

# **ReadMe File for the State of Maine Lake MIDAS Numbering Data December 2003**

## **Overview**

These data were created for projects within the Maine Department of Environmental Protection, Bureau of Land & Water Quality. The attached files are distributed for display and reference purposes only. All other uses are not advised, suggested, or encouraged.

The lake polygon file [ponds\_and\_lakes.shp] is based on USGS 24K hydrography data from the Maine Office of GIS (MEGIS), and is referenced by the following coordinate system, units, and datum:

UTM Zone 19, Meters, NAD 83

The lake points file [ponds\_and\_lakes\_points.shp] was generated by on-screen placement of points on top of the lake polygons, so it is also referenced to the same coordinate system, units, and datum. The accuracy of both files is considered "correct" (the best available), but is not guaranteed. Please note that both of these files will most certainly be updated.

## **Data History**

The State Planning Office (SPO) originally assigned lake MIDAS (Maine Information Display and Analysis System) numbers using a base of paper 15' USGS quadrangle maps. Later, the SPO gave a set of these maps along with the responsibility of assigning new lake MIDAS numbers to the Department of Inland Fisheries and Wildlife (IF & W). (Note: IF & W calls MIDAS numbers "WATCODE" for "water code," so files from that agency contain the WATCODE field, but this is equivalent to a MIDAS number.) IF & W also maintains a data table of MIDAS/WATCODE lake information, including lake name, lake coordinates, lake elevations, etc. – this table is known as the "Lake Index." Individual fields in the table appear to have been gathered from a variety of sources e.g. "local" lake names along with elevations determined from the 15' maps' contour lines.

The Department of Environmental Protection (DEP) also acquired a complete set of the SPO 15' MIDAS maps and a partial set of 7.5' MIDAS maps. These paper maps became the basis for generating a draft version of GIS lake MIDAS data. The final quality assurance / quality control (QA/QC) of these data began in January 2002 with a planned update of lake elevations based either on figures printed on 7.5' USGS quadrangle maps or on MEGIS contours digitized from the 7.5' USGS maps. Not long after this process was underway, it became clear that a more thorough QA/QC was warranted because a few hundred discrepancies in various categories had been corrected and many of these errors were not related to lake elevation.

Most of the discrepancies were between the IF & W MIDAS data table and the DEP's paper 15' MIDAS maps. This is understandable since these two data sources "evolved" independently of each other. However, errors were noticed within the table itself (e.g. an apparent typo in the coordinates that places the point outside the town where the point is

supposed to be located). Errors were also found in the paper maps (e.g. the 15' MIDAS map and the 7.5' MIDAS map of the same area show two different locations for the same MIDAS numbered pond).

### **QA/QC Process**

The QA/QC process was updated to include a comparison of at least the following fields: lake name, lake MIDAS number, lake coordinates, lake elevation and lake size between the IF & W data table and the DEP's GIS information. Significant differences in these categories were noted, as well as MIDAS numbers that were missing from either table. Errors in such things as lake name and lake elevation were relatively easy to correct.

One of the most common and difficult discrepancies to resolve between the sources was the "true" location of a given MIDAS number for a small (< 10 acre) "unnamed pond". IF & W's coordinates for the point were considered first and if most other categories "matched up" (i.e. lake area, lake elevation etc. and a lake was shown there on the original 15' MIDAS map), then the point was relocated to match IF & W's information. If it appeared as though the IF & W data contained errors, then an effort was made to unravel the error. If the discrepancy(ies) could not be resolved, then a note was made to follow up with IF & W to either clear up the issue or to at least agree upon a solution to the discrepancy. The documented errors are included in two MS Excel files [DEAGIS\_All\_MidasErrors.xls] and [DEAGIS\_Unresolved\_MidasErrors.xls].

### **Summary**

The results from completing (in July 2002) a QA/QC of these data highlighted and documented about 1,366 errors and discrepancies between IF & W and DEP MIDAS datasets. All but 243 of these errors were resolved, with about half of the unresolved errors resulting from a DEP GIS MIDAS number that did not have a corresponding number in the IF & W data table. Apparently many of these numbers were originally assigned by SPO, but were inadvertently eliminated from the IF & W data table if the original map was not available for reference.

