

## **Midge Information**

### **Life Cycle of a Midge**

- The female adult midge is impregnated and deposits in our pond and surrounding mucky areas as many as 3,000 to 4,000 eggs in a gelatinous mass. More than 90 percent of midges in a swarm are males.
- The eggs sink to the bottom of the pond and hatch in 2-7 days.
- After leaving the egg, larvae burrow or create small tubes in the muck.
- As they develop, the larvae enlarge the tube.
- Suspended organic matter in the water and muck provide a food source for larval development.
- The larvae turn a pink or red color from hemoglobin in the midges blood. This allows the larvae to breath under low oxygen conditions in the muck.
- The larvae develop for 2-7 weeks.
- The larvae transform into pupae while in their tubes.
- After no more than 3 days, the pupae swim to the surface and emerge as adults.
- The adults begin mating quickly after emerging.
- The adults live for 3-7 days.
- Adults either do not feed, or feed on small amounts of mostly nectar or pollen and drink small amounts of water.

### **Other Midge Facts**

- The content of protein and other nutrients in pollen, in comparison to nectar, might well contribute to the females' reproductive capacities. This has been a bad spring for pollen levels, allowing the Female to thrive longer than normal.
- Adult Midge specimens that had fed on sucrose, such as flower nectar, flew far longer than starved specimens and starved females longer than starved males. Some authors suggest the females and males apply the resources obtained in feeding differently. Males expend the extra energy on flight, while females use their food resources to achieve longer life spans.
- Midge Larvae drastically slow their metabolism during the winter. Based upon seasonal indicators the Midge Larvae will remain in their tube during the fall and winter months. They will entirely suspend their development or drastically slow it down until they determine the seasonal indicators make it sufficient to hatch. That is why we see them leave sometime in late August to September and hatch in such large numbers in late March to early April.

## **Other Occurrences in Nature that Cause Midge Reduction**

- Wind and rain play an important part in the reproduction process. When it is windy and/or rainy, Midge tend to protect themselves by attaching to a building, bush, tree or rock opposite the direction the wind is blowing. The wings of the Midge are light and delicate and they have a hard time moving around under windy and rainy conditions. The males are less free to impregnate the female during this time. Since the lifecycle of an adult midge is 3-7 days, this can have an impact on reproduction.

## **OPHOA Considerations**

### **Natural Predators**

- Birds . Bats, Swallows, Purple Martins. Create a friendly environment for nesting and habitat. A few neighbors have complained the Barn Swallows have created nest on their stucco and this is creating a problem for them. Bill Codd has volunteered to construct Bat houses for those neighbors who want them.
- Fish . Trout, Channel Catfish, Bluegill, Carp and other insectivorous species. Stocking fish predators and enhancing the fish environment can increase predation and reduce midge numbers.

### **Pond Control**

- Natural Bacteria and Chemical Products Used for Midge Larvae Control . Both types of approved products can be used in aquatic environments. Bugs-B-Gone, who sprayed the Pond last in 2011-2012 with Larvicide (Natural Bacteria), is no longer spraying larger aquatic environments due to how specialized and segmented the Extermination field has become. Penguin Pest Control would like to treat our Pond with a chemical called Strike, a growth inhibitor. Their quote is very pricey.

Feeling like I wanted more information on putting product into our Pond, I contacted the State of Colorado and spoke with Matt Lopez, who is the Manager of Pesticide Enforcement for the State of Colorado. After a through conversation with him, we found there are 45 Bacteria and Chemical applications approved by both the Federal Government and the State of Colorado for Midge Control. I have requested a list of authorized Commercial Applicators in the Aquatics Category within our zip code range. Matt also gave me the info for contacting the National Pesticide Information Center, the National Repository for questions and research on Pesticide use in Aquatic environments and the CSU Extension Office for product recommendations for our specific needs. If we wanted to verify permitting or apply for a permit to do the work ourselves, we need to speak with John Neiland with the Colorado Department of Public Health and Environment.

Additional research and bid requests need to occur so we may decide which product is best for our desired community effect.

- Aeration . Complete the full use of the current compressor. Add a second compressor and complement of aerators. Poor water circulation causes low oxygen levels and traps nutrients that favor algal blooms, less decomposition of muck and high midge populations. Adding aerators will oxygenate the water, help to decompose the muck and reduce algal blooms.
- Silt and Muck Control . Clean current Silt Retention Pond often. Create an underwater barrier, 2 ½ feet below the water surface (C,C&R\$ allow for a boat to draft no more than 2 feet) to create a silt barrier in the Marina. As our pond continues to fill with more silt, muck, nutrients, organics and pesticides, the population of Midge Larvae will increase. The nutrients, organics and pesticides in our muck and silt create the perfect habitat for larvae to live in and grow. Midges are important indicator organisms, i.e., the presence, absence, or quantities of various species in a body of water can indicate whether pollutants are present in the water.
- Reduce Algae Count in the Pond. Algae add to the organics of the muck and are a food source for Larvae. Many midge problems are associated with algal blooms caused by pollutants and nutrients getting into the water from agricultural and residential contamination and the like. Reducing these pollutants and runoff of nutrients into water can reduce midge problems over the long term. The HOA should find out from the State of Colorado if we can apply an algacide or introduce natural algae inhibitors.
- Test our water to better understand its composition and liabilities to desired habitat, benefits to unwanted habitat and pests and human use considerations. Keep a permanent record. This may serve to our advantage if future regulation is required.
- Test our Silt/Muck to understand its composition. This may aid us in determining if any action can be taken to improve a developing condition.

