2012
LAKE
MINNETONKA

SHORELINE
BOAT STORAGE
COUNT

INTRODUCTION

Beginning in 1971, the Lake Minnetonka Conservation District (LMCD) has conducted an inventory of watercraft stored at riparian and multiple dock sites on Lake Minnetonka. Since 1971, this project has been conducted during 30 different boating seasons, providing for inventorying even years only from 2000 forward.

The purpose of this Report is to summarize the results of this project conducted in 2012. Three primary objectives were established for the 2012 Shoreline Boat Storage Count. These include:

1. Establish the total number of watercraft stored in 2012.

2. Outline data collected from historical shoreline boat storage counts.

3. Identify any observable trends from the data collected.

METHODOLOGY

To ensure consistency and accuracy in the completion of the 2012 Shoreline Boat Storage Count, LMCD staff established the following five parameters:

1. Survey all lakeshore frontages (125 miles) from Monday through Thursday. To best represent when LMCD staff could count the maximum number of watercraft stored on Lake Minnetonka, surveying hours were historically set between 8:00 a.m. and 12:00 p.m. As of 2006, the Board requested that staff complete the Proactive Code Enforcement Program in conjuntion with the Shoreline Boat Storage Count on a bay-by-bay basis. Due to combining the two programs, surveying hours increased to as late as 4:00 p.m. Friday was established as an alternative day when weather conditions were not favorable or for other reasons. One Friday was utilized in 2012 (down from four in 2010).

2. Fieldwork for this project was to be counted during the month of June, with a completion date of July 4th. These dates were selected to best represent when LMCD staff could count the maximum number of watercraft stored on Lake Minnetonka. Due to combining the two programs and accommodating for staff availability, surveying dates were expanded. In 2012, fieldwork for this project commenced on June 4th and was completed on August 7th; as compared to May 25th and July 27th in 2010. Although a good part of the fieldwork for the 2012 project took place after July 4th, LMCD staff believe this had little or no impact on the outcome of the project.

3. The count of watercraft stored on Lake Minnetonka was conducted by LMCD staff, utilizing the LMCD's 19-foot runabout.

4. A shoreline storage count worksheet was established to assist in conducting the fieldwork for this project. Ten classifications of watercraft were established on this worksheet to categorize each watercraft type. The watercraft classifications include: runabout, cruiser, sailboat, pontoon, houseboat, charterboat, fishing boat, personal watercraft (PWC), aircraft, and miscellaneous. Further definition of the watercraft classifications are outlined in Appendix A.

5. Identify the number of sites that have three or four plus restricted watercraft stored within the authorized dock use area, along with those that have empty slips. For this project, a slip is defined as "either a docking structure with three clearly defined sides or a boat lift."

SUMMARY OF THE 2012 SHORELINE STORAGE COUNT

The total number of watercraft stored on Lake Minnetonka during the 2012 boating season was 10,691; 6,918 for residential storage and 3,773 for multiple dock facilities. Analysis of watercraft storage for the following respective categories are detailed below: 1) riparian sites, 2) multiple dock facilities, 3) docks with three or more watercraft, as well as those maintaining empty slips, and 4) historical multiple dock and riparian storage.

Riparian Sites: Appendix B highlights the 6,918 watercraft stored at riparian sites in 2012. Of the 6,918 watercraft, approximately 52% were found to be in either the runabout or cruiser classification. Further breakdown of this figure indicates that runabouts were 30% of the watercraft inventoried and cruisers were 22%. The establishment of the runabout and cruiser figures took into account watercraft included in the Mound Commons Docking Program. Therefore, those percentages are slightly skewed because LMCD staff was unable to distinguish the watercraft inventoried, by classification, at riparian residences. However, the 6,918 figure is accurate as staff backed out the total number of watercraft provided by the City of Mound for their docking program. Further details of this drawback are outlined below under "Multiple Dock Facilities." Additionally, one will note an unusual jump in the miscellaneous watercraft storage count for 2012 (1,636 as compared to 740 in 2010). Staff will address this further under "Conclusions/Trends." The lowest percent of watercraft stored at riparian residences were found to be in the houseboat, charter boat, and aircraft classifications, which totaled less than one percent.

Multiple Dock Facilities: Appendix C highlights the 3,773 watercraft stored at multiple docks in 2012. Of the 3,773 watercraft, approximately 57% were found to be in the runabout and cruiser classification. Further breakdown of this figure indicates that 37% of the watercraft were runabouts and that 20% were cruisers. The lowest percentage of watercraft stored at multiple dock facilities were houseboat, charter boat, and aircraft classifications, which totaled less than one percent. Again, these percentages are slightly skewed because LMCD staff was unable to distinguish the watercraft inventoried, by classification, for the Mound Commons Docking Program.

