

Marine

A large, curling ocean wave with white foam crashing over a blue sea. The wave is the central focus, with its crest curling over and creating a tunnel-like structure. The water is a deep blue, and the foam is bright white. The sky is a clear, light blue.

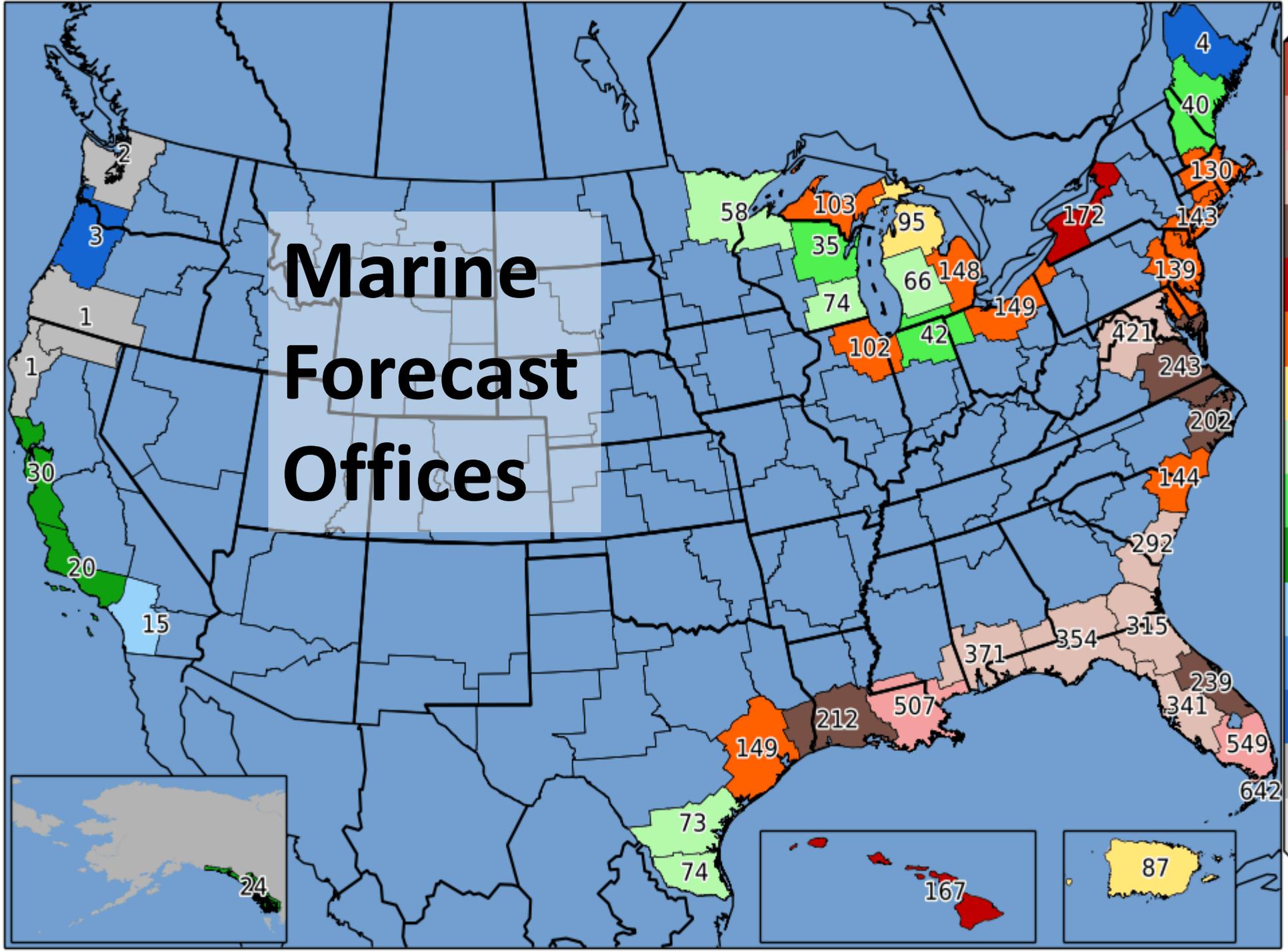
Bryan Jackson

Forecaster, Marine Program Leader

Topics

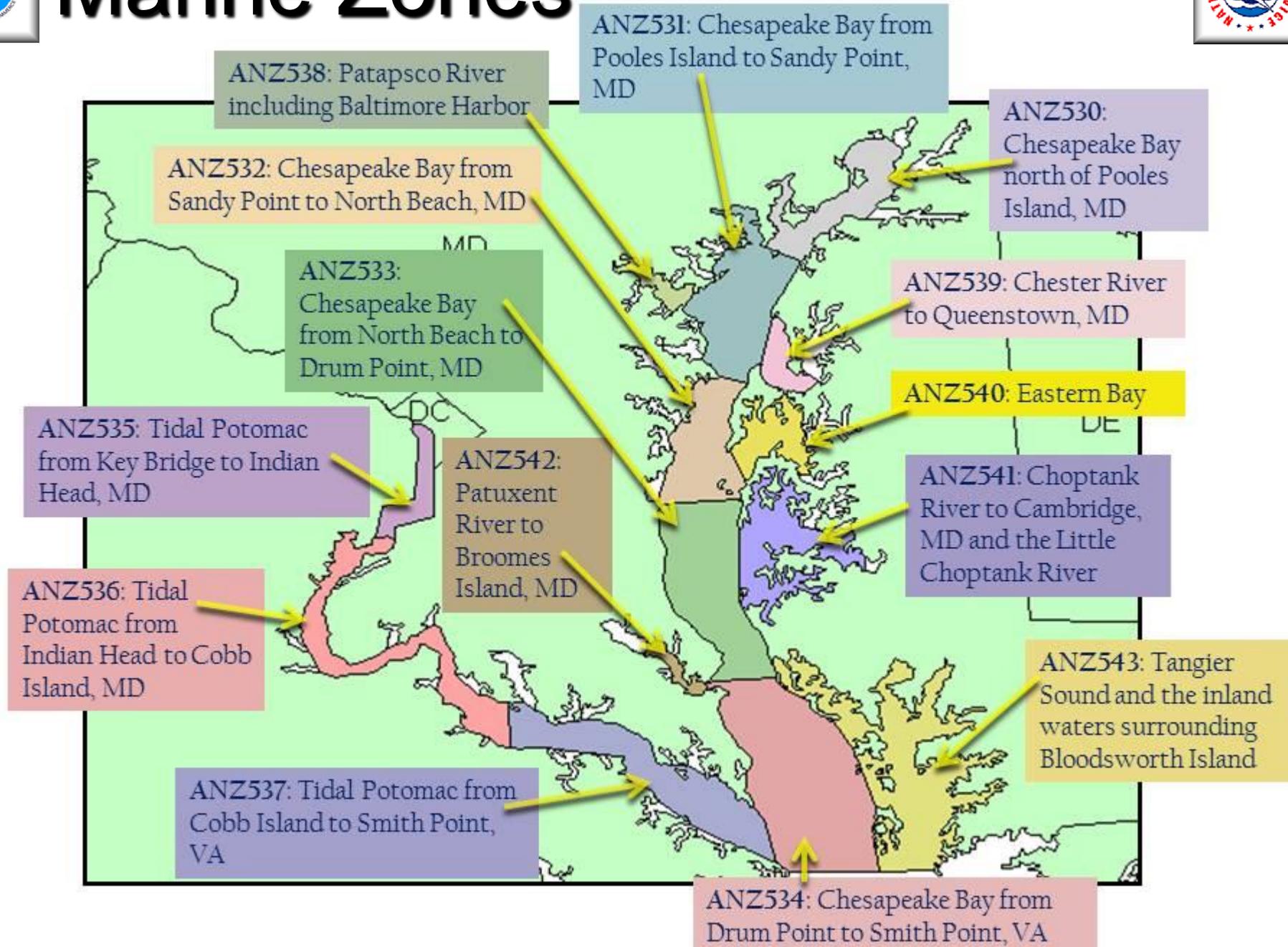
- Marine forecast products and services
- Worst Case Scenario

