



Third Saturday Nature Walk in September

**The Friends of
Arlington's Great Meadows**

2009 Annual Report

**Arlington, Massachusetts
www.FoAGM.org**

A Brief Introduction and Some History

Arlington's Great Meadows (AGM) is a 183-acre tract of wild, natural land owned by the Town of Arlington and located in adjacent East Lexington. Long enjoyed by area residents as a place of natural beauty, AGM includes extensive wetlands, upland forests, grasslands, vernal pools, and other natural communities. It is home to a vast array of plants and animals, and a stopping-off place for many species of migrating birds. The largest natural, undeveloped area in Arlington or Lexington, AGM is a treasure worth protecting and improving.

The Friends of Arlington's Great Meadows ("FoAGM" or "the Friends") is a group of citizens of Arlington, Lexington, and beyond who are committed to the protection and stewardship of AGM. Under the leadership of the FoAGM Steering Committee, and with the assistance of many volunteers, the Friends work with officials of the Towns of Arlington and Lexington, and with citizens everywhere who share their interest.

Origins of FoAGM. In the late 1990's, the Arlington Conservation Commission engaged botanist and naturalist Frances Clark to perform a detailed ecological study of AGM. Ms. Clark submitted a report in 2001 which included inventories of AGM's plant and animal species and made recommendations for the area's protection and enhancement. The Clark Report and subsequent publicity increased interest in AGM and led to the establishment of the Friends of Arlington's Great Meadows in 2002. The Friends carry out their activities with the approval and encouragement of Arlington's Board of Selectmen which, as the government body responsible for AGM, has recognized FoAGM as stewards of the Meadows.

Major accomplishments of the Friends from 2002 through 2009 include:

- Construction of two boardwalks, totaling 700 feet in length, allowing north/south passage across the wetland.
- Construction of a footbridge across Munroe Brook, allowing access to AGM from Orchard Lane.
- Maintenance of trails, two informational kiosks, and signage.
- Removal of trash, construction debris, rusting car engines, and other eyesores.
- Organization and leadership of a wide variety of educational programs to teach children and adults about nature and to introduce them to the beauty and wonder of Arlington's Great Meadows.
- Ongoing control of invasive plants in priority locations, especially Japanese knotweed.
- Building awareness of AGM through newspaper articles, event notices, group emails, the *FoAGM.org* web site, fliers, booths at town events, and more.

This annual report presents the accomplishments of the Friends of Arlington's Great Meadows in 2009 and an update of happenings during the year. We wish to thank everyone who has helped in one way or another with these efforts.

Education and Outreach

A major goal of the Friends of Arlington's Great Meadows is to bring people to the Meadows to learn about nature and this valuable resource. Studying nature is a worthy end in itself. Those who have had a good experience in AGM are likely to learn to love it and work for its protection. We also work with students and scientists to facilitate their research in AGM. This was a full year of such activities.

- **Nature Walks**

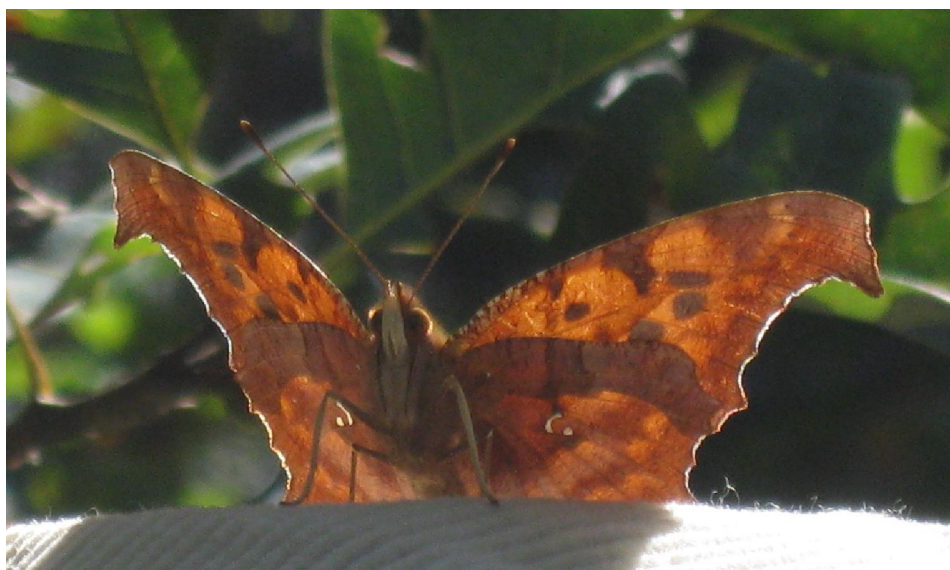
Third Saturday Nature Walk Series. In its second year, the Third Saturday Walks series began in March, when spring was still a long-off-fantasy, and continued each month through November, when most of the leaves had fallen and winter was not far off. No matter what the season, there is always much to see in Arlington's Great Meadows.

