Winter Recreation Developments
Michigan State University
Cooperative Extension Service
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Louis F. Twardzil, Recreation Specialist, Department of Park and Recreation Resources
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8 pages

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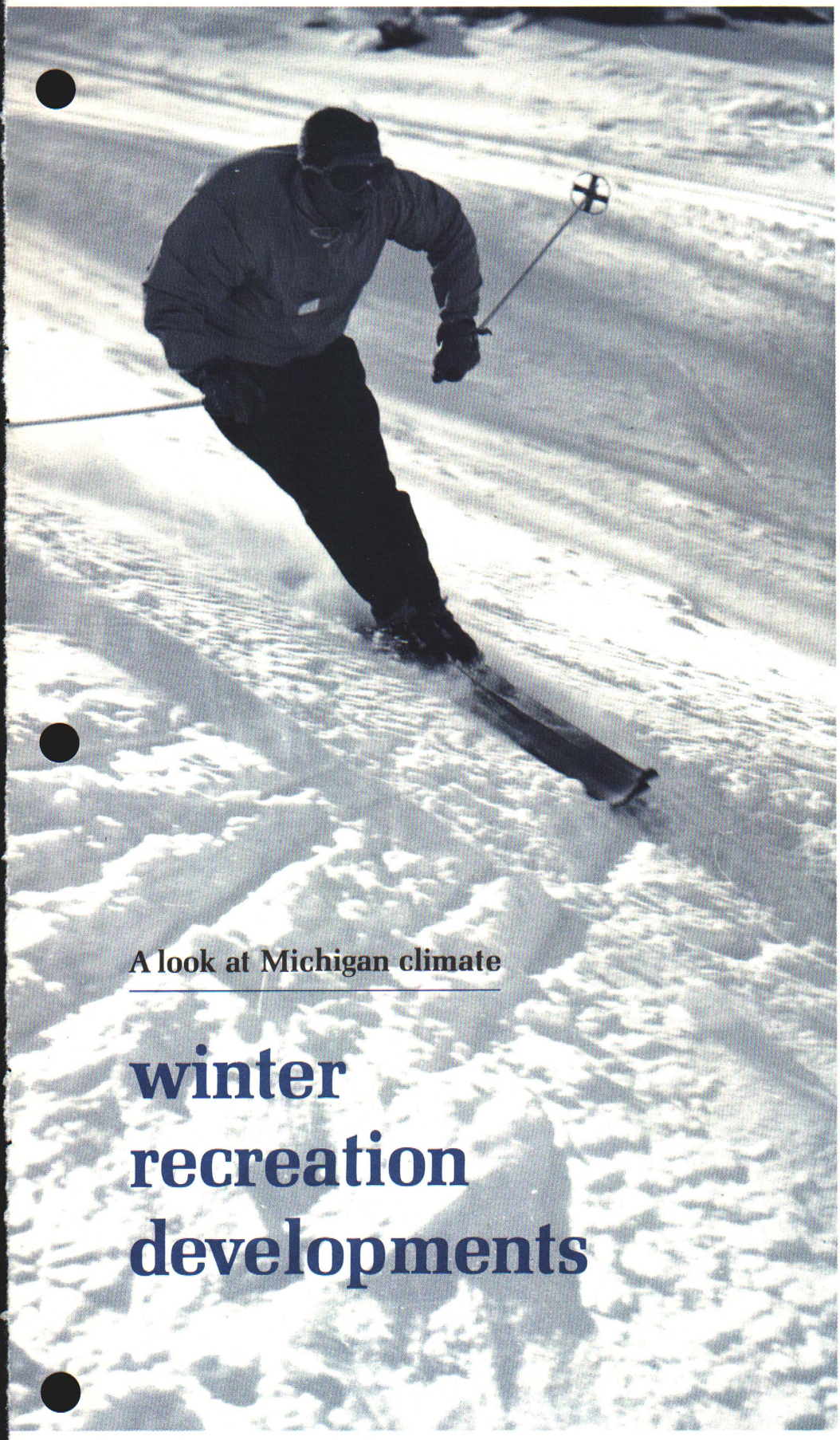
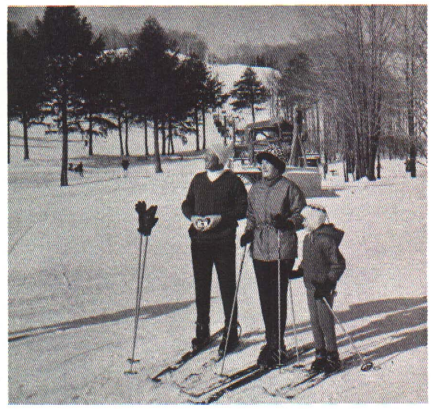