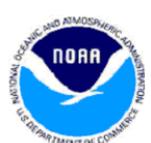
Marine Forecast Offices





Marine Zones

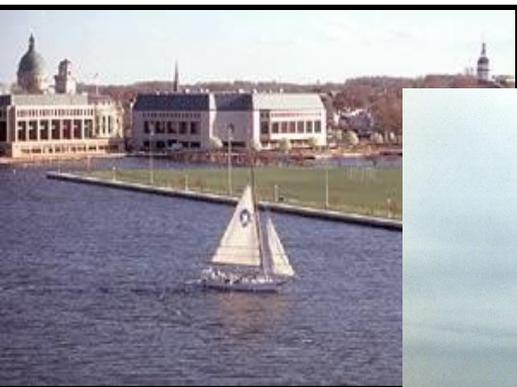




Coastal Waters Forecast



- Issued every 3 hours - amended as necessary
- 5 day forecast, two periods per day (6am, 6pm)

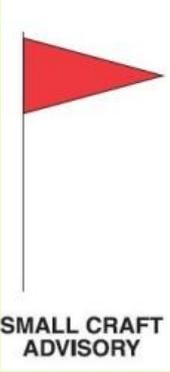
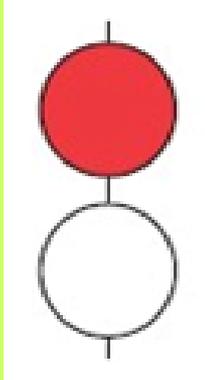
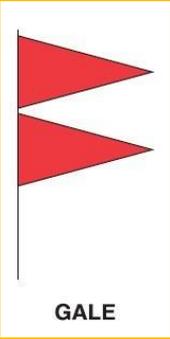
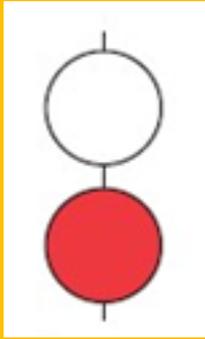
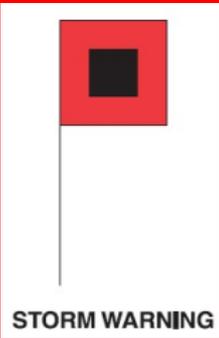
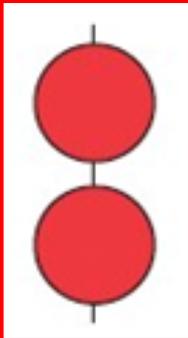


- Synopsis, Long-Fused Headlines
- Wind – from 8 compass points (knots)
- Waves – wave heights (feet)
- Weather – thunderstorms, rain, snow and fog



Long-Fused Marine Headlines



Hazard/Signal	Conditions	Night Signal
 <p>SMALL CRAFT ADVISORY</p>	Small Craft Advisory <ul style="list-style-type: none">Sustained winds or frequent gusts 18-33 kt (frequent gusts > 2 hours)Waves 4 ft	
 <p>GALE</p>	Gale Warning <ul style="list-style-type: none">Sustained winds or frequent gusts 34-47 kt	
 <p>STORM WARNING</p>	Storm Warning <ul style="list-style-type: none">Sustained winds or frequent gusts 48-63 kt	

Issued within the first 3 forecast periods (36 hours)



Short-Fused Marine Headlines



Special Marine Warning (SMW)

Potential for the following hazardous weather in a marine area for 2 hours or less:

- Showers/Thunderstorms with **winds or gusts \geq 34 kt**
- **Waterspouts.**
- **Hail \geq 3/4" diameter.**

If scattered to numerous showers/thunderstorms with \geq 34 kt winds will repeatedly affect the marine area, issue a Gale Warning for the threat period.