Don Miller led the walks with help from fellow Steering Committee members David White and Sandra Ruggiero. Herb Pearce, whose specialties are bird songs and plants, also attended from time to time and shared his knowledge.

The primary focus was again botanical, plants being more dependable than critters blessed with locomotion. We also saw and listened to birds and insects and talked about some of the mammals in AGM. Meeting at the parking lot behind Golden LivingCenter –Lexington, the walks began at 9:30 am and ended at 11:30 am or so, often with an option for those who wished to continue well beyond that time.

Some of the themes and highlights of the year's nine monthly walks:

- Nature's hurry to get started as early as possible in the spring. Green leaves have only about four and a half months to photosynthesize in our climate. Deciduous trees and shrubs have evolved to make their buds in late summer to get a head start on the following spring.
- As spring emerged, petite Canada Mayflower plants with two leaves produced flowers, while those with only one leaf waited, gathering their energy for another year before taking on the burdens of bringing offspring to maturity.
- Reproduction in the world of plants, both sexual and vegetative, and the various ways in which seeds are dispersed. One month we stood for many minutes on the Lily Pond boardwalk watching a variety of pollinator species on a buttonbush shrub: honey bees, bumble bees, and some fly species (order Diptera) that have evolved to look like bees.
- In addition to familiar bird-feeder friends, walkers saw or heard birds not often found in back yards, such as wood thrushes, peewees, and Eastern towhees. Song sparrows ordered maids to "put on your tea kettle-etle-etles", and towhees encouraged the guests to "Drink your tea-ee-ee-ee". Not to be outdone, the alder flycatchers called out "Free beer" (or something like that).



A “comma” butterfly rests on the hat of a September nature walker.

Animal Tracking. In early February, tracking expert Lydia Rogers led a field class in how to identify tracks and “sign” (indications of animal presence such as scat, fur, etc.). With a large turnout, it was fortunate that Lexington teacher and science educator Fran Ludwig was there and agreed to lead half the group. Despite imperfect snow conditions, we found tracks and/or sign of coyote, gray fox, raccoon and fisher (of the Mustelidae family related to weasels and skunks).

Fungi and Lichens. In early November, Arlington resident, Dr. Donald Pfister, Asa Gray Professor of Systematic Botany at Harvard, led a walk to study fungi and lichens. Dr. Pfister’s research interests focus on mycology, the study of fungi. Some fascinating points he made during the walk were:

- What can be seen by the casual observer of a mushroom or a shelf fungus is only the “fruiting body” which produces the spores necessary for reproduction. The body of the fungus is a network of thread-like filaments that grow throughout the soil or log on which the fruiting body appears.
- Lichens are a combination of a fungus and a photosynthetic organism such as green algae or cyanobacteria. There are thousands of species of lichens taking many strikingly different forms.
- Lichens reproduce by “fragmenting,” producing a powdery or mealy material which contains portions of both the fungus and the algae. The fungus alone can produce spores that will result in a new fungus, but that offspring will be on its own until an “algal partner” appears, re-establishing a lichen once again.
- Highlight species were “British Soldiers,” lichens with red-capped vertical structures; and Pixie Cup lichens which resemble long-stemmed green goblets. Both were less than one inch tall.



