

**2017**

Application  
Deadline  
April 7<sup>th</sup>, 2017

**Wyoming**

**Emergency Insect Management  
Grant Package**

Wyoming  
Emergency Insect  
Management  
Program

Wyoming Game and Fish - Wyoming Department of Health - Wyoming Livestock Board - Wyoming Department of Agriculture - Wyoming Governor's Office

## Grant Form and Selection Criteria.

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*Note – This packet contains 32 pages including cover.*

## 1. Introduction:

The 2003 Wyoming Legislature passed the Emergency Insect Management Program Act (EIMPA) (W.S. 11-5-401 through 11-5-405) to provide funding to state agencies and political subdivisions such as cities, towns, counties, weed and pest districts and special districts. This funding is to provide supplemental help to manage emergency outbreaks of insect pests and insect vectors of diseases for the protection of human health and safety, animal health including livestock and wildlife, agriculture and natural resources.

## 2. Definitions:

**Emergency** -An emergency occurs when the urgency and risk to human interests of an actual or potential outbreak of insect pests or insect vectors cannot be adequately addressed or managed with an applicant's available resources.

**Grant Funds** - are funds provided by the EIMPA and can be granted for not more than 50% of the total program cost to the grantee, except as provided by the act.

Only 20% of EIMPA funds may go to administrative costs, equipment and mapping activities during the first three years of a management program, and not more than 10% of these funds shall be used for those purposes in subsequent years.

**Matching Funds** - are provided by the Grantee and must make up 50% or more of the total cost of the program as determined by the committee, with the exception of certain insect pest outbreaks.

When grasshoppers and Mormon crickets are controlled before the incipient population occupies 2000 acres, the cost share from the EIMPA can be as high as 75%.

Grantee funds spent outside of the approved beginning and end dates of an approved program cannot be claimed as match.

The EIMC has the right to request specific documentation of Matching Funds from the Grantee, if the committee believes such documentation is necessary.

## 3. Grant Information:

For information concerning this program, contact:

**Slade Franklin – Weed and Pest Coordinator**  
**Wyoming Department of Agriculture**  
Phone: 307-777-6585      Fax: 307-777-1943  
Email: [slade.franklin@wyo.gov](mailto:slade.franklin@wyo.gov)

## 4. Application Procedures and Instructions:

Pay special attention to the Selection Criteria for Grants section as it contains vital information about the grants and the basis for selection.

Complete the attached application (**Appendix C – Grant Application**) using extra sheets as needed (maximum of 10 pages: 4 page application, 6 additional sheets, plus requested attachments).

### 1. Applicant information

- a. All information must be completed and legible.
- b. Be sure to provide the name and title of the person who will have the authority to sign a contract between the department of Agriculture and your organization. (*ex. Town Mayor, County Commissioner, Board Chairman*)

### 2. Grant Request

- a. Provide your program a name the committee can refer to.
- b. Indicate the common name of the insect pest or insect vector and indicate if it is listed on either the Wyoming Designated Pest list or your County's Declared Pest List. Both lists are available and updated at [www.wyoweed.org](http://www.wyoweed.org).
- c. Indicate the amount of the EIMPA Grant Funds you are requesting, the amount of Matching Funds you have and add the two for the total amount.
- d. Be sure to list any endangered or threatened species that may be impacted by your program.

### 3. Land Units Benefited

- a. Provide the number of acres in the management area, by ownership. In some cases, the program area will be larger than the number of acres requiring treatment.

### 4. Partners

- a. List all partners, INCLUDING YOUR ORGANIZATION, that will participate in the program or that will provide matching funds toward the program.
- b. Indicate the amount of their matching funds and whether the funds are cash (use a "C") or In-kind (use an "I").

### 5. Budget

- a. List an approximation of how much Grant, Matching Dollars, and Matching In-kind funds will be spent in the provided categories. The total for Matching Funds – Cash and Matching Funds – In-Kind must match the Total listed under Partners (Section 4.)
- b. Grant Funds may not be used for full-time employee salaries; only part-time salaries.
- c. Using a format similar to that outlined in the Section, give an itemized account of how the Grant Funds in the individual categories will be spent.

### 6. Program Narrative

- a. Complete the program narrative in six pages or less, following the format provided in the grant application. The completed grant should not be longer than 10 pages plus requested attachments.
- b. **Proposals with incomplete narratives will not be considered by the committee for approval.**

## 5. Wyoming Pollutant Discharge Elimination System (WYPDES) Program

### A. Background

On October 31, 2011, EPA issued a final NPDES Pesticide General Permit (PGP) for point source discharges from the application of pesticides to waters of the United States. This action was in response to a 2009 decision by the U.S. Sixth Circuit Court of Appeals (*National Cotton Council, et al. v. EPA*) in which the court vacated [EPA's 2006 Final Rule on Aquatic Pesticides](#) and found that point source discharges of biological pesticides, and chemical pesticides that leave a residue, into waters of the U.S. were pollutants under the Clean Water Act (CWA). As a result of the court's decision, NPDES permits are generally required for these types of discharges as of October 31, 2011.