A look at Michigan climate

winter recreation developments



COOPERATIVE EXTENSION SERVICE • MICHIGAN STATE UNIVERSITY

By Bernard Bujnowski, Graduate Assistant, Department of Park and Recreation Resources, and Louis F. Twardzik, Recreation Specialist, Cooperative Extension Service, Department of Park and Recreation Resources.

Interest in Michigan outdoor recreation during the winter months has increased steadily during the past half century. This is due largely to the natural climate of Michigan. Before, land and water resources were used as climate permitted — sleighing behind horses, sledding and tobogganing down gentle slopes, skating on frozen ponds, and snow skiing down natural slopes. These activities were enjoyed by residents living in the colder and snowier areas of the state, but denied, or seldom available, to those in the southern part of Michigan because of unpredictable snowfall and temperatures.

Changes in recent years have made development of these kinds of winter recreation activities profitable private enterprises. A new highway system with improved winter maintenance has greatly increased access to northern Michigan from both southern Michigan and neighboring States. More leisure time and larger discretionary incomes have also provided greater opportunities for outdoor recreation activities. Private investors were attracted to the potential of ski resorts, and Michigan now leads the nation with 85 recognized winter sports areas. The majority of them are, of course, in the northern part of the state.

Refinement of uphill tows and new methods for efficiently manufacturing snow have been largely responsible for the increasing popularity of snow skiing. These advances have sparked interest in developing additional private and public ski slopes in the southern counties of the state and in states south of Michigan.

A more recent technological development is the manufacture of snowmobiles. While only in mass production for a few years, hundreds of thousands are now in use in Michigan. The demand is so great that special snowmobile enterprises are being developed at a rate reminiscent of ski resort developments during the 1950's and '60's. Michigan now leads the nation in the number of registered snowmobiles in use. More than 200,000 were registered by the state in 1971. There is reason to believe that skiing and snowmobiling activities will increase through both private enterprise and facilities made available by state, city, and county park and recreation departments.

Critical to most winter outdoor recreation developments is the manufacture of snow either as a supplement to natural snow or as a snow base. Snow is manufactured by combining water under pressure and certain atmospheric conditions so that the compressed air atomizes the water. The resulting droplets of water are forced into the air and freeze before touching the ground. It is generally agreed that snow can be manufactured at 30°F. and lower temperatures, with a humidity of 65° or less and with frost set in the ground. However, snow is most efficiently made at 26°F. and lower, with low humidity.

Climate conditions for the various weather data gathering districts in Michigan follow. Statewide map summaries of average snow depth, freeze periods, and annual precipitation are included for each of these 10 regions. Information about these districts is available from the Department of Commerce, National Weather Service, Manly Miles Building, Harrison Road, East Lansing, Michigan.

Those who plan winter recreation developments should find this information useful for initial decision-making. Planners should be able to use it to determine the climatological potential for developing a winter outdoor recreation area. However, it is assumed that private and public developers will follow this analysis with more precise market studies to determine supply and demand conditions before making investments. Evaluation of topography, vegetation, water sources, etc. of the area is also advised.

For additional information on developing ski slopes and the manufacture of snow, write to:

U.S. Ski Association
Traverse City, Michigan 49684

* * *

For information on state laws pertaining to operating ski lifts, write to:

Michigan Department of Labor
300 E. Michigan Avenue
Lansing, Michigan 48933

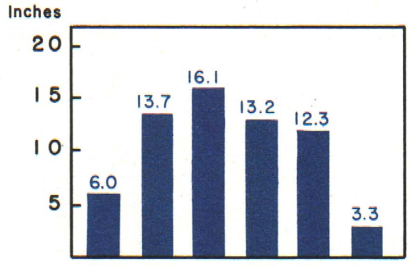
* * *

For information on location, services and facilities of winter sports areas throughout the state:

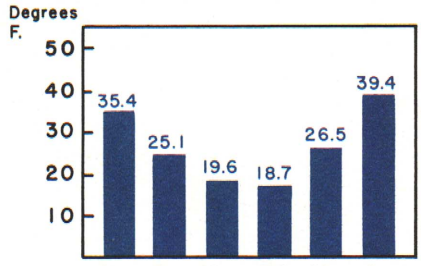
Michigan Tourist Council
Stevens T. Mason Building
Lansing, Michigan 48926

The authors wish to acknowledge Mr. N. D. Strommen, Climatologist, Michigan Weather Service, and Mr. Ceel VanDenBrink, Meteorologist, U.S. Weather Bureau, for data included in this publication. Photos: Michigan Tourist Council.

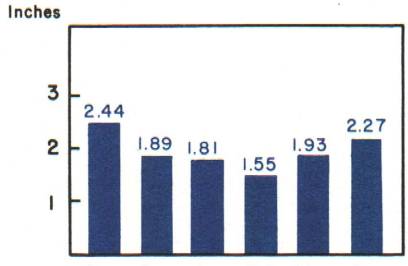
CLIMATOLOGICAL DATA FOR ALPENA, MICHIGAN



Mean Snowfall, Nov.-April 1931-60



Mean Temperature, Nov.-April, 1931-66



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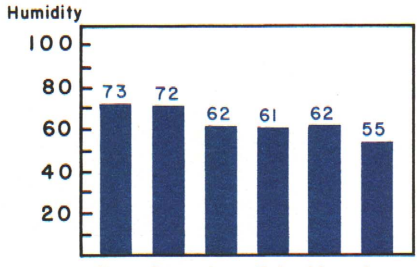

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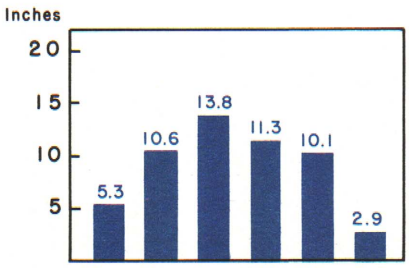

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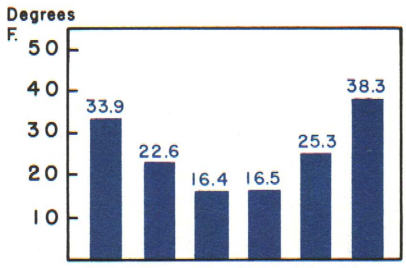

Mean Temperature, Nov.-April, 1905-61

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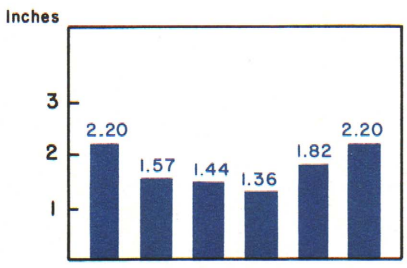

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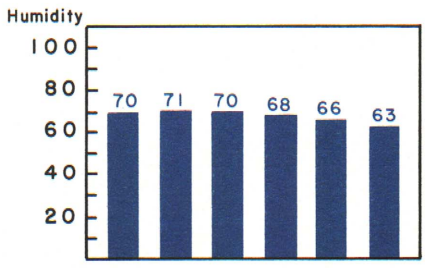

Relative Humidity, Nov.-April, 1961, measured at 1:00 p.m. E.S.T.

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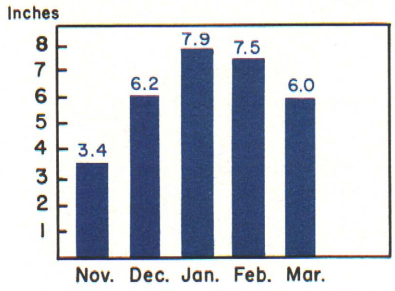
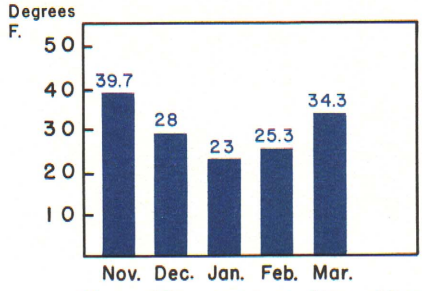
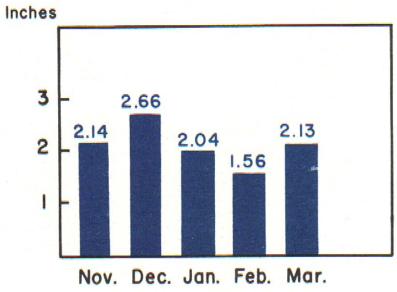