Marine Weather Statement (MWS)

- Update/Cancel a Special Marine Warning
- Winds or gusts of **18-33 kt** for less than two hours.
- Hazards: dense fog, low water levels, HazMat spill
- Advance notice of potential warning conditions





Convective Storms



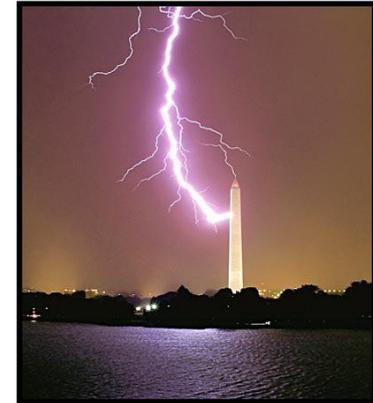
Watches (Coordinated with SPC)

Tornado Watch

-Tornadoes are considered water spouts in marine area

Severe Thunderstorm Watch

Choice of wind wording in SMW between 34 kt and 50 kt



Hazardous Weather Outlook (HWO)

- Any current long-fused marine headline
- Potential for marine hazard in the next five days





Marine Hazard Dissemination



- **NOAA Weather Radio (NWR)**
 - Tone Alarm (SMW) within a minute of issuance
 - All marine products are broadcast on NWR
- **Website (weather.gov/LWX)**
 - Colorful maps on website, click to see text
 - mobile.weather.gov
- **Recorded Forecast (CWF only)**
 - (703) 996-2200 (menu system)
- **USCG retransmit (VHF)**



Worst Case Scenario



Gusty Spring Showers

- Strong, gusty winds with large waves
 - Capsize small craft
- Low water temperatures
 - Quick onset of hypothermia



Water Temperature (°F)	Exhaustion or Unconsciousness	Expected Survival Time
32.5 °	Under 15 minutes	Under 15 to 45 min
32.5 to 40 °	15 to 30 minutes	30 to 90 minutes
40 to 50 °	30 to 60 minutes	1 to 3 hours
50 to 60 °	1 to 2 hours	1 to 6 hours
60 to 70 °	2 to 7 hours	2 to 4 hours
70 to 80 °	2 to 12 hours	3 hours to indefinite
Over 80 °	Indefinite	Indefinite

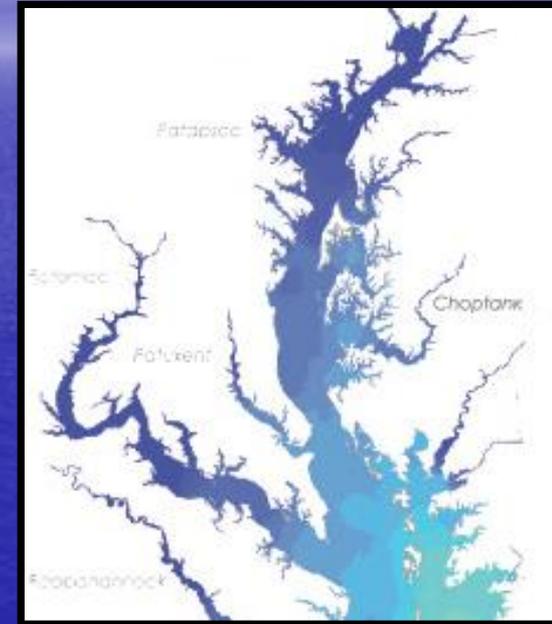
Gusty Spring Showers

- Expected wind gusts of <50 knots are difficult
 - No national guidance product
 - Locally driven forecasts and support
 - Ahead of Event: AFD, HWO, forecast
 - During Event: MWS and SMW



Worst Case Scenario

- Saturday April 4, 2015
 - water temps in the mid 40s
- Sunny morning
 - Many recreational boaters head out for first ‘nice day’ of the year.
- Backdoor cold front
 - Gusty Showers and dangerous conditions
 - Potential mass casualty event