The City of Mound has communicated to LMCD staff that there were 517 watercraft stored within the Mound Commons Docking Program in 2012. The bays that the watercraft are located within are highlighted by an (*) in Appendix B and C. Further breakdown of the 517 watercraft are detailed below:

Priest Bay	31	Emerald Lake	2
Cooks Bay	61	Seton Lake	34
West Upper Lake	4	Harrisons Bay	149
Phelps Bay	118	Jennings Bay	55
Black Lake	59	West Arm	4

This Report is accurate with regards to the total number of watercraft stored at riparian residences and multiple dock facilities in 2012. However, the breakdown of watercraft by classification for both riparian residences and multiple dock facilities is slightly skewed because the 517 associated with the Mound Commons Docking Program were not broken down by watercraft classification. As noted above, this resulted in the 517 watercraft being broken down in the riparian residence classifications rather than the multiple dock facility classifications.

Docks With Three or More Watercraft and Empty Slips: Appendix D highlights the number of sites that stored three or more restricted watercraft, as well as those maintaining empty slips. In 2012, there were 407 sites that stored three watercraft, 218 that stored four or more, and 891that had empty slips. This compares to 2010 statistics of 360, 207, and 773, respectively; providing for a 10% increase in three and four boat storage (13% and 5% individually) and a 15% increase in empty slips.

Historical Multiple and Riparian Shoreline Storage: Appendix E highlights historical multiple dock and riparian shoreline counts conducted by the LMCD from 1971 to 2012.

CONCLUSIONS/TRENDS

Based on the data collected from the 2012 Lake Minnetonka Shoreline Storage Count, the following conclusions and trends are offered:

1. Although there was a significant increase (16%) in the total watercraft storage count from 2010 to 2012 (9,230 to 10,691, respectively), staff believes the 2010 count is not consistent with prior years and more in line with 2006 and 2008 total storage counts (4% increase). Staff also believes that not only was the 2012 total storage count more consistent with 2006 and 2008, the individual watercraft storage counts were, as well.

2. The current methodology has been consistently utilized since 1998 (i.e., use of a flyover survey in 1996, etc.). Taking those past years into consideration (1998-2012), the current total storage count of 10,691 is 10% higher than the nine year storage count average of 9,733. This comparison provides for:
    - A non-significant change in the storage count of runabouts, cruisers, and sailboats.
    - An increase in the pontoon storage count; 16% higher than the nine year average (536) and a 36% increase from the 1998 count of 461.
    - An increase in the personal watercraft storage count; 30% higher than the nine year average (987) and a 100% increase from the 1998 count of 644.

3. As noted above, under "Riparian Sites," 2012 provides for a 121% increase in miscellaneous watercraft (1,636 as compared to 740 in 2010). This count had changed due to different interpretations in categorizing the smaller sailboats, as outlined in the attached Appendix A. Former staff members counted the small sailboats as a "sailboat" whereby a new staff member counted them as a "miscellaneous" (under 16' and unmotorized). The total boat storage count remained unchanged and staff believes there was an increase in miscellaneous watercraft as the sailboat count was insignificantly changed. Staff recommends that future categorization of smaller sailboats (as noted above) be counted as a sailboat vs a miscellaneous watercraft. This process will remain consistent with how they are counted in multiple dock inspections.

Based on the historical data outlined, it is the recommendation of staff that the next Shoreline Boat Storage Count remain as scheduled in 2014.

Watercraft Classification Definitions
(Appendix A)

- **Runabout-** single hull-pointed bow, tri-hull-blunt bow, hull may be partially covered, windshield often visible. These boats are usually over 16 feet in length, and powered by a 10 horse power motor or more.

- **Cruiser-** super structure, flying bridge, two windshields usually visible, hull mostly covered. This craft usually has sleeping accommodations.

- **Sailboat-** sails often visible, single hull-long slender shape, catamaran-twin hulls visible.

- **Pontoon-** rectangular shape, outboard motor, pontoons extend beyond the platform. These boats are often seen with a colorful canvas top.

- **House Boat-** relatively large, rectangular shape, with blunt rounded bow. This superstructure is sometimes present.

- **Charter Boat-** excursion or party boats that are licensed by LMCD.

- **Fishing Boat-** any boat 14 feet or longer, used for fishing. This craft is usually out-rigged with special fishing equipment.

