

BioRational Vector Control LLC.



A multidisciplinary team with over 50+ years of experience led by Dan Ariaz, who has won numerous awards and is internationally recognized as an expert in establishing effective control programs that work with a minimum of resources and capital.



Philosophical Principles

To provide the most effective biting fly control, including mosquitoes, sand flies and black flies, utilizing environmentally friendly products that are innocuous to non-target organisms.

To focus on safe and sane use of cost effective methods and principles for the control of pestiferous insects, in accordance with the guidelines recognized by international organizations such as the Centers for Disease Control and Prevention, United States Environmental Protection Agency, and the World Health Organization.

To make it a priority to insure public

To provide a harmony between business and recreational interests coupled with effective control.

To use the most effective products available which are cost effective, easy to use, environmentally friendly and compatible with all current application equipment available.

Technologies

Use design criteria and principles that allow for aesthetically pleasing development without production of nuisance or disease carrying insects.

Balance control methodologies with naturally biodegradable materials that can be used in domestic water supplies to control larvae, and by using the most up-to-date technology in equipment and pesticides for controlling adult mosquitoes and biting flies

Utilize the resources of a team that that has effectively managed over 100,000 acres of wetlands in a tourist based economy with over 5.5 million visitors annually.





Thank you for considering BioRational Vector Control LLC. for your specialized control project. We offer entomological, aerial, logistical services, equipment, training, as well as soft and environmentally compatible chemical control expertise that can be tailored for your specific needs:

Preliminary Site Evaluation

Mosquitoes and Sand Flies assume increased importance when populations are allowed to increase in a recreation area. Rainfall, tidal intrusion and fluctuations may significantly increase pestiferous populations. Inadequate control measures coupled with an influx of visitors increases human/insect interactions increasing the level of nuisance. In some instances, those people who are sensitive or are allergic, view biting flies as an added psychological burden. Prior to developing a control strategy, preliminary site evaluations need to have five primary components addressed:

1. Establishment of surveillance.
2. Assessment of the overall impact and nuisance threat.
3. Coordination and development of an overall control strategy.
4. Identification of potential Source / Solid Waste Reduction
5. Employee Training / Education

These components are essential in any routine biting fly surveillance and control regimen. Any control program should first establish a central coordinator to insure communication and interaction among all the interests involved. The control program will be developed with the coordinator as the primary point of contact for collecting and disseminating surveillance information and for making decisions. The coordinator should first establish lines of communication. Each of the components in the control plan requires the gathering of background information of essential equipment and personnel.

1: Establishment of Surveillance

The surveillance program provides information necessary for assessing target pest populations and determining the need for control. Required background information includes identity of the species on the property and any ecological traits, which may be peculiar to the area, such as unique larval habitats, dispersal patterns, or insecticide resistance.

Surveillance needs to emphasize techniques such as landing rate counts taken in the morning, evening, or both, in order to provide general information concerning mosquito and sand fly biting activity, population levels, and changes in population densities. A mosquito trapping program will also be included. Adult specimens collected by trapping provide specimens for identification and screening. Generally, battery powered traps will be used such as the CDC miniature light trap. Adult landing rate counts and adult collections near human activity centers will also be conducted. Initial mapping of the affected area including an aerial survey will aid in assessing the scope of the problem and in locating larval sources.

Part of the evaluation team will include entomological specialists who are familiar with mosquito and sand fly biology. Although mosquito identification and control requires specialized training, team members can also provide training in standard methods for taking landing rate counts and for placing and retrieving traps.

After surveillance is initiated, the coordinator will establish a surveillance system in the field.

2. Assessing the Overall Threat and Nuisance Impact

Accurately determining the overall threat and nuisance impact relies on the availability of background information and data from the surveillance program. Information about the extent of human exposure to biting flies, as well as, species composition is needed. Knowledge of the composition of the human population and the composition of the mosquito population are equally important. Furthermore, if analysis of background information indicates that a significant potential exists for transmission of arthropod-borne pathogens, the surveillance program must include a disease detection component.

3. Coordination of Control

The Coordinator must have the background information and results of the surveillance program to make decisions about the need for control. Centralization of this process will insure that areas most needing control are treated first and to avoid duplication of effort. A complete set of detailed maps will provide a basis for identification of control areas. If local capabilities for control are not sufficient, additional resources will be identified. In some instances, formal memoranda of agreement between the cooperating agencies to facilitate travel and to identify financial and legal responsibility may be necessary. Purchasing procedures of pesticide supplies, equipment, and other materials may be required. Identification of potential sources and contractors may also be necessary to

speed the process of materials and services. If the coordinator makes the decision to apply control measures, the application process and subsequent effect must be monitored. BioRational Vector Control LLC. relies on the support of ARRO-GUN SPRAY SYSTEMS LLC. to supply the only known specialized amphibious equipment designed for land or aquatic environments.

Specialists must ensure that applications are performed according to label specifications. Surveillance data must be analyzed to determine whether target populations were reduced and if retreatment is required. Other activities that must be considered in the control plan include the protection of mosquito control assets, public information, worker safety, equipment upkeep, as well as the design and storage of chemical products to reduce the danger of contamination or spill.

4. Potential Source / Solid Waste Reduction

In many instances, from cursory viewing of aerial photography, breeding sources can be identified as potential breeding sources from salt marshes, overgrown water impoundments, and intertidal lands. Many tropical species of mosquitoes have a wide habitat tolerance, surviving or thriving in brackish and polluted waters. Prevention, by managing these habitats prior to adult emergence is preferable to dealing with a full-blown problem at a later date. However, International treaties, agreements, or regulatory constraints need to be considered prior to manipulating these types of sources. For example, treaties such as an international migratory bird agreement concerning wetlands of significance may cause these areas to be protected. These same areas may well be prolific breeders of problem mosquito species and such protection may inadvertently protect the pest. Therefore, it is imperative that statutory procedures be adhered to. If possible, reduction of mosquito breeding sources will be considered. Physical intervention that modifies breeding habitats by draining, ditching, runnelling may be considered. Methods that cause minimal impacts will have priority and in some instances may enhance the natural “flushing” processes.

5. Employee Training / Education

BioRational Vector Control LLC. offers training for those employees who will be directly involved in the continued control efforts on site. Employees can be trained in insect biology and identification, control techniques, proper and safe use and application of control materials, methodologies, and equipment. Opportunities are available for staff to be trained off or on site.

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