

# Chemical of the Week

## Lake Lore

### Information about the Madison Lakes

*From the Center for Limnology  
University of Wisconsin-Madison*



### A History of Madison's Lakes

| <u>Year</u> | <u>Importance</u>   |
|-------------|---|
| 15,000 B.C. | Madison area under 300 m of glacial ice   |
| 10,000 B.C. | Glacial ice gone from Madison; Lake Mendota twice present size                                    |
| 3,000 B.C.  | American Indian population flourishing  |
| 1,000 B.C.  | First signs of Indian mounds  |
| 1800        | First European settler  |
| 1836        | Madison becomes territorial capital   |
| 1848        | Wisconsin becomes 30th state; Madison population 300  |
| 1849        | First UW class for 17 students; Tenney Locks constructed  |
| 1855        | Beginning of Lake Mendota and Lake Monona ice records   |
| 1877        | First limnological studies (E.A. Birge)   |
| 1882        | First noxious algae growth documented (Madison population 12,000)                                 |
| 1890        | Carp introduced   |
| 1900        | First limnology class taught at University by C. Juday  |
| 1920        | Madison population 35,000   |
| 1928        | Sewage diverted around Lake Monona  |
| 1940        | Madison population 67,000   |
| 1958        | Madison sewage diverted around Lakes Monona, Waubesa & Kegonsa                                    |
| 1960's      | Eurasian water milfoil invades Madison Lakes  |
| 1963        | Limnology Lab constructed with funds obtained by A.D. Hasler from the National Science Foundation |
| 1971        | Waunakee & DeForest sewage diverted around Lake Mendota   |
| 1985        | Madison population 173,000  |
| 1987        | Lake Mendota Biotic Manipulation Program begins   |
| 1994        | Lake Mendota Priority Lake Project begins   |

## Some Statistics about Madison's Lakes

### Sizes of the Lakes

|                             |                                   | Mendota | Monona | Waubesa | Kegonsa | Wingra |
|-----------------------------|-----------------------------------|---------|--------|---------|---------|--------|
| <b>Area</b>                 | (km <sup>2</sup> )                | 39.8    | 13.3   | 8.4     | 13.0    | 1.3    |
|                             | (acres)                           | 9830    | 3290   | 2070    | 3210    | 320    |
| <b>Shoreline Length</b>     | (km)                              | 35.2    | 21.2   | 15.1    | 15.4    | 5.9    |
|                             | (miles)                           | 21.9    | 13.2   | 9.4     | 9.6     | 3.7    |
| <b>Volume</b>               | (10 <sup>6</sup> m <sup>3</sup> ) | 505     | 110    | 40      | 67      | 6      |
|                             | (10 <sup>9</sup> gallons)         | 130     | 29     | 11      | 18      | 1.6    |
| <b>Maximum Depth</b>        | (m)                               | 25.3    | 22.6   | 11.6    | 9.8     | 4.3    |
|                             | (ft.)                             | 83      | 74     | 38      | 32      | 14     |
| <b>Mean Depth</b>           | (m)                               | 12.7    | 8.3    | 4.7     | 5.1     | 2.7    |
|                             | (ft)                              | 42      | 27     | 15      | 17      | 9      |
| <b>Direct Drainage Area</b> | (km <sup>2</sup> )                | 562     | 105    | 113     | 141     | 14     |
|                             | (acres)                           | 139000  | 25900  | 27900   | 34800   | 3460   |

### Water Temperatures for Lake Mendota

|                           |                            |
|---------------------------|----------------------------|
| Surface Maximum:          | 34.3°C (94°F)              |
| 0 to 7 m (0 to 23 ft):    | Average July-23.1°C (74°F) |
| 0 to 7 m (0 to 23 ft):    | Maximum July-28.4°C (83°F) |
| 14 to 18 m (46 to 59 ft): | Average July-12.6°C (55°F) |

### Thickest Annual Ice Cover for Lake Mendota

|         |               |
|---------|---------------|
| Average | 49 cm (19 in) |
| Maximum | 75 cm (30 in) |
| Minimum | 30 cm (12 in) |

### Ice Cover

|                             | Mendota     | Monona      | Wingra      |
|-----------------------------|-------------|-------------|-------------|
| <b>Average days/yr</b>      | 105         | 105         | 120         |
| Maximum                     | 161         | 160         | 164         |
| Minimum                     | 47          | 47          | 70          |
| <b>Average Freeze Date</b>  | 20 Dec      | 15 Dec      | 27 Nov      |
| Latest                      | 30 Jan 1932 | 30 Jan 1932 | 29 Dec 1877 |
| Earliest                    | 23 Nov 1880 | 22 Nov 1880 | 2 Nov 1913  |
| <b>Average Opening Date</b> | 4 Apr       | 31 Mar      | 29 Mar      |
| Latest                      | 6 May 1857  | 4 May 1857  | 29 Apr 1881 |
| Earliest                    | 27 Feb 1998 | 27 Feb 1998 | 26 Feb 1998 |

### Sources of More Information

- Beckel, A. 1987. "Breaking New Waters: A Century of Limnology at the University of Wisconsin," *Transactions of the Wisconsin Academy of Sciences, Arts and Letters*; available from the Center for Limnology, UW-Madison.
- Brock, T.D. 1985. *A Eutrophic Lake, Lake Mendota, Wisconsin*, Springer-Verlag, New York.
- Frey, D.G. 1963. *Limnology in North America*, University of Wisconsin Press.
- *Madison Area Lakes Map, #84-1*, featuring Monona, Mendota, Wingra and showing depths and boat docks, available from Wisconsin Geological and Natural History Survey, 3817 Mineral Point Road, Madison, WI 53705; phone: 608-262-1705.

## *Further Reading*

- [On Sacred Ground: The long and winding path to Picnic Point includes Madison's earliest inhabitants.](#)  
By Erika Janik, *On Wisconsin*, Spring 2016.

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