Protecting Yourself from MOSQUITOES

Mosquitoes are a natural part of the environment. They are also one of the most annoying insects in the Northwest Territories.

Each year, they cause a nuisance and economic loss because of their blood-sucking habits and make some areas intolerable for recreation or work. Fortunately, they do not carry disease in the Northwest Territories.

The abundance of ***mosquito*** breeding areas in the Northwest Territories make the ***mosquito*** a pest of enormous proportions.

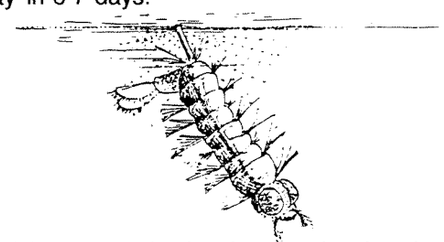
Each summer, as people head for the outdoors, the desire for a ***mosquito*** free environment grows. Although there is no means available to eliminate ***mosquitoes*** completely, people can help maintain ***mosquito*** populations within tolerable levels by following some simple steps.

LIFE STAGES OF THE *MOSQUITO*

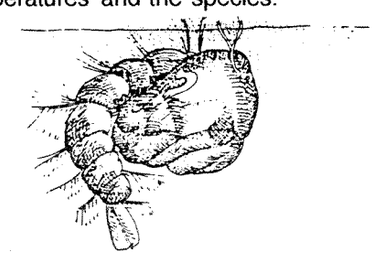
During their life cycle, all ***mosquitoes*** go through four stages of development - egg, larvae, pupae and adult. Stagnant waters are required for the first three stages.

Each female ***mosquito*** lays from one to several hundred eggs at a time. Depending upon the species, eggs are laid singly or in clusters called "rafts" on the water surface, or singly on moist soil where water is likely to collect. Preferred sites for breeding are stagnant waters high in organic matter such as in swamps, temporary spring melt pools, and along weedy edges of lakes or lagoons. ***Mosquitoes*** can also develop in standing water which accumulates around culverts, catch basins, eavestroughs, discarded tires, tin cans, buckets and bird baths.

The larvae or "wriggler", which hatch from the eggs, feed on organic matter in the water. All larvae develop through four larval stages called "instars" before reaching the pupal stage. In early spring, when water temperatures are low, the larvae may require a period of 30 days to reach larval maturity. In midsummer, when waters are warmer, larvae may reach larval maturity in 6-7 days.



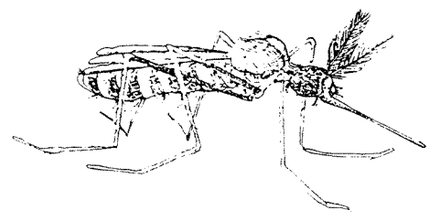
When fully matured, the larvae develop into pupae or "tumblers", which resemble a large-headed comma. This stage is non-feeding and lasts from one to four days, depending upon water temperatures and the species.



The adults emerge through a split in the pupal skin. They pull themselves out onto the water surface to rest on the empty skin while the legs and wings stiffen and then fly away.

Mating usually takes place within a few days of emergence, during which time both sexes feed on plant juices and nectars. After mating, the female searches out a blood meal as blood is required to initiate egg development. The male dies shortly after mating. Following engorgement, the female will remain relatively inactive to allow egg development to be completed and then deposit her eggs.

Many species of ***mosquitoes*** are encountered in the Northwest Territories. They may differ in details of their life stages such as number of generations in a year, preferred source of their blood meal, and water temperature requirements for larval development. Most emerge in the spring while others emerge in the fall.



WHAT CAN WE DO?

1. ***Eliminate mosquito breeding areas:***

   - fill in low areas to prevent standing water; empty water which accumulates in stored boats;
   - remove old cans and buckets, up-end buckets or other containers which are left outdoors;
   - inspect eavestroughs and clean out any that are plugged;
   - ensure that drainage ditches are not clogged with garbage, and that ditches and driveway gutters drain properly;
   - dispose of, or empty old tires;
   - change water in bird baths or wading pools every week; and
   - encourage insect-eating birds to use your property.

2. ***Reduce mosquito resting areas:***

   - trim hedges; mow weeds and grass; and remove unnecessary trees and shrubbery. This provides less protection for adult ***mosquitoes*** from the sun and wind.

3. ***Prevent mosquitoes from entering your house:***

   - ensure windows and doors are closed tightly and that screens are in good repair;
   - close fireplace and woodstove dampers when not in use; and
   - ensure all doors and unscreened windows remain closed when not in use.

4. ***Personal protection:***

   - light-coloured clothing is less attractive to ***mosquitoes*** than dark clothing. Long-sleeved shirts, trousers rather than shorts, socks, and hats are also helpful;
   - apply repellents. Protection may last up to three hours, but more frequent applications may be required if a person is perspiring heavily or the repellent is rubbed or washed off. Apply repellent to all exposed skin and treat clothing, particularly around the collar and cuffs; and
   - avoid using perfumes, aftershaves, hairspray, etc. when outdoors.

Insect repellents provide some relief. They usually contain DEET. Prior to use of the repellent, be sure to always read the label following all instructions. Repellents are not recommended for use on infants.

Some people are highly sensitive to insect bites. To soothe itching and swelling, antihistamines and anaesthetics are available at the local drugstore. A dilute solution of baking soda in water applied to the bite also helps reduce the itch and swelling, while a little baking soda in the bath water will assist in a scratch-free sleep.