Donald Pfister displays a lichen at the November walk.

Children's Nature Walks at AGM.

On an October weekday afternoon, Don Miller led an introductory walk in AGM for an Arlington **Girl Scout** troop. The scouts and their leaders had great fun.

On a Sunday afternoon in November, **Bay State Kids Outdoors (BSKO)** held a hike in AGM for children and their parents, a group of about 20 altogether. BSKO (www.bsko.org), a new movement started by Arlington resident Brian McBride, aims to get children and their parents out in nature safely and enjoyably.

A Pond Foray. In April, former Steering Committee member Andrea Golden and Aliberti Lubertazzi, who recently completed a doctorate in pond zoology, led an all-ages pond foray to two of AGM's ponds. The event was co-sponsored by Citizens for Lexington Conservation (CLC) and the Cambridge Entomological Club.

The first stop was Infinity Pond, a certified vernal pool, where grownups and children netted and observed a variety of vernal pool fauna, both big and small, before returning them to the pool. The leaders explained that vernal pools dry up most years by late summer, so fish cannot survive in them; and that these pools are crucial to the reproduction of certain species of "mole" salamanders, fairy shrimp, and frogs, such as the wood frogs which reproduce in Infinity Pond before leaving to live in woods.

The group then visited Lily Pond, conveniently located beneath the Lily Pond Boardwalk. There they netted and observed many animals, including predacious diving beetles; the larvae of dragonflies and caddis flies; and bullfrog tadpoles beginning their second year of tadpole-hood, with their legs beginning to form. They also saw caddis fly larvae, which construct their own "homes" (perhaps more like sleeping bags) out of vegetation and other materials.



May Nature Walk exploring the area burned in 2008.

Don Miller and other members of the FoAGM steering committee can provide guide services, brief nature lessons, and information on AGM. If you are aware of a group interested in a guided walk at AGM, please contact Don Miller, 781-646-4965 or donaldbmiller@comcast.net, for more information.

- **Science in the Meadows**

Field Trip for Harvard Students. In addition to conducting a walk open to the public in November, Harvard botany professor Donald Pfister brought a class of undergraduates to AGM in late spring for a field trip to study its varied natural communities and to identify plant species. Don Miller helped Dr. Pfister plan the route ahead of time and assisted with the walk.

Research on the Eating Habits of Birds. Northeastern University graduate student Liz Clark conducted the first year of a two-year study of the extent to which various species of birds will eat the fruits of invasive plants when the fruits of native plants are available. Part of her study involved installing small mesh bags on branches of buckthorn shrubs to catch berries which fall naturally. The bags did not catch birds or harm them in any way. Ms. Clark will share the results of her research with FoAGM when it is completed.

Honey Bee Project. Students at the Waldorf School continued for a second year a honey bee project in which they care for and harvest honey from two hives in the Meadows. Waldorf teacher Joe O'Regan and his students originally constructed and installed the hives in 2008 with support from an FoAGM educational mini-grant.

In the spring of 2009, the hives were moved to a more protected location on the south side of the meadows, closer to the Waldorf School. As mentioned in our previous Annual Report, the project's early success in 2008 had been marred by an incident of vandalism in the late fall. One additional incident of vandalism occurred shortly following the move but after some informational signs were put up and an article was placed in the Lexington Minuteman and Arlington Advocate, there was no further trouble.

Honey production was a bit down this year due to the rainy weather, but there was enough for the third graders to taste. The school looks forward to adding more hives in the new location next year.



Bee Hives in their new 2009 location.

Firefly Citizen Science Project. Another project that continued for a second year in the Meadows was the "Firefly Watch," a citizen science project organized by the Boston Museum of Science and researchers from Tufts University and Fitchburg State College. With the help of volunteers around the state, the project leaders hope to learn about the geographic distribution of fireflies and their activity during the summer. They also hope to gather information about the effect on fireflies of human-made light and pesticides. For further information on the project, see: http://www.mos.org/events_activities/virtual_exhibits&d=2558.