- **Personal Watercraft (PWC)-** is a watercraft less than 14 feet in length, which uses a motor powering a water jet pump. This water jet pump is its primary source of motive power. This craft is designed to be operated by a person in the sitting, standing or kneeling position, rather than in the conventional manner such as sitting or standing inside the watercraft.

- **Aircraft-** any contrivance invented or designed for navigation or flight in the air. The term includes aircraft equipped with floats or skis.

- **Miscellaneous-** This designation of watercraft includes any craft other than rowboats, 16 feet or less in length. Miscellaneous watercrafts are usually unmotorized, or sometimes equipped with motors of 10 hp or less. Some examples of this miscellaneous watercraft are canoes, wet sailboards and paddleboats.

2012 Riparian and Multiple Shoreline Storage Count (Appendix B)

	Runabout	Cruiser	Sailboat	Pontoon	House Boat	Charter	Fishing	PWC	Aircraft	Misc.	Riparian Total *	Multiple Total	Grand Total
1. Halstead Bay	78	58	0	20	1	0	20	56	0	42	275	30	305
2. Priest Bay*	42	39	3	14	0	0	11	33	0	32	143	31	174
3. Cooks Bay (Inc. Lost Lake)*	74	68	11	22	0	0	16	57	0	64	251	131	382
4. West Upper Lake*	73	59	8	12	0	0	21	66	0	74	309	36	345
5. South Upper Lake	59	34	5	11	0	0	16	51	0	70	246	168	414
6. Smithtown Bay	32	21	0	2	0	0	8	21	0	23	107	18	125
7. Phelps Bay*	75	65	4	27	0	0	33	62	0	70	218	118	336
8. East Upper Lake	71	34	3	9	0	0	15	43	0	44	219	0	219
9. Carman Bay	59	54	4	12	1	0	18	31	0	51	230	12	242
10. Old Channel Bay	28	16	2	2	0	0	2	23	0	13	86	4	90
11. Spring Park Bay	53	31	3	7	0	0	15	34	0	25	168	134	302
12. Black Lake*	45	47	1	13	1	0	18	17	0	42	125	68	193
13. Emerald Lake*	21	16	0	3	0	0	2	6	0	8	54	5	59
14. Seton Lake*	27	34	0	6	0	0	10	6	0	17	66	81	147
15. Harrisons Bay*	126	124	0	40	1	0	35	77	2	68	324	188	512
16. Jennings Bay*	102	86	2	31	1	0	29	72	0	81	349	133	482
17. West Arm*	82	100	2	30	0	0	28	74	0	70	382	203	585
18. Forest Lake	54	30	0	9	1	0	8	39	0	57	198	16	214
19. Coffee Cove	25	23	3	1	0	0	3	22	0	14	91	3	94
20. Crystal Bay, West	82	45	0	9	0	0	11	41	0	47	235	6	241
21. Crystal Bay, East	35	18	0	6	0	0	1	19	0	28	107	4	111
22. North Arm	93	45	3	18	1	0	12	38	0	96	306	5	311
23. Stubbs Bay	38	11	0	7	1	0	6	16	0	41	120	16	136
24. Maxwell Bay	26	23	0	4	2	0	5	32	0	24	116	168	284
25. Lafayette Bay	63	57	5	14	0	0	18	29	0	37	223	64	287
26. Smiths Bay	9	12	3	1	0	0	3	5	0	4	37	78	115
27. Tanager Lake	4	5	0	1	0	0	2	6	0	7	25	77	102
28. Browns Bay	35	19	3	3	0	0	8	2	0	8	78	95	173
29. Wayzata Bay	55	35	10	5	1	0	7	21	0	52	186	483	669
30. Grays Bay	48	35	0	9	0	0	8	19	0	49	168	48	216
31. Libbs Lake	50	37	0	7	0	0	4	8	0	34	140	9	149
32. Robinsons Bay	22	10	2	1	0	0	1	4	0	18	58	17	75
33. St. Louis Bay	13	6	3	0	0	0	5	1	0	8	36	222	258
34. Carsons Bay	47	27	15	14	0	0	16	22	0	66	207	220	427
35. St. Albans Bay	71	39	0	12	0	0	8	22	0	62	214	235	449
36. Excelsior Bay	4	4	0	0	0	0	0	1	0	4	13	211	224
37. Gideons Bay	95	65	9	20	0	0	20	31	1	76	317	186	503
38. Echo Bay	23	10	3	6	0	0	8	20	0	19	89	240	329
39. Big Island Passage	2	0	0	0	0	0	0	0	0	0	2	1	3
40. Veterans Bay	3	2	2	4	0	0	6	6	0	6	29	0	29
41. Lower Lake South	45	18	4	2	0	0	10	27	0	37	143	1	144
42. Lower Lake North	61	43	14	10	0	0	10	42	0	48	228	8	236
TOTAL	**2050**	**1505**	**127**	**424**	**11**	**0**	**477**	**1202**	**3**	**1636**	**6918**	**3773**	**10691**

