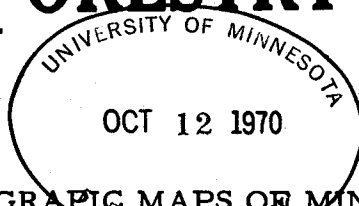


MINNESOTA FORESTRY NOTES

COPY 2

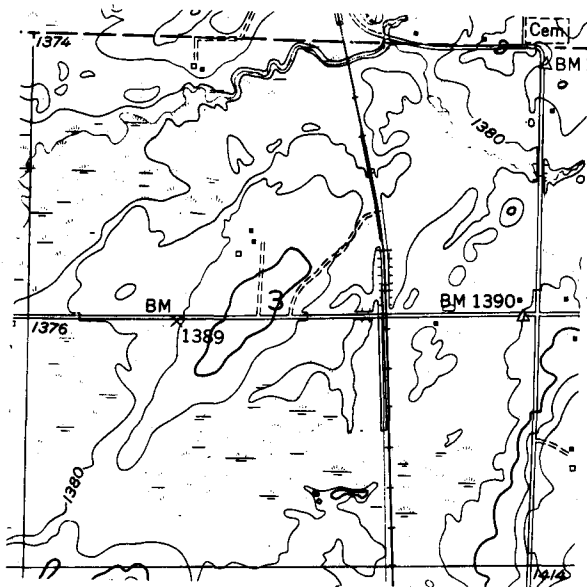


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U. S. GEOLOGICAL SURVEY TOPOGRAPHIC MAPS OF MINNESOTA-- HOW TO OBTAIN AND USE THEM

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An accurate topographic map can serve as a practical forestry planning and working tool. Prior to 1949, few good topographic maps were available for any part of Minnesota. Since that time, however, Minnesota has become the center of one of the most active mapping programs in the United States. The purpose of this paper is to provide information pertaining to the procurement, scope, and possible uses of presently available maps.



U. S. Geological Survey maps are based on quadrangles bounded by either 15 minutes or 7½ minutes of latitude and longitude with scales of 1/62,500 and 1/24,000, respectively. The average 1/24,000 scale quadrangle is approximately 15 x 22 inches in size and covers about 50 square miles of land area. Contour interval for most maps is 10 feet. Since 1949 all maps have been constructed from aerial photos by accurate photogrammetric methods with control points established by field survey and with subsequent field checking of detail. Figure 1. illustrates the type of information provided on these maps.

Fig. 1. Sec. 3, T53N, R16W, SHAW QUADRANGLE, St. Louis County (shown at actual map scale of 1/24,000)

Since most foresters prefer a map scale of 1/15,840 or 1/20,000, photographic enlargements having a scale error of less than 3% may be readily made from these Survey maps. Blue-printing firms, using a technique such as the "Super-Stat" process can supply enlargements on semi-matte paper at a cost of about \$8.00. The negative becomes the property of the purchaser and all subsequent prints will cost about \$6.00 each. The 1/24,000 (2.64" = 1 mile) scale quadrangles will, of course, enlarge with greater accuracy and resultant detail than those of 1/62,500 (1.01" = 1 mile) scale. Such maps provide a high quality base map to which forest type boundaries, "forty" lines, and other information may be transferred from aerial photographs.

Transfer of aerial photo detail to the base map requires the use of a mapping device. Suggested instruments might be any of the following: Sketchmaster, Recto-

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planigraph, Multiscope, Reflecting Projector, or Radial Line Plotter. Once photo details such as section corners, roads, streams, lakes, etc., have been superimposed upon their map positions, the delineated type boundaries may be transferred to the base map in their proper scale and locations. Since a picture of the relief, cultural details and land divisions is provided, the topographic map may be used for planning purposes also.

Published maps may be purchased from the U. S. Geological Survey at Washington, D. C., or at the Federal Center, Denver, Colo., for 20¢ per sheet, or from private map supplying companies. Preliminary maps may be purchased for 50¢ per sheet from the U. S. Geological Survey, Box 133, Rolla, Mo. Indexes of published Minnesota maps may be obtained from the Geological Survey in Washington, and indexes of advance maps from Rolla. Quadrangles should be ordered by name (if known) or specification of latitude and longitude. The latter may be accurately determined from most county maps when used in conjunction with the index map in Figure 2. Contact prints of air photos on which the mapping was based may be purchased from Washington, as well as photo index sheets of individual quadrangles.

