



# European crane fly

## Description:

There are several different species of crane fly in the Pacific Northwest but it is the European crane fly (*Tipula paludosa*) that is of concern because of the damage that its larvae can do to lawns. The life cycle of a crane fly is completed in about one year. Adult crane flies lay eggs late in the summer and larvae emerge later the same fall. The larvae stay in the soil throughout the winter and turn into pupae late the following spring (about May). Adults emerge from the pupae stage in the late summer, mate and lay eggs within one day, and die before winter is over. Adult crane flies do not feed on grass or otherwise injure lawn and are harmless to humans and pets.

Adult crane flies look like large mosquitoes with long legs, but they do not bite or sting. Crane fly larvae look like short, thick worms with tough gray skin and are called "leather jackets". A crane fly pupa looks similar to a caterpillar. Eggs are small black and oval in shape.



## Impacts:

Crane fly larvae cause lawn damage when they eat grass roots and crowns. The larvae begin eating grass when they emerge in the fall and again in the spring when the soil temperature rises. Lawns damaged significantly by crane fly larvae will appear thin and may develop patchy brown areas as early as March or as late as May. Thin areas in the lawn can become more susceptible to weed invasion. The first year that crane flies invade a lawn is usually the worst. In later years, natural controls such as predators and parasites bring them under control.



## Control Options:

Thurston County's integrated pest management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. When chemical control is considered, the least toxic product is recommended when no other control methods would be effective or practical.

When controlling crane flies, remember that only the larvae cause lawn damage and that damage is seen after the opportunity to effectively use chemical and biological larvae control.

### ► Cultural / Habitat

[Maintaining a healthy lawn](#) is the best way to prevent seeing the damage made by crane fly larvae. A healthy lawn may have over 50 larvae per square foot and still look great. Lawns grow best in sunny, well drained locations with regular aeration, watering, and fertilization.

### ► Manual / Mechanical

**Year 1:** If you notice patchy, thin areas in your lawn in the spring; aerate, over seed, and fertilize your grass to help it outgrow any damage. In August and September watch your yard for adult crane flies, which will be mating and laying eggs in the lawn. If you think there is a lot of adult activity, and your lawn did not recover well from the springtime damage, then you can stop watering your lawn and let the top two inches of soil completely dry out. This will reduce the number of crane fly eggs that will survive.

**Year 2:** Monitor for crane fly damage in February or March: randomly select four test sites in your lawn, cut three sides of a 6-inch square to a depth of a few inches. Fold back the grass on the uncut edge and scrape off dirt to expose the larvae. Count the larvae in each square and add them together, if there are less than about 50 larvae then the problem is not crane fly larvae and you should continue to work on the health of your lawn. If you have more than 50 larvae and had intolerable lawn damage the previous year, you may want to consider biological controls as well as increasing lawn health.



Crane fly larva - Ken Gray image courtesy of Oregon State University



Crane fly pupa - Ken Gray Image courtesy of Oregon State University

If your yard recovered well from the damage of the previous year, you may consider continuing non-chemical control and focus on the health of your lawn. Repeat aerating, fertilizing, and watering your grass and you may never need to control crane fly larvae.

► **Biological**

Crane flies have many natural enemies such as birds, beetles, bats, yellow jackets, frogs and nematodes. These natural controls can often balance out crane fly populations without the use of insecticides. Attracting birds to your yard in the spring can help with larvae control.

Nematodes can be purchased and applied to lawns in March or April after soil temperatures reach about 55 degrees. These tiny worms attack crane fly larvae and can decrease their population by up to 50%. Because nematodes require warm soil, they are less effective in years with a cold spring.

► **Chemical**

Chemical controls rely on broadcast application of pesticides to treat areas affected by crane fly larvae. While this type of control has shown to be effective in reducing larvae populations, it is often not necessary. Consequently, Thurston County does not recommend using chemical controls to address crane fly larvae damage. Instead, efforts should focus on improving the overall health of the lawn, which will make it better able to withstand damage caused by crane fly larvae.

**READ AND FOLLOW ALL PESTICIDE LABEL DIRECTIONS AND RESTRICTIONS.** All chemical control products can cause harm if not used properly.

**REFERENCES:**

Antonelli, Arthur L. and Gwen Stahnke. WSU Extension Bulletin 0856. European Crane Fly: A Lawn and Pasture Pest.

Collman, Sharon J. 2001. Crane Fly, Don't Bother Me! UW Center for Urban Horticulture Newsletter.

Dickey, Philip. European Crane Fly: Lawn Pest or Bird Food? Washington Toxics Coalition Fact Sheet.

Whatcom County Crane Fly fact sheet <http://whatcom.wsu.edu/cranefly>

McDonald, David K. 1999 Ecologically Sound Lawn Care for the Pacific Northwest pgs. 49-52



Thurston County Public Health & Social Services  
412 Lilly Road NE  
Olympia WA 98506  
Phone: 360-867-2586  
T.D.D. 360-867-2603  
[www.co.thurston.wa.us/health/ehipm/index.html](http://www.co.thurston.wa.us/health/ehipm/index.html)

To receive this fact sheet in an alternative format, please contact the Thurston County Environmental Health Division at 360-867-2664. Revised: 12/2009