*** Minus City of Mound Boat Storage Count (Added to Multiple Dock Statistics)**

2012 Multiple Dock Storage Count (Appendix C)

	Runabout	Cruiser	Sailboat	Pontoon	House Boat	Charter Boat	Fishing Boat	PWC	Aircraft	Misc.	Total Multiple Dock Count *
1. Halstead Bay	15	12	0	1	0	0	1	1	0	0	**30**
2. Priest Bay*	0	0	0	0	0	0	0	0	0	0	**31**
3. Cooks Bay (Incl. Lost Lake)*	31	15	7	3	1	5	2	6	0	0	**131**
4. West Upper Lake*	16	11	0	0	0	0	4	1	0	0	**36**
5. South Upper Lake	93	28	12	15	0	0	17	2	0	1	**168**
6. Smithtown Bay	11	3	0	1	0	0	1	2	0	0	**18**
7. Phelps Bay*	0	0	0	0	0	0	0	0	0	0	**118**
8. East Upper Lake	0	0	0	0	0	0	0	0	0	0	**0**
9. Carman Bay	8	2	0	0	0	0	0	2	0	0	**12**
10. Old Channel Bay	2	2	0	0	0	0	0	0	0	0	**4**
11. Spring Park Bay	54	49	2	14	0	0	13	2	0	0	**134**
12. Black Lake*	5	3	0	1	0	0	0	0	0	0	**68**
13. Emerald Lake*	2	0	0	0	0	0	1	0	0	0	**5**
14. Seton Lake*	17	23	0	4	1	1	1	0	0	0	**81**
15. Harrisons Bay*	12	7	1	9	0	0	2	8	0	0	**188**
16. Jennings Bay*	27	28	0	9	0	0	10	3	0	1	**133**
17. West Arm*	154	28	1	15	0	0	1	0	0	0	**203**
18. Forest Lake	9	0	0	1	0	0	1	4	0	1	**16**
19. Coffee Cove	3	0	0	0	0	0	0	0	0	0	**3**
20. Crystal Bay, West	6	0	0	0	0	0	0	0	0	0	**6**
21. Crystal Bay, East	2	2	0	0	0	0	0	0	0	0	**4**
22. North Arm	4	1	0	0	0	0	0	0	0	0	**5**
23. Stubbs Bay	4	1	0	2	0	0	1	7	0	1	**16**
24. Maxwell Bay	116	44	0	3	0	0	3	2	0	0	**168**
25. Lafayette Bay	32	18	1	2	0	0	3	5	0	3	**64**
26. Smiths Bay	35	27	10	3	0	0	3	0	0	0	**78**
27. Tanager Lake	48	19	0	7	0	0	3	0	0	0	**77**
28. Browns Bay	31	60	1	2	0	0	0	1	0	0	**95**
29. Wayzata Bay	129	74	224	14	0	0	23	7	0	12	**483**
30. Grays Bay	29	11	0	6	0	0	1	1	0	0	**48**
31. Libbs Lake	5	1	0	0	0	0	2	0	0	1	**9**
32. Robinsons Bay	8	8	1	0	0	0	0	0	0	0	**17**
33. St. Louis Bay	49	18	80	8	0	1	51	8	0	7	**222**
34. Carsons Bay	46	17	82	6	0	0	61	7	0	1	**220**
35. St. Albans Bay	129	79	0	19	0	0	7	1	0	0	**235**
36. Excelsior Bay	78	78	7	20	0	12	11	0	0	5	**211**
37. Gideons Bay	57	23	70	19	0	0	7	5	0	5	**186**
38. Echo Bay	128	78	0	15	0	1	9	8	0	1	**240**
39. Big Island Passage	0	0	0	0	1	0	0	0	0	0	**1**
40. Veterans Bay	0	0	0	0	0	0	0	0	0	0	**0**
41. Lower Lake South	0	0	1	0	0	0	0	0	0	0	**1**
42. Lower Lake North	4	1	0	2	0	0	1	0	0	0	**8**
TOTAL	**1399**	**771**	**500**	**201**	**3**	**20**	**240**	**83**	**0**	**39**	**3773**

