Butte County Mosquito and Vector Control District

POLICY MANUAL

POLICY TITLE: **Integrated Vector Management**
POLICY NUMBER: **4040**

4040.1 Integrated Vector Management Program. All control practices of the District shall be based on a Integrated Pest Management (IPM) approach, in which the various elements of an IPM Program are followed. As stated in the Healthy Schools Act of 2000 the definition of IPM is "…a pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques such as monitoring for pest presence and establishing treatment threshold levels, using non-chemical practices to make the habitat less conducive to pest development, improving sanitation, and employing mechanical and physical controls. Pesticides that pose the least possible hazard and are effective in a manner that minimizes risks to people, property, and the environment, are used only after careful monitoring indicates they are needed according to pre-established guidelines and treatment thresholds." The United States Environmental Protection Agency (EPA) defines IPM as "an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment." The District has renamed Integrated Pest Management to Integrated Vector Management (IVM) to best reflect the District's objectives, goals, programs, and missions, but the definition of IVM is the same for IPM.

4040.1.1 The Butte County Mosquito and Vector Control District's Integrated Vector Management Program consists of the following components;

4040.1.1.1 Surveillance. Monitoring the populations of vectors and vector-borne disease to assess risks and treatment thresholds. The District's Entomology Department (Lab) monitors mosquito and other vector populations, detects mosquito-borne and vector-borne disease by testing vectors, mosquitoes, sentinel chickens, and dead birds for the presence of pathogen, parasite, or arbovirus, and monitors weather and climate variables. In addition, the District relies on the surveillance conducted by the District's Mosquito and Vector Control Specialists in the field and the public.

4040.1.1.2 Source Reduction and/or Elimination (Physical Control). Physical control is an environmental manipulation that results in the reduction or elimination of mosquito-breeding sites. It is the best means of mosquito control. The District actively works and educates property owners, land managers, and municipalities to reduce the amount of water used for irrigation, actively participate in the design of any new developments or restoration projects, and the overall minimization of standing water on a property.

The Board declares its intent to use source reduction as the preferred method of control and to consistently work toward problem elimination in preference to shorter lived controls.

When appropriate, voluntary source reduction by the land or property owner, or responsible agency will be sought.

If the magnitude of the problem and public interest argue for the District making all or part of the necessary corrections, the District will consider making such corrections or assisting the landowner in making make the necessary corrections. To this end, the Board will budget appropriate amounts of money to help landowners correct problems. Because the size of land holdings and multiple ownership makes specific limitations inappropriate, but recognizing that some limitations are necessary, the Board of Trustees shall periodically review the expenditures for all equipment or contract costs under this Section which exceeds $1,200.00 per year of District costs for any source reduction site.

The District Manager may agree to cost sharing with a property owner for reimbursement of District cost, as a way to reduce District costs for projects which otherwise might exceed this discretionary limit. When appropriate and within the limitations of the budget, equipment rental is authorized, or District owned equipment may be used.

4040.1.1.3 Public Education and Outreach / Best Management Practices to Reduce Mosquitoes. The District Public Education Department's primary goal and responsibility is to inform and protect residents from mosquitoes and vectors, vector-borne diseases, and source reduction methods through education. The District strives to accomplish this by informational display booths at community events, K-6 grade educational presentations and programs, service/community group presentations, supplying educational material such as, reports, brochures, pictures, videos, and much more, open house events, tours, as well as hosting the District's website, public service announcements, newsprint advertising, billboard advertising, and press releases.

4040.1.1.4 Biological Control. Control of mosquitoes and other vectors by disrupting their ecological status, through the use of organisms that are natural predators, parasites, or pathogens. Although the District has experimented and tried other forms of biological control, the use of mosquitofish (Gambusia affinis) has become the most efficient biological control method used in mosquito control. Introduced to California in 1922, mosquitofish have become an attractive and effective alternative to pesticides. Mosquitofish are planted to control mosquito populations in mosquito-breeding sources such as irrigation ditches, industrial, ornamental, and artificial ponds, un-maintained swimming pools, semi-permanent and permanent urban sources, and at times rice fields and wetlands. California law allows the District to plant fish in water sources other than those located on private property. To avoid competition with sensitive native fish and other native aquatic organisms, the District does not stock mosquitofish in habitats where such species are known to be present.

Using one living organism to reduce the numbers of another organism is the basis for traditional biological control. In mosquito control, it is customary to label living organisms as beneficial, when they exert any significant effect which reduces a mosquito population. These effects may be direct, such as predation or parasitism, using mosquitoes as food, or killing mosquitoes with some sort of toxic material which is naturally produced. Indirect effects include competition for habitat or biological habitat alterations which reduces the suitability of habitat for mosquitoes, or reduces the food for mosquitoes.

The Board of Trustees recognizes that using biological control as a method to reduce mosquito populations is as much an art as a science.

4040.1.1.5 Chemical Control. Larvicide. Larvicides are public health pesticides registered for use by the California Department of Pesticide Regulation (CDPR) to target and control immature stages of mosquitoes (larvae and pupae). Larvicides are used when physical control, public education and outreach, and biological control measures cannot or have not reduced or eliminated vector populations in a timely fashion. The District uses the most environmentally friendly and target specific larvicides. The application of larvicides are made in accordance with their respective labels. Larvicides can be applied by ground and/or air.

