

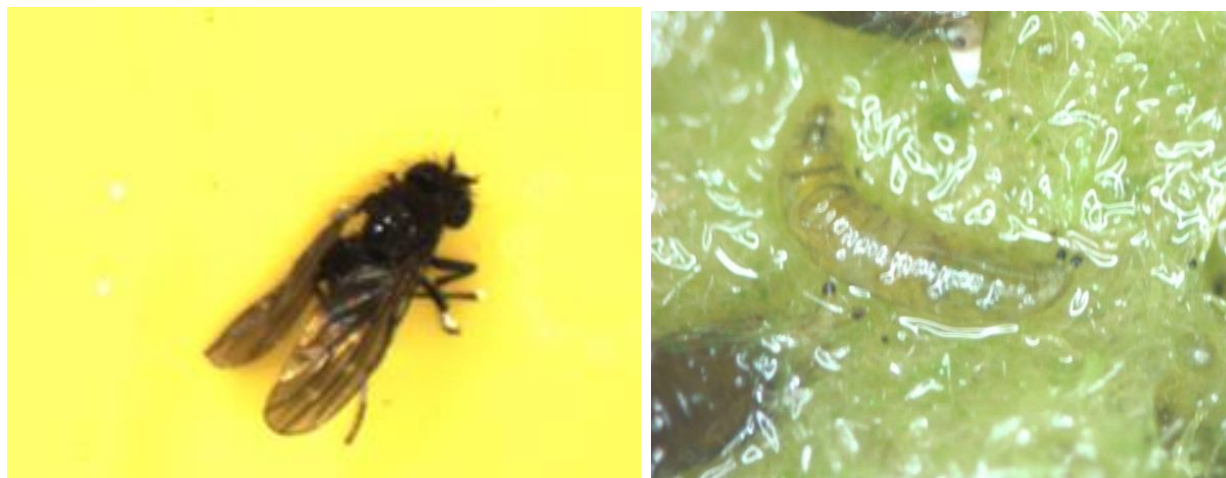
Managing Shore Flies in the Greenhouse

Introduction

Shore fly adults (*Scatella stagnalis*) are a nuisance pest in the greenhouse that do not feed directly on plants. However, the presence of adults and their droppings (black dots or frass) on plant leaves may be objectionable to customers. Shore fly adults may be confused with the [dark winged fungus gnats](#) that are common in the moist greenhouse environment. Management strategies differ between these pests so be sure to correctly identify the pest you are dealing with.

Identification Shore fly adults (*Scatella* spp.) are about 1/8 of an inch long with a robust body and short legs and antennae. Each shore fly wing has about five or six distinctive white or light colored spots. Fungus gnats are long legged delicate flies. Predatory hunter flies have clear wings with no spots and are about twice the size of shore flies.

Figure 1: Shore fly adult (photo by L. Pundt) on left and Shore fly larvae (Photo by J. Allen)



Shore fly larvae are yellowish-brown in color, lack the black head capsule characteristic of fungus gnat larvae and have forked spiracles, or breathing tubes, at their rear end. Shore fly pupae are dark brown, and spindle shaped with forked spiracles at their end.

Figure 2: Shore fly pupa (on left) and shore fly pupa compared to shore fly larvae (on right). Photos by J. Allen



Biology and Life Cycle: Adult shore flies lay up to 300 white, oblong eggs in algae or in very wet areas. Eggs hatch into first stage larvae (maggots) with two forked breathing tubes at their rear. The pupae (protected with a thick skin) are found near algal mats. Shore flies develop from egg to adult in about two weeks (depending upon temperature). Adults can live for two to three weeks.

Scouting: Use yellow sticky cards to monitor for the adults. Adults are often seen resting on plant leaves. Shore flies are stronger fliers than fungus gnats and may fly up when disturbed.

Figure 3: Shore fly adult resting on plant leaves. Photo by L.Pundt



Figure 4: Fungus gnats and shore flies on yellow sticky card. Photo by L. Pundt



Damage: Shore fly larvae feed upon algae and do not directly feed upon plants. However, their frass (droppings) on plants are unsightly. In addition, their presence may be objectionable to customers and can be a nuisance to workers. Shore fly larvae may help spread soil-borne pathogens.



Figure 5: Shore fly droppings (frass). Photo by L. Pundt

Cultural Controls. All life stages of shore flies can be found on or near algae, their food source. Proper sanitation and environmental modification are crucial to managing algae growth. Reduce the moisture and puddling water on greenhouse floors, benches and greenhouse surfaces. The greenhouse floor should be level and drain properly to prevent the pooling of water. Avoid over watering crops, especially early in the production cycle, to allow the upper media surface to dry out between watering's. Select growing media that drains well and avoid compacting the media. Use disinfectants as part of a pre-crop cleanup program for control of [algae](#) on greenhouse surfaces and walkways.

Some propagators attach yellow sticky tape or hopper tape to their irrigation booms to “mass trap” adult shore flies. Keep hopper tape in a refrigerator before use, so it is easier to handle.



Figure 6: Mass trapping shore flies in a propagation greenhouse. Photo by L. Pundt

Biological Controls: Biological controls are best used preventively in conjunction with proper cultural practices.

Rove beetles (*Dalotia coriara*) are generalist predators that feed upon shore flies, fungus gnats and thrips pupae in the growing media. They feed upon the eggs and larvae of shore flies. Adults are best released in the evening. Consult with your supplier for more information on release rates.

Beneficial nematodes (*Steinernema spp.*) infect shore fly larvae but do not always provide sufficient levels of control.

They are not well adapted to the semi-aquatic environment where shore flies are breeding. However, some growers are using repeated sprays with *Steinernema carpocapsae* (Millenium) at high rates against shore flies.

The beneficial hunter flies (*Coenosia attenuata*) have been commonly observed in Connecticut greenhouses. They are not commercially available from biological control suppliers but have been moved from greenhouse to greenhouse on plant material. They prey on shore flies as well as fungus gnats. Hunter flies have shiny wings without any spots and are about twice as large as shore flies. This aerial predator is often found perching on leaves, waiting to ambush its prey.



Figure 7: Beneficial Adult Hunter fly. Photo by L. Pundt

The parasitoid *Hexacloa neoscatella* may also be present in unsprayed greenhouses and help to regulate shore fly populations.

Insecticides

Repeated applications of insect growth regulators can be used against the shore fly larvae. Some insecticides can also be used to reduce adult populations. See the latest edition the *New England Floricultural Crop Pest Management and Growth Regulations Guide: A Management Guide for Insects, Diseases, Weeds and Growth Regulators* for more specific guidelines. Available from [Northeast Greenhouse Conference and Expo](#) and the [UConn CAHNR Communications Resource Center](#).

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