

Houston Laker



*Had a great time on the 4th of July!!!
August 2011*





Community Events

August 3rd - Recycling Day

**August 8th - City Council Meeting
7:30p.m. - City Hall**

**August 18th - Venetian Gardens Homes Association
Board Meeting
7:00p.m. - City Hall**

August 31st - Recycling Day

**CITY OFFICIALS
CITY OF HOUSTON LAKE**

Mayor

Michael Hallauer
215-9138
(mayor@houstonlake.net)

City Clerk

Marsha Duncan
419-5051
(cityclerk@houstonlake.net)

City Collector

Joyce Kullman
547-8173

Alderman (Ward 1 So.)

Perry Davis
587-8614
(Sw1-alderman@houstonlake.net)

Alderman (Ward 1 So.)

Rick Cowan
741-2730
(Sw2-alderman@houstonlake.net)

Alderman (Ward 2 No.)

Phil Otte
741-5477
(Nw1-alderman@houstonlake.net)

Alderman (Ward 2 No.)

Dan Coronado
584-2667
(Nw2-alderman@houstonlake.net)

Municipal Judge

Greg Dorsey
785-4284

Court Clerk

Sharon Brandt
785-4284

Codes Enforcement Officer

Mitch Kelly
584-9361
(mkelly@houstonlake.net)

**VENETIAN GARDENS
HOMES ASSOCIATION**

President

Bill Gay
584-9548

Vice President

Nick Jackalone
587-0028

Treasurer

Bill Winton
913-963-7535
(Lake Tags)

Secretary

Al Horine

Board Member

Evadene Judge
726-4456

Houston Lake

Watershed Management

Committee

Michael Hallauer
215-9138

Registrar

Editor – Houston Laker

Mary Head
741-5639
(editor@houstonlake.net)

Sewer Grinder Pumps

Marsha Duncan
419-5051

**For more City and Homes Association Info
go to**

Houstonlake.net

CITY OFFICIALS CITY OF HOUSTON LAKE

F Y I

ARTICLE II. PERMITS

SECTION 500.100: BUILDING PERMIT REQUIRED

All persons desiring to construct, erect, alter or add to any building, boat dock, fences, road or drive or any structure in the City of Houston Lake, Missouri, **must first obtain a building permit** for such construction, alteration or addition from the Board of Aldermen of said City. (Ord. No. 282 §2, 10-14-02)

SECTION 500.110: PERMIT APPLICATIONS

All persons desiring to obtain such a permit shall submit an application with the complete plans and specifications and plot plan for such construction showing sizes, estimated cost and details of such proposed construction and the location of such construction upon the plot of land. No new dwelling construction or property line fence construction will be permitted until after certified surveys have been filed with the Board of Aldermen. Certified surveys will be required on all additions to old dwellings where the new construction will be closer to the property line than the old dwelling. (Ord. No. 282 §3, 10-14-02) Applications for a building permit may be obtained by leaving a message at City Hall, contacting your Alderman or calling City Clerk at 816-419-5051.

Notice of Public Hearing

City of Houston Lake, MO.

The Board of Alderman of the City of Houston Lake, Missouri will conduct a Public Hearing at 7:30 p.m. on Monday, August 8, 2011 at Houston Lake City Hall.

Citizens may be heard on the property tax rates to be set in order to comply with Article X, Section 22 of the Missouri Constitution and Section 67.110 and 137.073 of the Missouri Revised Statutes.

The proposed tax rate is based on information currently available to the City of Houston Lake. The tax adopted may vary from, but will not exceed the proposed rate.

	Prior Tax Year (2010)	Current Tax Year (2011)
Assessed Valuation (Real Estate/Personal Property)	\$2,808,501.00	\$2,694,545.00
Prior Tax Rate (2010) as defined in Chapter 137, RSMo.	\$0 .6668	
Proposed Tax Rate (2011) (Rate per \$100.00)		\$0.67
County Collection Fee \$0.015	\$18,727.00 <u>- \$421.00</u>	\$18,053.00 <u>- \$404.00</u>
Revenue for General Fund	\$18,306.00	\$17,649.00

Date: July 26, 2011 Marsha Duncan, City Clerk

Notice of Public Hearing

City of Houston Lake, MO.

