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VERIFICATION OF COMOX 2 TO 5 DAY FORECASTS

W.L. RANAHAN, METEOROLOGIST
CFWO COMOX

INTRODUCTION

During summer, the Duty Meteorologists at CFB Comox are asked to provide forecasts, or more properly called "outlooks" for a five day period. Requests come mainly from farmers interested in hay-harvesting. Hay-harvesting is an important agricultural endeavour on Vancouver Island because of the limited agricultural land, and the very high costs of transporting hay to the Island. As a result, most farmers attempt to harvest two crops, one in June and another in September. Hay, once it is cut, must have 2 - 4 days of dry weather before it can be baled and stored. Even a few mm of rain can ruin the crop once it is cut. During the months of June, July and August 1978, a record was kept of all 2 to 5 day outlooks recorded on the public weather codaphone "Dial-a-Forecast". These were categorized and verified. The 7LPE extended progs and outlooks issued by the Pacific Weather Centre served as guidance.

METHOD OF VERIFICATION

Six weather categories were selected, ranging from fine to progressively poorer weather as follows:

Category	Description of Weather
1	Sunny, a few clouds
2	Partly cloudy, cloudy periods
3	Cloudy, Mostly cloudy
4	Partly cloudy, a shower or two
5	Cloudy, Mostly cloudy, a few showers
	Showers
6	Overcast with rain, intermittent rain, periods of rain, drizzle, etc.

The categories were selected as they would affect hay-drying especially, but also as a day would be perceived by the general public. A consensus of three weather office staff members was reached to categorize actual weather. While these were subjective assessments, there is no reason to believe that similar results would not be achieved by using a more complex objective technique.

Three forecasts were recorded daily, one by each shift. These were compared with the actual weather categories and the forecast judged as correct if the prediction was within one category of the actual weather. A separate assessment was made concerning precipitation only. Results were compared with a best predictor for the summer months, which would simply be "partly cloudy" as most days record sunshine and no precipitation.

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Results

	Day 2	Day 3	Day 4	Day 5
No. of Fcsts	252	254	257	257
No. Correct	194	169	158	153
% Correct	77.0	66.6	61.5	59.4
Best Prediction (Partly Cloudy)	62.9%	62.9%	62.9%	62.9%
Precipitation Events (X 3)	93	96	99	99
Precip Fcsts	67	67	64	67
% Correct Precip Forecasts	82.1%	64.2%	56.3%	49.3%
% Missed Precip Events	40.9%	55.2%	63.6%	66.7%

DISCUSSION

The decrease in accuracy with time would be expected. Results achieved by YAGOWAR (1) in Quebec showed a similar decline in accuracy with time for precipitation forecasts over a large area. YAGOWAR's results also showed that a skill score approached climatology by Day 5 for public forecasts, and that a "best predictor" category actually scored higher by Day 4. The results in this paper show that meteorologists are too optimistic, issuing only 67 precipitation forecasts for 99 precipitation events. By Day 5, a full 2/3 of the precipitation events are missed. In addition, precipitation likely fell in the area on some days, but not at the station, thus adding to the optimistic trend in the forecasts.

CONCLUSIONS

The usefulness of Day 4 and Day 5 forecasts needs to be evaluated. If two-thirds of the Day 5 precipitation events are missed, and one-half the precipitation forecasts are wrong, are we providing a useful service? Certainly some skill shows up on Day 3 and the figures for Day 2 are very good, although the forecasts for precipitation are still optimistic with 40.9% of the events missed. It would seem best to limit forecasts to three days where forecasters show skill in this period, or else to improve the accuracy of Day 4 and 5 forecasts.

References

1. YAGOWAR, N. Verification of Forecasts in an Operational Forecast Centre, 11th Annual Congress, Canadian Meteorological Society, June 1977 pp. 14 - 17.