Protecting Yourself from BLACKFLIES

Black flies are part of the natural environment. They also are one of the most annoying and serious insect pests affecting people in the Northwest Territories. Black fly activity occurs a few weeks after the ice leaves streams and rivers in the spring, and continues until the first frost in the fall.

Black flies usually attack during daylight hours, particularly on cloudy, warm days in sheltered areas. In open areas, especially during clear, hot weather, there are two daily peaks in biting activity. The first occurs in early morning, while the second and more severe peak occurs in the late afternoon. Black fly activity increases at the approach of storms and on humid, cloudy days however, rain and cold inhibit activity.

Black fly attacks may be massive and vicious, or in such small numbers that they are barely noticeable. A black fly bites quietly and painlessly. You may not be aware of the bite until you notice blood oozing from your skin. Black flies often crawl into your hairline or through openings in your clothes. The bites usually occur behind your ears, around your neck and belt line, and on the lower parts of your legs and arms.

Scratching the bite should be avoided. It can cause skin infections. Toxins injected during a severe ***black fly*** attack can cause headaches, nausea, fever, and swollen, painful glands. Transmission of disease or parasites by ***black flies*** is unknown in Canada.

LIFE CYCLE OF *BLACK FLIES*

Black flies have four stages of growth: egg, larvae, pupae, and adult. The first three stages require fast-moving water.

Females lay single layer clusters of yellowish to black eggs on the surface of rocks, sticks or vegetation located below water level in swift moving streams and rivers. The eggs hatch within a few days or months depending on the species.

The larvae hatch from the eggs, and can move about by clinging to silken threads they spin or by a looping movement. They attach themselves to rocks or vegetation in the swiftest portion of the water, and feed by filtering microscopic particles in the water. Mature larvae measure about 6 mm long, and are gray or brown in colour. In two to three weeks, at summer temperatures, they are ready to pupate.

When fully mature, the larvae develop into pupae. The larvae spin a vase-like cocoon and pass into the pupae stage which lasts only a few days. The adult emerges quickly and flies off in search of food. The females of the biting species require blood meals before they can mature their eggs. The males (and females of the non-biting species) feed on nectar and plant juices.

Black flies overwinter in either the egg or larval stage below the water level and resume development after spring breakup. There is usually only one generation of ***black flies*** per year in the Northwest Territories.

WHAT WE CAN DO?

1. Remember ***black fly*** attacks are most severe in the morning or late afternoon, and before storms. Try to reduce activity in infested areas during these times. Buildings, tents and enclosed shelters are safe havens from attack. Attacks are more common in the bush than in open, wind-swept areas or on islands.

2. **Personal protection:**

   Wear appropriate clothing. Keep shirt sleeves and fronts tightly closed and your trousers tucked inside socks or boots. Light coloured clothing such as orange, yellow and light green is less attractive to black flies than dark colours such as blue, purple or red. Shoulder length, fine-webbed head nets can be effective.

   Smudges are very effective in keeping ***black flies*** away from the immediate area.

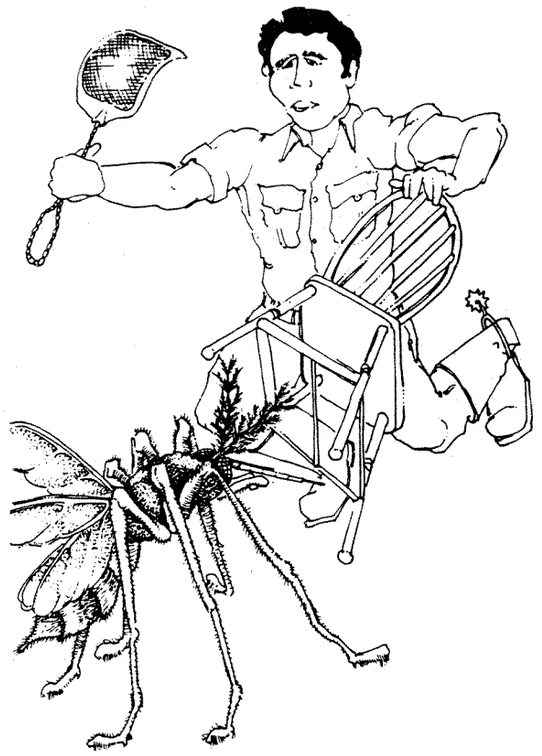
   Use insect repellents safely. DEET is one of the best all-purpose repellent chemicals available. Spray all exposed skin and all clothing, especially around cuffs, collars, waistbands, and the front of shirts and trousers. Keep spray away from eyes. Reapply repellent if it is washed off, or its effectiveness is reduced over time. Before using any repellent, read the directions on the label carefully. Care should be taken as solvents found in most repellents can damage synthetic fibres and plastics. The use of repellents on infants is not recommended.

   Some people are highly sensitive to insect bites. Antihistamines and anaesthetics available at your local drugstore can soothe itching and swelling. A dilute solution of baking soda and water applied to the bite also helps remove the itch and swelling. A little baking soda in bath water will assist in a scratch-free sleep.

3. ***Black flies*** have natural predators. These predators, including insectivorous birds (ie. swallows) and other insects (ie. dragonflies) help reduce ***black fly*** numbers. The birds are opportunistic eaters of ***black flies***, and are not an effective means of control by themselves. These natural predators of ***black flies*** and other pests can be attracted with suitable nesting boxes on poles.

City of Yellowknife

Source: Resources, Wildlife, and Economic Development
Government of the Northwest Territories



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