Effected operators include those that apply pesticides that result in discharges from the following use patterns: (1) mosquito and other flying insect pest control; (2) weed and algae control; (3) animal pest control; and (4) forest canopy pest control. The permit requires permittees to minimize pesticide discharges through the use of pest management measures and monitor for and report any adverse incidents. Some permittees are also required to submit NOIs prior to beginning to discharge and implement integrated pest management (IPM)-like practices. Record-keeping and reporting requirements will provide valuable information regarding where, when, and how much pesticides are being discharged to waters of the United States. Pesticide application use patterns not covered by a Pesticide General Permit may need to obtain coverage under an individual permit or alternative general permit if they result in point source discharges to waters of the U.S.

In Wyoming, the Department of Environmental Quality (DEQ) has the primary permitting authority for the CWA unless applications occur on tribal lands. Applicators and operators who have questions concerning their compliance with the Wyoming Pollutant Discharge Elimination System (WYPDES) program should refer all questions to DEQ's website ([http://deq.state.wy.us/wqd/wypdes\\_permitting/index.asp](http://deq.state.wy.us/wqd/wypdes_permitting/index.asp)) or contact their office at 307-777-6081.

For applications on tribal lands, applicators and operators should refer to the EPA's website (<http://cfpub.epa.gov/npdes/index.cfm>) or contact EPA Region 8 at 303-312-6256.

**As with all applicable federal and state laws, it is the responsibility of the grantee to ensure any EIMG funded program is in compliance with the WYPDES and/or NPDES permitting programs.**

## 6. Selection Criteria for Grants

The following criteria will be used by the committee to select grant recipients. Grant applicants should keep the following criteria in mind when completing the grant application.

**Remember: An emergency occurs when the urgency and risk to human interests of an actual or potential outbreak of insect pests or insect vectors cannot be adequately addressed or managed with an applicant's available resources.**

### A. Criteria Used for All Applications

1. **Goals:**
  - (a) Protect human health and safety, animal health including livestock and wildlife, agriculture and natural resources.
  - (b) Detect early, rapidly assess new insect infestations for potential threats and rapidly respond to threats.
  - (c) Eradicate infestations when possible.
  - (d) Reduce reservoirs of infected or potentially infected vectors.
  - (e) Contain and reduce outbreak infestations.
  - (f) Survey and monitor known infestations.
  - (g) Identify habitats, life cycles, vulnerabilities, and management strategies of insect pests.
  - (h) Minimize impacts to non-target species and the environment.
  
2. **Eligibility to Participate:**
  - (a) Any State agency or political subdivision may apply for grant funding. This includes insect abatement districts formed under W.S. 18-12-101 through W.S. 18-12-140 (Improvement and Service Districts).
  - (b) Preference will be given to programs using a large number of the components of an Integrated Pest Management (IPM) Program.
  - (c) Preference will be given to programs with a large number of cooperators including cooperating local, state and federal agencies and private landowners.
  - (d) Preference will be given to political subdivisions at their full taxing level (maximum allowed by statute), including other service fees, to receive funds under this program.
  - (e) For previous grant recipients, past compliance with reporting requirements is mandatory (see Appendix D – Final Report).
  
3. **Coordination:**
  - (a) Even though each county or management area will have different needs and priorities, working toward the same goals through the IPM system will allow local flexibility by selecting tools appropriate for local conditions.
  - (b) The program will be coordinated among the various insect management entities within a county or management area.
  - (c) Management areas can be coordinated across county boundaries to meet the management needs of the area.
  - (d) Grant requests by entities will meet the goals developed by the EIMC.

## Criteria (Cont.)

4. **Integrated Pest Management Program:**
  - (a) All management programs will be based on the IPM system, which uses a wide variety of tools to accomplish the goals of the program.
  - (b) IPM programs can include education, prevention, culture, chemical, biological, mechanical, research, survey and monitoring components.
  - (c) See appendix A & B.
5. **Application Required:**
  - (a) Not more than 10 pages plus requested attachments (see [Appendix C – Grant Application](#)).
  - (b) Use official application form and meet all deadlines for reports.
6. **Allowable grant fund expenses:**
  - (a) Includes the components of an IPM program with limitations on administration and research.
7. **Non-allowable grant funds expenditures:**
  - (a) Costs associated with administration, equipment and/or mapping that collectively surpass the statutory limitations.
  - (b) Salary and benefits to full-time personnel.
  - (c) Travel to out-of-state meetings.
  - (d) Capital outlay for trucks, buildings and other expensive, high-cost resources.
  - (e) Purchases made outside of the contractual beginning and end of the program.
8. **Allowable “In-Kind” matching funds examples:**
  - (a) Salary and benefits to full-time personnel.
  - (b) Depreciation of equipment not purchased with grant funds.
  - (c) Volunteer time.
  - (d) Value of donated supplies, chemicals and equipment.
9. **Allowable “Cash” matching funds examples:**
  - (a) Salaries and benefits of part-time personnel whose employee is directly associated with the approval and implementation of the grant program.
  - (b) Grantee funding used in the purchase of supplies, equipment, pesticides that otherwise would not have been purchased in the grant had not been approved.
10. **Final Report:**
  - (a) All grantees are required to submit a final report by December 31<sup>st</sup> of the proposals funding year.
  - (b) The final report form will be used (see [Appendix D – Final Report](#)).

