

Why all the Black Flies?

If you are noticing more Black flies this year, there is a reason!



If you live in the Magic Valley, you have probably noticed more black flies also known as buffalo gnats swarming the ears of livestock or your face when outside. A mild winter and a warm spring got Black Flies numbers off to an early start, but to really understand the increase in the population this year following two years of relatively low numbers we need to look at their biology and the control work done by Twin Falls County Pest Abatement District.

Unlike mosquitoes that need still water, Black Fly larva require moving water to bring them food. The larva attaches in the water to rocks

and grass and filter the water for food. The larval stage lasts for several months in the winter or as little as a week in the summer. The cleaner, faster and more turbulent water the better! Once the larva hatch they are capable of flying 20-30 miles, even more if the wind is right. Female

Black Flies spread out in search of a blood meal. The adults don't live long, generally less than two weeks, they return to flowing waters such as a river or canal to lay up to 600 eggs. In the summer months these eggs will develop rapidly and Black Fly adults will hatch in as little as 7-10 days. This high reproduction rate and short life cycle, leads to rapid colonization and exponential growth of populations.

A treatment program in TF County that included winter treatments in 2010 and 2011 gave us great results. However, there is always a certain amount of

BF that fly in from untreated breeding sites outside the County. That 20-30 mile flight range means that that control is a regional issue. So why were our winter treatments so effective the past two years? The Snake river is one of the largest overwintering habitats, and by treating there we removed much of the source for BF that colonize Canals in surrounding area. In short the whole magic valley benefits from these treatments. Unusually high river flows kept TFCPAD from treating the Snake River during the winter months. Due to the cost. Some treatment was conducted early spring, but by then many BF had already hatched and set off to colonize the canals of the Magic Valley. TFCPAD is still treating the canal systems as we have for the past couple of years, sampling for larva and treating when appropriate.

Why are we concerned ?

Besides being annoying to people Black Flies (BF), reduce weight gain in livestock, affect their behavior and spread disease. An outbreak of Vesicular Stomatitis (VS)

transmitted by BF occurred once before. Resulting in quarantines and loss of production. An outbreak would have a serious impact.

This year it has already been found in New Mexico. If it finds its way to the Magic Valley, treatment of BF will need to be conducted region wide!

Black Fly Lifecycle Facts:

Larva develop only in running water.

1 mile of river or canal can produce up to 1 billion , per mile, per day

Adults can fly 20-30 miles or more.

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Black Fly Life Cycle



Above: Black Fly Adults common to Magic valley, dime for size comparison.

Left: *Simulium vittatum* bites only livestock

Right: *Simulium bivittatum* bites both livestock and people.

Below: Black Fly Pupa on rock.



How to Control them!

By your self, there is little an individual can do to reduce black fly populations. However, if you have live stock, there is something you can do to provide some relief.

Black flies do not like to go in sheds, So having some sort of shade can provide relief. Ear masks and face masks can also help as well as some repellants. Even Vaseline rubbed in horses ears can provide a barrier against the black flies trying to bite.

Black Fly Control is best accomplished on a geographic regional level by targeting the larva before they hatch in canals and rivers. A natural soil bacteria *Bacillus thuringiensis* subspecies

israelensis or (Bti) is applied to the water. Larva feed on the bacteria and die. It does not effect people, fish or livestock and is very safe to use.

In looking for a weak link in Black Fly biology that could be used to achieve better control. We found that Black Fly reproduction continues even in the winter. Larva grow slowly, but have a special adaption, triggered by the cold that allows them to hatch and immediately lay eggs without feeding or mating. Black Fly numbers can increase in overwintering habitat, even during the winter!

During the winter, canals are dry and the overwintering habitat is limited, so winter treatments can greatly reduce the population. Overwintering larva that hatch in the spring spread out and are the colonizers of the canals. By reducing the number we start out the year with lowers the numbers we see during the rest of the year.