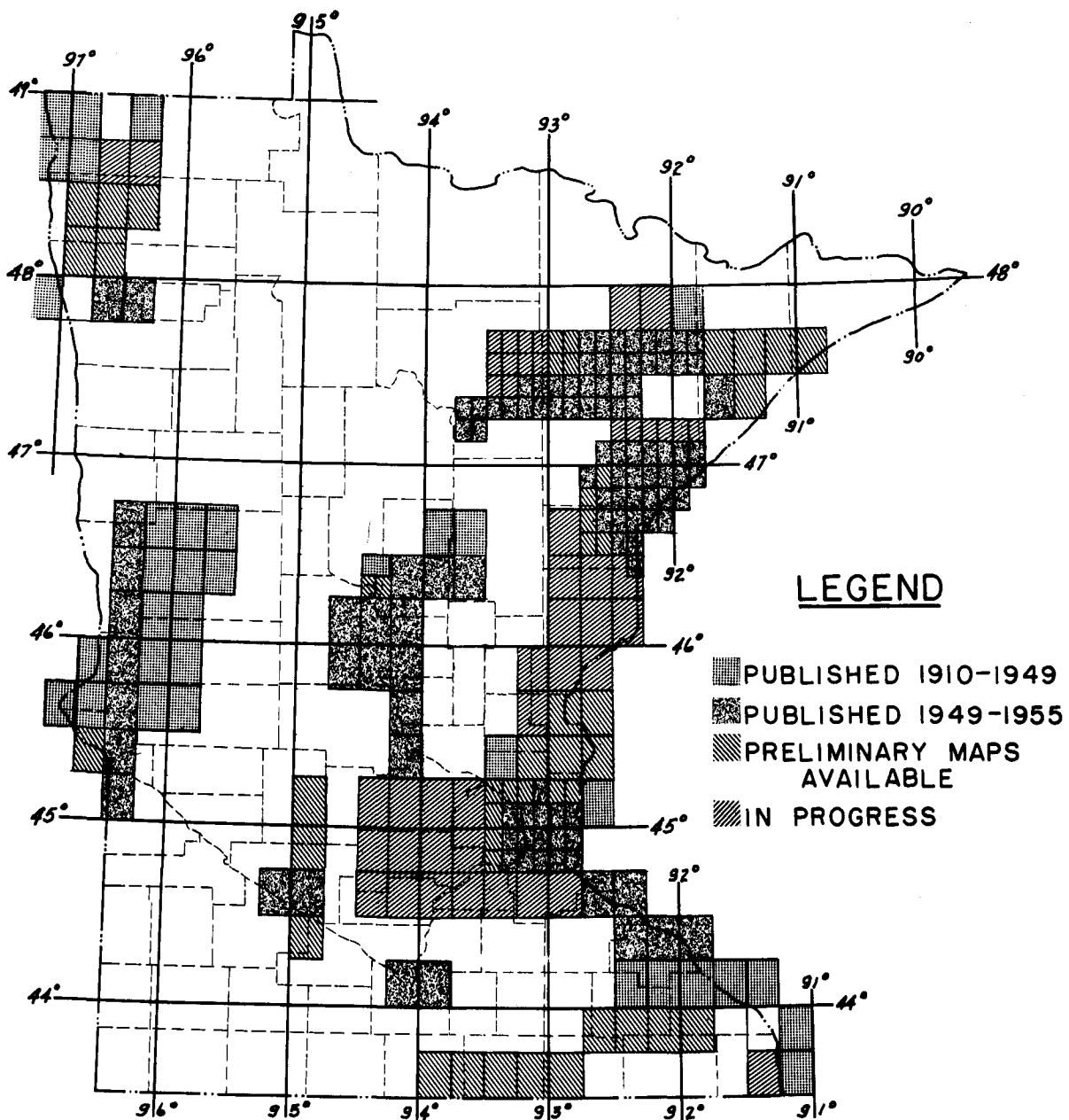


Fig. 2 Index map