Former Steering Committee member Andrea Golden, who gathered data at AGM for the Firefly Watch again this year with her husband Barry, offered these observations:

- o AGM is a relatively undisturbed habitat, and the marsh is a good habitat for larval fireflies (fireflies are not actually flies, but beetles in the family Lampyridae). The larvae are predators that favor small invertebrates as food.
- o Adult fireflies do not eat during their short lives, but spend their nights looking for mates. They can sometimes be found during the day resting under leaves, in the grass, or on trees. At night, the female fireflies perch in the vegetation, and the males fly overhead. Observation of the flash patterns, which differentiate firefly species, indicate that there are at least two species in AGM.
- o The summer of 2009 was cool and wet. Although fireflies in our area generally appear in early summer, this season seemed stretched out, with fireflies still active into August. At the peak of the season, 10 or 20 fireflies were visible within a 10-second period.

The Friends encourage the use of AGM for education and research projects of students and faculty. Anyone wishing to do research in Arlington's Great Meadows should contact FoAGM and can do so via email at Info@FoAGM.org.

- **Community Outreach**

Educational Mini-Grants. FoAGM continues to accept applications for mini-grants of up to \$250 for research or artistic projects in Arlington's Great Meadows involving students from grades K-12. The first award was made in 2008 to Joe O'Regan of the Waldorf School to help fund the honey bee project described above. No applications were received in 2009, but FoAGM will again distribute information about the program to area schools and organizations in the hope that interesting and useful projects will result. Application forms are available on our website. If interested contact us at Info@FoAGM.org.

Arlington Town Day. The Friends participated in Arlington's Town Day again this year, staffing a booth shared by Arlington Land Trust. Information and handouts were provided to many passers-by. Some were already regular frequenters of AGM, while others had heard of it but didn't know how to get there. Others were delighted to learn about Arlington's Great Meadows and its nearby location in East Lexington.

Resource Management

Wildlife

A topic that has generated considerable public interest over the past year is the increased presence of coyotes in the suburbs of Boston. Coyote sightings have become more common in this area generally than in previous years, and AGM is no exception.

The Town of Lexington sponsored a public forum on coyotes in the fall of 2009, conducted by Belmont Animal Control Officer John Maguranis, at which a good deal of valuable information was presented. Coyotes are omnivorous, consume a wide variety of plant and animal foods, and play an important role in controlling rodent populations. They tend to be most active at dawn and dusk. Generally coyotes shy away from humans and avoid contact with them. Helpful information about living with coyotes can be found at the MSPCA website: http://support.mspca.org/site/PageServer?pagename=lww_wildlife_coyote.

We have discussed the issue of coyotes with neighbors of AGM who have reported seeing them and hearing their cries in and around the Meadows. Although it is generally recommended that small pets be kept indoors, we have heard no reports of coyotes approaching visitors to AGM.