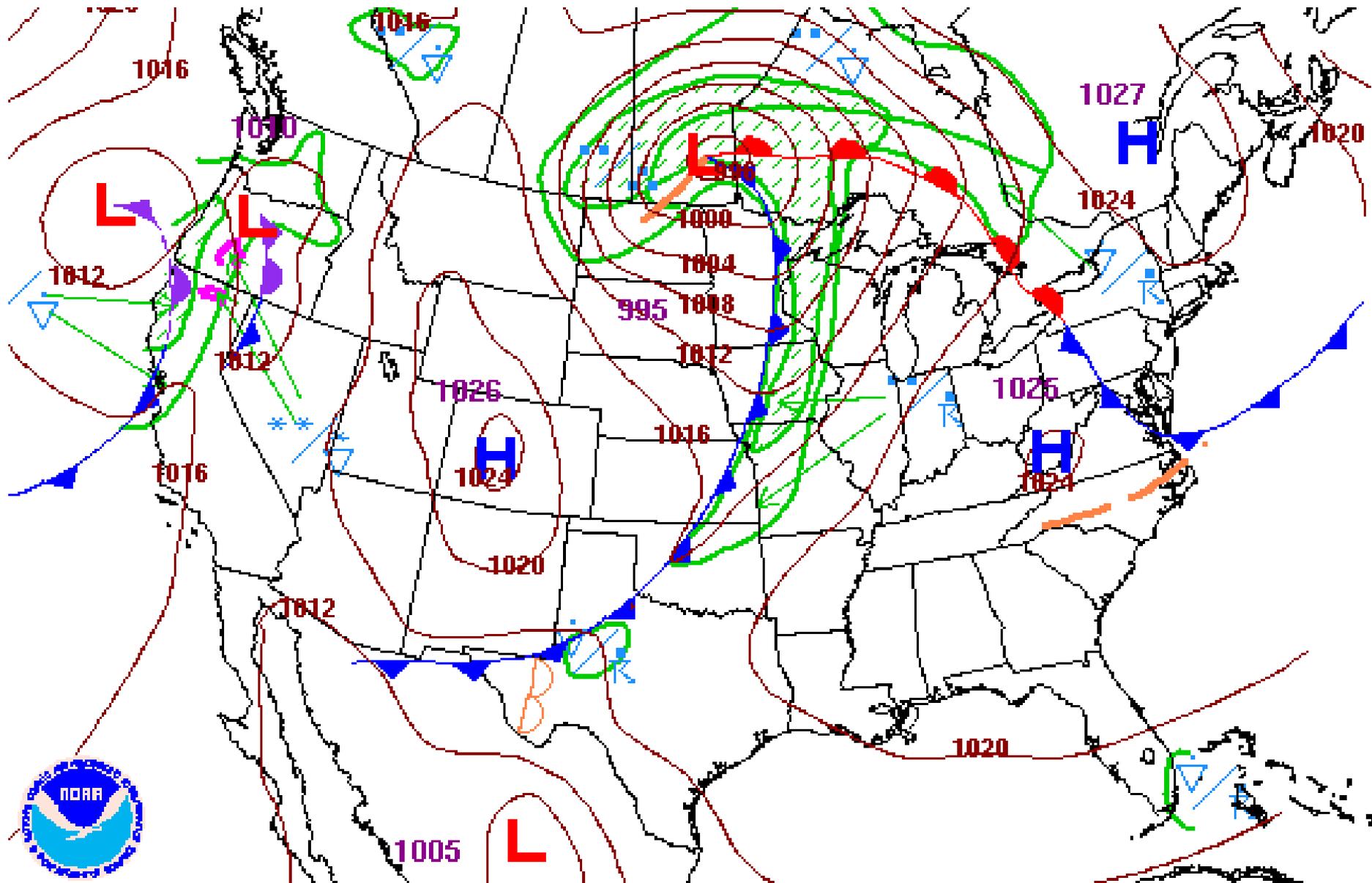
Discussion on Preparation

- How do you convey marine-related threats to your jurisdiction?
- Are you very familiar with NWS products and services for marine areas?
- Are you familiar with the threat low water temperatures pose?

