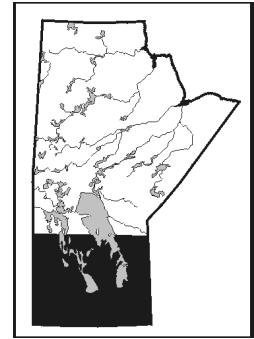


by H.D. Groom



Groom, H.D. 1998: Assessment of aggregate potential in selected Wildlife Management Areas; in Manitoba Energy and Mines, Geological Services, Report of Activities, 1998, p. 212-213.

**INTRODUCTION**

There are seventy-seven Wildlife Management Areas (WMAs) in Manitoba; most are in agro-Manitoba, south of the 52nd parallel (Figure GS-33-1). WMAs were established as multiple-use areas and aggregate extraction has been permitted since the program's inception in 1961. These areas are managed by the Department of Natural Resources under the Wildlife Act. Quarry mineral extraction is regulated by Mines Branch under the Mines and Minerals Act.

quarry mineral values. Quarry mineral extraction will not be permitted in lands placed in the "Prohibited" category. The "Limited" and "Standard" categories will allow for extraction. For this reason, assessment of aggregate potential in these areas is required to ensure that significant resources are not sterilized. The agreement also calls for a management plan for each WMA. Deposit mapping is expected to be an on-going program as the plans are formulated.

**BACKGROUND**

The WMA aggregate evaluation program began in late 1996 to meet the needs of two separate but related initiatives.

The second initiative, the Endangered Spaces Campaign, is focussed on preserving the biodiversity within each natural region of the province. The goal is to ensure that parcels of land that adequately express a broad range of ecological values are protected from potentially invasive land uses, including forestry, mining and hydroelectric development. As per Endangered Spaces guidelines, aggregate extraction is considered mining and is one of the prohibited activities in lands protected under this initiative. As there is limited crown land in southern Manitoba, Wildlife Management Areas are a major focus for finding candidate sites for protection to Endangered Spaces standards.

The first is the Memorandum of Agreement (MOA) regarding Quarry Mineral Exploration and Mining in Wildlife Management Areas, signed in August, 1997 by the departments of Natural Resources, Energy and Mines, and Highways and Transportation. The agreement does not apply to metallic or petroleum deposits. Under this initiative, Wildlife Management lands will be categorized based on biological and