Mean Snowfall, Nov.-Mar.
1931-60



Mean Temperature, Nov.-Mar.
1959-69



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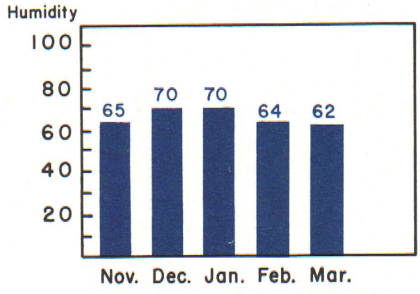

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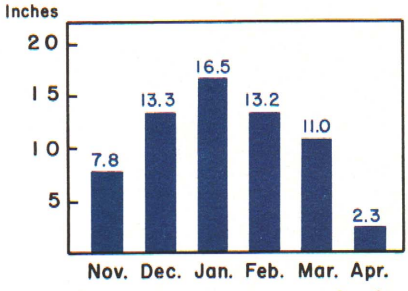

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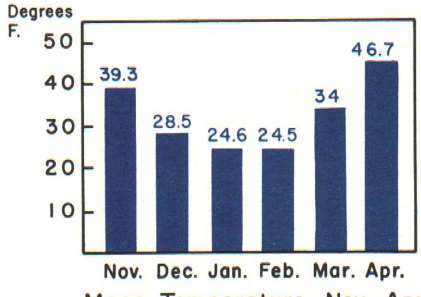
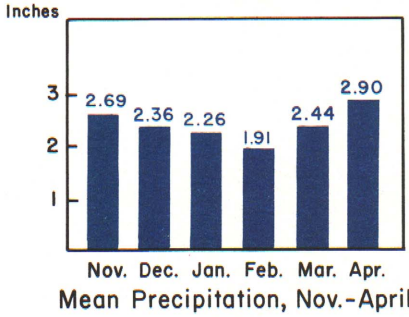


Mean Temperature, Nov.-April,
1931-69

CLIMATOLOGICAL DATA FOR GRAND RAPIDS, MICHIGAN



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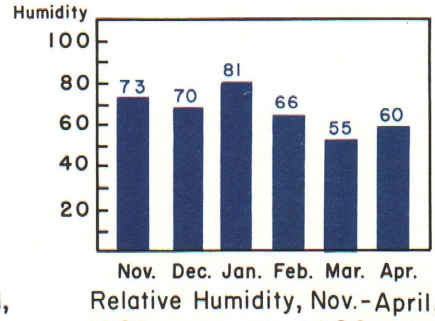

Relative Humidity, Nov.-April,
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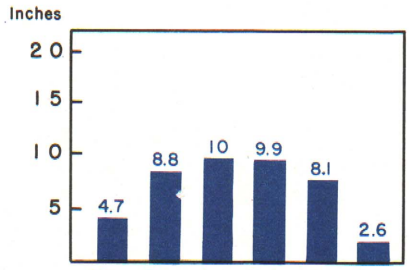
CLIMATOLOGICAL DATA FOR LANSING, MICHIGAN



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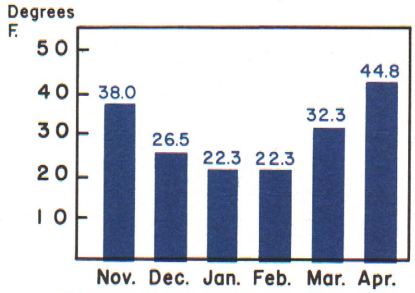

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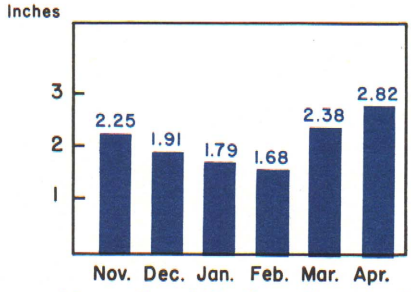