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The proposed tax rate is based on information currently available to the City of Houston Lake. The tax adopted may vary from, but will not exceed the proposed rate.

	Prior Tax Year (2010)	Current Tax Year (2011)
Assessed Valuation (Real Estate/Personal Property)	\$2,808,501.00	\$2,694,545.00
Prior Tax Rate (2010) as defined in Chapter 137, RS Mo.	\$0.73	
Proposed Tax Rate (2011) (Rate per \$100.00)		\$0.73
County Collection Fee \$0.015	\$20,502.00 - <u>\$421.00</u>	\$19,670.00 - <u>\$404.00</u>
Revenue for Fire Protection	\$20,081.00	\$19,266.00

Date: July 26, 2011 Marsha Duncan, City Clerk

August 08, 2011
Council Meeting Agenda
City of Houston Lake – City Hall 7:30 p.m.

1. Opening Session

2. Public Discussion

3. Tax Rate Hearing 2011

4. Minutes

5. Building Permits

6. Treasurer's report

7. Paybills – Resolution No 08-08-11

8. Collector's Report

9. Police Report/Codes Report

10. Reports from Aldermen

Mr. Cowan

Mr. Otte

Mr. Coronado

Mr. Davis

11. Old Business

- a. Solid Waste Containers
- b. Public Indecency
- c. Property Maintenance

12. New Business

13. Mayors Report

14. Closed Session

a. A motion to enter into Closed Session pursuant to RSMo 610.021(1) for discussion of Legal issues, RSMo 610.021(2) for Real Estate (purchasing or selling) and RSMo 610.021(3) for Personnel issues.

15. Re-enter Open Session

16. Adjournment

**Financial Statement
City of Houston Lake
As of June 30, 2011**

Income - Period Covered July 1, 2010 - June 30, 2011

General Fund	133,224.35	
Road Fund	126,554.73	
Grinder Pump Fund	4,450.57	
Fire Protection Fund	21,094.42	
Total		\$ 285,324.07

Expenses - Period Covered July 1, 2010 - June 30, 2011

General Fund	105,544.13	
Road Fund	193,410.41	
Grinder Pump Fund	3,463.57	
Fire Protection Fund	19,000.00	
Total		\$ 321,418.11

Total Funds as of June 30, 2011

General Fund	83,420.11	
Road Fund	11,958.26	
Grinder Pump Fund	8,243.55	
Fire Protection Fund	21,075.48	
Municipal Court Account	234.75	
Municipal Court Bond Account	519.75	
Transportation Sales Tax Receipts (as of Mar)	6,535.60	
General Fund CD - matures 06/12/12 (as of May)	23,142.90	
Road Fund CD - matures 06/26/12	56,574.67	
Mill and Overlay CD Account - matures 04/12/13 (as of Apr)	25,000.00	
Grinder Pump Fund CD - matures 12/15/11 (as of Apr)	17,089.86	
Total		\$ 253,794.93

**City of Houston Lake
Unofficial Minutes of the Council Meeting
July 11, 2011**

The Council of the City of Houston Lake met in regular session on July 11, 2011 at City Hall. The following members were present: Aldermen Phil Otte, Perry Davis, Dan Coronado and Rick Cowan.

Opening Session

The meeting was called to order at 7:30 p.m. Mayor Hallauer presided.

Public Discussion

Resident Larry Haynes asked the Council when the pot holes will be fixed as there are getting to be more. Mayor Hallauer said that weather permitting all the trouble spots can be fixed at one time.

HOA Director Bill Winton addressed the Council with a proposal for cutting the costs of copying as he felt that the Homes Association could produce the Houston Laker in a more cost effective way. He was provided a copy of the annual invoice sheet. This sheet shows the total cost of the shared printing and mowing for the City and the Homes Association. Mayor Hallauer pointed out that the total number of copies used last year was approximately 40,000 of which the City used approximately 1600. The rest was for the printing of the Houston Laker. This means that the City pays 50% of the total cost (\$603.14) for 4% of the usage. He also pointed out that the City pays 50% of the mowing costs and owns only 15% to 20% of the property mowed. Mr. Winton will present this to the Homes Association Board for possible adjustments to the Houston Laker or ceasing publication altogether.

