high as 3 or 4 feet within 20 nm, up to 4-5 feet further out.

Friday through Wednesday: Moderate NE winds will continue on Friday as high pressure remains centered to the north. The flow will swing around to the SE late Friday night, then S on Saturday as a cold front approaches. Increasing low-level winds will result in the onset of Small Craft Advisory conditions late Friday night over the offshore GA waters, then the rest of the waters Saturday morning. A period of frequent 34 kt gusts is possible on Saturday over the Charleston nearshore waters and GA offshore waters, so a Gale Watch or Warning may eventually be needed. The SCA conditions should taper off Saturday night, but a period of marginal 25 kt gusts will be possible on Sunday after the cold front moves through.

A powerful storm system will impact the marine area Monday night through Wednesday morning. Unseasonably strong southerly winds are anticipated during this period, particularly Tuesday through Wednesday morning, during which widespread Gales are expected.

&&

.CHS WATCHES/WARNINGS/ADVISORIES...

GA...None.

SC...None.

MARINE...None.