Forecast: Lead up to Event

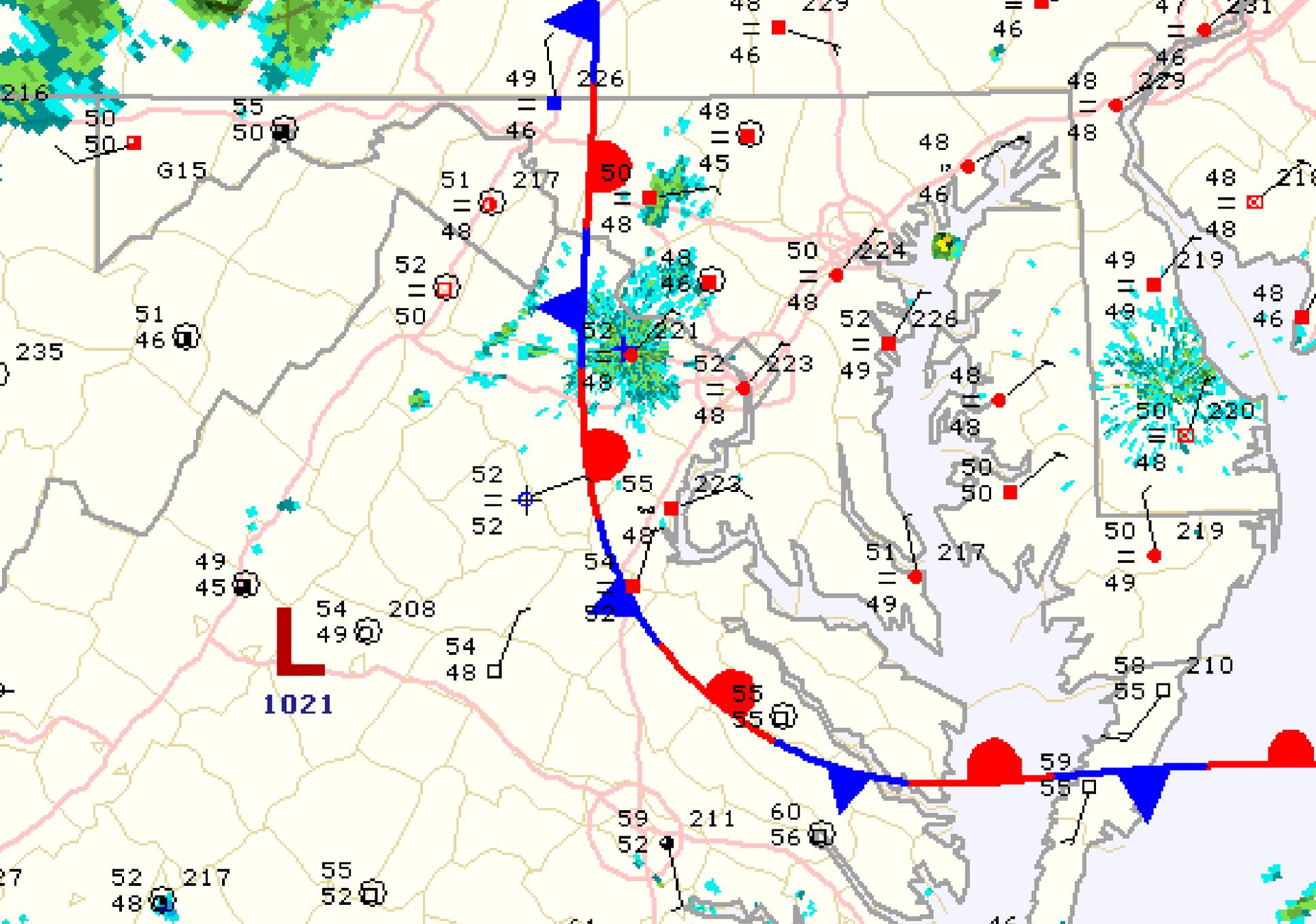
- Marine section of Area Forecast Discussion
 - Day 3: Back door cold front likely Saturday
 - Day 2: Back door cold front Saturday
 - Potential for scattered gusty showers
 - Day 1: Scattered gusty showers, SMW possible
- Hazardous Weather Outlook
 - Day 2: Chance of gusty showers on Bay
 - Day 1: Scattered gusty showers on Bay