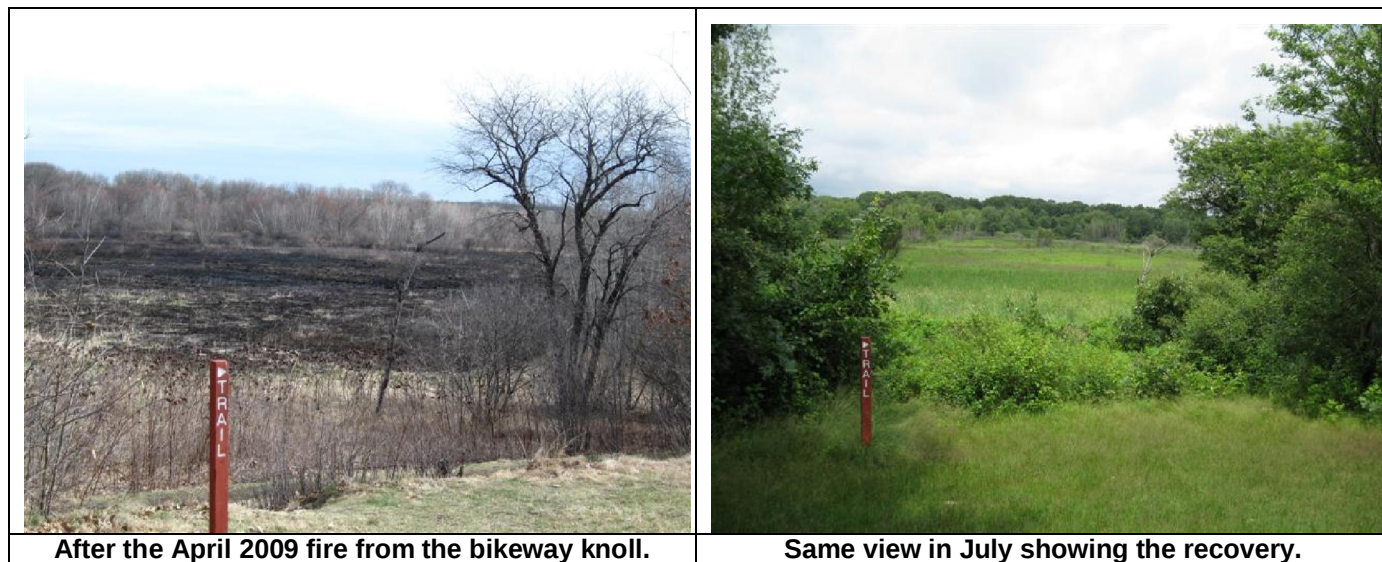
Fires at AGM

The spring of 2009, like the spring of 2008, witnessed a significant fire in AGM. Fires have been a major influence on the ecology of Arlington's Great Meadows. In earlier decades, they were a regular occurrence and they acted to keep the upland areas much more open than they are now. In recent years, however, fires have been a rare occurrence which means that trees and shrubs have had a chance to grow making the upland areas less open. It also means that when fires do occur they can be more intense, as there is more fuel for them to burn.

Both fires occurred during dry conditions in early April on windy "red flag" (high risk) days. The fire in 2008 started in the upland area near the Golden LivingCenter and was set off by youths playing with fireworks. Prompt response by the Lexington and neighboring fire departments limited the spread to about nine acres in the wooded upland area. Although few

trees were totally consumed, many suffered damage sufficient to prevent regrowth. Recovery of other plants has been fairly rapid, but two growing seasons later the effects are still quite visible.

The fire in 2009 started somewhere in the lower wetland area and spread rapidly through the wetlands because of the winds. The fire departments again responded rapidly and were able to prevent the fire from spreading very far into the adjacent upland wooded areas although there were some anxious moments for neighbors on Circle Road. Altogether, over a hundred acres burned in a spectacular fire that made the evening TV news. The wetland area grew back vigorously. Signs of the fire persisted in the adjacent upland areas, but tree damage does not appear to have been as great as in the previous fire.



Upland Meadow Restoration Project

In part because of the declining frequency of fires in AGM, some upland areas that for many years have been open meadows are now changing rapidly to forest. This accelerating process has resulted not only in the diminution of some wonderful views of the wetlands but also in the reduction of habitat variety that sustains a diversity of flora and fauna, including many species of birds. For several years, FoAGM has been considering the desirability and feasibility of restoring some of these previously open upland meadows. In 2009, significant progress was made toward developing a plan.

In May, Jeff Collins of Massachusetts Audubon Society's Ecological Extension Service, who was engaged by FoAGM in 2008 to perform a study, submitted a final report, entitled "Recommendations for Restoration of Meadow Habitat at Arlington's Great Meadows." The Collins Report, which can be viewed on the FoAGM website, addresses three separate meadow areas and contains detailed ecological descriptions and management recommendations keyed to maps. The major area addressed is the five-acre "entry meadow" accessed via the parking lot of the Golden LivingCenter. The report also discusses a "small meadow" of less than half an acre located along the pathway from the entry meadow to the Lily Pond boardwalk and a "shrubby meadow" that is not part of AGM but located in adjoining Lexington conservation, known as Joyce Miller's Meadow, near the Minuteman Bikeway.

