



PACIFIC REGION TECHNICAL NOTES

82-010
August 12, 1982

Thompson-Shuswap Recreation Forecast Verification

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INTRODUCTION

For the last 4 years, the Kamloops Weather Office has been issuing a once-daily forecast slanted towards recreational activities in the Thompson-Shuswap area of the Southern Interior. The forecast is issued from early June to mid September. From 1978 to 1980, the forecast was used only in radio broadcasts over local radio stations. In the 1981 season, the forecast was distributed to other B.C. weather offices on teletype circuits 120 and 122. The forecast has been very well received by the news media, and by the general public. This year for the first time a verification program has been started.

THE OBSERVING NETWORK

The B.C. Forest Service maintains a network of weather reporting stations to collect data for the Fire Weather Program. These stations report Monday to Friday by radio to Kamloops Regional Headquarters. Weekend readings are obtained on Monday from various recording instruments. The data are received at Headquarters just after 1330 local time, and are passed to the Kamloops Weather Office. Eleven of these stations report TEMP/WIND DIRECTION & SPEED/24-HOUR PRECIPITATION. The 12th station, at Chase, B.C. also reports a sky condition.

Weather reports from the 3 airports in the region, Kamloops, Kelowna, and Revelstoke are also included.

The remaining reports are from climate or volunteer observers who report only during the summer season. One commercial establishment, Anglemont Marina, also reports daily. Four of these volunteer stations also report the state of the lake surface.

PROBLEMS WITH VERIFICATION

The major problem lies with the time of observation at the B.C. Forest Service stations, just after 1300 local time, which falls several hours short of the time when maximum temperatures would usually occur.

Chase, along with other Forest Service stations is equipped with an anemometer. Wind speed and direction at Anglemont Marina are estimated, and no attempt to verify these will be made.

Anglemont Marina does not report precipitation unless it is occurring at the time of observation. Reports surrounding B.C. Forest Service stations, and lightning plots from the Lightning Locator System were used to verify precipitation at this station (Figure 1).

VERIFICATION

It was decided to use two stations, Chase and Anglemont Marina, for the verification program. Simple contingency tables were drawn up for the forecast maximum temperature versus next days reported temperature (Figures 2 & 3), using increments of 5 degrees Celsius.

The same method was used for the forecast sky and precipitation conditions versus next days reported conditions, using only four classifications; sunny, sunny with cloudy periods, cloudy, and precipitation (Figures 4 & 5).

Wind speeds at Chase were handled the same way, i.e. forecast wind speed versus next days reported wind speed (Figure 6).

CONCLUSIONS

Temperature errors were due, in part, to the time of observation at these stations, and it also appears that the close proximity of the Anglemont station to the lake tends to hold the temperatures down a few degrees more than expected.

The forecast errors of sky and precipitation conditions on a number of days made it apparent that weather conditions over the Shuswaps were quite different from those at Kamloops. It will be necessary in the future to very carefully assess the need to break down the Region into smaller areas (Figure 7).

Wind forecasts for Chase were poor, with most days reporting considerably stronger winds than forecast. These winds often seem confined to the Chase area where a narrowing of the South Thompson Valleys occurs.

There is one more important factor involved, particularly with July 1982 weather. Some of the worst July weather in many years was recorded in the Southern Interior in July. There was probably some reluctance to accept indications that the very unseasonably cool and wet weather would persist for such a prolonged period.

I remain confident that as the Kamloops Weather Office staff gains more experience, the forecasts will improve, and the next verification, at the end of the season will indicate that improvement.

