



## Weather at Sea - user survey about marine weather forecast

Kristine Gjesdal, Kristin Goa, Thomas Olsen, and Anne-Mette Olsen  
Norwegian Meteorological Institute, Norway, (kristineg@met.no)

This work is part of the Norwegian Meteorological Institutes (MET-Norway) effort to develop demand-driven marine weather services, which is one of our strategies.

It has therefore been important to obtain knowledge about the users of marine weather services and their needs.

As a first approach we interviewed key people internally at MET-Norway. Next step was to speak to maritime organizations, and last, but not the least, conducting an online survey amongst our users.

The interviews revealed that most important issues related to marine weather forecasts are good information regarding wind gusts (which we do not forecast) and waves. Further, the interviews revealed a set of wishes for future forecasts:

- area information, including hazard alerts of gale warning and special alerts for critical areas
- gust to be included in the forecast
- more detailed forecasts in the coastal and fjord areas
- make it easier to navigate within the weather website 'yr.no'
- supplementary (descriptive) weather information as part of the online maritime information (all in one place)
- easy access to observations

This information was largely confirmed by the survey, which was online for two weeks and provided 4373 answers. There are some weaknesses in the method, but the high number of respondents adds confidence that the signals from the survey are reliable.

For almost everyone who participated in the survey, the Web Weather Service 'yr.no' is the main source of weather information. The most used, and those services perceived as most useful, is "hourly" forecasts, gale warnings and weather and wave maps.

Regarding possible improvements of today's forecast at 'yr.no', observations of wind and waves tops the list followed by hourly forecast, and route forecast.

Future forecasts for marine areas should focus on wind, gust, wave and hazard warnings. The weather will be included to the extent that it is important for visibility. Observations should be included. Some users have problems with navigation on 'yr.no', and cannot benefit from information already available. This can be improved. Warning about wind and waves over a distance is desired by many. Easy access to observations may be very useful for marine traffic in the dark (most of the day in Northern Norway in the winter), and whenever it is difficult to see the sea state. Observations of gusty winds along the coast and in the fjords are missed by many.

In the absence of sufficiently detailed forecasts, observations provide a great benefit on short term, especially for ferries, fast ferries and cruise ships.