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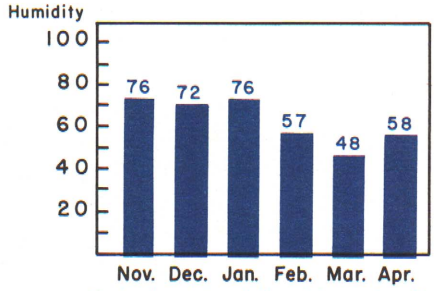

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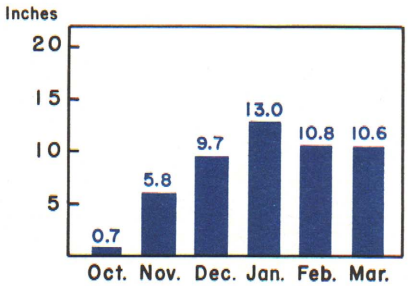
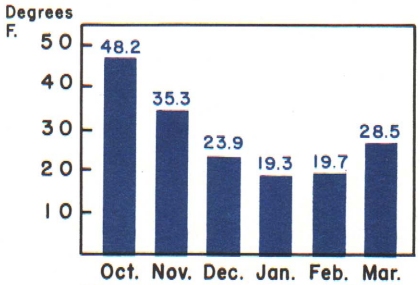
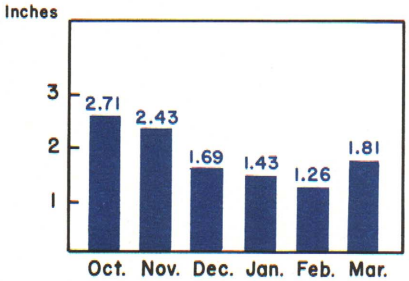


Mean Snowfall, Oct.-March, 1931-60



Mean Temperature, Oct.- Mar. 1918-69

CLIMATOLOGICAL DATA FOR HOUGHTON LAKE, MICHIGAN



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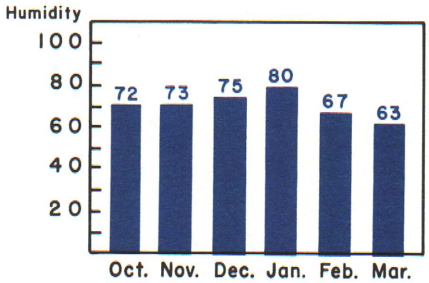

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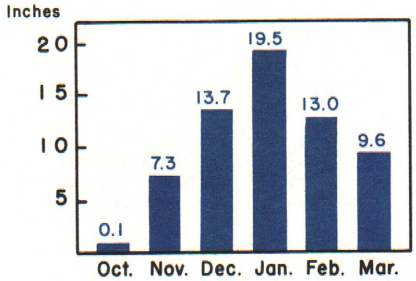

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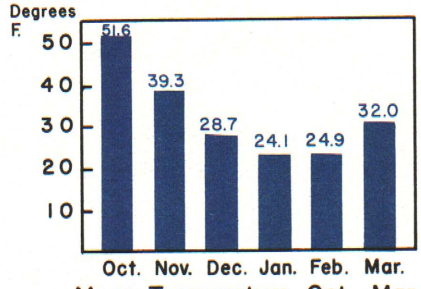
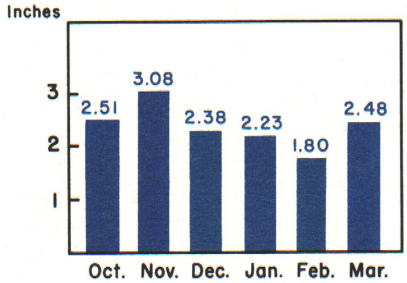


