

Living With Crane Flies

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Most crane fly species are harmless, semi-aquatic, detritis-feeding insects. A few species have adapted, as larvae, to drier conditions and shifted to feeding on living roots. These species can be economically important in some circumstances.

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updated June, 2004

Use pesticides sparingly and wisely. Pesticide information is based on US product labels available at the time of the last update. The laws in your area may be different. Where differences occur your local laws take precedence. Please read and follow product labels that are appropriate for your area. *You are responsible for the safe and legal use of pesticides.* Pesticide toxicology information in the US can be found at [National Pesticide Information Center](#) or 1-800-858-7378. These contacts should not be used in an emergency. In an emergency contact your local poison control office or emergency system.

<http://www.LivingWithBugs.com>
e-mail: getinfo@livingwithbugs.com

Adjust Monitor

You should be able to see 12, more or less distinct, shades of grey in the “steps” below (count from light to dark). The least distinct transition will probably be between the two darkest steps (11 & 12). The middle grey border should be slightly lighter than step 7 but darker than step 6. There should be no color cast in any area of the step-wedge, it should appear neutral grey. Finally, the gradient below the steps should be smooth with no banding.



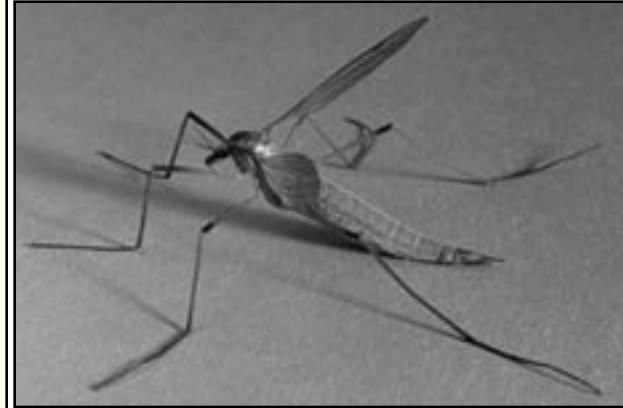
If monitor fails these tests it may need adjustment.

Monitor adjustments are based either on your own eyes or on a hardware sensor called a colorimeter. There are many websites that will lead you through procedures for visual adjustment. A search on “monitor calibration” will produce a current list of sites where eye-based monitor adjustment is covered. The other method is to use a device called a colorimeter that takes some of the guesswork out of evaluating small color or shade differences on the screen. One such colorimeter is the Colorvision Spyder (www.colorvision.com).

Basic Monitor Adjustments (visual)

- 1) Set your display card to at least 24-bit color (millions of colors) if possible. Check your display card manual on how to do this. If your card is not able to display 24-bit color, as most newer cards can, accurate calibration may not be possible.
- 2) Allow your monitor to warm up for at least 15 minutes. Adjust room lights so that they approximate your normal viewing conditions, and block any bright reflections on the screen. Subdued room lighting is best. This step is important since room lighting that reflects off the monitor will significantly change how screen images appear.
- 3) Adjust the blacks (black point). Set the monitor’s Brightness and Contrast controls both to 100%. Using the image above, decrease the Brightness until there is just barely a separation between the darkest steps, 11 & 12.
- 4) Adjust the whites (white point). Most monitors will work well with Contrast set to 100%. However, if there is no clear separation between the lightest two steps, 1 & 2 above, then decrease the Contrast a bit.
- 5) If it is possible to set the color temperature of your monitor, set it to 6500 degrees Kelvin.
- 6) Lock these settings in (check your manual or tape down the controls).

Crane flies are relatively large, semi-aquatic (as larvae) insects. Adults live only a short time whereas larvae may live for a year or more in moist soil feeding on organic matter and plant tissue. They generally occur around permanent bodies of water because of the requirement for damp soil. Most species go unnoticed except by the people who study them. A few, however, have adapted to survival in the relatively drier soils away from permanent water. These species are a concern when they feed on the roots of turf or other commercially important plants. Certain crane flies can be especially damaging to newly planted grass. Of particular concern are *Tipula paludosa*, the European crane fly (right) and *T. oleracea* in the Pacific Northwest, USA, and throughout the UK (perhaps other maritime climates as well).



