NWS Melbourne Marine Web Letter

April 2006

Comments from the Program Leader

As part of a new effort to discover the needs of the marine community, I spoke to the Canaveral Charter Captains Association about marine forecasting in April. They ceremonially threw ping pong balls at me as a reminder that our forecasts often cause them headaches! I still enjoyed the chance to communicate with them. Here are a few of the points that I took away from the meeting:

- Almost all of the captains listen to NOAA Weather Radio.
- Most agreed that the listening cycle is too long.
- However, most like to hear the Day 4-5 portion of the forecast and don't want it trimmed from the broadcast.
- The Day 4-5 forecast at the beginning of the week has a great impact on whether people charter a boat or not.
- The captains felt that an expression of the confidence level in the forecast would help in decision making.
- The captains would like to see wind wave and swell mentioned separately in the forecast.
- Some look at our graphical forecasts, but all find the text forecast indispensable.

Some of these items are addressed in the sections below. This meeting was the first of what I hope will be many in the years ahead. We would like to have at least 4 talks with boating groups each year. In addition, tours of the Melbourne NWS office can be arranged. The improved communication will lead to more awareness of what boaters and forecasters deal with on a daily basis. The goal of the interaction is to provide more effective forecasts, statements and warnings.

Randy Lascody

Projects and Plans

1. NWS Melbourne is investigating the potential to run a near shore (shallow) wave model called SWAN. Other offices that have examined this model have determined that it provides better wave forecasts near the coast than the much more course resolution NOAA Wave Watch model. Of course, the most important input to any wave model is the wind forecast, so high resolution wind data will likely be utilized. Also, it is hoped that forecasters have the ability to edit the wind fields that feed the wave model. The goal of this effort is to produce more detailed forecasts of the near shore marine environment, both textual and graphical. As the project goes forward, more details will be provided in future web letters.

2. While collaborating with other Marine Program Leaders, it is evident that we must look at the way we communicate the sea state in our forecasts. Wave steepness is the determining factor in whether 7 foot waves lead to dangerous conditions (Small Craft Advisory) or a rather tranquil day on the waters. There is a significant difference between 7 foot waves with a 7 second period versus a 13 second period. NWS offices along the west coast of the United States provide wind waves and swells in their Coastal Waters Forecast. This is seen as a much more effective way to express the sea state and I plan to look into providing similar information in the east central Florida Coastal Waters Forecast.

3. Since the weekend is such a vital forecast for a majority of boaters, Melbourne forecasters will be discussing their confidence level more in the Area Forecast Discussion. Also there is a multi-agency project that is utilizing the GFS ensemble model to determine a "confidence level" in several weather parameters, including the 10 meter wind fields. Basically, an ensemble approach to modeling entails running several iterations of a particular model, with each "ensemble member"

starting off with slightly different initial conditions. It is well known that small differences in the initial conditions can lead to significant errors in the later portions of a forecast. Hence, when the ensemble members have a smaller than normal deviation at Day 5, the confidence level of the forecast is greater than normal. The experimental "confidence" graphics can be found here.

4. I would like to start adding some case studies of weather incidents that occur over the marine area to the NWS Melbourne Marine page. The reason for accomplishing this would be to provide useful instruction to those in the marine community. If any boaters have stories that they would like to share, feel free to send them to me (Randy.Lascody@noaa.gov).

Tips/Reminders

1. Since winds/seas are usually much different in the Gulf Stream, a position of the west wall has been included in the east central Florida Coastal Waters Forecast for about a year and a half. There are fluctuations in the position of the Gulf Stream, but generally the western edge follows the 100 fathom line. Intrusions of warm water onto the Continental Shelf are generally short in duration but important to boaters as the gradients in water temperature that result are known to attract fish. The position estimates sometimes reflect these warm water intrusions onto the Continental Shelf but generally the policy we follow is to try and stay close to the "average" 100 fathom position. Another graphical depiction of the Gulf Stream is available here, courtesy of the Navy.

2. Buoys report the Significant Wave Height, which is the "average of the highest one third waves." This was found to be the average wave height reported by experienced observers of the sea state. Since the word "average" is in the definition, boaters need to know that there will be higher waves present. For more information about what wave theory has to say about the wave spectrum, click here. For those interested in how the NDBC buoys actually determine the wave spectrum, check out this link.

3. There is a wealth of marine weather information available at the Marine and Coastal Weather Services Branch of the National Weather Service. One section pertains to Voluntary Marine Observation Programs. This program gives boaters a chance to provide input directly to forecasters! We would love to receive your marine observations. Give us a call at 800-683-4468 extension 241. In the future we will look at ways to receive these observations over marine radio frequencies.

4. If you have and questions/comments/criticisms/requests, email Randy.Lascody@noaa.gov.