Mean Temperature, Oct.-Mar., 1940-66

CLIMATOLOGICAL DATA FOR MUSKEGON, MICHIGAN



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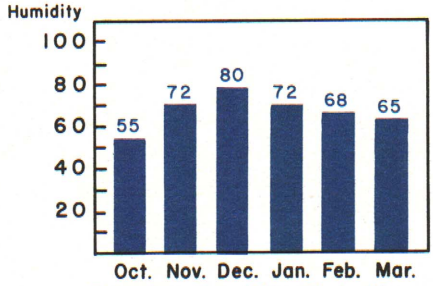
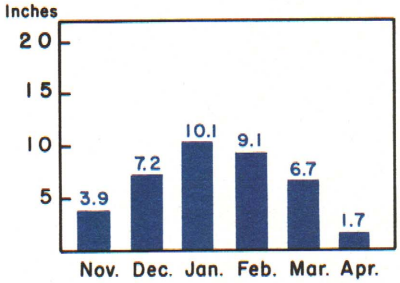
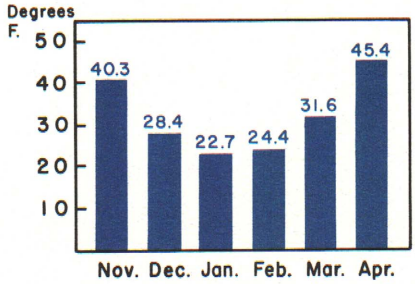


Relative Humidity, Oct.-Mar., measured at 1:00 p.m. E.S.T. 1966

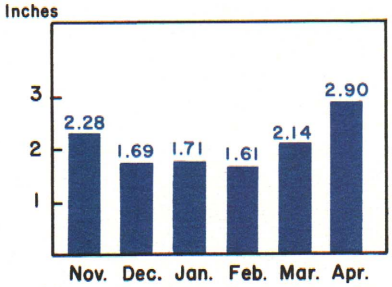


Mean Snowfall, Nov.-April, 1931-60

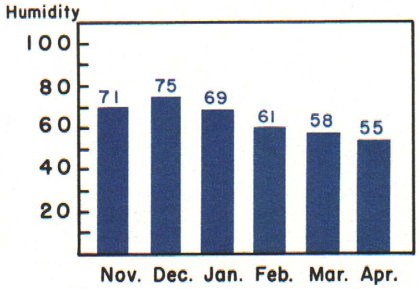


Mean Temperature, Nov.-Apr., 1942-70

CLIMATOLOGICAL DATA FOR FLINT, MICHIGAN



Mean Precipitation, Nov.-Apr., 1942-70



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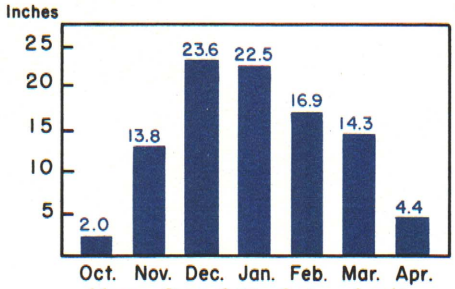
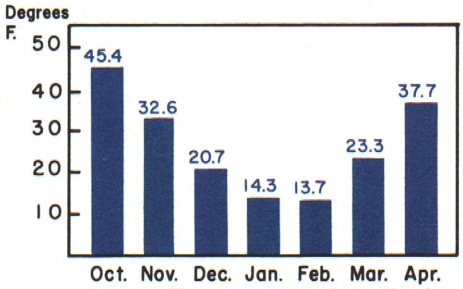
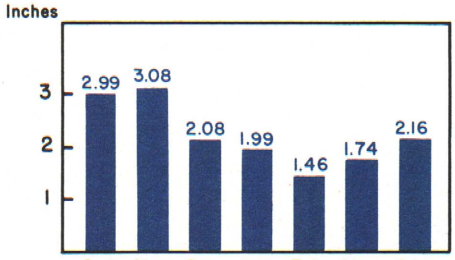


Mean Snowfall, Oct. - April
1931-60

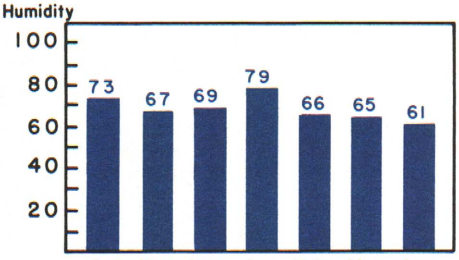


Mean Temperature, Oct.-April
1931 - 69

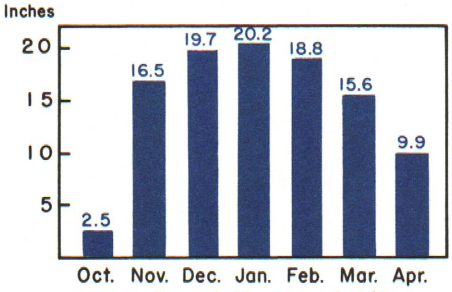
CLIMATOLOGICAL DATA FOR SAULT STE. MARIE, MICHIGAN