Minutes June 13, 2011

The minutes were approved by general consent.

Building Permit

None

Treasurers Report

Alderman Coronado moved that we accept the treasurer's report, seconded by Alderman Cowan. Motion passed.

Emergency Management

Director of Houston Lake Emergency Management, Alderman Coronado told the Council the City of Parkville is letting him have a copy of their Emergency Management Binder for all of the Council to see. He also is in the process of finishing one of the courses for Public Works and ICS, Instant Command System. ICS shows the City how to interact with local, county and state officials in case of a disaster. He also plans to introduce himself to other city Emergency Management Officials.

Code Enforcement/Sheriff's Report

No reports

Reports from Aldermen

Alderman Cowan – Alderman Cowan wanted to thank everyone that came out to help setup the mortars, Andrew Garcia and Bob King. He asked the Mayor if we ever got the KCPL poles numbers for some minor repairs. Mayor Hallauer said that he received the numbers and KCPL has been notified.

Alderman Otte – Alderman Otte said that he thought that the 4th was one of the best fireworks display he had seen, and thanks to all that helped. Another thank you to Joe Chepra for cleaning the ditches and to Glenn Morris for a great job on mowing in this heat.

Alderman Coronado – Alderman Coronado contacted the contract manager with the Kansas City Water Department about reseeding the areas that are not really growing very well. He was informed that the contractor will be coming back out to reseed these areas. He also stated that he has observed late at night someone climbing the hill above the Mayor's Park with an SUV. That property is private and would make it difficult to block off.

Alderman Davis – Alderman Davis thanked everyone for the wonderful 4th of July event.

New Business

a. 2011- 2012 Budget Hearing:

The Council was given a copy of the proposed 2011-2012 budget. With some discussion, public and from the Council, Alderman Coronado made a motion to accept the 2011-2012 budget, seconded by Alderman Otte.

Roll call:

Cowan – Aye
Davis – Aye
Otte – Aye
Coronado – Aye

Motion passed

Resolution 7-11-11 (paybills)

Alderman Cowan moved that we accept Resolution 7-11-11, seconded by Alderman Otte.

Motion passed.

Mayors Report

a. Mayor informed the Council that there will be a Household Hazardous Waste program scheduled for August. We are part of a Co-op agreement with MARC. This will be posted in the Houston Laker.

b. The sewer maps are now on a CD and a flash drive. Mayor Hallauer thanked Mayor Head and Alderman Coronado for their endeavors putting that together.

c. The July 4th event was a great time for all. Mayor thanked all the Aldermen for their continued support. The only problem was a group of people doing fireworks in the street. This is not allowed.

d. Mayor Hallauer had a comment and false assumption by a resident regarding the Closed Session. The statement from this resident was that the City goes into a Closed Session to “spend money under the table”. Mayor needed to set the record straight by noting that spending is approved and conducted in an open forum. Spending is tracked monthly by the Council, Bank and Bookkeeper. **The State of Missouri allows a City Council to enter into a Closed Session for the following reasons:**

- 1. Discussion of Legal issues**
- 2. Real Estate (purchasing or selling)**
- 3. Personnel issues.**

Adjournment

The meeting was adjourned at 8:40 pm

Reports from Aldermen Alderman Cowan – Alderman Cowan wanted to thank everyone

Please take a moment to fill out the questionnaire below. This information is vitally needed to insure that you and your family have the maximum support from your City and Platte County Emergency Management Officials in the event of a disaster. All information will be "highly confidential" and shared with no one. Please place this in a sealed envelope and deposit in the "black" mail box to the left of the City Hall front door.

Name:

Address:

Daytime phone No.

Evening phone No.