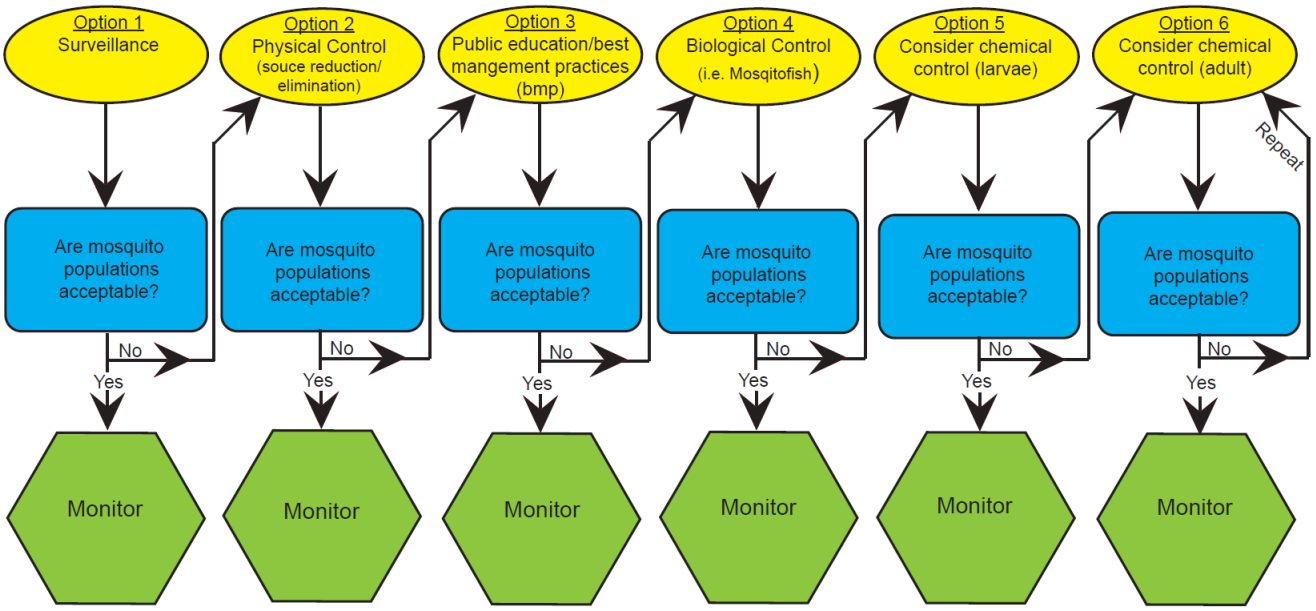
4040.1.1.6 Chemical Control. Adulticide. Adulticides are public health pesticides registered for use by the California Department of Pesticide Regulation (CDPR) to target and control adult mosquitoes. Adulticides are used when physical control, public education and outreach, biological control, and larviciding measures cannot or have not reduced or eliminated vector populations in a timely fashion. The District uses the most environmentally friendly and target specific adulticides. The application of adulticides are made in accordance with their respective labels. Adulticides can be applied by ground and/or air.

The District recognizes that various synthetic and natural public health pesticides provide minimal risks to humans, animals, and the environment and effective control of mosquitoes and other vectors.

The selection and use of appropriate public health pesticides is at the District Manager's discretion. The District Manager may delegate discretionary decisions to other District employees and allow them to make choices of such pesticides for use in the day to day operation of the District's Integrated Vector Management Program.

The District further recognizes that it has a responsibility to vigorously defend the beneficial uses of pesticides and source reduction practices for mosquito and vector control, to keep these uses available to protect the health of the residents in the District.

4040.1. 2 Vector and mosquito populations and breeding sites are assessed by District employees in accordance to the following flowchart;



4040.2 The Board of Trustees recognizes that the use of an Integrated Vector Control Program ~~control~~ requires subjective judgments that can only be made by trained and skilled people who understand the alternatives and have evaluated the various conditions that exist, including the benefits, as well as the risks which are associated with all control activities.

4040.2.1 The Board of Trustees accepts the general principles that:

4040.2.1.1 Exclusion or quarantine type activities are preferable to allowing a public health vector or disease causing agent to enter a new area.

4040.2.1.2 Source reduction or source elimination (control or elimination of standing water) is preferable to other control methods.

4040.2.1.3 Preventable mosquito breeding areas should get preferential attention for source reduction work.

4040.2.1.4 Biological, physical, and chemical control methods are not mutually exclusive, and all should be considered, and ideally used in concert.

4040.2.1.5 Legal control or abatement proceedings may be appropriate as a reasonable part of an Integrated Vector Management Program.

4040.2.1.6 Risk assessments and/or threshold levels for pest mosquito populations as well as for disease vectors is the most reasonable basis for deciding when control is necessary, except when practicing prevention.

4040.2.1.7 Surveillance of populations of mosquitoes and vectors is considered to be fundamental to determining when ~~a~~ risk assessment and/or threshold level are exceeded, and when control is necessary.

4040.2.1.8 Risk assessments and/or threshold levels determination for public health must consider costs. This involves trying to assign an economic value to good health as a benefit to be balanced against material costs or environmental risks associated with any control practice.