

DECISION AIDS FOR ANTARCTIC WEATHER FORECASTING

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1. Introduction

The promotion of operational research is being rejuvenated to provide greater assistance to the forecaster's in determining short range thresholds in the advance or breaking of inclement weather elements.

This presentation discusses the process that will be followed, solicit any ideas, recommendations, and encourage assistance throughout the community.

2. Description

SPAWAR Office of Polar Programs (SOPP) has generated interest in development of a focus group from the operational footprint to begin a process that will help identify difficult and poor forecast decisions periods based on periods of sensed elements and related forecasts.

Grouping:

The first event for the focus group will be to develop a process to identify known events and group like occurrences. Armed with a new database inquiry tool, this step can be done with ease. A bit more tedious will be establishing the relationship with forecasts. This challenge can be tackled using the TAF Verification forms where the focus group will align the time periods with two classifications for the forecasts, Good/Bad. After the forecasts are matched up with each period of inclement weather they will be grouped by month to ensure events can be semi-related. From that point each identified period will be separated for individual data gathering.

Data Gathering:

Collection of supportive information will begin with a look at every event on an individual level. Every period will be reconstructed with the series of information that led up to both a good or bad decisions in the identified weather occurrences. This is the first time we have focused on good situations in an attempt to determine what went right. Documents for both wrong and right situations will include forecast logs and journals to recreate the forecast process.

Correlations:

After all data gathering and recreation is complete, the situations will have to be re-grouped in specified classes, by time of year and event.

Consistencies:

From this point hopefully patterns will emerge that may show either consistencies in the forecast or inconsistencies. Both will help in identifying strengths and weaknesses in the forecasting process. Where there is a consistent tendency to over or under forecast in a given situation key parameters will be identified that the forecaster's used to determine if a relative measure can be extracted to improve the accuracy.

Where inconsistencies exist the better outcome will be identified and evaluated for accuracy. If valid parameters can be identified they will be annotated and added as a forecasting decision aid.

Empirical Rules:

Where outcomes are correct but data is speculative or vague, the data and forecasting rule will be classified as an empirical rule until the data and forecasting technique can be

validated or eliminated if it is considered invalid over time and repeat occurrence.

Absolutes:

The goal of this process will be to find absolute, measurable rules in various situations to provide better tool in tough situations to aid the forecaster. Only a few forecast decision aids currently fit this category. Most forecasts are done from individual forecaster experience and lack a proper measure to the cause and effect.

SOPP encourages outside participation with any known data sets that can lead to greater forecast accuracies.

SUMMARY

It is understood that this will be a long process to initiate and require perseverance on assigned personnel to continue this process through the future. There are limited data sets but with each event more can be learned over time and assist in a catalog of events that can reduce forecasting errors.