## B. Additional Criteria Used for West Nile Virus (WNV) Applications

1. **In Addition to Section A. Criteria, WNV Applications Shall also Include the Following:**
  - (a) Applications must include a monitoring protocol. At a minimum the protocols must meet those approved by the EIMC and are included in this packet. (see [Appendix E – Control of West Nile Virus through Vector Mosquito Management](#))
  - (b) The committee will only fund programs that are primarily focused on reducing mosquito species that are known vectors of WNV.
  - (c) Funded programs will need to incorporate an IPM program with a strong emphasis on public education, source reduction and risk management. (See [Appendix A - Elements of an IPM Program - Mosquitoes and Human Health Concerns](#)).
    - (i) Education shall include at a minimum the distribution of information (5 D's) provided by the Wyoming Department of Health at <http://www.badskeeter.org/>
  - (d) Unless exempted by the Committee, all WNV Vector program final reports must be completed and submitted no later than December 31<sup>st</sup> of the programs funding year.

## **Appendix A - Elements of an IPM Program - Mosquitoes and Human Health Concerns**

### **1. Education:**

- a) Involves education for the general public, landowners, agencies, local governments, and technicians that survey, monitor, and perform management activities.
- b) Education elements may include, but are not limited to: media spots (TV, radio, newspapers, magazines); brochures; leaflets; fact sheets; seminars; symposia; training workshops; public meetings; and university classes.

### **2. Preventive:**

- a) Stopping or preventing the insect pests or insect vectors from becoming a problem in an area either by exclusion, altering habitat or eradicating isolated infestations.
- b) Prevention elements may include, but are not limited to: quarantine; public education; avoiding optimum conditions, places and times for being infected; spot treating localized infestations; managing for less favorable breeding conditions or infestation conditions; monitoring hatching areas, breeding areas or egg-laying areas; and increasing natural biological control opportunities.

### **3. Cultural:**

- a) Involves managing activities and practices to make habitats unattractive to the insects.
- b) Cultural elements may include, but are not limited to: cleaning up breeding sites such as cans, old tires, animal watering sites, birdbaths, and plugged gutters; managing grazing to discourage grasshopper and Mormon cricket egg-laying; managing trees for certain densities to discourage bark beetle infestations; managing irrigation water to minimize standing water at the ends of fields.

### **4. Chemical:**

- a) Adulticide - chemical sprays to control adult insects. These types of sprays are usually not as effective as larvicide and should be used only when necessary.
- b) Larvicide - chemicals that control larval insects.
  - (i) These chemicals are very effective and may eliminate mosquitoes before they are capable of causing infections. There is usually less risk with adulticides and larvicides are usually more effective than adulticides.
  - (ii) Some larvicides kill the larva by chemical means, some prevent them from molting into adult mosquitoes, and others use a common bacteria, which is toxic only to mosquitoes.

**5. Biological:**

- a) Involves the use of natural enemies of the insect to manage the infestation.
- b) Can include bacteria as a larvicide, bats, birds, fish and other organisms that feed on larva and adult mosquitoes.

**6. Mechanical:**

- a) Involves activities such as soil tillage to destroy eggs, logging, controlled burns, ditching to drain problem area, where allowed by law.

**7. Research:**

- a) Involves specifically designed research to answer questions regarding the habitat, life cycle, vulnerability and management systems necessary to eradicate, contain or control the insect pest.

**8. Survey and Monitoring:**

- a) Elements may include, but are not limited to: locating and mapping potential feeding, breeding, loafing, over wintering and migrating sites; surveying to detect populations before treatments; and monitoring populations after treatments to determine effectiveness.

## **Appendix B - Elements of an IPM Program - Grasshoppers, Mormon Crickets and other Agriculture Pests**

### **1. Education:**

- a) Elements may include, but are not limited to: educating landowners about grazing techniques to limit habitats attractive to egg-laying, egg survival and hatching; updates on the newest and most effective control techniques; and cost-share opportunities.

### **2. Preventive:**

- a) Elements may include, but are not limited to: grazing techniques to limit habitat; summer survey to detect small outbreaks and hot spots; treating small hot spots before they have a chance to infest larger areas.

### **3. Cultural:**

- a) Involves grazing techniques to limit habitats attractive to egg-laying, egg survival and hatching.

### **4. Chemical:**

- a) Involves using the Reduced Agent and Area Treatments (RAATs) Program, developed at the University of Wyoming, as the standard for grasshopper and Mormon cricket management programs.
- b) RAATs programs spray and skip alternate strips of varying widths while applying less chemical, use highly selective pesticides that target molting insects, and have fewer adverse environmental consequences than previous grasshopper/Mormon cricket programs.
- c) Other conventional control methods are available for use depending on timing, population density, life stage, and vegetation characteristics at time of control.

### **5. Biological:**

- a) RAATs programs are based on the judicious use of small amounts of pesticide compared to conventional programs, to quickly reduce the grasshopper population and the conservation biology of natural predators and parasites to manage the remaining grasshopper population for the current year and into the future.
- b) As biological control agents become available for insect pests, they should be used where appropriate.