Life of a Crane Fly

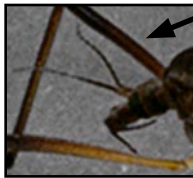
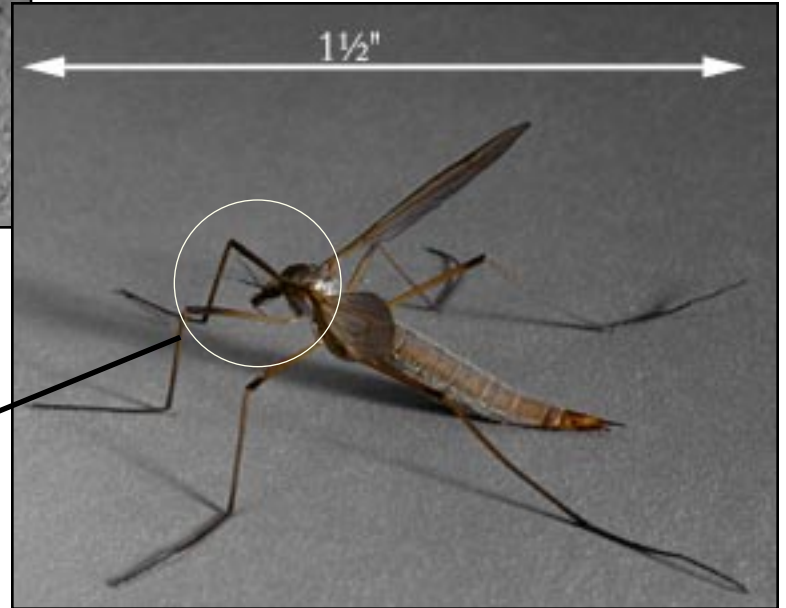


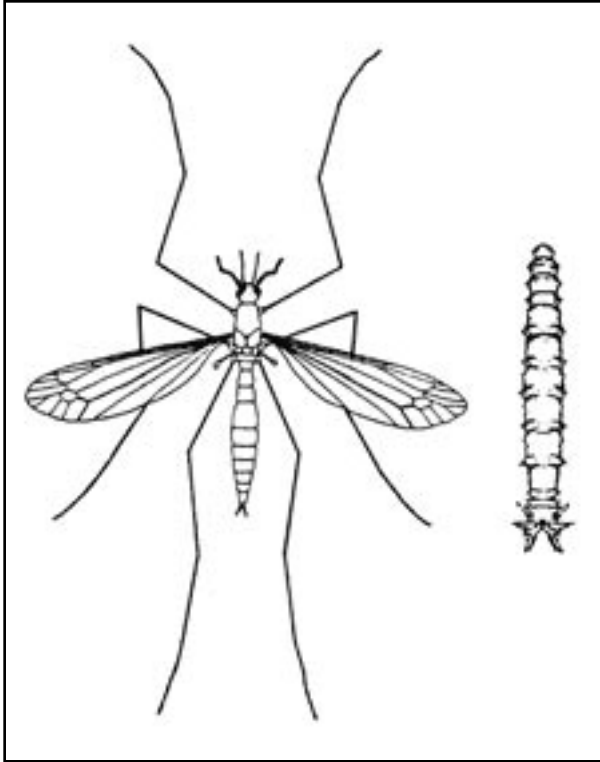
The drawing above depicts large crane fly larvae feeding below a clump of grasses and mixed vegetation. Crane flies (Diptera: Tipulidae) are semi-aquatic detritus feeders as larvae. Adults have been called “helicopters” and “mosquito hawks” because of their large wings and superficial resemblance to mosquitoes. Most species are confined to vegetated margins around permanent water. A few species have adapted to drier habitats allowing them to invade more economically significant plants. One such species, the European crane fly (*Tipula paludosa*), was introduced into the Pacific Northwest, USA, around 1970. Another very similar species, *T. oleracea*, arrived in the same area during the last 10 years.



Identification of adults and larvae

“Higher” flies include the familiar house and stable (above) flies. “Lower” flies (mosquitoes, gnats, crane flies; right) are distinguished by their relatively long antennae.





adults

- large insects with long, fragile legs
- 1 pair of wings and a pair of halteres
- non-feeding, harmless, short-lived

larvae

- relatively large, legless maggots
- thick, grey outer skin
- found in root zone

