

PACIFIC REGION TECHNICAL NOTES

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The Satellite Fire Weather FX

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INTRODUCTION

During the dry season, fire threatens to destroy a significant portion of British Columbia's forests. To minimize losses, fire fighting agencies undertake significant operations to contain and eliminate forest fires. During this critical time of year, an A.E.S. Pacific Region Fire Weather Program operates to support the fire fighting groups. This service enhances the ability of these groups to assess fire danger and allow efficient allocation of fire fighting resources.

PACIFIC REGION FIRE WEATHER PROGRAM

The Pacific Region Fire Weather Program operates from May 1 to November 1 of each year. The Fire Weather Forecaster issues two forecasts daily (7:30 a.m. and 1:30 p.m.) from the Pacific Weather Centre. These forecasts are received by the Presentation Technicians in the field offices. The Presentation Technicians then give daily briefings to the Fire Protection Officers— at 9:00 a.m. and 3:00 p.m. As well, the Fire Weather Forecaster and the field Presentation Technicians are available for consultation during their hours of operation.

SATELLITE FIRE WEATHER FX PROGRAM

For fire weather purposes, the main forecast concerns are:

- 1. Thunderstorms;
- 2. Occurrence and non-occurrence of precipitation;
- 3. High winds and abrupt wind shifts;
- 4. Changes in weather regimes.

The meteorological patterns affecting the above are numerous. To support the fire weather program, the satellite meteorologist will look for such patterns on the imagery. She/he will verbally communicate such information to the Fire Weather Forecaster and disseminate the same to the Presentation Technicians by way of a SATELLITE FIRE WEATHER FX.

A. CONTENTS OF MESSAGE

The following are among the meteorological situations that could be discussed in the SATELLITE FIRE WEATHER FX.

- 1. Presence and motion of small scale cloud systems that result in thunderstorm activity;
- 2. Comparison of convective development with similar meteorological situations;
- 3. Motion and trend of large scale cloud systems and precipitation areas that could alter the fire danger rating;
- 4. Movement of jet stream wind maximums over B.C. resulting in high surface winds;
- 5. Movement of "dry" surface fronts over B.C. resulting in abrupt surface wind shifts;
- 6. Movement and depth of marine stratus layer with respect to the coasts;
- 7. Movement and trend of radar echoes.

Other meteorological patterns evident on the imagery and important for fire weather conditions will probably become evident later. Cases will be documented as they arise.

B. TIME OF ISSUE

Initially, two messages will be scheduled at 8:45 PDT and 14:45 PDT. It is intended that the messages be received in the field offices in time for the daily weather briefings.

The morning message will probably describe any meteorological patterns evident on the imagery that may affect fire behavior then or for the remainder of the day. The afternoon message will probably describe the extent and development of convective cloud, the motion of marine stratus, etc.

C. HEADING

The heading for the Satellite Fire Weather FX will be:

FXCN6 CWVR — $\begin{pmatrix} 21\\15/45Z \end{pmatrix}$

Discussion of Satellite Imagery pertaining to Fire Weather Conditions over B.C.

D. COMMENCEMENT DATE

The program will start about April 15 and will be run internally for a minimum of two weeks. In this period, it is hoped that the satellite meteorologist will be able to eliminate any start up problems and acquire some expertise. The first satellite Fire Weather FX for distribution is scheduled on May 1st, 1980. This coincides with the beginning of the Fire Weather Program.

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COMMENTS

- A. To extract the maximum amount of information, fine resolution visible imagery must be available along with sectorizing, enhancement and animation capabilities. At present, PWC has no control over satellite imagery received. For that reason, the Satellite Fire Weather FX Program must be regarded as developmental only.
- B. This Technical Note was purposely issued early to allow enough lead time to consider any suggestions and/or criticism received from the field offices before the program is fully implemented on May 1, 1980.

FUTURE DEVELOPMENTS

By the fire weather season of 1982, the Vancouver GOES station is expected to be in operation. At this point, a much greater capability is expected.