

Lake Colby Eurasian Milfoil Eradication Program

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Introduction

The Adirondack Watershed Institute supplied divers and top water personnel for the eradication of Eurasian milfoil in Lake Colby during August 2002, June and August 2003, July 2004, July 2005, June - August 2006, May - August 2007 and June - August 2008. The program is in its seventh year at Lake Colby while the diver program is in its eleventh year at the Adirondack Watershed Institute. The program was established to help eradicate Eurasian milfoil from Lake Colby and to continue into later years as a maintenance program. The overall effort was greatly increased beginning in 2006 and this increased effort continued into 2007 and 2008. This increased effort has begun to bear fruit and we are beginning to see great success in four out of five locations on the lake. The following is the dive log from the summers of 2002 - 2008.

Methodology

Four Adirondack Watershed Institute divers on air tanks hand harvested Eurasian milfoil from Lake Colby over nine days during the summer of 2002, over a 12.5 day period in June and August of 2003, a seven day period during the summer of 2004, and an eight day period during the summer of 2005. Three Adirondack Watershed Institute divers, on a hookuh rig, were employed during 2006, 2007, and 2008. Three divers, on a hookuh rig, seem to be not only more economically feasible but also much more efficient than the earlier four dive tank crews. An increased effort was begun in 2006 and it carried into 2007 and 2008. In 2006, Lake Colby was dove over a 29 day period and in 2007 the diving was over a 27 day period. In 2008, Lake Colby was dove over an 18 day period. (Note: During 2007 and 2008 most of the dive days were ten hour days and not typical eight hour days. This was the equivalent of 29 eight hour dive days in 2007 and 22 eight hour dive days in 2008.)

All average diver bags per day numbers are based on an eight hour dive day by a crew of four divers. This is done to make all numbers comparable whether it was an eight or a ten hour day or a three or four person dive crew. This allows us to not only compare bags numbers from year to year in order to better gage success but it also allows us to compare bag numbers from lake to lake.

The divers were careful to remove the whole milfoil plant including the root ball with as little fragmentation as possible. While at the same time, one person worked on top of the water collecting the divers' bags full of milfoil and collecting any fragments that were drifting on or near the waters surface.

Dive Log Results

08/17/02

Location: West Bay.

Diver Bags of Eurasian Milfoil: 115

08/18/02

Location: West Bay.

Diver Bags of Eurasian Milfoil: 83

08/24/02

Location: West Bay. Northern shore.

Diver Bags of Eurasian Milfoil: 54

08/25/02

Location: South side of West Bay.

Diver Bags of Eurasian Milfoil: 34

08/31/02

Location: South shore of West Bay.

Diver Bags of Eurasian Milfoil: 72

09/01/02

Location: North Bay

Diver Bags of Eurasian Milfoil: 111

09/07/02

Location: North Bay heading into the bay.

Diver Bags of Eurasian Milfoil: 141

09/08/02

Location: East shore working north.

Diver Bags of Eurasian Milfoil: 167

09/09/02

Location: In front of Lee Keets' house.

Diver Bags of Eurasian Milfoil: 53.5

Total for Lake Colby for 2002 Season:

Diver Bags of Eurasian Milfoil: 830.5

Comparison: Based on four divers per day.

Average diver bags of Eurasian Milfoil per day at Lake Colby: 106

Average diver bags of Eurasian Milfoil per day at Mountain View: 21

Average diver bags of Eurasian Milfoil per day at Indian Lake: 119

Average diver bags of Eurasian Milfoil per day at Upper Saranac Lake: 78

06/20/03

Location: Lee Keets camp past brown boat house

Diver bags of Eurasian Milfoil: 8

06/21/03

Location: Brown boat house to beach area

Diver bags of Eurasian Milfoil: 31

06/22/03

Location: Beach area through front of hospital

Diver bags of Eurasian Milfoil: 32

06/23/03

Location: Front of hospital to inlet

Diver bags of Eurasian Milfoil: 26

06/24/03

Location: Past DEC Camp Colby to around corner

Diver bags of Eurasian Milfoil: 14

06/25/03

Location: Large bay past DEC Camp Colby

Diver bags of Eurasian Milfoil: 26

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Lake Colby 2002 – 2008

06/26/03

Location: West shore between bays

Diver bags of Eurasian Milfoil: 20

06/27/03

Location: Far western bay

Diver bags of Eurasian Milfoil: 24

06/28/03

Location: Clean up around mats in Trestle bay

Diver bags of Eurasian Milfoil: 67

06/29/03

Location: Trestle bay

Diver bags of Eurasian Milfoil: 24

06/30/03

Location: Trestle bay

Diver bags of Eurasian Milfoil: 36

08/10/03

Location: Lee Keet's camp to past pavilion.

