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Metadata:

#### I. Data set Descriptors

Data set Title: Relative abundance, physical, chemical and climatic data of 57 lakes surveyed using Nordic Biodiversity Netting in Ontario, Canada

Data set Time Period of Content: Summer 2000 – Summer 2005

Data set Distribution Date: April 10, 2018

Data set Originators: G. Morgan, M. Malette, S. Kaufman, J. Gunn and W. Selinger

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Data set Abstract: Through the early 2000's, 57 lakes mostly around Sudbury, Ontario were surveyed by the Laurentian University's Cooperative Freshwater Ecology Unit using the Nordic Netting method. Used as a whole-fish community assessment method, it also gathers useful information on sportfish species, such as lake trout (*Salvelinus namaycush*), northern pike (*Esox lucius*), smallmouth bass (*Micropterus dolomieu*), and walleye (*Sander vitreus*). Physical and chemical data were queried from the OMNRF Aquatic Habitat Inventory (AHI) database, which was comprised of data from the AHI surveys conducted between the mid-1960's and the late 1980's. Lastly, climate data were derived from the Ontario Climate Model (T. Marshall, OMNRF, personal communication). Distance to the Vale® nickel smelter was determined using GIS software.

Data set Citation: Morgan et. al., 2005.

Nordic Netting results from 57 lakes around Sudbury, ON, Canada.

#### II. Project Descriptors

Objective: To document fish biodiversity and sportfish abundance from lakes across a wide spatial distribution in Sudbury, Ontario, Canada.

#### III. Experimental or Sampling Design

##### Study Description:

Between 2000 and 2005, fish community assessments were conducted on 57 lakes across an area in proximity to Ontario. These assessments were used to gather relative abundance and life history data from all sportfish captured. Surveys were conducted in the summer while lakes were thermally stratified (June – September) using the Nordic Netting method (Morgan 2004). This quantitative method used multimesh monofilament gillnets (30 m long x 1.2 m deep with mesh sizes of 10–110 mm [stretched measure]). Gill nets were set overnight for 12 h (i.e., set between 1800 and 2000 hours and lifted between 0600 and 0800 hours) at random locations. Sampling effort was stratified into five depth zones (<3, 3–5.9, 6–11.9, 12–19.9, and 20–35 m), and the number of nets (16–55 per lake) was volume-weighted by depth zones. All fish were identified to species, measured for fork length and total length (both in mm) and round weight (wet weight or fresh weight; g). Additional sampling of sport fish included the removal of bony structures for aging and visual assessment of sex and maturation status.

Study Begin Date: Fall 2000

Study End Date: Fall 2005

Study Sampling: For lakes with multiple surveys, results for most recent surveys are shown.

#### IV. Research Methods

Study Instrumentation: The NORDIC nets (approximately \$700.00 CAD each) are available from Lundgrens Fiskredskapsfabrik, Storkyrkobrinken 12 S-111 28, Stockholm, Sweden, Telephone: 46 8 10 21 22, FAX: 46 8 20 10 22, Email: [info@lundgrensfiske.com](mailto:info@lundgrensfiske.com), Contact: Magnus Lofqvist

Study Taxonomy : All species nomenclature is following Scott and Crossman (1973)

#### V. Data Structural Descriptors

Notes about the data (anomalies, missing sampling intervals, etc.):

Missing values are noted with empty cells

Data are in one .csv file (Nordic.csv). Variables have been abbreviated as follows:

WBY\_NM: Waterbody Name

SMELTER\_DIST: Distance from the geographic centre of the lake to the Vale® nickel smelter located in Copper Cliff, Ontario (kilometres)

LAT: Latitude of the geographic centre of the lake (Degrees, minutes, seconds (truncated to eliminate punctuation))

SRFAREA: Surface area of the lake (hectares)

GDD: Growing degree days greater than 5°C; The sum of the number of degrees of average daily air temperatures greater than 5 degrees Celsius; the value in the data is the average of the annual values between 1990 and 2000. Larger GDD values = greater thermal energy inputs (unitless)

DEPMAX: Maximum depth of the lake (metres)

DEPMN: Mean depth of the lake (metres)

THERMDEPTH: Depth of the thermocline. The thermocline is layer of water that rapidly changes from the warm upper layer of water to the deep, cold layer of water. (metres)

PERIM: The length of the perimeter (shoreline) of the waterbody. Excludes island shorelines. (kilometres)

ELEV: Elevation of the waterbody. (metres above sea level)

AVGTEMP: Average air temperature (degrees Celcius)

MEI: Morphoedaphic Index. Calculated as the concentration of Total Dissolved Solids (mg/L) divided by mean depth (m). MEI is a measure of biotic productivity in a waterbody. (unitless)

SECCHI: Secchi depth; An index of water clarity measured by lowering a 20cm diameter disk with alternating black and white quarters into the water column. The depth is recorded where the disk can no longer be seen. Larger secchi depth = clearer water (metres)

LT\_REL\_ABUN: Lake Trout relative abundance, calculated as the mean number of lake trout caught per net during the Nordic survey. Values of zero denote species was not present.

NP\_REL\_ABUN: Northern pike relative abundance, calculated as the mean number of Northern Pike caught per net during the Nordic survey. Values of zero denote species was not present.

SMB\_REL\_ABUN: Smallmouth bass relative abundance, calculated as the mean number of smallmouth bass caught per net during the Nordic survey. Values of zero denote species was not present.

WAL\_REL\_ABUN: Walleye relative abundance, calculated as the mean number of walleye caught per net during the Nordic survey. Values of zero denote species was not present.

NUM\_SPC: Total number of fish species captured during the Nordic Netting survey.