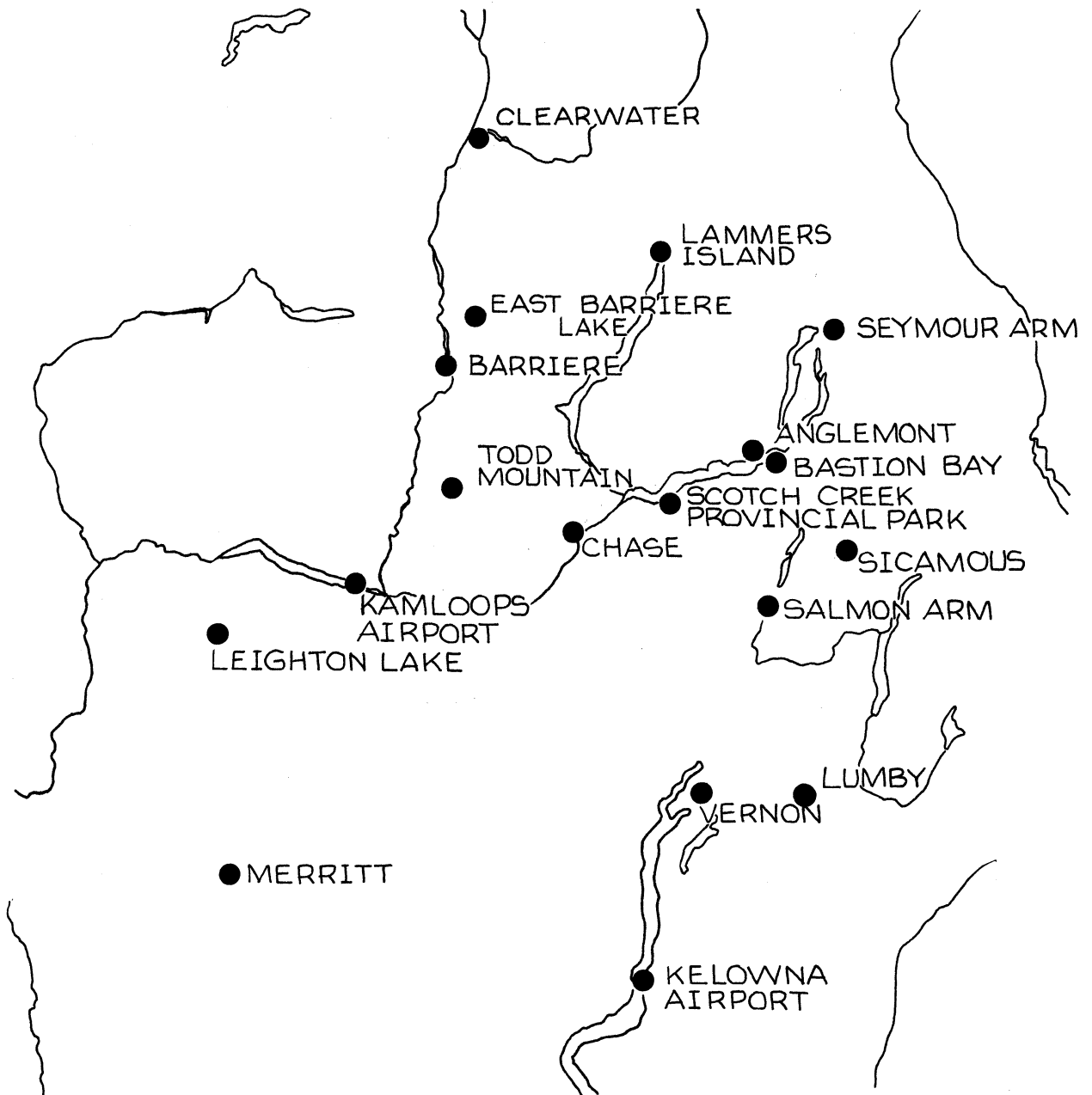
REFERENCES

Frymire, W.J., Pacific Region Technical Note 78-039, Kamloops Weather Office Special Recreational Broadcast for the Thompson-Shuswap Region - summer 1978.

Duffy, R.O., Pacific Region Technical Note 80-024A, British Columbia Forest Service Lightning Location Project.

- B.C. Forest Service stored Computer Data, "daily 1300 local time weather reports".
- Statistics in Meteorology, A Training Branch Correspondence Course, Module 8.
- B.C. Forest Service Lightning Locator Data, Computer Stored 1980-1982.

FIGURE 1.
OBSERVING NETWORK - 1982



B.C. FOREST SERVICE
STATIONS

CLEARWATER
LAMMERS ISLAND
BARRIERE
EAST BARRIERE LAKE
TODD MOUNTAIN
LEIGHTON LAKE
MERRITT
SICAMOUS
LUMBY
VERNON
SEYMOUR ARM

A.E.S. STATIONS

KAMLOOPS AIRPORT
KELOWNA AIRPORT
REVELSTOKE AIRPORT

CLIMATE - VOLUNTEER STATIONS

SALMON ARM
CHASE B.C.F.S.
ANGLEMONT MARINA
SCOTCH CREEK PROVINCIAL PARK
BASTION BAY
SICAMOUS (Weekends)

FIGURE 2.

CONTINGENCY TABLE FOR FORECAST MAXIMUM TEMPERATURES(°C)
AT CHASE, B.C.
VERSUS 1300PDT REPORTED TEMPERATURES

ACTUAL	FORECAST						TOTAL
	11-15	16-20	21-25	26-30	31-35	36-40	
11 - 15	0	0	3	0	0	0	3
16 - 20	0	1	5	2	0	0	8
21 - 25	0	0	4	3	2	0	9
26 - 30	0	0	0	7	2	0	9
31 - 35	0	0	0	0	1	0	1
36 - 40	0	0	0	0	0	0	0
TOTAL	0	1	12	12	5	0	30

DAYS 30	
HITS	13 = 44%
NEAR MISS	10 = 33%
MISS	7 = 23%

FIGURE 3.

CONTINGENCY TABLE FOR FORECAST MAXIMUM TEMPERATURES(°C)
AT ANGLEMONT, B.C.
VERSUS 1300PDT REPORTED TEMPERATURES

ACTUAL	FORECAST						TOTAL
	11-15	16-20	21-25	26-30	31-35	36-40	
11 - 15	0	0	5	0	0	0	5
16 - 20	0	2	2	3	0	0	7
21 - 25	0	1	5	3	0	0	9
26 - 30	0	0	1	9	4	0	14
31 - 35	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0
TOTAL	0	3	13	15	4	0	35

DAYS 35	
HITS	16 = 46%
NEAR MISS	10 = 33%
MISS	8 = 23%

FIGURE 4.