Diver bags of Eurasian Milfoil: 3.5 (1/2 day)

08/27/03

Location: Along shore to beach area.

Diver bags of Eurasian Milfoil: 15

Total for Lake Colby for 2003 Season:

Diver Bags of Eurasian Milfoil: 326.5

Comparison: Based on four divers per day.

Average diver bags of Eurasian Milfoil per day at Lake Colby: 26

07/07/04

Location: Trestle Bay towards homes around bend. Diver bags of Eurasian Milfoil: 27

07/08/04

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 32

07/09/04

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 68

07/10/04

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 73

07/12/04

Location: North Bay.

Diver bags of Eurasian Milfoil: 35

07/13/04

Location: Beach Area and West Bay.

Diver bags of Eurasian Milfoil: 12

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Lake Colby 2002 – 2008

07/14/04

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 14

Total for Lake Colby for 2004 Season:

Diver Bags of Eurasian Milfoil: 261

Comparison: Based on four divers per day.

Average diver bags of Eurasian Milfoil per day at Lake Colby: 37

07/05/05

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 32

07/06/05

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 42

07/07/05

Location: West Bay and East shore of North Bay.

Diver bags of Eurasian Milfoil: 51

07/08/05

Location: Eastern shore of North Bay.

Diver bags of Eurasian Milfoil: 40

07/11/05

Location: Beach area to Trestle Bay.

Diver bags of Eurasian Milfoil: 45

07/12/05

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 68

07/13/05

Location: Trestle Bay, then Beach to boat launch.

Diver bags of Eurasian Milfoil: 44

07/14/05

Location: Beach to point past DEC Camp.

Diver bags of Eurasian Milfoil: 9.5

Total for Lake Colby for 2005 Season:

Diver Bags of Eurasian Milfoil: 331.5

Comparison: Based on four divers per day.

Average diver bags of Eurasian Milfoil per day at Lake Colby: 37

06/15/06

Location: In front of Hospital.

Diver bags of Eurasian Milfoil: 25

06/16/06

Location: North Bay, east side.

Diver bags of Eurasian Milfoil: 63

06/19/06

Location: North Bay, east side.

Diver bags of Eurasian Milfoil: 41

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Lake Colby 2002 – 2008

06/20/06

Location: North Bay.

Diver bags of Eurasian Milfoil: 83

06/21/06

Location: North Bay, west side.

Diver bags of Eurasian Milfoil: 129

06/22/06

Location: North Bay, west side.

Diver bags of Eurasian Milfoil: 40

Location: West Bay.

Diver bags of Eurasian Milfoil: 136

06/23/06

Location: West Bay.

Diver bags of Eurasian Milfoil: 18

Location: Shoreline with homes, southeast.

Diver bags of Eurasian Milfoil: 73

06/24/06

Location: Shoreline with homes up to beach.

Diver bags of Eurasian Milfoil: 32

06/26/06

Location: Beach area heading north up Route 86.

Diver bags of Eurasian Milfoil: 99

06/27/06

Location: Between beach and Hospital.

Diver bags of Eurasian Milfoil: 94

06/28/06

Location: In front of Hospital.

Diver bags of Eurasian Milfoil: 84

Location: North Bay

Diver bags of Eurasian Milfoil: 5

06/29/06

Location: Trestle Bay South shore.

Diver bags of Eurasian Milfoil: 34

06/30/06

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 28

07/24/06

Location: North Bay, west side.

Diver bags of Eurasian Milfoil: 54

07/25/06

Location: North Bay.

Diver bags of Eurasian Milfoil: 64

07/26/06

Location: North Bay.

Diver bags of Eurasian Milfoil: 58

07/27/06

Location: North Bay.

Diver bags of Eurasian Milfoil: 69

07/28/06

Location: West Bay.

Diver bags of Eurasian Milfoil: 52

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Lake Colby 2002 – 2008

07/31/06

Location: West Bay.

Diver bags of Eurasian Milfoil: 62

08/01/06

Location: Trestle Bay.

Location: In front of homes.