## **6. Research:**

- a) Elements may include, but are not limited to: specifically designed research to answer questions regarding the habitat, life cycle, vulnerability, conservation biology and management systems necessary to eradicate, contain or control insect pests.

## **7. Survey and Monitoring:**

- a) This includes the summer monitoring program conducted by weed and pest districts each year. The information collected is used to identify infested areas and identify areas with a potential for outbreak in the next year allowing districts to plan for potential programs.
- b) Spring surveys conducted in potential outbreak areas will determine if a control program is warranted, the size of the program, and when RAATs applications can be made.
- c) Post treatment surveys should be conducted to determine the effectiveness of the program.
- d) Summer surveys would be conducted in each county.

# Appendix C – Grant Application

Application Received _____
Application Reviewed _____
Approved _____ Not Approved _____

## 1. Applicant Information:

Organization (Grantee): \_\_\_\_\_

Contact Name: \_\_\_\_\_

Contact Title: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, and Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Fiscal Year End Date (MM/DD): \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Is someone other than the Contact listed responsible for signing contracts? If so;

Name \_\_\_\_\_ Title \_\_\_\_\_

## 2. Grant Request

Program Title: \_\_\_\_\_

	<i>Check if Appropriate:</i>	<b>State Designated</b>	<b>County Declared</b>
<b>Targeted Insect(s)</b> <i>(Please Check)</i>	<input type="checkbox"/>		
<u>West Nile Virus Vector Mosquitoes</u>			<input type="checkbox"/>
<input type="checkbox"/> <u>Mountain Pine Beetle</u>		<input type="checkbox"/>	
<input type="checkbox"/> <u>Grasshoppers</u>		<input type="checkbox"/>	
<input type="checkbox"/> <u>Other: (List)</u>		<input type="checkbox"/>	<input type="checkbox"/>

EIMP Grant Funds: \$ \_\_\_\_\_

Matching Funds: \$ \_\_\_\_\_

**Total Amount:** \$ \_\_\_\_\_

**Entries MUST match values  
in the "Partners" and  
"Budget" Sections of the  
Application**

Please list any living species currently listed as threatened or endangered or any candidate species, as defined by the Endangered Species Act that could affect your program.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### 3. Land Units Benefited

Please list the number of acres *benefited by this program by land ownership*.

	Specify Name for: Units, District, Facilities, etc.	Acres to be <u>incorporated</u> in the Program Area	Acres Treated in the Program Area
Bureau of Land Management			
Bureau of Reclamation			
Department of Defense			
National Park Service			
Wyoming Game and Fish			
Fish and Wildlife Service			
USDA-Forest Service			
Other Federal Land			
Tribal Land			
State Land ( <i>excluding State Fair and State Parks</i> )			
City/Town			
Special Districts			
Private Land			
<b>TOTAL</b>			

### 4. Partners

Indicate all federal, tribal, state, local, private, and non-governmental partners and their level of participation (Matching Funds). **(Include your contribution)**

Partners	Contribution Amount	<b>C</b> for Cash or <b>I</b> for Inkind or Services
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
<b>TOTAL</b>	\$	

## 5. Budget

	Grant Funds	Matching Funds Cash	Matching Funds In-Kind	TOTALS
Salaries: <b>Part-time</b>				
Contractual Services:				
Supplies: (ex. PPE)				
Pesticides: (Larvacides/Adulticides)				
<i>Equipment:</i>				
Equipment Rental:				
In-State Travel:				
<i>Mapping/survey:</i>				
<i>Research:</i>				
Education:				
<i>Administration:</i>				
Other:				
Other:				
Other:				
<b>TOTALS</b>				

*Only 20% of EIMPA funds may go to administrative costs, equipment, research and mapping activities during the first three years of a management program, and not more than 10% of these funds shall be used for those purposes in subsequent years.*

*Only 20% of all allocated EIMPA funds for the Fiscal Year may go to research.*

Provide an approximated itemized account for each of the above "Grant Funds" categories:

- Salaries** – Three temporary staff employed for 5 months from Mid-May through Mid-September \$7.56 @ 40 hrs. per week x 4 weeks x 5 months = \$6,067 x 3 = \$18,200)
- Chemical** – Scourge 4-12 – 1 (55 gal. drum) x \$4,700.00 = **\$4,700.00**; Vectolex CG – 10 (40 lb) bags x \$212.00 = **\$2,120.00**; **Total \$6,820.00**

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## 6. Program Narrative

**A program narrative is required.** Funding will only be awarded to applications that address all of the following components.