Cell phone:

Number of adults (18 and older):

Number of children:

Names and ages:

Names and ages:

Number of dogs:

Number of cats:

Is there anyone in the household who requires special medical attention?
If so, who and please provide details (oxygen, wheelchair, walker)

Is there anyone in the household who depends on insulin for diabetes?
If so, who and how much medication is needed daily.

Is there anyone in the household that suffers from heart disease?
If so, who and please provide details (pacemaker, atrial fibrillation, etc.)

Is daycare or adult daycare provided at this residence?
If so, what are the hours of operation?
How many in attendance?

Is there anyone in the household who cannot speak English?
If so, who and what language is used?

If you decline to provide this information, which is being gathered to assist local authorities in the event of a disaster, you may be jeopardizing your health and well being. For this reason, we ask that you sign the waiver below and return this form to City Hall.

I understand that I will not and cannot hold the City of Houston Lake, its Officials or Platte County Emergency Management and its Officials responsible for my welfare in the event of a disaster whether man made or weather related.

Signature

Date

Please take a moment to fill out the questionnaire below. This information is vitally

Venetian Gardens Homes Association

Minutes for July 21, 2011

Meeting was called to order at 7:00p.m. The following Board Members were present: Nick Jackalone, Vice President; Al Horine, Secretary and Bill Winton, Treasurer. Bill Gay, President-excused and Evadene Judge, Board Member-excused.

Visitors: Bob King, Janet Boehm, Jewel and Mary Head, Sharron DeLaFuente, Dan Coronado, Larry Haines and Gil Hughes.

Water Sample report from Sharron DeLaFuente was handed to the Board Members. She took the sample 10 feet out from the dock at the beach and it is OK to swim in. The report is in this Houston Laker. This is the Fecal Coliforms water report.

Duckweed that is in the lake was discussed.

Rocks behind the Community Garden were discussed to where they should be placed.

Bowl Out above the silt pond was talked about and explained by Gil Hughes.

Gasoline Power Hedge Trimmer was discussed. The Board Members voted and passed to buy the trimmer for \$279.00.

Tree removal was discussed. The Board Members revoted and passed to obtain the lowest bid then have the trees removed.

Walk Bridge needs a sealer put on. The Board Members voted and passed to buy the sealer for the bridge. Some Home Owners will volunteer to put the sealer on the walk bridge.

Meeting adjourned at 8:20p.m.

Next Homes Association meeting will be Thursday August 18, 2011 at 7:00p.m. City Hall.

CII LABORATORY SERVICES

Invoice

10835 NW Ambassador Drive
 Kansas City, MO 64153 USA

Phone: (816) 891-7337
 Fax #: (816) 891-7450

Page: 1

Number: 0000095011

Date: 7/8/2011

Customer: CITY.HOUSTON

Bill To	Ship To
City of Houston Lake 3440 NW Edgewater Tr. Kansas City, MO 64151 United States	City of Houston Lake 3440 NW Edgewater Tr. Kansas City, MO 64151 United States

Sharron De la Fuente

816-260-8633

Sample Number	Customer PO No.	Due Date	Term
35081/P001			15 day from Receipt of Invoice

Item	Description	Quantity	Price	Amount
Fecal Coliforms-water-100ml	Fecal Coliforms (cfu/100ml)	1	22.00	22.00
----- LAST ITEM -----				

27488508108072011



Federal EIN#: 43-1836165

Subtotal	22.00
Freight	0.00
Sales Tax	0.00
Trade Discount	0.00
Payment/Credit Amount	0.00
Balance	USD 22.00

10835 NW Ambassador Drive Number: 0000095011

Kansas City, MO 64153 USA



Community Garden Update



The garden was beautiful this year yielding many pounds of green beans. Thanks to all that helped harvest and shared with other residents.

But a special thanks goes to Bill Winton for the special care he has given the garden.....watering and weeding all with a watchful eye. Thank you Bill!!