CONTINGENCY TABLE FOR FORECAST
SKY AND PRECIPITATION CONDITIONS
AT CHASE, B.C.
VERSUS ACTUAL CONDITIONS

ACTUAL	FORECAST				TOTAL
	SUN	SUN CLD	CLOUD	PCPN	
SUNNY	15	0	0	4	19
SUNNY w/CLOUDY PERIODS	0	0	0	0	0
CLOUDY	1	0	0	2	3
PCPN	2	0	0	6	8
TOTAL	18	0	0	12	30


DAYS = 30
 HITS
 21 = 70%

FIGURE 5.

CONTINGENCY TABLE FOR FORECAST
SKY AND PRECIPITATION CONDITIONS
AT ANGLEMONT, B.C.
VERSUS ACTUAL CONDITIONS

ACTUAL	FORECAST				TOTAL
	SUN	SUN CLD	CLOUD	PCPN	
SUNNY	14	0	0	1	15
SUNNY w/CLOUDY PERIODS	0	0	0	1	1
CLOUDY	3	1	0	0	4
PCPN	6	0	0	14	20
TOTAL	23	1	0	16	40


DAYS = 40
 HITS
 28 = 70%

FIGURE 6.

CONTINGENCY TABLE FOR FORECAST WIND SPEEDS(KM/HR)
AT CHASE, B.C.
VERSUS 1300PDT REPORTED WIND SPEEDS

ACTUAL	FORECAST						TOTAL
	0-5	6-10	11-15	16-20	21-25	26-30	
0-5	5	0	0	0	1	0	6
6-10	10	0	0	1	0	1	12
11-15	9	0	0	1	0	0	10
16-20	1	0	0	0	0	0	1
21-25	0	0	0	0	0	0	0
26-30	1	0	0	0	0	0	1
TOTAL	26	0	0	2	1	1	30

DAYS 30	
HITS	5 - 17%
NEAR MISS	10 - 33%
MISS	15 - 50%

Figure 7 - Sample recreational forecast for Thompson-Shuswap
issued by Kamloops Weather Office.

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RECREATION FORECAST FOR THE THOMPSON-SHUSWAP AREA ISSUED BY
ENVIRONMENT CANADA AT 130 PM PDT FRIDAY JULY 23 1982 FOR TODAY
AND SATURDAY WITH AN EXTENDED OUTLOOK. THE NEXT SCHEDULED FORECAST
WILL BE ISSUED AT 130 PM TOMORROW SATURDAY JULY 24 1982.

(1) THOMPSON-SHUSWAP

TODAY: SUNNY HIGHS NEAR 25. WINDS TODAY AND TOMORROW VARIABLE 10-20
KM/HR. TONIGHT: CLEAR LOWS NEAR 13. SATURDAY SUNNY HIGHS NEAR 28.
OUTLOOK FOR SUNDAY SUNNY HIGHS NEAR 28.

END.

SYNOPSIS FOR THE THOMPSON-SHUSWAP AREA.

THE BUILDING RIDGE OF HIGH PRESSURE HAS GIVEN SUNNY SKIES TO MOST
LOCATIONS IN THE THOMPSON-SHUSWAP AREA. THE RIDGE WILL CONTINUE TO
GIVE MORE SUNNY SKIES THROUGHOUT THE AREA FOR THE NEXT FEW DAYS.

END.

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THOMPSON-SHUSWAP-N. OKANAGAN 1 PM PDT RECREATION WEATHER REPORTS
JULY 23 1982.

B.C. FOREST SERVICE WEATHER STATIONS

STATION	TEMP	WIND	PCPN	STATION	TEMP	WIND	PCPN
CLEARWATER	20	CALM	3.0	BARRIER	19	CALM	5.1
E. BARRIER LK	20	S 6	8.6	LAMNERS ISL.	22	SE10	2.8
TODD MTN.	11	SE 5	0.9	LEIGHTON LK.	13	N 5	2.0
MERRITT	23	SW 9	22.3	SEYMOUR ARM	18	CALM	6.2
SICAMOUS	18	S 10	2.5	VERNON	21	S 5	0.0
LUMBY	22	S 9	0.0				

SHUSWAP LAKE WEATHER STATIONS

STATION	WEATHER	TEMP	WIND	RMRKS
CHASE	SUNNY	21	NE 5	RH 57
SALMON ARM	SUNNY	18		
SCOTCH CREEK	SUNNY	19	NW10	LAKE SMOOTH
ANGLEMONT MARINA	CLOUDY	19	CALM	LAKE SMOOTH

(1) If conditions warrant, the forecast is broken down into:

"South Thompson & Western Shuswap" and

"North Thompson & Eastern Shuswap"