Diver bags of Eurasian Milfoil: 7

Diver bags of Eurasian Milfoil: 25

08/02/06

Location: In front of homes.

Diver bags of Eurasian Milfoil: 25

08/07/06

Location: In front of homes.

Location: Beach to hospital.

Diver bags of Eurasian Milfoil: 21

Diver bags of Eurasian Milfoil: 29

08/08/06

Location: Beach to Boat Launch.

Diver bags of Eurasian Milfoil: 53

08/09/06

Location: Boat launch along DEC camp.

Location: North Bay.

Diver bags of Eurasian Milfoil: 13

Diver bags of Eurasian Milfoil: 2

08/10/06

Location: North Bay.

Diver bags of Eurasian Milfoil: 15

08/11/06

Location: In front of homes.

Location: North Bay.

Diver bags of Eurasian Milfoil: 44

Diver bags of Eurasian Milfoil: 8

08/28/06

Location: Moir Road shoreline.

Diver bags of Eurasian Milfoil: 53.

08/29/06

Location: Shore in front of hospital.

Diver bags of Eurasian Milfoil: 55

08/30/06

Location: Shore in front of hospital.

Note: Only a partial day. Packed up for year.

Diver bags of Eurasian Milfoil: 3

Total for Lake Colby for 2006 Season:

Diver Bags of Eurasian Milfoil: 1696

Comparison: Based on four divers per day.

Average diver bags of Eurasian Milfoil per day at Lake Colby: 104

05/21/07

Location: North Bay.

Diver bags of Eurasian Milfoil: 12

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Lake Colby 2002 – 2008

05/22/07

Location: North Bay, east side.

Diver bags of Eurasian Milfoil: 6

05/23/07

Location: West Bay.

Diver bags of Eurasian Milfoil: 17

05/24/07

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 17

05/25/07

Location: Trestle Bay to Lee Keets house.

Diver bags of Eurasian Milfoil: 26

05/29/07

Location: Lee's house to boat launch.

Diver bags of Eurasian Milfoil: 36

06/18/07

Location: North Bay.

Diver bags of Eurasian Milfoil: 68

06/19/07

Location: West Bay.

Diver bags of Eurasian Milfoil: 32

06/20/07

Location: Shoreline with homes.

Diver bags of Eurasian Milfoil: 36

06/21/07

Location: Between beach and Hospital.

Diver bags of Eurasian Milfoil: 43

06/25/07

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 56

07/10/07

Location: North Bay.

Diver bags of Eurasian Milfoil: 11

07/11/07

Location: North Bay.

Diver bags of Eurasian Milfoil: 18

07/12/07

Location: North Bay, west side.

Diver bags of Eurasian Milfoil: 26

07/13/07

Location: North Bay.

Diver bags of Eurasian Milfoil: 15

07/16/07

Location: West Bay.

Diver bags of Eurasian Milfoil: 21

07/17/07

Location: Boat launch to homes along shore.

Diver bags of Eurasian Milfoil: 24

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Lake Colby 2002 – 2008

07/25/07

Location: West Bay and Trestle Bay.

Diver bags of Eurasian Milfoil: 48

07/26/07

Location: West Bay.

Diver bags of Eurasian Milfoil: 52

07/30/07

Location: West Bay and Trestle Bay.

Diver bags of Eurasian Milfoil: 46

07/31/07

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 57

08/01/07

Location: Northwest Bay.

Diver bags of Eurasian Milfoil: 25

08/02/07

Location: In front of homes.

Diver bags of Eurasian Milfoil: 15

08/14/07

Location: North Bay.

Diver bags of Eurasian Milfoil: 20

08/15/07

Location: North Bay.

Diver bags of Eurasian Milfoil: 23

08/16/07

Location: West Bay.

Diver bags of Eurasian Milfoil: 27

08/17/07

Location: Boat launch to homes along shore.

Diver bags of Eurasian Milfoil: 27

Total for Lake Colby for 2007 Season:

Diver Bags of Eurasian Milfoil: 804

Comparison: Based on four divers per day.

Note 29 dive days

Average diver bags of Eurasian Milfoil per day at Lake Colby: 37

06/16/08 Crew 1

Location: North Bay.

Diver bags of Eurasian Milfoil: 25

06/17/08 Crew 1

Location: DEC Bay and West Bay.

Diver bags of Eurasian Milfoil: 6, 14

06/18/08 Crew 1

Location: Beach to Keets and North Bay.

