

other hand, there is a steady increase in recreational hunting and fishing, as evidenced by the number of licences issued to residents and non-residents. In 1961 the number of resident firearms licences issued was 115,796, the number of resident angler's licences 139,945, non-resident firearms licences 3,937, and non-resident angler's licences 46,048, resulting in a provincial revenue of \$1,656,061. The amount of game taken during the hunting season by resident sportsmen was estimated as follows: deer 67,000, moose 15,000, elk 3,500, mountain goat 1,900, mountain sheep 1,000, caribou 1,000, waterfowl 377,000, grouse 413,000, and pheasant 57,000.

Among the wildlife management programs conducted by the Department of Recreation and Conservation is included the rehabilitation of lakes through the use of toxaphene which kills off all fish species, permitting later planting of desirable species such as rainbow trout. More than 100 lakes have been brought back into trout production in recent years by this technique. Also included is the establishment of longer and more widespread open seasons on antlerless deer and moose. Such seasons are carefully studied to assess their effects upon the stands of game but, when properly applied, they allow a greater harvest of moose and deer. A limited open season on hen pheasants was established for the first time in 1962. Although at first there was some public criticism of the shooting of female birds, the fact that such open seasons are based on sound biological findings is now being realized.

### PART III.—CLIMATE AND TIME ZONES

#### Section 1.—Climate\*

Just as there are great differences in the weather throughout Canada at any given instant, there are also many climates. These climates are not unique but are similar to those in Europe and Asia extending from the Arctic down to the mid-northern hemispheric latitudes. Because Canada is situated in the northern half of the hemisphere, most of the country loses more heat annually than it receives from the sun. The general atmospheric circulation compensates for this and at the same time produces a general movement of air from west to east. Migrant low pressure areas move across the country in this "westerly zone", producing storms and bad weather. In intervals between storms there prevails the fair weather associated with high pressure areas.

Although the movement of migrant high and low pressure systems within the zone of the westerlies is the most significant climatic control over Canada, the physical geography of North America contributes greatly to the climate. On the West Coast, the western Cordillera limits mild air from the Pacific to a narrow band along the coast, while the prairies to the east of the mountains are dry and have extreme temperatures because they are shielded from the Pacific Ocean and are in the interior of a large land mass. In addition, the prairies are part of a wide north-south corridor open to rapid air flow from either north or south which often brings sudden and drastic weather changes to this interior area. On the other hand, the large water surfaces of Eastern Canada produce a considerable modification to the climate. In southwestern Ontario winters are milder with more snow, and in summer the cooling effect of the lakes is well illustrated by the number of resorts along their shores. On the East Coast, the Atlantic Ocean has considerable effect on the immediate coastal area where temperatures are modified and conditions made more humid when the winds blow inland from the ocean.

\* Prepared by the Meteorological Branch of the Department of Transport, Toronto. A comprehensive study on The Climate of Canada, also prepared by the Meteorological Branch, was carried in the 1959 Year Book, pp. 23-51. Supplementing that textual material, detailed tabulations of climatic factors for 45 individual meteorological stations across the country were carried in the 1960 Year Book, pp. 33-77. A reprint is available from the above source giving the complete textual and tabular data. A very brief outline of the climate of Canada by region is given in the 1962 edition, pp. 39-40.