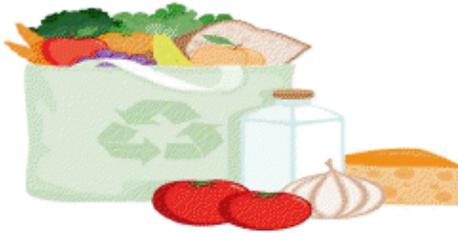
Now we are into a tremendous heat wave and it has effected the tomato plants. There are many tomatoes on the plants but some are a little sunburned. We suggest that they be picked and either put in a window (the will turn red) or make fried green tomatoes!!! I was assured that after we get to a cool down, the plants will perk up and yield more tomatoes. That was great news to hear.

The pepper plants are doing very well, so be sure to get down there and pick some. Again, remember that this is a shared garden, so please just pick enough for your family use.

We will be replanting the green beans, lettuce, spinach and beets (Angela ☺) again as soon as the weather changes.

If you'd like to help us, please contact myself, Angela Gay or Bill Winton. We'd love to see you at the garden!!!

Community



From the Kitchen of.....

Marsha Duncan

I just have to share this with you. I love any kind of poultry and especially turkey. I noticed that most stores carry turkey thighs, usually packaged in 2, for less than \$5.00. They are huge and will feed at least 4 people. So I bought a package, I threw some things together in a crockpot, and came up with this really easy and really tasty dish.

A side benefit to this dish besides being inexpensive and easy is the wonderful aroma it creates. Like Thanksgiving in July!!!

Crockpot Turkey Thighs

1 package of turkey thighs
1 can of turkey gravy
1 small sliced onion
2 stalks of celery

Salt & pepper both sides of the turkey thighs and brown in a skillet. Place the 2 celery stalks on the bottom of the crockpot. Place the onion slices on top of the celery. Transfer thighs to the crockpot and pour the turkey gravy on top of everything. Turn crockpot on high for 2 to 3 hours then to low until the meat is tender and falling off the bone. Serve mashed potatoes, rice or noodles.

If you have a recipe or some hints that you would like to share with us, please contact Marsha at mduncannkc@aol.com or Mary at maryjewelh@aol.com



HOUSEHOLD HAZARDOUS WASTE COLLECTIONS



Mobile collection events are held throughout the Kansas City area in Missouri and are free to residents of participating communities in the Regional HHW Collection Program.

If your community is not a member of the Regional HHW Collection Program, please contact your city hall or county office. Each city and county in the five-county Solid Waste Management District is given an annual opportunity to join the program.

For more information, contact Nadja Karpilow at karpilow@marc.org or 816/474-4240.



2011 Mobile Collection Event Schedule

ABOP = only antifreeze, batteries, motor oil, and paint are accepted

→	Aug. 13	8 a.m.-noon	Platte County/Weston/ Platte City	Platte Ridge Park 17130 MO Highway 371	HHW
	Aug. 27	8 a.m.-noon	Pleasant Hill/Raymore	Cass County Fairgrounds 308 W. Commercial	ABOP
	Sept. 10	8 a.m.-noon	Kearney	100 E. Washington Street	HHW
→	Oct. 1	8 a.m.-noon	Platte County/Riverside/ Parkville	E.H. Young Riverfront Park 1001 Argosy Parkway	ABOP
	Oct.22	8 a.m.-noon	Liberty	Liberty City Hall 101 E. Kansas	HHW

Residents of participating communities in the regional program can attend ANY of the mobile events, regardless of location.



COMMON HOUSEHOLD HAZARDOUS WASTE PRODUCTS

Household Hazardous Waste (HHW) includes household cleaners, lawn and garden products, automotive fluids, paints and paint-related products.

Common HHW products that can be taken to a collection facility:

- Acids
- Adhesives and glues
- Aerosol cans
- Ammonia
- Antifreeze
- Art and hobby paints
- Asphalt and roofing tar
- Batteries, household, dry cell or lead acid
- Bleach
- Brake fluid
- Capacitors
- Caulk
- Car wax and cleaners
- Charcoal lighter fluid
- CFCs and HCFCs
- Disinfectants
- Drain opener
- Fabric dyes
- Fertilizer
- Fingernail polish and remover
- Flea collars
- Fluorescent lights
- Furniture polish and wax
- Gas cylinders (up to 5 lbs.)
- Gasoline
- Insecticide and insect repellent
- Kerosene and fuel oils
- Lead
- Lighter fluid
- Lubricating oils
- Mercury
- Mothballs
- Motor oil
- Organic solvents
- Oven cleaner
- Paint: solvent- or water-based
- Paint strippers: alkaline-, solvent- or water-based
- Pesticides
- Pet spray and dip
- Photographic chemicals
- Rat and mouse poison
- Septic tank cleaners
- Shoe polish
- Spot removers
- Swimming pool and spa chemicals
- Toilet bowl cleaner
- Transmission fluid
- Tub and tile cleaner
- Unknown substances
- Varnish
- Windshield wiper fluid
- Wood preservatives
- Wood stain

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Houston Lake Cookbook

(Recipe Form)

To have your favorite recipe/recipes published in the next Houston Lake Cookbook, please fill out the form below and submit it to Mary Head via phone, 741-5639, e-mail maryjewelh@aol.com or mail to 5328 NW Houston Drive, Houston Lake, Mo. 64151.



Additional forms can be requested through Mary, e-mail or at City Hall.

Recipe Category

(one recipe per page)

Appetizers

Beverages

Soup

Salads

Vegetables

Main Dishes

Breads

Vegetarian

Desserts

Miscellaneous

Recipe Title: _____

Please Type or Print Plainly

Ingredients

Please use these abbreviations: C for cup, tsp. for teaspoon, Tbsp. for Tablespoon, pkg. for package, qt. for quart, pt. for pint, oz. for ounce, and lb. for pound.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Method or Mixing Instructions

Submitted

by: _____

Telephone number () _____

Please Print or Type Name Legibly

Houston Lake Cookbook

Aquatic Plant Management



Control of Duckweed and Watermeal

*Carole A. Lembi, Professor of Botany
Botany and Plant Pathology, Purdue University
E-mail: lembi@purdue.edu*

Duckweed and watermeal are free-floating plants that can totally cover the surface of a pond. In addition to making a pond unsightly and not very appealing for swimming (Fig. 1), thick growths of these plants can harm the fish population. A surface layer of duckweed or watermeal will prevent sunlight from reaching the deeper parts of the water column. This means that underwater plants and algae can no longer photosynthesize and produce oxygen. The lack of oxygen can greatly stress or even kill fish; typically duckweed or watermeal infested ponds lose good fishing quality over a period of years.



Figure 1. A handful of watermeal plants.

- **Identification**
- **Habitat**
- **Control**
 - **Non-chemical**
 - **Diquat**
 - **Fluridone**
- **Cost Considerations**
- **Water Restrictions**

Identification

Individual **duckweed** plants are about an 1/8th to a 1/4 of an inch in width, so they are not very large. They are generally round in outline, with a single root hanging from each small plant (Fig. 2). **Watermeal** is much smaller compared to duckweed (Fig. 3); in fact, watermeal is the smallest flowering plant in existence. Watermeal plants look like tiny green seeds, each of which is less than 1/16th of an inch in width (Fig. 4). A handful of watermeal will feel gritty, like you are rubbing cornmeal (or grits) between your fingers.

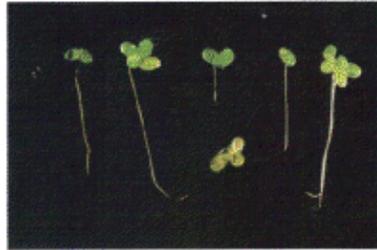


Figure 2. Duckweed. Note the root hanging from each plant.

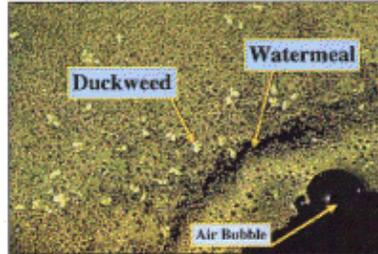


Figure 3. Duckweed and watermeal together (air bubble is included for size comparison).

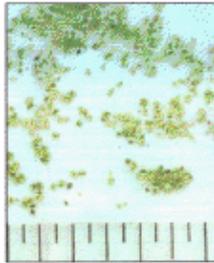


Figure 4. Watermeal. These plants do not have roots.