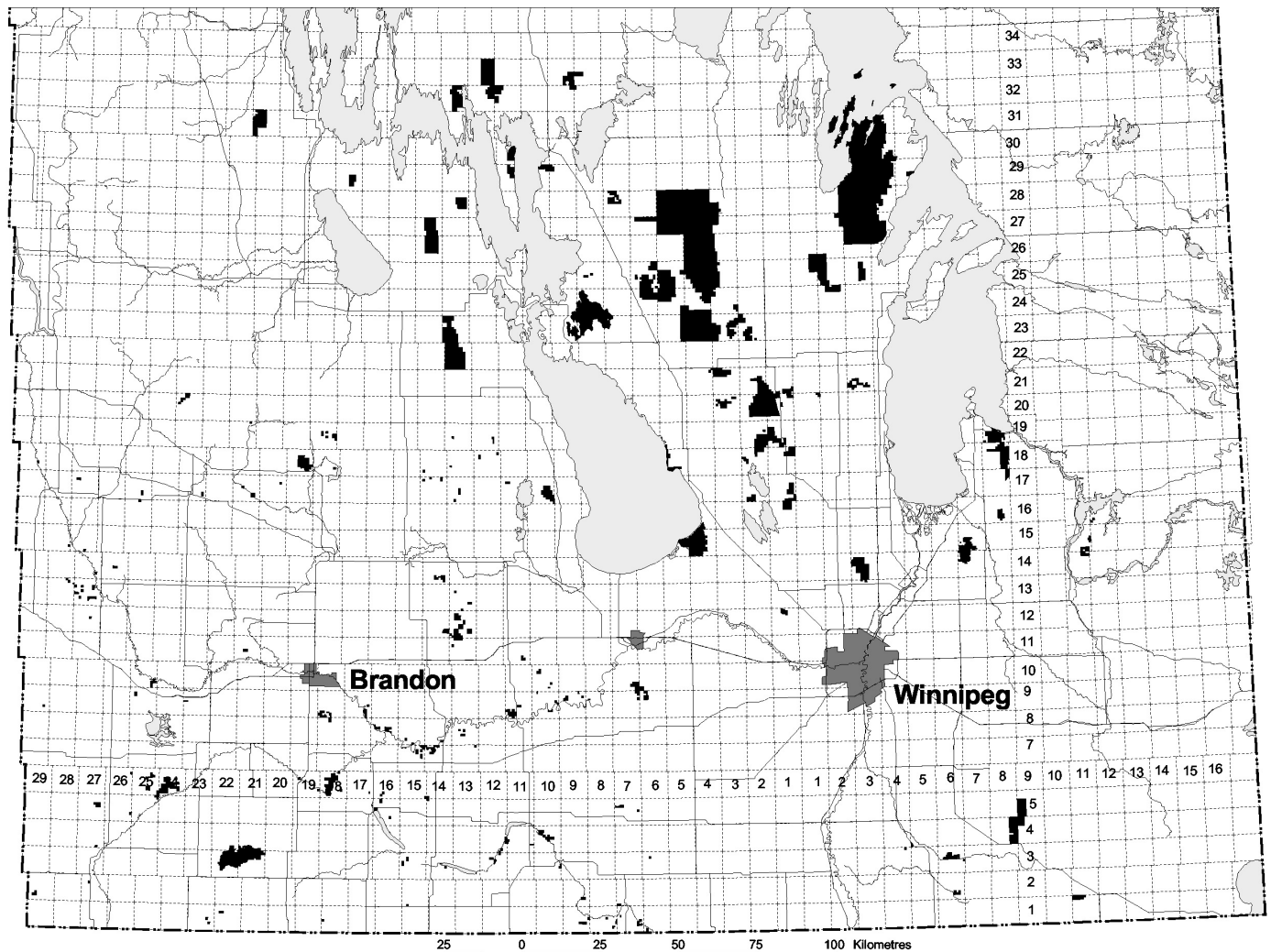


Figure GS-33-1: Wildlife Management Areas in southern Manitoba

**METHODOLOGY AND PROGRESS**

**Data Compilation**

The first phase of evaluation was compilation of existing information on aggregate resources available through Energy and Mines and in Department of Highways and Transportation block files. The information was compiled on township grids and included the location of active pits and quarries (crown and private) and quarry lease areas outside as well as within the WMAs. In addition, several WMAs had previously been mapped as part of municipal aggregate reports published by Energy and Mines.

**Field Investigations**

Field investigations have been carried out over the last two years. The field work consists of an initial site inspection followed by backhoe testing of areas with sand and gravel potential.

Site inspection involves walking as much of the ground as possible. Existing pits are visited and sampled. The locations of bedrock outcrops are noted, as well as surface features that would affect aggregate extraction. These include: difficulty of access, proximity to water bodies, degree of gullying, current surface use and degree of forestation.

Potential aggregate deposits identified by site inspections are then targeted for backhoe testing. The following permits are required prior to initiating backhoe testing: a WMA Use Permit, a Crown Lands Work Permit and where applicable, permission from holders of hay permits issued by Agricultural Crown Lands. In some cases, a WMA use permit to backhoe is refused, but in most of these cases auger or shovel holes can be accommodated.

Backhoe test pits are excavated to a depth of 3 - 5m, depending on the material in the hole. Each hole is logged and aggregate sampled. The coarse fraction of the sample (>3/4"; >19.1mm) is field sieved and a representative portion of the fine fraction (<3/4"; <19.1mm) returned to Winnipeg for sieving. The Materials and Research Branch of the Department of Highways and Transportation is providing the sieve analysis for this program and ninety samples are currently being processed. Site locations, backhoe test pit logs and sieve data will be on file with Geological Services Branch as the data becomes available.

**Progress**

In 1997, all or portions of ten Wildlife Management Areas were Gazetted for protection to Endangered Spaces standards. The Department of Natural Resources then compiled a list of an additional thirty-four WMAs that had high priority as potential candidate sites for the campaign. In April, 1998, all or portions of fifteen of these were Gazetted to prohibit quarry extraction.

This summer, sixteen Wildlife Management Areas (or portions thereof) were site inspected and test pitted as required (Table GS-33-1). Some of the WMAs are very large; for these, site inspection was limited to existing access trails.

**Table GS-33-1  
WMAs site inspected 1998**

| Wildlife Area: unit *          | Hectares                       | Test Hole Type                              |
|--------------------------------|--------------------------------|---|
| Alonsa (north of request area) | 10 917<br>(2 976 ha requested) | 21 backhoe                                  |
| Assiniboine Corridor           | 3 275                          | auger & previous testing by Dep't Hwys      |
| Broad Valley                   | 4 103                          | 1 backhoe & previous testing by Dep't Hwys  |
| Lee Lake                       | 7 127                          | 27 backhoe & previous testing by Dep't Hwys |
| Lee River                      | 1 187                          | backhoe pending                             |
| Little Birch                   | 22 339                         | 15 backhoe                                  |
| Mantagao Lake                  | 51 347                         | 48 backhoe                                  |
| Mars Hill                      | 3 315                          | backhoe pending                             |
| Narcisse                       | 11 882                         | 14 backhoe                                  |
| Onanole                        | 574                            | shovel & auger                              |
| Parkland:                      | 910                            |   |
| Snake Creek unit               | 130                            |   |
| Pembina Valley:                | 3 263                          | auger                                       |
| Snowflake                      | 298                            | previous testing: Hwys                      |
| Grassy Lake                    | 758                            | auger & previous testing                    |
| Marringhurst                   | 233                            |   |
| Stuartville                    | 198                            |   |
| West Derby                     | 264                            |   |
| Riverside                      | 96                             |   |
| Tiger Hills:                   | 558                            |   |
| Ninette                        | 291                            | 4 backhoe                                   |
| Upper Assiniboine:             | 2 095                          |   |
| Gambler                        | 50                             | shovel                                      |
| Mayne                          | 130                            | auger                                       |
| Reeder                         | 689                            | 9 backhoe                                   |
| Willen                         | 289                            | previous testing: Hwys                      |
| Whitemud Watershed:            | 5 682                          |   |
| Chipping Hill                  | 194                            | auger                                       |
| Lower Assiniboine              | 517                            | 4 backhoe                                   |
| Oak Leaf                       | 355                            | auger & shovel                              |
| Robins Ridge                   | 194                            |   |
| Sight Hill                     | 194                            |   |

\* only units site inspected 1998 are listed