- I. **Program Name and Summary** (Two (2) or three (3) sentences).
- II. **Program Abstract** (one-page maximum)
- III. **Program Description** (five-page maximum - longer descriptions will be returned):
  - A. **Program.** *Describe the management program.*
  - B. **Objectives.** *List and prioritize the program's specific measurable and obtainable objectives, as related to the grant criteria.*
  - C. **Methodology.** *Describe the program tasks and timetable for implementation, including who is doing the work and who is supervising. If this is part of a larger program, briefly describe the larger program and how this part relates to the overall effort. Also, include insect treatment methods and how these treatments would lead to a solution to the problem in the program area: i.e. long-range plans, etc.*
  - D. **Tax Mechanism.** *Describe any mechanism used to generate local funds supporting the program. (ex. Monthly charge on Utilities bill)*
  - E. **Management Implications.** *Describe what management plans, strategies, or land use practices will be employed. Have these plans, strategies, and practices been agreed to by all pertinent parties?*
  - F. **Notification:** *Describe what strategies, plans or methods your program will use to notify the general public of any planned applications of a pesticide.*
  - G. **Monitoring and Evaluation.** *Describe the strategy for monitoring and evaluating program results in the short and long-term, including how success will be defined and measured.*
  - H. **Education:** *Describe the plans or strategies to educate the public about the program, the threat, and any protective measures. (Applications for WNV programs are required to include information from or similar to that provided by the Wyoming Department Health's (<http://www.badskeeter.org/>) in their educational programs).*
  - I. **Results.** *If this is a continuation of a past Emergency Insect Management funded program, report briefly on the program's past accomplishments.*
- IV. **Justification** *Why the committee should approve your program (one-paragraph maximum). Explain how this proposal benefits human health and safety, animal health including livestock and wildlife, agriculture or natural resources.*

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## 7. Attachments

Attach copies of the following items.

### A. Organization Information

1. Program staff and their qualifications
2. List of applicants Board of Directors/Trustees/County Commissioners/City Council...(as applicable)

### B. Program Information

1. Map of the program area that is delineates program borders.
  2. Samples of any educational material
- 
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Send seven (7) copies of the application and attachments to:

Slade Franklin – EIMC  
Wyoming Dept. of Agriculture  
6607 Campstool Road  
Cheyenne, WY 82002

Please refer all questions concerning this application and program to:

Slade Franklin  
307-777-6585  
[slade.franklin@wyo.gov](mailto:slade.franklin@wyo.gov)

**Final Reports MUST be Returned No Later Than December 31<sup>st</sup> of the Funding Year in Order to be Eligible for the Next Year's Funding!!!!**

**APPENDIX D – Final Report**

**Emergency Insect Management**

Report Date: \_\_\_\_\_

**1. Applicant Information:**

Organization (Grantee): \_\_\_\_\_

Contact Name: \_\_\_\_\_

Contact Title: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, and Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Fiscal Year End Date (MM/DD): \_\_\_\_\_/\_\_\_\_\_

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**2. Funding**

**Program Title:** \_\_\_\_\_

	<i>Check if Appropriate:</i>	
	<b>State Designated</b>	<b>County Declared</b>
<b>Targeted Insect(s)</b> <i>(Please Check)</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> West Nile Virus Vector Mosquitoes	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Mountain Pine Beetle	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Grasshoppers	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other: (List) _____	<input type="checkbox"/>	<input type="checkbox"/>

EIMP Funds Used: \$ _____	<i>If Applicable:</i> EIMP Funds Awarded \$ _____ EIMP Funds Used: \$ _____ <b>EIMP Refund:</b> \$ _____  <i>Make checks payable to:</i> <b>Wyoming Dept. of Agriculture - EIMP</b>
Matching Funds: \$ _____	
<b>Program Cost:</b> \$ _____	

### 3. Land Units Benefited

Please list the number of acres *benefited by this program by land ownership*.

	Specify Name for: Units, District, Facilities, etc.	Acres to be <u>incorporated</u> in the Program Area	Acres Treated in the Program Area
Bureau of Land Management			
Bureau of Reclamation			
Department of Defense			
National Park Service			
Fish and Wildlife Service			
USDA-Forest Service			
Other Federal Land			
Tribal Land			
State Land ( <i>excluding State Fair and State Parks</i> )			
City/Town			
Special Districts			
Private Land			
<b>TOTAL</b>			

### Partners

Indicate all federal, tribal, state, local, private, and non-governmental partners and their level of participation (Matching Funds). [\(Include your contribution\)](#)

Partners	Contribution Amount	<u>C</u> for Cash or <u>I</u> for Inkind or Services
<b>TOTAL</b>		

## Final Budget

	Grant Funds	Matching Funds Cash	Matching Funds In-Kind	TOTAL
Salaries: <b>Part-time</b>				
Contractual Services:				
Supplies: (ex. Gloves, Filters)				
Pesticides: (Larvacides/Adulticides)				
<i>Equipment:</i>				
Equipment Rental:				
In-State Travel:				
<i>Mapping/survey:</i>				
<i>Research:</i>				
Education:				
<i>Administration:</i>				
Other:				
Other:				
Other:				
<b>TOTAL</b>				

*Only 20% of EIMPA funds may go to administrative costs, equipment, research and mapping activities during the first three years of a management program, and not more than 10% of these funds shall be used for those purposes in subsequent years.*

*Only 20% of all allocated EIMPA funds for the Fiscal Year may go to research.*

**Provide an itemized account for each of the above categories:**

- Salaries** – Three temporary staff employed for 5 months from Mid-May through Mid-September \$7.56 @ 40 hrs. per week x 4 weeks x 5 months = \$6,067 x 3 = \$18,200
- Chemical** – Scourge 4-12 – 1 (55 gal. drum) x \$4,700.00 = **\$4,700.00**;  
Vectolex CG – 10 (40 lb) bags x \$212.00 = **\$2,120.00**; **Total \$6,820.00**

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## 4. Program Narrative

**Provide a program narrative in the following format.** (Final Reports will not be accepted unless all requested areas are complete.)