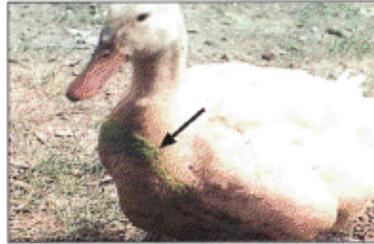


Figure 5. A duck with watermeal (arrow) clinging to its breast feathers.

Habitat

Both plants are typically found in ponds at the edge of or in woods. They are less frequently present in ponds located in open fields but can cause problems there, too. These plants require a lot of nutrients (nitrogen and phosphorus) to grow, so typically they are found in nutrient-rich environments such as in ponds that receive drainage from feed lots, leaky septic fields, and other similar situations. The association with trees suggests that leaf litter may play an important role in providing nutrients for growth. The bottom sediments of infested ponds are often very black and mucky. This organically rich material also can be a major source of nutrients.

Duckweed and watermeal can be spread easily from one pond to another by humans, or probably more frequently, by ducks and geese (Fig. 5). It is easy for these small plants to become lodged in the feathers of birds and then transported to a new home.

Both duckweed and watermeal tend to disappear from the pond surface in late fall. Why does this happen and where do the plants come from when they reappear the following spring? In the summer, the plants are photosynthesizing. This process produces food, which is stored as starch, and oxygen, which becomes trapped in the plant body and provides buoyancy. In the fall, the

Watermeal

Figure 2. Duckweed. Note the root hanging from each Figure 3. Duckweed and watermeal together (air bubble

accumulated starch makes the plants heavier, and as photosynthesis slows down and less oxygen is produced, the plants lose buoyancy. They sink to the sediments where they overwinter, relying on stored starch for energy. In the spring, the plants start photosynthesizing again and the accumulated oxygen causes them to rise to the surface.

Given enough nutrients, duckweed and watermeal can reproduce prolifically to cover an entire pond within a few weeks after coming to the surface. All species can reproduce by budding, and in some cases, a new plant will be produced every 24 hours.

Control

Non-chemical

The control of duckweed is difficult and is even more difficult for watermeal. There are few options for effective control. Any obvious sources of nutrient inputs (lawn fertilizers, leaf litter, drainage from feed lots) should be eliminated. Some people use elaborate skimming devices to scoop the plants off the surface. When this is done, the plants must be disposed of away from the pond basin so that they do not wash back into the water. There are no effective biological controls. Grass carp feed on duckweed only weakly, and they do not feed on watermeal at all.

Draining a pond is a drastic measure, but sometimes it is the only alternative if complete renovation is desired. To be effective, the bottom sediments, which contain both plants and the nutrient-rich sediments, must be scraped out or dredged.

The most effective control methods are chemicals. Two chemicals are labeled for the control of these plants. The ways in which they are used vary greatly.

Diquat

Diquat, which is sold under the trade name of Reward[®], is used at 1 gallon per surface acre. It is diluted in 50 to 150 gallons of water per acre and sprayed directly on the floating plants. A nonionic surfactant, which can be purchased at most places that sell Reward[®], must be added to the Reward[®]/water solution as directed on the Reward label.

Reward[®] is a contact herbicide. That means it immediately causes the plant tissue it comes into contact with to turn brown. Because duckweed and watermeal plants are so small, a single Reward[®] treatment will seldom make contact with and kill all the plants. In addition, Reward[®] does not persist in the water; it is typically gone from the water column by 7 to 10 days after treatment. Therefore, any plants that survive the initial treatment will start to regrow in a few days. A typical scenario after treatment with Reward[®] is that many of the plants will turn brown and sink but the survivors will regrow and again cover the pond.

Several treatments of Reward[®] usually have to be made in a single season to keep a pond relatively free of duckweed or watermeal. Treatments should begin as soon as the plants start to grow in the spring or early summer in order to "keep ahead" of the growth. It is helpful to treat when the wind has pushed the plants to one end of the pond; the spray should be concentrated on the plants in that area. However, do not forget to spray small patches that may still be floating on other parts of the pond or washed up along the banks.