Diver bags of Eurasian Milfoil: 14, 10

06/19/08 Crew 1

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 50

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Lake Colby 2002 – 2008

06/16/08 Crew 2

Location: North Bay.

Diver bags of Eurasian Milfoil: 11

06/17/08 Crew 2

Location: Hospital shore and West Bay.

Diver bags of Eurasian Milfoil: 2, 5

06/18/08 Crew 2

Location: West Bay and North Bay.

Diver bags of Eurasian Milfoil: 6, 6

06/19/08 Crew 2

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 18

06/23/08

Location: Removed all old mats

Diver bags of Eurasian Milfoil: 0

06/24/08

Location: Placed 12 mats. Pulled in Trestle Bay, half day. Diver bags of Eurasian Milfoil: 15

06/25/08

Location: Keets shoreline and West Bay.

Diver bags of Eurasian Milfoil: 16, 19

06/26/08

Location: West Bay.

Diver bags of Eurasian Milfoil: 34

07/14/08

Location: North Bay

Diver bags of Eurasian Milfoil: 53

07/15/08

Location: West Bay

Diver bags of Eurasian Milfoil: 57

07/16/08

Location: North Bay and West Bay.

Diver bags of Eurasian Milfoil: 26, 30

07/17/08

Location: Keets shoreline and West Bay.

Diver bags of Eurasian Milfoil: 10, 30

08/11/08

Location: Trestle Bay.

Diver bags of Eurasian Milfoil: 33

08/12/08

Location: Trestle Bay

Diver bags of Eurasian Milfoil: 20

Total for Lake Colby for 2008 Season:

Diver Bags of Eurasian Milfoil: 510

Comparison: Based on four divers per day.

Note 15.5 dive days

Average diver bags of Eurasian Milfoil per day at Lake Colby: 33

Conclusions

The diver hand harvesting program is in its seventh year at Lake Colby. The program was established to help eradicate Eurasian milfoil from Lake Colby and to continue into later years as a maintenance program. The overall effort was greatly increased beginning in 2006 and this increased effort continued into 2007 and 2008. This increased effort has begun to bear fruit and we are beginning to see great success in four out of five locations on the lake.

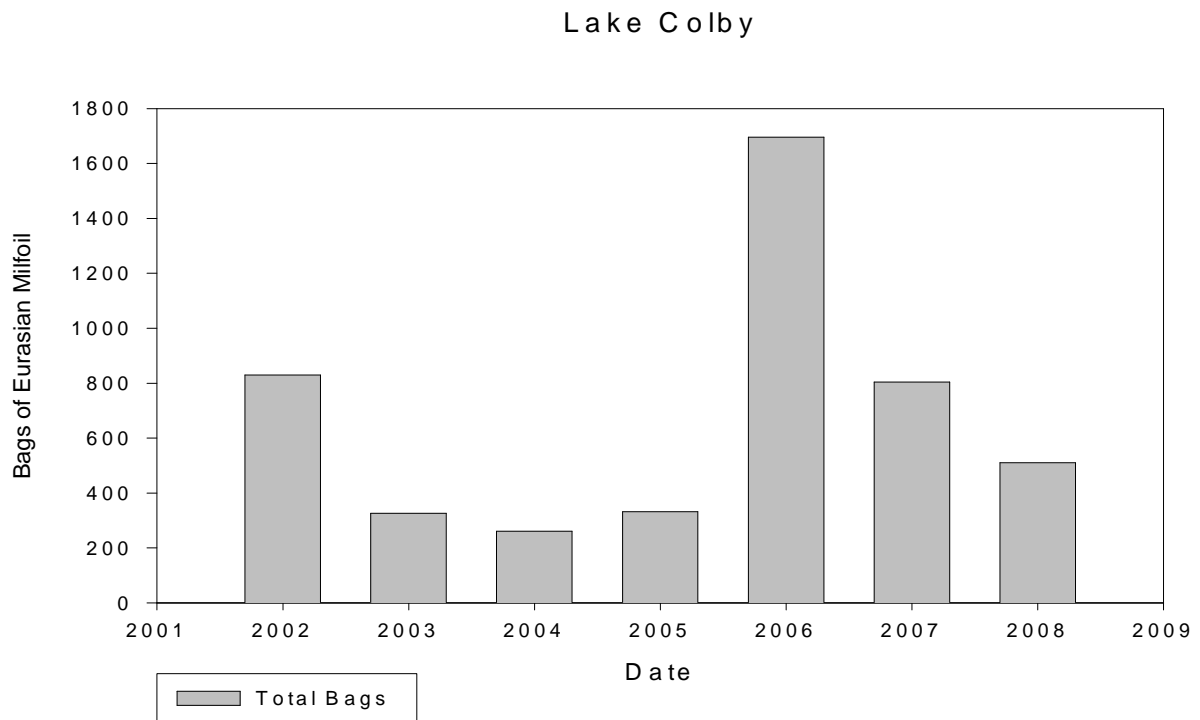
As shown in Table 1 and Graph 1, a high point was reached in 2006 with 1696 bags of Eurasian milfoil harvested. This was a banner year due to the increased effort put into this dive program in terms of money and diver hours. The last two years, 2007 with 804 bags and 2008 with 510 bags, have seen less milfoil harvested each year. This is the direction we are hoping to continue into the future with less milfoil harvested each year. This shows that the milfoil is decreasing and the divers are spending more time looking for the plants rather than harvesting large milfoil beds. This is also shown in Graph 2, where the divers harvested on average 104 bags of milfoil per day in 2006, followed by 37 bags of milfoil per day in 2007 and 33 bags of milfoil per day in 2008.