- I. **Program Name and Summary** (Two (2) or three (3) sentences).
- II. **Program Description** (4-page maximum - longer descriptions will be returned):
  - A. **Program.** *Describe the management program.*
  - B. **Objectives.** List the program's specific measurable and obtainable objectives, as related to the grant request and if those objectives were met. If those objectives were not met, explain why?
  - C. **Methodology.** Briefly describe how the program was implemented. Include information on all pesticide applications and the thresholds used to justify those applications. *WNV vector grantees must also indicate if there were any cases of WNV within their treatment area and who reported them.*
  - D. **Education.** Briefly describe the educational tools and methods used to alert the public about the program. *(Samples may be attached.)*
  - E. **Monitoring.** Briefly describe the pre-treatment and post-treatment monitoring protocols used for the program. *(WNV vector applicants must complete and return Appendix E of this package with their final reports.)*
  - F. **Results.** Explain if the overall program was a success or failure. Is the program a continuation of a past EIMPA funded program and will it require the continued support.

Send the completed final report, **by December 31<sup>st</sup>**, to:

**Wyoming Department of Agriculture  
Emergency Insect Mgmt Grant Final Report  
C/O Jessica Jones  
2219 Carey Avenue  
Cheyenne, WY 82002**

Please refer all questions concerning this application and program to:

**Slade Franklin  
307-777-6585  
[slade.franklin@wyo.gov](mailto:slade.franklin@wyo.gov)**

## **Appendix E - Control of West Nile Virus through Vector Mosquito Management**

### **1. Introduction**

Prevention and control of West Nile virus (WNV) is most effectively accomplished using an integrated program that includes targeted surveillance for adult and larval stages of WNV vector mosquitoes; effective mosquito control using a variety of strategies that are consistent with best practices and community needs; and timely public education. The goals of mosquito-based WNV surveillance are to: 1) use data on mosquito populations (and, if feasible, virus infection rates) to assess the threat of human disease; 2) identify geographic areas of high risk; 3) assess the need for and timing of interventions; 4) identify larval habitats for targeted control; 5) monitor the effectiveness of this type of surveillance and improve prevention and control measures; and 6) develop a better understanding of transmission cycles and potential vector species.

The purpose of this publication is to provide technical guidance for monitoring and controlling adult and larval stages of WNV vector mosquitoes and, primarily, *Culex tarsalis*. The public education component will not be covered here, but such materials can be obtained through the Wyoming Department of Health's website <http://www.badskeeter.org/> and the US Centers for Disease Control Division of Vector-Borne Infectious Disease website <http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>.

### **2. Monitoring adult mosquito population levels**

Trapping is an efficient method of collecting adult mosquitoes because the mosquitoes come to the traps. All the collector has to do is set the traps then empty them. Often individuals in a community, as a voluntary service, are glad to run a mosquito trap on their premises.

Having a consistent location, which is sampled on a regular basis throughout the mosquito season and from year to year, provides valuable seasonal and historical data on mosquito populations. To collect useful comparative data, the same type of mosquito trap should be used each time.

Adult trapping is an effective way of determining the mosquito species present, the relative density of a mosquito infestation, and the effectiveness of a control application. An "annoyance threshold" can be estimated based on the number of complaints from an area of town with light trap data. This threshold can be a guide for future treatments.

Light trapping of adult mosquitoes takes advantage of the fact that many mosquito species are attracted to light. Two basic kinds of light traps are commonly in use, the New Jersey light trap, which runs on house current, and the CDC (Centers for Disease Control) miniature light trap, which is battery powered. The obvious advantage of the New Jersey trap is that it can be run from an extension cord on house current whereas with the CDC trap one must continually purchase or recharge six volt or D cell batteries. The CDC trap has a relatively small bulb similar to that in a flashlight and the NJ trap normally has a 40-watt bulb. Often it is advisable to place 1/4-inch hardware cloth at the entrance of the trap to exclude other night-flying insects, such as moths.

Normally the CDC miniature light trap is supplemented with CO<sub>2</sub> (carbon dioxide) from either dry ice or a pressurized cylinder of CO<sub>2</sub>. CO<sub>2</sub>-baited traps take advantage of the fact that the adult female is also attracted to CO<sub>2</sub> gas. Two to three pounds of dry ice may be wrapped in several layers of newspaper and placed in a cloth bag or dry ice may be placed in a modified drink cooler. The bag or cooler is then suspended above or adjacent to the trap. The dry ice should last one evening. The New Jersey light trap may also be supplemented with CO<sub>2</sub>. Data in Wyoming show that CO<sub>2</sub> supplementation increases the probability of trapping *Culex tarsalis* the primary Wyoming vector of West Nile virus.

