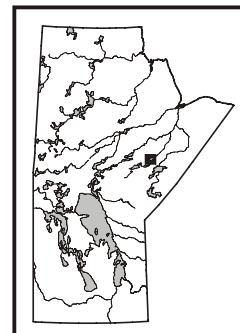


GS-19 OPERATION SUPERIOR: MULTIMEDIA GEOCHEMICAL SURVEYS IN THE KNEE LAKE GREENSTONE BELT (NORTHERN HALF), NORTHERN SUPERIOR PROVINCE, MANITOBA (NTS 53L)

by M.A.F. Fedikow and E. Nielsen



Fedikow, M.A.F. and Nielsen, E. 2000: Operation Superior: multimedia geochemical surveys in the Knee Lake greenstone belt (northern half), northern Superior Province, Manitoba (NTS 53L); in Report of Activities 2000, Manitoba Industry, Trade and Mines, Manitoba Geological Survey, p. 105-107.

SUMMARY

During the field season, 2000 rock, till, b-horizon, humus and vegetation samples were collected for multi-element geochemical analysis from 350 sites within the northern portion of the Knee Lake greenstone belt. In addition, 334 bulk samples of till and beach sand were collected for kimberlite indicator-mineral identification and analysis. The geochemical and mineralogical analysis of these samples will continue to build a multi-element-multimedia geochemical database that was initiated in 1996 and continued in 1997, 1998 and 1999 (Fedikow et al., 1996, 1997a, b; Fedikow and Nielsen, 1997; Fedikow et al., 1998, 1999, 2000) to assist mineral resource assessment in the northern Superior Province of Manitoba.

1999 SURVEY

The fifth and final year of a helicopter- and fixed-wing-assisted, belt-scale (1 km sample spacing), multimedia geochemical survey in northeastern Manitoba concentrated on the northern portion of the Knee Lake greenstone belt (Fig. GS-19-1). The distribution of sampling sites for the 2000 survey is given in Figure GS-19-2. Sample collection throughout the area was accomplished by helicopter, and a boat was used to access the extensive shoreline at the north end of Knee Lake. Samples are currently undergoing preparation for geochemical analysis in the laboratories of the Manitoba Geological Survey.

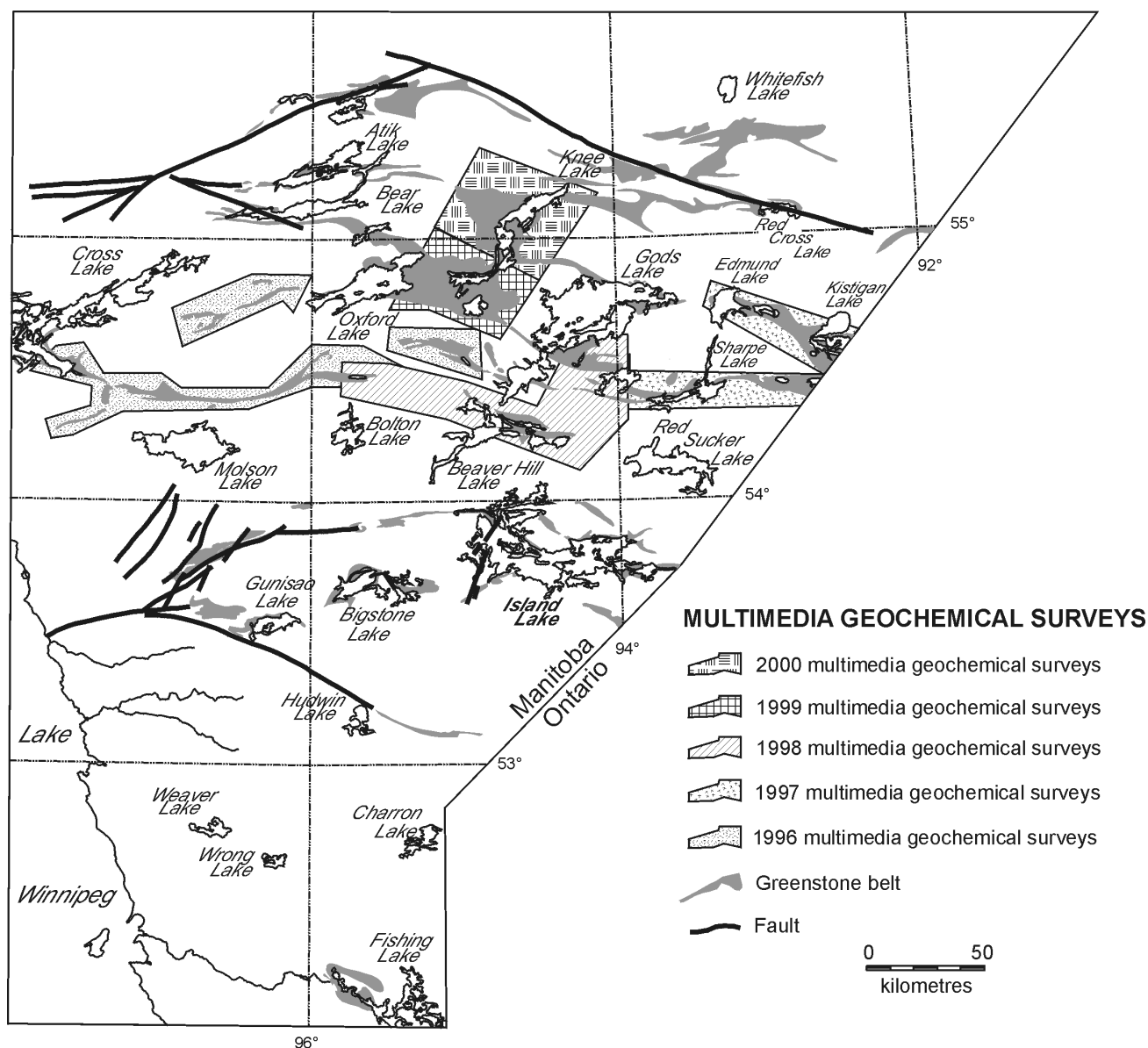


Figure GS-19-1: Target area for multimedia geochemical surveys, 2000.