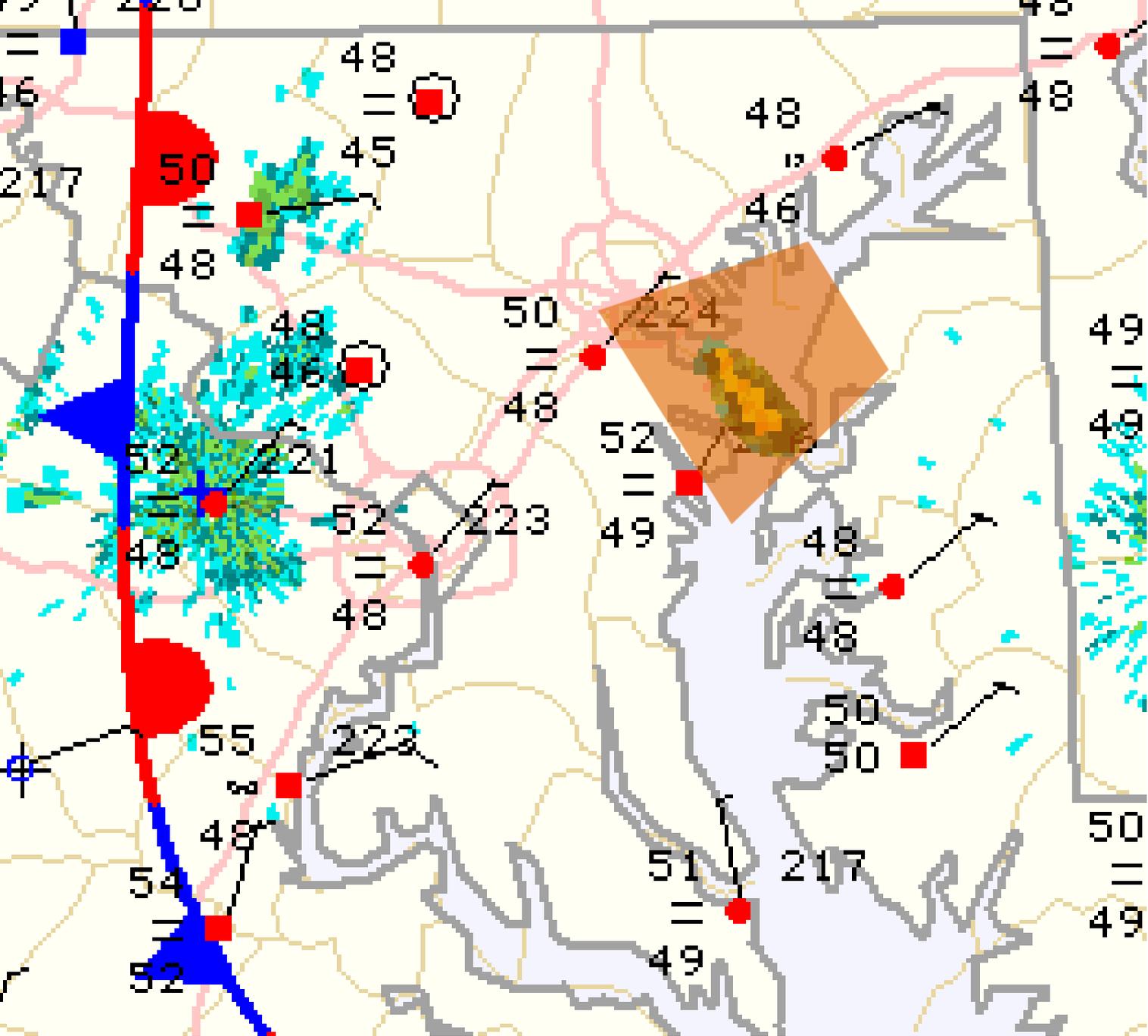
Backdoor Cold Front



Forecast: Day of Event

- 3:55 AM: Area Forecast Discussion
 - Backdoor cold front will enter the area this afternoon with scattered showers. Some showers will be gusty, particularly on the waters.
- 4:35 AM: 40% (scattered) showers 2-6 PM
- 5:00 AM: Hazardous Weather Outlook
 - Scattered gusty showers over the waters
- 10:00 AM: AFD: update on cold front position
- 12:00 PM: MWS: quickly developing gusty showers





3:00 PM

Warning Efforts

- 12:00 PM: MWS for all waters: quickly developing scattered gusty showers later this afternoon
- 2:30 PM: SMW for shower moving southwest from Pooles Island. Capable of > 34 knots
 - Until 4:00 PM including portions of zones from Pooles Island to North Beach, Patapsco, and Chester
- 3:15 PM: MWS follow up
 - Line of showers now approaching Sandy Point

Communication During Event

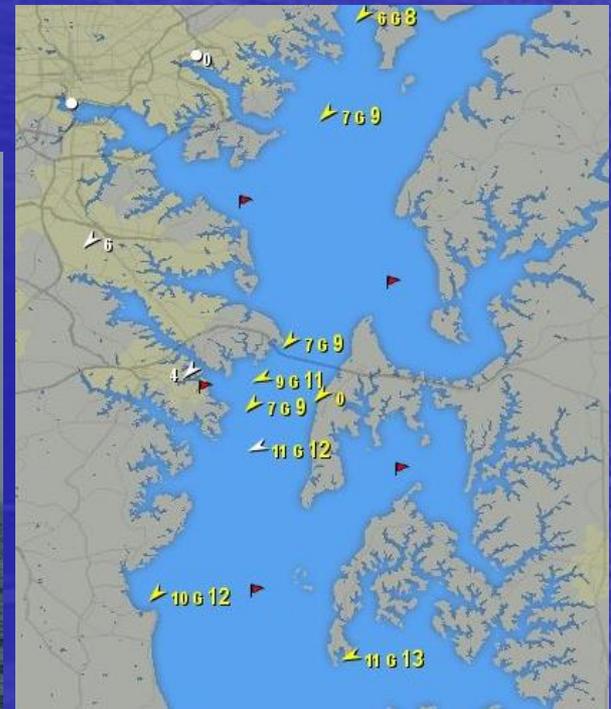
- Special Marine Warning disseminated via NOAA Weather Radio, our website, and relayed on VHF
- Forecasters available at WFO
Baltimore/Washington in real time via NWSchat or phone

Shower Observations

2:50 PM: 35 kt wind gust @ Patapsco CBIBS Buoy

3:05 PM: 40 kt wind gust @ Sandy Pt State Park

3:20 PM: 38 kt wind gust @ Thomas Pt Lighthouse



Discussion on Response

- Multiple capsized vessels
 - Sailors and boaters in the cold water
- How would you prepare/react?
 - US Coast Guard
- What other significant marine threats are lesser known/discussed?
 - e.g. Lightning, wind shifts, channeling winds, etc

Summary

- Backdoor cold front brought gusty showers to what had been a sunny day
- The showers, with heavy maritime activity and low water temperatures combined for potential mass casualty event
- Importance of communicating marine hazards
 - Particularly when water temperatures are low!

Thank You

Contact Me...

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Marine Program Leader**

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Marine Reports: 1-800-253-7091