To be effective, light traps should be placed at an elevation of three to six feet, and away from competing light sources. Mosquitoes may be collected into mesh bags or into cups or jars with pieces of “no-pest strip.” If living mosquitoes are collected, the mesh bag should be placed in a picnic cooler with dry ice for transport to a freezer. All collections should be labeled and specimens should be placed in a freezer to keep them from rotting. The label should include: (1) the name of the mosquito district, (2) the county, (3) the type of trap (and whether or not it is supplemented with CO<sub>2</sub>), (4) treatment, (5) trap location, (6) GPS coordinates, (7) collection date, (8) name of the collector, (9) date of treatment, (10) weather conditions during the collection period that may have influenced the collection, and (11) site description. Place the label in with the collected mosquitoes immediately. These data will later be entered in the “Adult Mosquito Data Sheet” in the appropriate columns.

For collection of *Culex tarsalis*, traps should be placed in vegetation especially along tree lines near the edges of irrigated fields or wetlands. Collection in agricultural areas where birds and livestock are present will enhance *Cx. tarsalis* numbers for West Nile virus surveillance.

Often the number of adult mosquitoes is overwhelming and a sub-sample of the collection must be taken for identification. In order to obtain an unbiased sample, the adult mosquito collection from an individual trap may be spread evenly over a grid. A cookie sheet with a grid drawn in indelible ink may be used. Randomly remove all of the mosquitoes from one out of ten (ten percent) of the grid squares. Do not to select only the “big or little mosquitoes” for a truly representative sample of mosquito species. For data recording the total number of mosquitoes can be estimated from the sample.

### **3. Required adult mosquito monitoring effort**

The extent of identification of adult mosquitoes is at the discretion of the mosquito control district, and we suggest one of three different

levels. The EIMC strongly encourages each mosquito district to achieve the highest level possible. (Mosquito control districts may find it useful to cooperate with neighboring districts in identification.)

- **Level 1:** Minimally, the adult mosquito collection should be separated into mosquitoes and non-mosquitoes and the mosquitoes counted individually or estimated from a sub-sample.
- **Level 2:** In addition to separation of mosquitoes from non-mosquitoes, mosquitoes in the genus *Culex* are to be identified and counted. Experience in Wyoming tells us that these *Culex* will mostly be *Cx. tarsalis*. If the collector so desires, *Cx. tarsalis* may easily be separated from other *Culex* species.
- **Level 3:** A mosquito district may want a more complete picture of its mosquito complex, and this is encouraged. These districts will sort mosquitoes, including *Culex tarsalis* from non-mosquitoes and identify the more common mosquitoes to species. Districts at level 3 will collect every other week from a minimum of five permanent light traps throughout their treatment area. A minimum of one permanent trap outside the district's treatment area will serve as an "untreated control." Mosquitoes will be collected from the "control" trap on the same dates as pre and post-treatment traps in the treated areas. Level 3 districts are also being encouraged to develop West Nile virus surveillance with trapped mosquitoes.

Following identification of the mosquitoes, the following data will be entered on the "Adult Mosquito Data Sheet" in the appropriate columns. (12) Mosquito collection total (required of all 3 levels), (13) Species, if known, (level 2 programs enter "*Culex*" in this column, level 3 programs enter *Culex tarsalis* plus other common species in this column, (14) level 2 programs enter number of *Culex* (enter a zero for if there are none), level 3 programs enter number of each species in a separate row.

#### **4. Evaluating adult mosquito control efforts**

Adult mosquitoes are to be monitored one day before and one day following application of adulticide. In case of inclement weather, traps may be run 2 days post-treatment also.

Aerial applications for adult control will be monitored both pre and post-treatment. The number of traps (one or more) is at the discretion of the mosquito control district (and the EIMC) and should be sufficient to show efficacy over the sprayed area. If several distinct areas are to be aerially treated on the same date, then it would be advisable to place traps in those areas also.

Ground applications of adulticide in one treatment area will be monitored every other week. A mosquito control agency may choose to monitor more than one treatment area. If there are three or fewer ground applications in a season then all three should be monitored. A minimum of one trap will be required per treatment area, but it may be reasonable to utilize more than one trap depending on the size of the treatment area. The number of traps within the treatment area is at the discretion of the control unit but may be increased following review by the Emergency Insect Management Committee.

#### **5. Monitoring larval mosquito population levels**

The mosquito larva is an elusive prey. The long-time equipment for collecting and sampling larvae is the mosquito dipper, a one-pint, white cup with a dowel-stick handle about a yard long.

The larval stages of a mosquito are aquatic, but they must obtain air from outside their aquatic habitat through a "siphon." (The pupal stage has breathing "trumpets" that serve the same purpose.) Since they must get air by penetrating the surface film of the water, the larvae are found in standing water, seldom more than a few inches deep, with little or no wind or wave action. Usually, larvae are associated with emergent vegetation that further protects them when they rise to the surface for

another “gasp” of air. Seldom are larvae found in large open bodies of water, especially with no protective vegetation. Keep this in mind when looking for larvae.

Mosquito larvae are not uniformly distributed within their aquatic habitat. This is especially true of the tiny, early larval stages, which tend to occur in clusters. For this reason you may have to sample an individual site several times to determine whether larvae are present. When sampling, walk along the edge of suitable habitat and sample the water at regular intervals, e.g. every one or two meters (or more), depending on the size of the habitat. The number of samples will vary with habitat size and should be in multiples of ten. Inspections of habitat should be made at intervals of 1 to 2 weeks because an area “free” of larvae may have larvae at a later date.