Graphs 3 – 7, show harvested Eurasian Milfoil bags taken by divers from Lake Colby by location over the last three years 2006 -2008. These years were chosen because of the increased effort began in 2006 and continued through 2007 and 2008. Graph 5 Moir Road, Graph 6 East Shore and Graph 7 North Bay; have shown remarkable progress the last three years. These three areas were swum at least three times each of these summers and the divers are having a great impact on the milfoil plants. These three areas should continue to be a success in coming years. Trestle Bay has also been a huge success but only in the last two years. Finally, the challenge in the future continues to be West Bay. Almost half of the milfoil harvested this past year came out of West Bay.

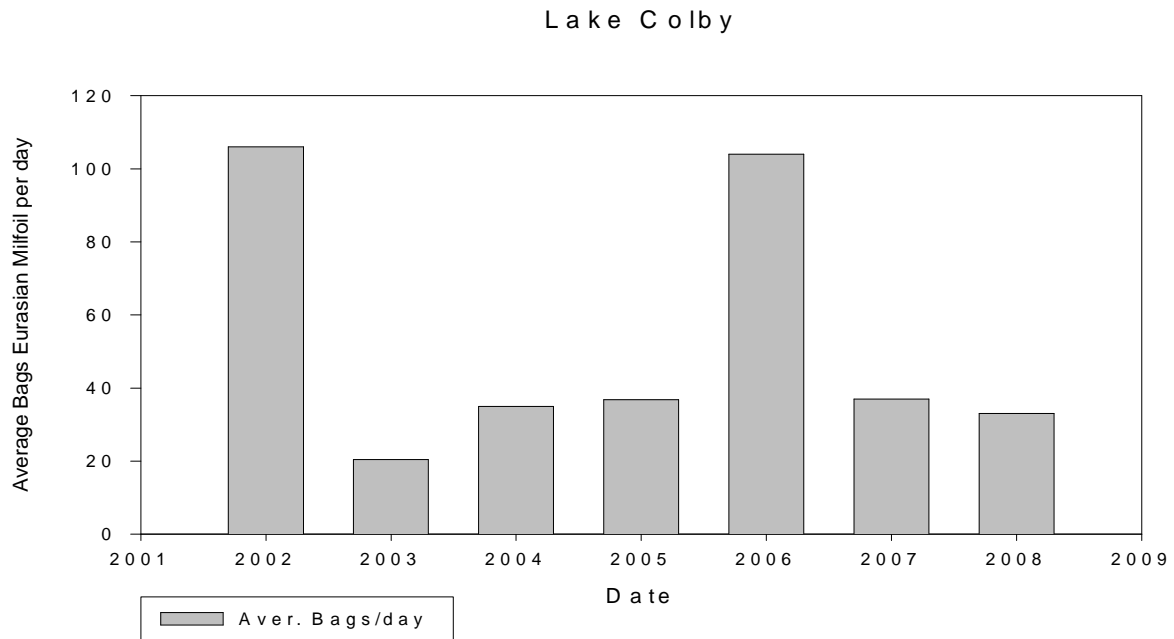
In conclusion, we are beginning to see success from the extra diving effort that began in 2006. Four of the five zones or areas of the Lake continue to show improvement with only West Bay continuing to be a problem area.