LEGEND

- 8 Granodiorite
- 7 Greywacke, arenite
- 6 Tonalite
- 5 Metasedimentary gneiss
- 4 Gabbro, gabbro-norite
- 3 Greywacke, mudstone
- 2 Felsic volcanic rocks
- 1 Basalt
- Mafic dyke
- Sample location

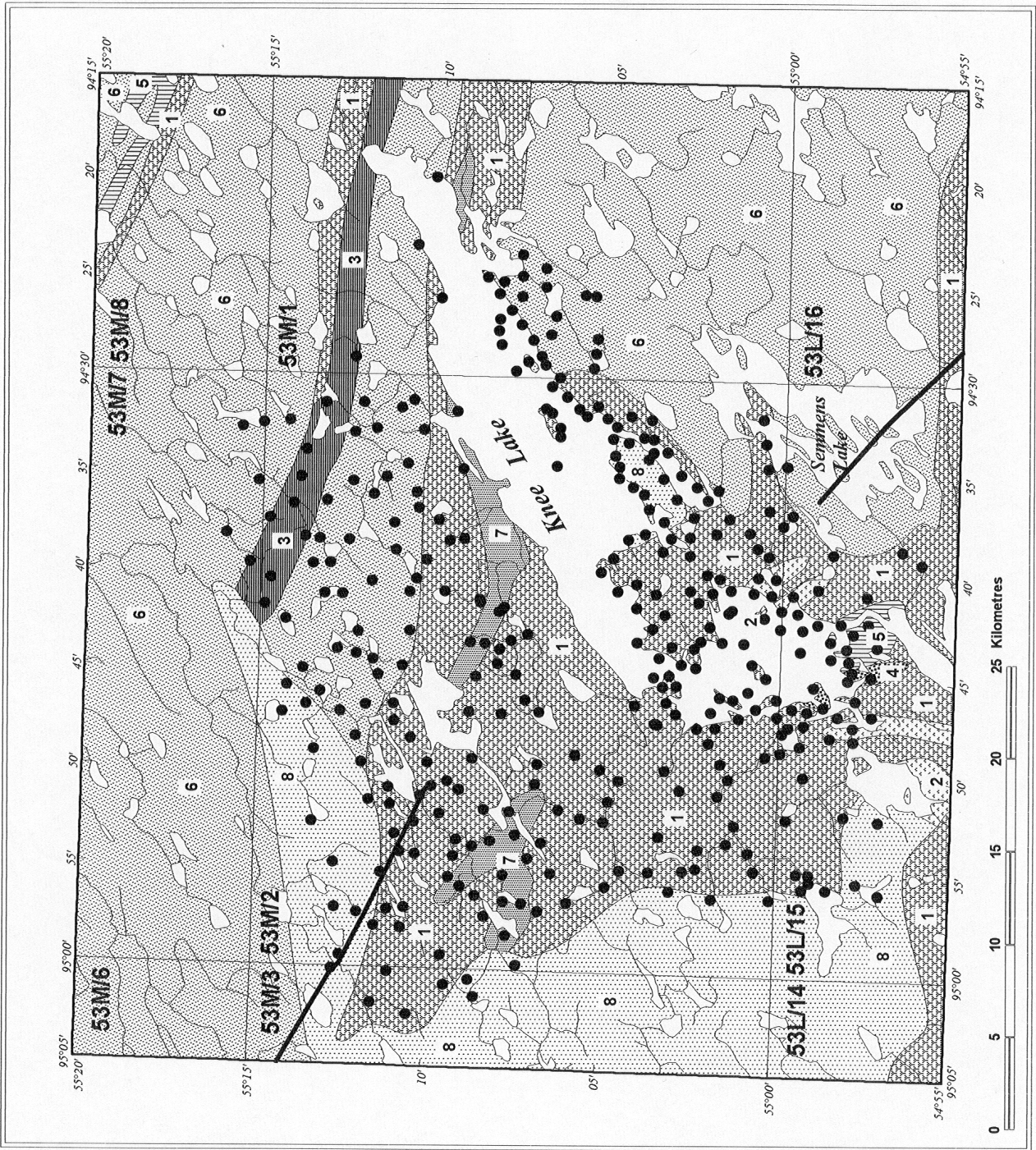


Figure GS-19-2: Distribution of sampling sites for the 2000 survey area.

ACKNOWLEDGMENTS

We gratefully acknowledge the considerable skills of Dave Tomlin and Jamie Gould, Provincial Helicopters Ltd. (Lac du Bonnet) in safely accessing sample sites for the 1999 season. Chris Bater, Zoe Kepron and Ryan Oger provided able and enthusiastic assistance during the sampling program and sample preparation. Neill Brandson and Karen Punstel are thanked for all-around logistical support.

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