As of July 2002 about 377 new MIDAS points were added to the lake points file for a grand total of 6,746 MIDAS points, but 685 were "unknown" - without a MIDAS number. The number of lake polygons was reduced by 21 to 32,901 water bodies because lakes that were split along quadrangle boundaries were merged together.

By the time of this revision (December 2003) currently there are about 6,685 MIDAS points, for a net increase of 316 points over the original number. Please note that now there are no "unknown" points (those without a MIDAS number) - elimination of many of these points accounts for the lower total than was found in July 2002. As far as the lake polygons are concerned, there are now about 33,111 lake features in these files - a net increase of 189 features over the original number. While more than 189 new features were added, there were many "sliver" polygons that were either deleted or merged with a neighboring polygon.

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Until noted as complete in this file, the DEP will work with IF & W  
in order to correct and update any future issues that arise within this dataset.

That said, "these data are subject to corrections and updates."

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Questions about, or suggested corrections to these data should be directed to:

Linda Bacon  
ME DEP BL&WQ  
17 SHS  
Augusta ME 04333  
(207) 287-7749 [Linda.C.Bacon@maine.gov](mailto:Linda.C.Bacon@maine.gov)

or to:

Steve Harmon  
ME DEP BL&WQ  
17 SHS  
Augusta, ME 04333  
(207) 287-7812 [Steve.Harmon@maine.gov](mailto:Steve.Harmon@maine.gov)

Thank You

Steve Harmon  
12/31/03

### **Updated Information as of May, 2003**

- Achieved resolution of all discrepancies between IF & W and DEP MIDAS datasets.
- Completed all corrections identified through comparison with IF & W data.
- Currently undergoing a final (we hope!) QA/QC in order to ensure:
  1. That MIDAS points are actually located inside the correct water feature.
  2. That unnecessary MIDAS points are “retired” (because they are duplicate numbers for the same water or no lake/pond/river water feature exists at that location – based on orthophotos). Note: in this case “retired” does not mean “eliminated,” so records of all retired MIDAS numbers will be maintained in the GIS. We hope that this step will reduce future “locational confusion.”
  3. That MIDAS points located without a USGS 1:24K water feature, but where orthophotos show a water feature, will have a feature added based on orthophoto data.
  4. That all remaining “unnumbered” points are assigned a MIDAS number (these “unnumbered” points are the result of past editing activities, including the recent DEP / IF & W data discrepancy elimination project).

5. That all water features greater than 100 acres are assigned a MIDAS number.
6. That all named water features are assigned a MIDAS number.
7. That instances where further work may be required (e.g. feature data might make more sense if moved from one class into another [such as from rivers into lakes/pond], point retirement issues, size of water discrepancies between USGS 1:24K and orthophoto data, etc.) are documented for future updates.

### **Updated Information as of December, 2003**

1. All MIDAS points verified to be within the correct lake polygon – though not all points do have an associated polygon due to natural or human-induced changes (e.g. draining and filling) or due to duplicate MIDAS numbers being assigned to the same feature. Note: all active points that now seem to be associated with a river feature were verified to be within that feature.
2. All "obvious" duplicate points or points without a waterbody were retired, although many that are on a river segment remain active until further (needed) classification work is complete.
3. "3A" - Added water features where digital aerial orthophotos indicate that an unmapped feature existed. "3B" – Coded water features (under the field "FTRE\_EXIST) where digital aerial orthophotos indicate that a previously mapped feature no longer existed.
4. All remaining "unnumbered" MIDAS points were eliminated.
5. All orthophoto-verified features greater than 10 acres (great pond size) were assigned a MIDAS number.
6. All named water features were assigned a MIDAS number.
7. All edits made to the original polygon file were transferred to a copy of the DEPs base ponds and lakes feature class when it was discovered that the original polygon file had been transformed incorrectly. The transformation had taken place at some unknown time in the past and it was not possible to re-transform the file into a correct coordinate system.