Table 1: Lake Colby Eurasian Milfoil Bags by Location

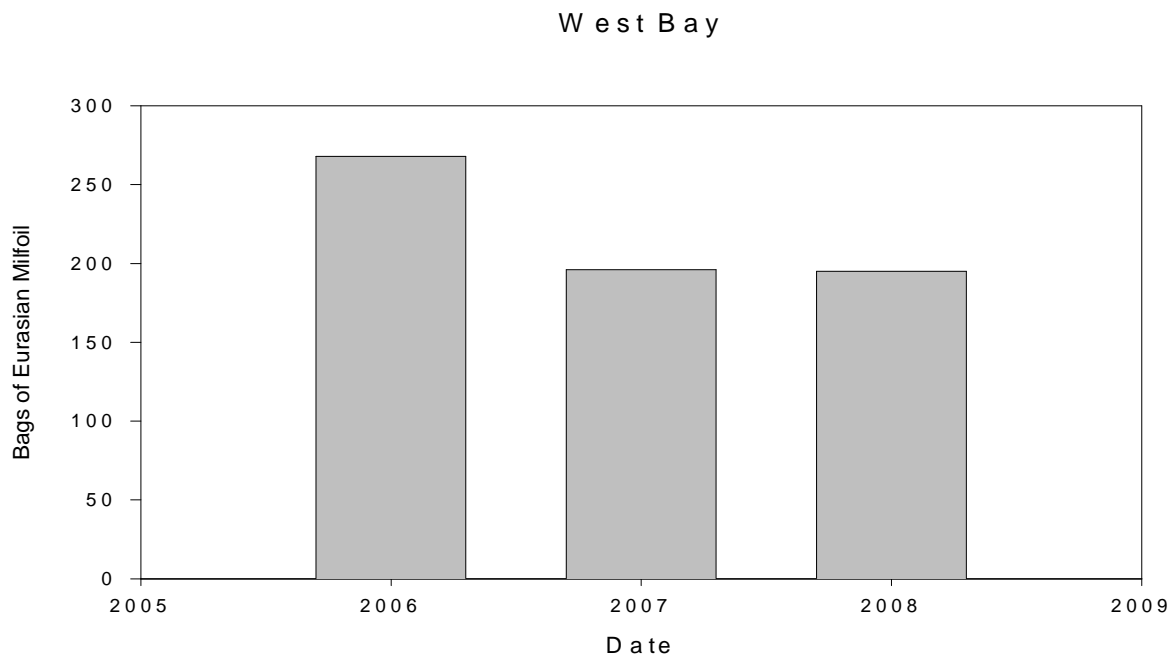
Location	2002	2003	2004	2005	2006	2007	2008	Total
West Bay	358	44	12	51	268	196	195	1124
North Bay	252	-----	35	40	631	224	131	1313
East Shore	167	98	-----	9.5	455	100	8	837.5
Moir rd shore	53.5	57.5	-----	45	273	94	40	563
Trestle Bay	-----	127	214	188	69	190	136	924
Totals	830.5	326.5	261	333.5	1696	804	510	4761.5



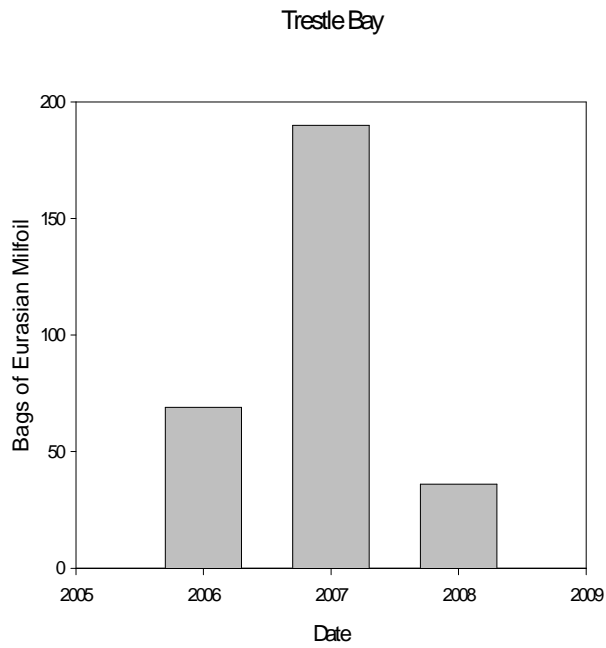
Graph 1: Lake Colby Eurasian Milfoil Bags Harvested by Year