Mr. Collins noted in his report that with early-successional natural communities in decline across our region, as well as the plant and animal species that rely on them, “[i]t is of particular importance to recognize high quality grassland and shrubland habitat and to manage it in a way that maintains its highest habitat value while accommodating other values of the site.” The report contains specific recommendations for restoration and maintenance of the three areas in AGM, including control methods such as mowing, brush-cutting, burning, grazing and (possibly) herbicides, with many alternatives provided for flexibility in cost and feasibility.

On July 14, 2009, Mr. Collins presented his findings and recommendations at a public meeting at the Follen Community Church in Lexington. His comments were well received and there was enthusiastic support for proceeding with the meadow restoration project proposals contained in his report.

In October, members of the FoAGM Steering Committee met with contractors Chris Polatin and Bruce Scherer from Polatin Ecological Services, LLC to walk the land and to obtain their recommendations for implementation of the project, including an estimate of costs. In November, Mr. Polatin delivered a detailed proposal with an estimated budget for services that also included management alternatives.

FoAGM expects to make a final determination in 2010 on how and when to proceed with the meadow restoration project. The current thinking is that the initial clearing work could best be implemented with a combination of volunteer effort and paid contractors. A multi-year plan with an ongoing maintenance budget would then be necessary to maintain open areas over the long term. Although FoAGM currently has some funds available, a targeted fund-raising effort would be necessary to meet the complete needs of the project and allow it to go forward.

Questions about this project can be directed to Don Miller at donaldbmiller@comcast.net.

Maintenance Activities

Management of Invasive Plants

Although invasive plants abound in many areas of Arlington’s Great Meadows, during the last five years the Friends have focused invasive management efforts in an area along the Minuteman Bikeway where Japanese Knotweed blocks the view of the beautiful wetland from spring through fall.

As reported in prior years, two techniques have been used on an experimental basis in an attempt to eliminate Japanese Knotweed from this area. “Cut, dig, and cover” has involved cutting the old stalks, digging out the root crowns and as much of the rhizome network as possible, and covering the ground with black landscape plastic for an extended period of time to block sunlight and, hopefully, destroy any remaining rhizomes. “Cut, cut, pull” has involved cutting the growing stalks repeatedly during successive growing seasons until the plant becomes sufficiently weak to uproot it by pulling. Both methods are continuing. No herbicides have been used.

Overall, the efforts to date have resulted in considerable diminution of the knotweed but not its complete elimination. New knotweed shoots are coming up with less vigor and, in much of the plot, the stalks are smaller. Weakened stalks can often be pulled out rather than cut. Portions of the plot near the bikeway are experiencing more success than the half of the slope

nearest the border of the wetland. By either method, we hope to gradually reduce the plant's energy reserves in its rhizome system until it dies. We hope it succumbs before we do.

Although it is still too early to tell whether either of our experimental methods offers promise for the long-term control of Japanese Knotweed, at the very least our efforts are keeping the view open. As many people's knowledge of Arlington's Great Meadows begins with their view of it from the bikeway, this is a not insignificant achievement.

People willing to help with this effort are asked to call Don Miller at 781-646-4965 during the growing season. It is good exercise in a beautiful setting with nice people.

Trail Maintenance and Fire Department Access

Dedicated FoAGM members were able to keep all the trails open again this year in spite of some rainy weather that encourages plant growth. Several volunteers spent a November morning cutting brush and saplings along the fire road between Sheila Road and the Golden LivingCenter parking lot to create a path wide enough for a 9 foot wide brushfire-fighting vehicle to pass unhindered.

Other Management Matters

- Dumping of yard waste has greatly diminished after the installation of signs in 2007 at several locations where this was common.
- During the past year, youth have targeted trees, rocks and signs with paintball guns. FoAGM has posted notices reminding all that such activities are prohibited.
- AGM remained relatively litter-free in 2009, thanks to regular visitors who helpfully pick up what a few others leave behind.
- Other activities that typically occur in municipal open space (under-age drinking, littering, petty vandalism) continue to occur in AGM, but seem less frequent than in prior years.