Multiple treatments of Reward[®] can successfully control duckweed; unfortunately, they seldom give effective control of watermeal.

Fluridone

Fluridone, which is sold as Sonar® or as Avast!™, is used at 1 quart per surface acre for the control of duckweed. It is essential that the Sonar® AS (not Sonar® SRP) or the Avast!™ (not Avast!™ SRP) formulations be used. According to the guidelines for Sonar®, the keys to good control of duckweed are that the pond outflow be stopped or minimized for at least 30 days or longer, and that the chemical be applied in two treatments 10-14 days apart. Therefore, for a one acre pond, 1/2 quart is applied initially followed by the other 1/2 quart 10-14 days later. Treatment should be made as soon as the plants start to appear in the spring. The chemical should be applied fairly evenly over the pond surface and plants, but it is not essential to get as thorough a coverage of the plants as it is with diquat.

Fluridone is not a contact herbicide. If it can be held in the water for 30 days, it will effectively control the duckweed plants that are present. The effect is very slow, and may not be noticeable for 2 or even 3 months after treatment. Affected duckweed plants will turn almost pure white, as shown on the watermeal plants below (Fig. 6).

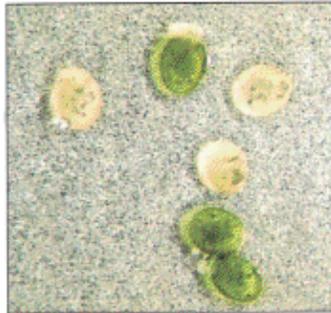


Figure 6. Three of these six watermeal plants have turned white following exposure to Sonar®.

The nice thing about fluridone is that when it works, it really works well. Retreatments are not necessary, and sometimes the control will last a second year (although it may be helpful to apply a pint of Sonar® or Avast!™ at the beginning of the second season to kill any plants that may have survived).

As a general rule, fluridone is effective on most watermeal treatment sites, but sometimes there is no effect. The reason for this is as yet unknown. According to Sonar® guidelines, the dose for watermeal should be 1.5 quarts per surface acre if the average depth is more than 5 feet. Again, it is critical that there be no outflow from the pond and that the treatment be split.

A possible (but expensive) strategy for successful watermeal control is to kill the surface plants with a treatment of Reward and follow that with the split fluridone treatment to kill the recovering plants.

Cost Considerations

One of the main stumbling blocks to using fluridone is its cost. In 2001, the cost for a quart of Sonar[®] was approximately \$482, compared to one gallon of Reward, which cost approximately \$118 (prices may vary somewhat from distributor to distributor). Avast![™], which is a generic form of fluridone sold by Griffin L.L.C., was available for approximately \$435. The SePRO company, which sells Sonar[®], guarantees the results on duckweed if the application is made according to directions. Both companies offer a test (FastEST for Sonar[®] and AVASTest for Avast![™]) in which the concentration of fluridone in the water can be determined within 48 hours. This is important if the pond owner is not seeing results and suspects that the chemical is no longer at a high enough concentration to be effective. For further information on these tests, contact the product dealers.

In analyzing the benefits of diquat versus fluridone, the pond owner must make a choice between a cheaper product that may have to be used over and over again, versus a more expensive product that, when it works, will give excellent control and even may prevent new growth the following year.

Water Restrictions

Both Reward[®] and Sonar[®] or Avast![™] treated water can be used for swimming and fishing immediately after use (although it is always advisable to wait 24 hours after treatment). Reward[®] treated water must not be used for irrigation for 1 to 5 days after treatment; drinking water, 1 to 3 days; and livestock watering, 1 day. Water treated with Sonar[®] or Avast![™] must not be used for irrigation of trees, turf, or crops for 7 to 30 days after treatment (check the label for exact restrictions). These chemicals also should not be applied within 1/4 mile of any functioning potable water intake.

NOTE: Additional restrictions can be imposed by states. Check with local and state regulatory agencies before using these products.

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REVISED: 7/02

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