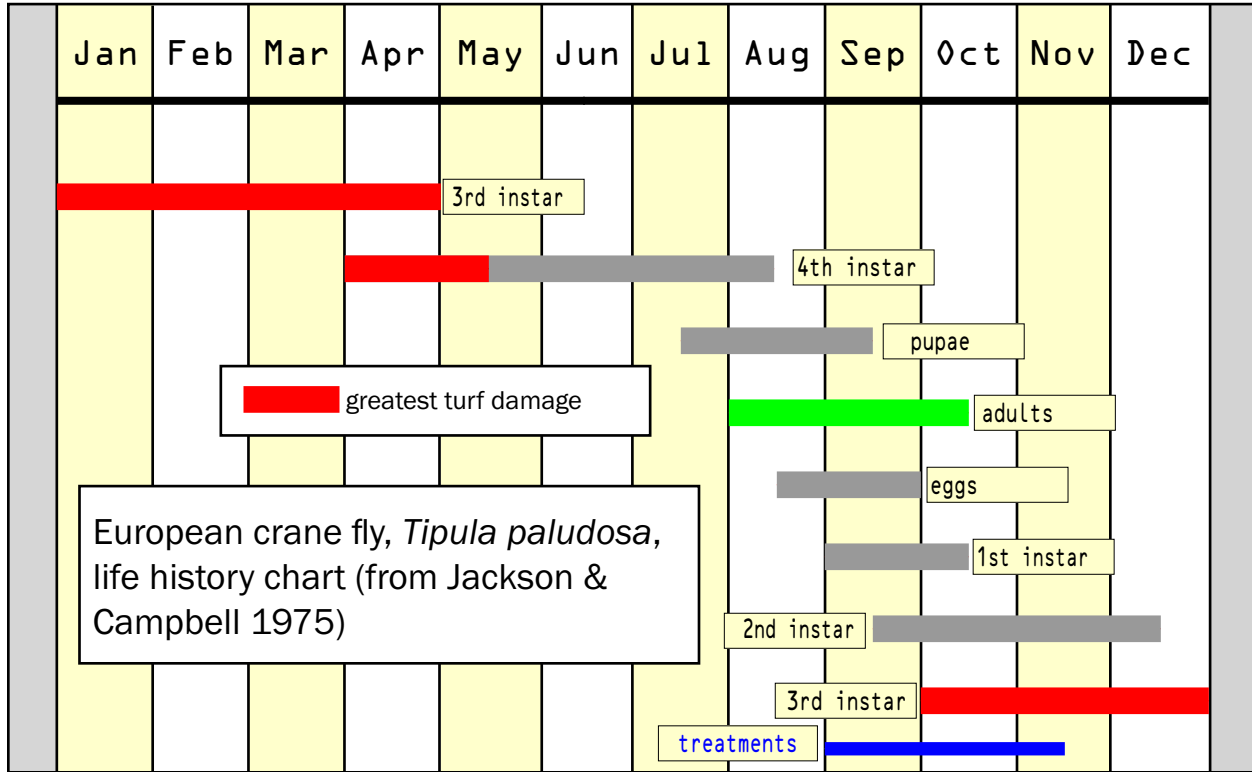


Crane fly eggs (above) and a larva (right) unearthed below grass. Larvae (about 1-1/2" long) are called "leatherjackets" because of their relatively thick, leathery appearance.



Identification of Crane Flies

Adults resemble large mosquitoes but do not bite. Usually brown in color with long, slender wings and long legs. They are weak fliers so generally occur near permanent water. They are attracted to lights during summer evenings. Larvae live in damp soil. Last instar larvae are somewhat larger than adults, typically dark grey in color. Larvae have no legs.