Legal Protection Of Arlington's Great Meadows

The Friends of Arlington's Great Meadows continue to be committed to permanent protection for the entire property through the best legal means possible. Possible strategies are (1) a conservation restriction, or (2) designation as conservation land under Article 97 of the Massachusetts Constitution. Currently, Arlington's Great Meadows, which is classified as "surplus municipal land of the Town of Arlington," is not a legally protected conservation area, although a majority of the acreage is protected as wetlands. We encourage anyone who is interested in pursuing permanent legal protection for AGM to contact us.

Financial Report

Not surprisingly, in view of the economic downturn, donations to AGM in 2009 were down 17% from 2008. Expenses exceeded income by about \$1,500 but we continue to hold healthy cash balances. The major expenditure during the year was a large payment to Mass Audubon Extension Service for Mr. Collins's habitat restoration study and report. It is satisfying to note that all of our income is from individual donations and employer matches, so we are fully supported by the generosity of our dedicated members and not dependent on municipal budgets, grants, corporate funding, or fundraising events. FoAGM also continues its successful partnership with the Arlington Land Trust (ALT) as fiscal agent.

Summary of activity in FoAGM's fund balances as of the end of 2009:

2009 Income

\$ 1,760.00 in 39 donations, ranging from \$5 to \$250, average \$45

2009 Expenses

\$ 2,845.00 Habitat restoration study

\$ 212.76 Printing

\$ 100.00 Meetings

\$ 65.00 Web site

\$ 3,222.76 Total Expenses

Fund Balance as of December 31, 2009

\$ 9,750.97 FoAGM fund balance at beginning of the year

-\$ 1,462.76 Net change

\$ 8,288.21 FoAGM fund balance at year-end

We thank our new and trustworthy regular donors who have contributed to the preservation of one of the largest natural open spaces in the Arlington/Lexington region. Those wishing to make a tax-deductible donation can make a check out to "ALT FoAGM Fund" and mail it to FoAGM, Box 492, Arlington, MA 02476, or use a credit card online at www.networkforgood.org (Enter "arlington land" in the search field and select state of MA. Select Arlington Land Trust and enter "FoAGM" as a designation.)

Mike Tabaczynski, Financial Officer

Acknowledgements

We would like to thank the following individuals and groups for their guidance, encouragement, physical labor, and other assistance to FoAGM, as well as countless others who helped us to complete a successful year.

Arlington Board of Selectmen
Lexington Board of Selectmen
Arlington Advocate
Arlington Conservation Commission
Arlington Land Trust
Golden LivingCenter-Lexington, Clyde
Tyler, Executive Director
Citizens for Lexington Conservation
Emerson Gardens Condominium Assoc.
Friends of Lexington Bikeway
Follen Community Church
Joe O'Regan of the Waldorf School
Lexington Fire Department
Lexington Garden Club
Lydia Rogers
Donald Pfister

Lexington Christian Academy
Lexington Conservation Commission
Lexington Minuteman
Lexington Police Department
Menotomy Bird Club
New England Mountain Bike Association
Polatin Ecological Services
Students of Lexington High School
Waldorf School in Lexington
Waldorf High School of Massachusetts Bay
Arlington Police Department
Jeff Collins of Massachusetts Audubon
Frances Clark
Andrea Golden
Fran Ludwig
Herb Pearce

We'd like to express a special thanks and welcome to our newest steering committee member Sandy Vorce from Arlington. Sandy is the property manager at the Mass Audubon Habitat Sanctuary in Belmont and brings much practical experience and a cheerful can-do attitude.

The Friends of Arlington's Great Meadows is committed to continuing its stewardship and protection efforts for this exceptional treasure in our midst. We hope our work will ensure that all generations can enjoy and learn from it.

Respectfully submitted,

The Steering Committee

David White, Chair
Don Miller
Sandy Vorce

John Bartenstein
Sandra Ruggiero

Laurel Carpenter
Mike Tabaczynski

We encourage residents of Arlington, Lexington and neighboring communities to attend our meetings and to participate in our activities. Steering Committee meetings are generally held monthly and an Annual Meeting is usually held in the Spring. To obtain notice of these meetings, visit our web site at www.FoAGM.org and sign up for our email list. For those with a strong interest, positions are available on our Steering Committee.

Photo credits: David White

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