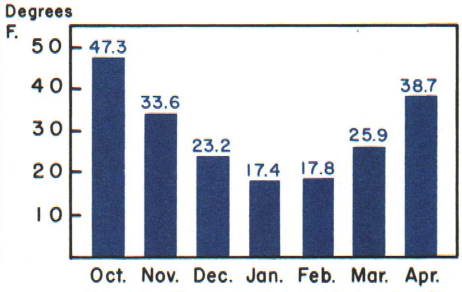
Mean Precipitation, Oct.-April
1931-69



Relative Humidity, Oct.-April, 1969
measured at 1:00 p.m. E.S.T.

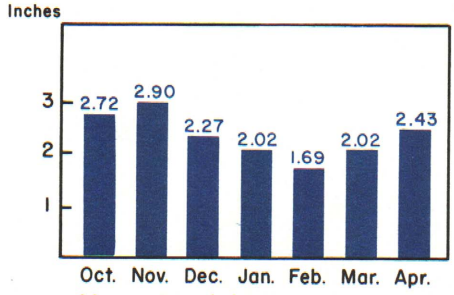


Mean Snowfall, Oct.-April
1931-60

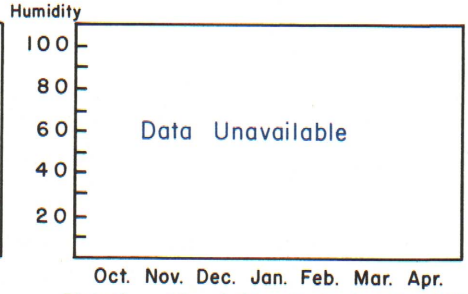


Mean Temperature, Oct.-April
1931-69

CLIMATOLOGICAL DATA FOR MARQUETTE, MICHIGAN



Mean Precipitation, Oct.-April
1931-69



Relative Humidity, Oct.-April, 1969
measured at 1:00 p.m. E.S.T.

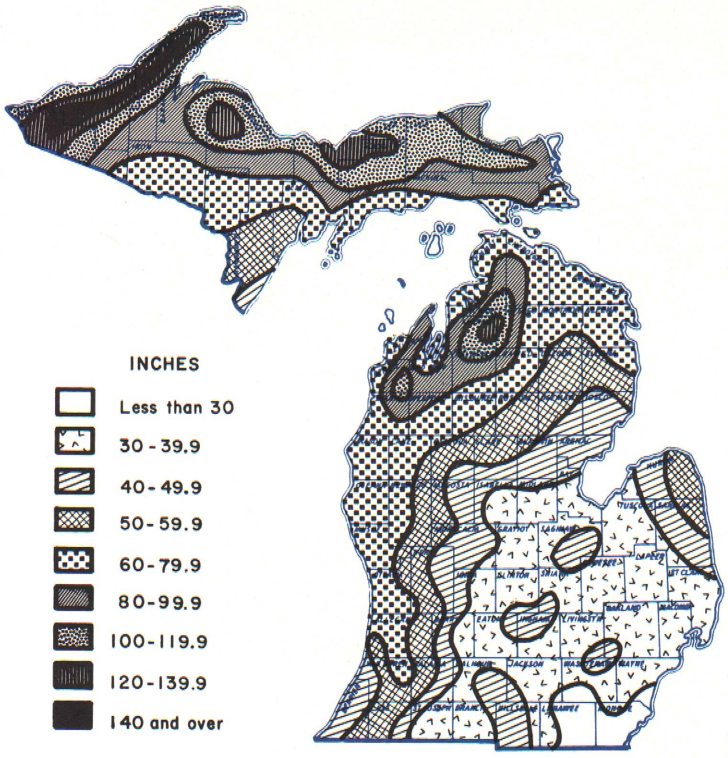


Figure 1 — Average seasonal snowfall, 1931-1960.