*** City of Mound Multiple Dock Counts Included in Respective Bay's Total Count**

2012 Docks with 3 and 4 Boats and Empty Slips (Appendix D)

	3 Boats	4 Boats	Empty Slips
1. Halstead Bay	15	10	29
2. Priest Bay	11	4	18
3. Cooks Bay	14	14	23
4. West Upper Lake	17	14	25
5. South Upper Lake	16	10	45
6. Smithtown Bay	8	2	21
7. Phelps Bay	21	12	29
8. East Upper Lake	16	7	32
9. Carman Bay	12	3	32
10. Old Channel Bay	9	2	9
11. Spring Park Bay	15	3	28
12. Black Lake	6	2	19
13. Emerald Lake	2	1	8
14. Seton Lake	1	3	11
15. Harrisons Bay	24	15	19
16. Jennings Bay	23	18	34
17. West Arm	22	12	41
18. Forest Lake	17	2	22
19. Coffee Cove	6	3	8
20. Crystal Bay, West	9	5	37
21. Crystal Bay, East	7	6	16
22. North Arm	16	7	25
23. Stubbs Bay	7	3	9
24. Maxwell Bay	9	7	10
25. Lafayette Bay	10	5	36
26. Smiths Bay	4	1	3
27. Tanager Lake	2	1	1
28. Browns Bay	3	0	24
29. Wayzata Bay	8	5	30
30. Grays Bay	8	4	20
31. Libbs Lake	2	2	20
32. Robinsons Bay	2	2	3
33. St. Louis Bay	1	2	8
34. Carsons Bay	14	5	22
35. St. Albans Bay	6	3	27
36. Excelsior Bay	1	0	5
37. Gideons Bay	10	5	48
38. Echo Bay	4	3	17
39. Big Island Passage	0	0	4
40. Veterans Bay	3	1	6
41. Lower Lake South	12	4	20
42. Lower Lake North	14	10	47
TOTAL	**407**	**218**	**891**

Historical Multiple and Riparian Shoreline Storage Count (Appendix E)

Year	Runabout	Cruiser	Sailboat	Pontoon	Houseboat	Charter	Fishing	PWC	Aircraft	Misc.	Total*
2012	3449	2276	627	625	14	20	717	1285	3	1675	10691
2010	3186	2183	674	558	13	21	746	1064	4	781	9230
2008	3146	2,670	693	521	12	22	768	1062	2	1337	10233
2006	3436	2546	629	574	20	17	995	1277	0	784	10278
2004	2734	2900	655	557	17	15	986	1015	1	854	9734
2002	2842	3135	728	560	24	30	1007	1086	8	1089	10509
2000	3867	2097	773	490	25	29	764	811	4	659	9519
1999	3788	1592	719	477	31	26	785	639	2	738	8797
1998	3269	1917	720	461	32	20	732	644	4	809	8608
1996	2907	3117	1021	413	48	26	1135	796	4	1008	10475
1994	2629	2812	874	439	47	26	1202	448	8	875	9360
1993	3056	2016	839	381	40	24	1263	318	6	912	8855
1992	2836	2117	840	386	35	25	1245	273	9	881	8647
1991	3258	1350	890	349	37	25	1210	243	8	700	8070
1990	1606	2206	784	304	44	0	824	157	4	720	6649
1989	1653	2568	748	260	62	0	806	0	7	707	6811
1988	1983	2876	966	236	70	0	816	0	5	567	7519
1987	2134	2771	1064	239	61	0	1009	0	5	723	8006
1986	2512	2816	1238	286	99	0	1047	0	3	795	8796
1985	2882	2186	1056	271	104	0	1022	0	3	644	8168
1984	2638	2153	1182	321	94	0	1075	0	4	724	8191
1983	2930	1958	1207	326	89	0	906	0	5	416	7837
1982	2607	1699	1294	351	91	0	1106	0	5	297	7450
1981	2519	1765	1512	342	105	0	848	0	4	681	7776
1980	2632	1630	1135	394	118	0	511	0	5	483	6908
1979	2694	1549	1372	391	113	0	995	0	5	543	7662
1975	3259	1074	1648	448	156	0	1621	0	0	917	9123
1974	3309	872	1288	557	147	0	1850	0	0	903	8926
1973	1543	528	984	506	101	0	1543	0	0	609	5814
1971	1620	320	535	364	91	0	1326	0	0	255	4511