### **Homeowner Actions to Reduce Midge Effects**

- When Adult Midge populations are high, participate in the Joint Spray of your home with the rest of the homeowners. By spraying only individually and not in a coordinated fashion, there is little impact on the Midge Population. If a large number of homes participate, a much greater number of egg laying females are exterminated, thereby helping to reduce the population of the upcoming Midge hatches. This will allow the HOA members to get closer to the benefits of aerial or truck fog spraying without applying pesticide control on every square foot of the development. This method will address those HOA members concerned about having pesticides applied around their immediate home.
- Use light traps to kill midges either by electrocution or escape-proof capture.
- Eliminate bright lights around the house at night. Sodium vapor lights and yellow bulbs are somewhat less attractive to midges, as are lower wattage bulbs. At night, close inside curtains or blinds that face breeding areas.
- Do not overwater. This creates a wet soil for Female Adult Midge egg laying and larvae burrowing.
- Yards with flowers producing Nectar need to consider reducing their plantings.

- Do not put landscape and grass clippings in the pond. They are nutrient rich and add to the muck organics and silt build-up.
- Point an inside fan out of the door or even use an outdoor fan to create "no fly zones" near entrances.

### **HOA Member Survey for Joint Spray Due to Midge Concerns**

- There are 81 homes and 4 vacant lots in Otter Pond for a total of 85 properties.
- In our survey, we were able to make contact with 74 properties.
- Of the 74 properties:
  - 61 properties wanted to participate in the Joint Spray.
  - 12 properties decided to not participate in the Joint Spray.
  - 1 property was undecided.
- Of the 11 remaining properties we did not make contact with:
  - 4 were vacant lots.
  - 4 were rentals.
  - 1 was vacant due to a death.
  - 2 were not available.

### **Findings and HOA Member Comments**

Of those HOA members contacted, 81.4% wanted to take part in the Joint Spray.

- Even if you include those properties we did not make contact with, 71.8% wanted to take part in the Joint Spray.
- Of those surveyed, some of the negative comments were (I am paraphrasing):
  - This year, the Midge swarms have started out to be the worst.
  - Visitors do not want to come to my house because of the volumes of Midges.
  - I am tired of eating Midges every time I go into my yard.
  - It is wonderful the Swallows came to eat the Midges but now my house, doors, windows and cars are full of bird poop.
  - Daily, I have to sweep dead Midges from my porch.
  - I cannot open the door without them getting into my house.
  - I have to vacuum my ceiling a lot to get rid of alive or dead midges.
  - I left standing water in my sink for 15 minutes and when I returned there were about 25 Midges in the water.

- I have used a blow torch to sadistically fry themõ .and I thoroughly enjoyed it.
  - I have lived on the Pond a long time and have never seen the Swallows come in such mass and for so long. They have been here for 6 days, morning through dusk. That goes to show how bad the problem is.
  - I fear the Swallows have momentarily taken care of the problem. Just wait until June-July, though.
  - In all the years I have lived here, the Swallows have never reduced the Midges like this time. The Midges have always been a problem throughout the entire season. I am hoping our luck will continue.
  - I cannot enjoy my house or go into my yard because of these pests.
  - Usually, during our 4<sup>th</sup> of July picnic in our yard, we have to wear head scarves.
  - It was suggested by a few people to not purchase my home in Otter Pond because of the extreme bug issue.
  - How am I going to sell my House? There are Midge swarms everywhere and they are attached by the thousands to my stucco.
  - I made the mistake of leaving my car window open and when I returned it was filled with Midges.
  - The Midges are not a problem at my house but I wish to support the neighborhood.
  - I have to walk well into the street because the Midges are so bad. They seem to not like the areas above the asphalt.
  - Several UPS/Fedex drivers and gardeners have stated they do not want to come into Otter Pond because of the Midge problem.
- Some of the other comments were:
    - I do not like any type of insecticide applied to my house. I either feel insecticides are bad for humans or I am allergic or my neighbor is allergic and I do not want to cause them any ill effects.
    - The Midges do not affect me. I live far away from the pond. They are not a problem for me.
    - There is a big Midge issue, but I feel it is a pond and OPHOA issue, not mine. The Board has not done a good job taking care of that common area problem.
    - I have invested in my own tools and chemicals and wish to remain independent.
    - I have my own service and wish to remain independent.

### **Final Thoughts**

Now you are as informed as I am about the Midge, its associated HOA member concerns and different ways to address the problem. I, and 61 plus HOA members ask you to begin a major effort to reduce the negative impact of the Midge population in our Common Areas by further researching and initiating some or all of the suggestions. It is unknown whether the Midge issue has yet affected the perception of our beautiful community but, by having a problem of this growing magnitude, it may come to hurt us in the future. If the Board waits to act, I fear the problem will only get worse.

There are 61 HOA members who are willing to spend their hard earned money to help reduce the Midge levels. They will pay \$50 per home per Joint Spray, which is a 33% discount as a result of the extreme volume of HOA members that want to participate. This is a HOA member decision regarding their own property and is of no cost to the Board. This, in itself, is very telling as to how badly the community wants to have this problem taken care of. Almost all homeowners, with the exception of a few, would like the Midge population greatly reduced while still providing enough food supply for the fish and birds. Those who have lived here a long time, wish to return to the days where there was a proper balance for both wildlife and residences.

Otter Pond is not a natural body of water that existed prior to the development. It was created by the developer to make a unique community. The pond is common area and needs to be maintained with the proper consideration to the HOA member and their desire to enjoy their investment and not have their property depreciate unduly as a result of Board inaction.

I implore this Board to take action.

Thank you!

David Beard  
1911 Otter Pond Circle