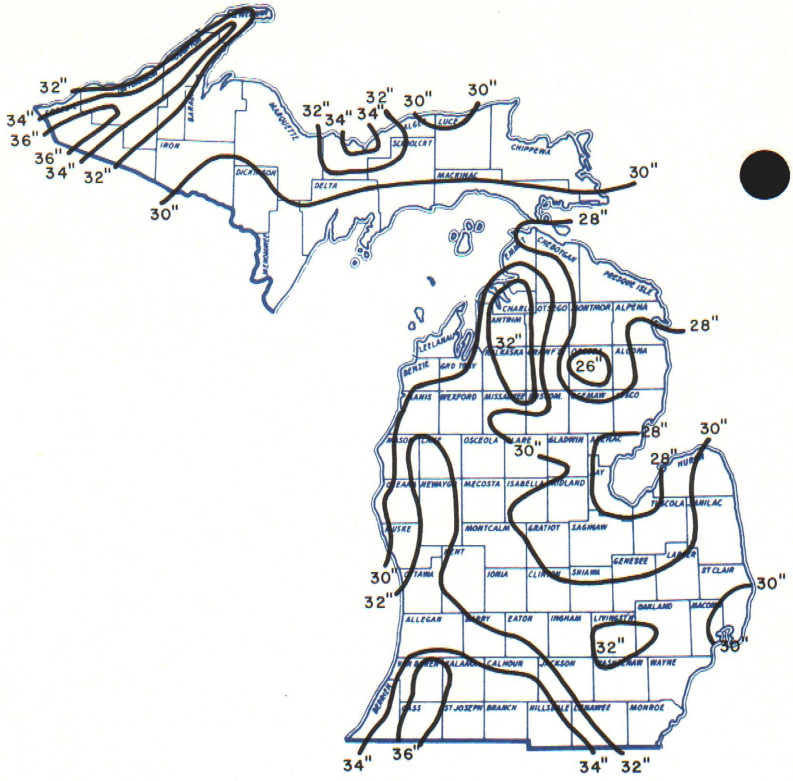


Figure 2 — Normal annual precipitation, 1931-1960.

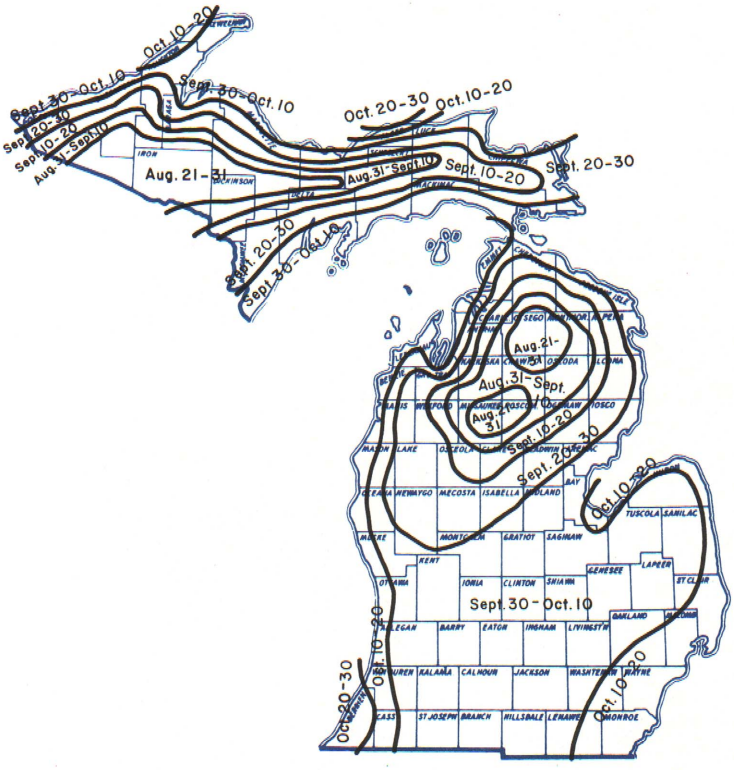


Figure 3 — Average date of first temperature of 32°F. or lower in the fall.

Figure 4 — Average date of last temperature of 32°F. or lower in the spring.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8, and June 30, 1914, in cooperation with the U.S. Department of Agriculture. George S. McIntyre, Director, Cooperative Extension Service, Michigan State University, E. Lansing, Mich. 1P-5M-7:71-CR