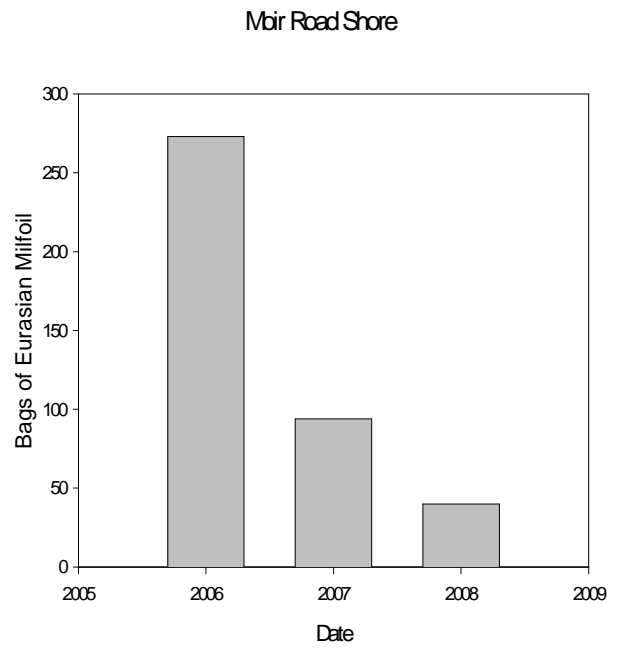
Graph 2: Lake Colby Eurasian Milfoil Average Bags per day Harvested by Year



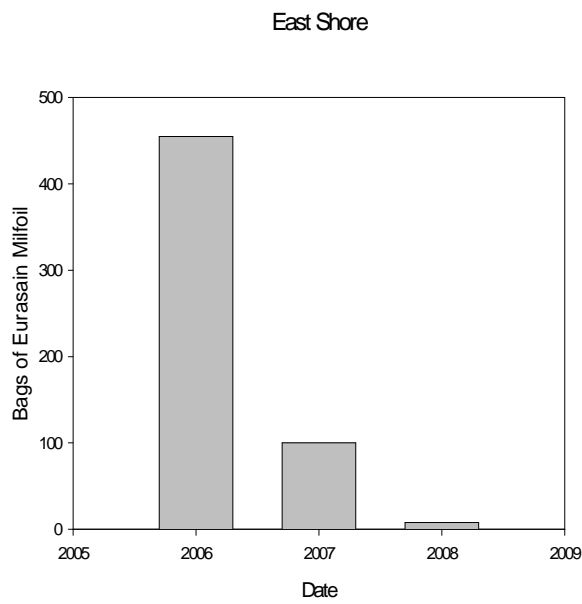
Graph 3: West Bay bags of Eurasian milfoil harvested 2006 – 2008.



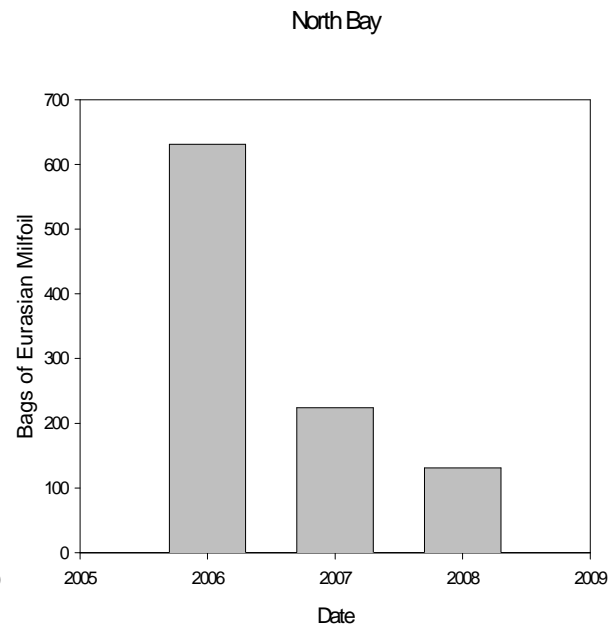
Graph 4: Trestle Bay



Graph 5: Moir Road Shore



Graph 6: East Shore



Graph 7: North Bay