

## CREEL CENSUS

Although much information may be secured regarding fish, their food, their reproduction and other phases of their life histories through field and laboratory examination of them and of the water areas in which they are found, it cannot always be predicted what size or species of fish an angler will take from a lake or even that he will catch anything. Because the game fish populations in National Parks waters are largely used for public enjoyment and because a knowledge of the fish removed from them is of vital importance in the maintenance of the fish populations, recourse is made to a creel census to secure data regarding the fish taken by anglers.

The creel census is based on voluntary completion by anglers of special cards designed to secure data regarding the numbers, species and lengths of fish caught, the type of lure used, the time of day and, most important, the time in hours and minutes required for the capture. Each angler is requested to complete a return for each day's fishing. Returns are regarded as confidential in order to overcome the traditional reluctance of an angler to report a small or nil catch. During 1954 creel census cards were returned reporting the capture of more than 50,000 fish from 125 lakes and 84 streams in 11 National Parks.

An analysis of this information and its correlation with corresponding data for earlier years is of inestimable value to fish management policy and practice. If the creel census data indicate that too large a proportion of the angling catch consists of immature fish, then steps may be taken to protect the desired portion of the fish population by changing the regulations. If the fishing effort or number of hours required to capture a fish becomes progressively greater for a given species during succeeding years, this is considered an indication of imminent depletion of this species and steps are taken to check it.

The maintenance of good angling in the National Parks of Canada depends largely on the co-operation of the anglers. Experience has shown that this co-operation is always freely available from those who understand the purposes for which this great natural heritage is maintained.

## PART III.—CLIMATE AND TIME ZONES

## Section 1.—Climate

A comprehensive discussion of the climatic regions of Canada is available in the 1948-49 Year Book, pp. 41-62, and detailed tabulations of climatic factors covering 36 meteorological stations located mostly at well known or populous centres are given in the 1950 Year Book, pp. 35-70. Other articles appearing in previous editions are listed under "Climate and Meteorology" in Chapter XXIX of this volume.

Table 1 gives long term temperature and precipitation data for 35 representative Canadian stations; Tables 2 and 3 provide monthly temperature and precipitation data during 1954 for these same stations. These are mostly well-sited or populous places with climates fairly representative of a considerable area. Each of the figures given under "Temperatures" are of course averages obtained over the period of observation. Under "Precipitation", in calculating the annual total, inches of rain is considered the total depth of water accumulated on a hypothetical horizontal impervious surface without evaporation. Similarly the depth of snow given is that which falls on a horizontal surface without settling, melting or sublimation. Because the depth of water obtained from melting newly fallen snow is roughly one-tenth of the depth of the snow, the total precipitation is obtained by adding together the total rainfall and one-tenth of the depth of the newly fallen snow. A day with rain is, for the purpose of these tables, one on which 1/100 of an inch or more falls and a day with snow is one with at least 1/10 of an inch of newly fallen snow. Whenever the temperature four feet above the ground falls to 32°F. or lower the day is counted as a day with frost. The average date of the last spring frost and of the first frost in autumn marks the approximate period continuously free from frost.