Life history of European crane fly

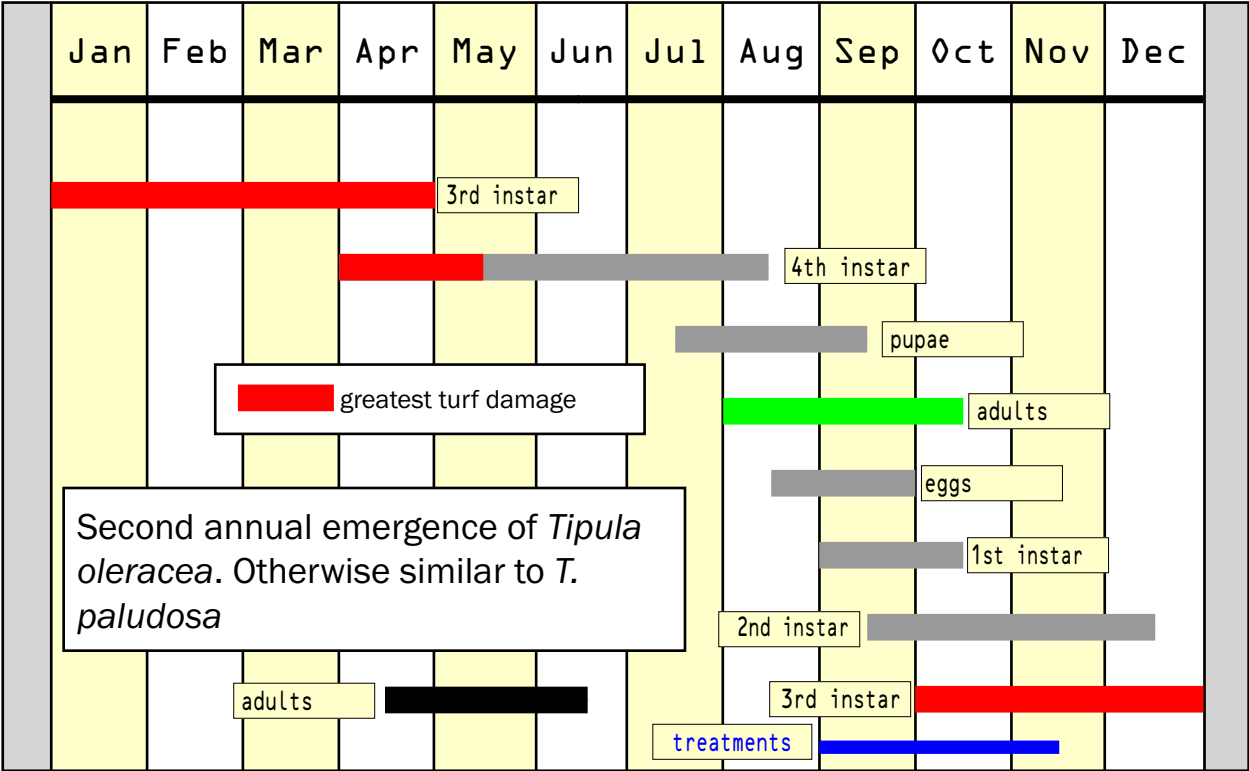
Use this chart to time insecticide applications. Bars represent time periods when the various stages of European crane fly occur. These bars can shift left or right depending on yearly temperature averages. Warm years shift bars left (events happen earlier) while in cool years the bars shift right (events happen later).



Crane fly damage in a Washington lawn. This damage occurred the previous fall and winter but became noticeable during the summer.

Crane fly damage

Only larvae feed and therefore are the stage that does the damage to roots and crowns. Larvae feed during the fall and winter and can be especially damaging in relatively warm maritime climates. Damage becomes evident in late spring and summer as the weather turns warmer and drier. Turf damage can also occur when birds dig for larvae. New plantings can, rarely, be completely destroyed.



Treatment Options

First. improve crop/turf health. Ensure proper fertilization, irrigation, variety composition, treat diseases and nutrient deficiencies.

In turf, reduce irrigation during summer. If possible allow turf to go dormant during summer.

Consider treating new grass plantings, prophylactically, with insecticide in fall. This may be particularly important in coastal areas.

If damage tolerance is low, treat established turf areas where damage is found.

Treatment Options for Control of Crane Fly Larvae in Lawns
apply in early-mid fall

homeowner applied		
Products	Characteristics	Comments
carbaryl	carbamate insecticide	available as a 6.3% Ortho product (2004)
entomopathogenic nematodes (living insect pathogens)	non-toxic, perishable, must be used exactly according to directions	available from garden centers and online; check for efficacy against crane fly
commercial application		
Sevin SL (carbaryl)	carbamate insecticide	label calls for spring application which may not prevent damage
Scimitar GC, Talstar PL (pyrethroid insecticides)	low water solubility; may be less effective but still give adequate control	active ingredient in Talstar (bifenthrin) may be available to homeowners
entomopathogenic nematodes (living, insect pathogens)	non-toxic, perishable, must be used exactly according to directions	check for efficacy against crane fly

Timing Insecticide Applications

- (1) Spring applications target late (large) instar larvae; damage is already done.
- (2) Late summer applications targeted at adults would be ineffective because adults live only a short time but emerge over 4-6 weeks (bi-modal for some species).
- (3) Fall applications target early (small) larvae before too much damage has been done; must not be too early (miss activity) or too late (soil is too cold) but easier to time than spring applications.

Additional information about insect control with entomopathogenic nematodes can be found at www2.oardc.ohio-state.edu/nematodes/default.htm.