When sampling larvae with your dipper, remember that the larvae have a defense mechanism to protect them from predation. (Pupae also have this mechanism.) If disturbed, larvae will dive to the bottom of their habitat, reducing the likelihood that they will be picked up in scoop of water. This defense mechanism can be triggered if the larvae sense movement; see a shadow passing over the habitat; or feel vibration of the ground or vegetation, as might be caused by a heavy-footed mosquito surveyor. So, as you quietly approach the potential mosquito habitat, dipper in hand and shadow behind you, quickly submerge your dipper in water, and with a twist of the wrist, remove about a half-dipper of water and examine the contents. With experience you will learn to avoid collecting debris from the bottom of the habitat, which makes observation of smaller larvae difficult.

## **6. Required larval mosquito monitoring effort**

For both ground and aerial application, it is required that larval mosquitoes be distinguished from non-mosquito larvae. Record both number of larvae and stage(s) of development per dip pre and post-treatment. In addition, for aerial application, the district is required to determine whether larval *Culex* are present in one treatment area. Data to be entered on the mosquito larval data sheet include: (1) name of mosquito district, (2) county, (3) treatment, (4) location, (5) GPS coordinates, (6) sampling date, (7) collector, (8) date of treatment, (9) site description and water source, (10) size of breeding area, (11) number of larvae per dip (12) life stages present, and (13) genus or species present (if known).

## **7. Evaluating larval mosquito control efforts**

Pretreatment monitoring of larval mosquitoes is required to ensure that mosquito larvae are present.

Aerial application – Minimally, ten larval dups, pre and post-treatment, will be required for each aerial application of larvicide. Additional dups, in multiples of ten, may be advisable if several distinct areas are to receive larvicide or if large acreages are to be treated. Pre and post-treatment dups should be taken from the same approximate locations. The post-treatment interval depends on selection of larvicide.

Late instar larvae (50+) should be collected and preserved at the time of the pretreatment dipping in at least one treatment area.

Ground application - For ground application of larvicide a treatment area within the district will be monitored on an every-other-week basis. Pretreatment dups will be taken in that area. Post-treatment dups, larval collection, and larval identification are optional.

## **8. Non-insecticidal control**

Larval monitoring prior to and (where possible) after of alternative control measures, e.g., source reduction/elimination, biological control, etc. will be useful to the committee. Photographs of examples of source reduction/elimination are encouraged. These results may be submitted as a supplemental report. Counts may be recorded on standard data sheets if the mosquito district desires.

## **9. West Nile virus detection in trapped mosquitoes**

Level 2 or 3 programs may wish to report results of West Nile virus testing (e.g., RAMP or VecTest) as a supplemental report if this is part of their program.

## **10. Mosquito control districts that practice both adult and larval control**

Mosquito control districts doing larval and adult control will be expected to document both aspects of their programs according to the guidelines presented above.

## **11. Program funding**

Although every funded program is expected to provide results according to the guidelines that have been presented here, the results of monitoring efforts will not affect funding.





## **Appendix G - Procedures for Unforeseen Emergency Funding Requests**

The Wyoming Department of Agriculture (WDA) and the Emergency Insect Management Committee (EIMC) recognize that unforeseen insect infestations may arise during the year (e.g., a spike in grasshopper numbers leading to potential crop devastation) that requires immediate action. In order to request emergency assistance to help mitigate these outbreaks, the following procedures should be followed in order to request Emergency Insect Management Grant (EIMG) funds.

*Compliance with these procedures does not guarantee approval of financial assistance from the EIMG.* Please contact the WDA Weed and Pest Coordinator (777-6585) to address any questions about when to follow this procedure.

1. Grantee shall attempt to e-mail or telephone Weed and Pest Coordinator prior to any remedial actions if EIMG funds will be requested for assistance.
2. Weed and Pest Coordinator will immediately notify the Contracts Coordinator of the requested amount, the date of contact and contact information of the grantee.
3. Within a reasonable time in relation to control actions the grantee shall submit a request for funding using the approved application form. The Weed and Pest Coordinator shall forward the application to the EIMG committee and the Contracts Coordinator.
4. Weed and Pest Coordinator will organize an EIMC meeting to review the request.
5. Contracts Coordinator prepares agreement for emergency request, **the term starting date being the initial date grantee requested assistance** from Weed and Pest Coordinator. Contracts Coordinator proceeds with agreement approval from Fiscal Manager and the Attorney General's office (AG). Further routing of agreement is contingent upon EIMC's recommendation of approval.
6. Upon EIMC review, the weed and pest coordinator shall submit the EIMC recommendations to the Governor for final approval.
7. If the Governor approves funding from the EIMG program, the approval letter is routed to the Contracts Coordinator and added to the agreement. The agreement is updated to reflect the addition of the approval letter, and the AG is notified of the agreement changes. If the Governor does not approve the funding, a letter shall be mailed by the Weed and Pest Coordinator to the Grantee.
8. Agreement is routed to Grantee along with a voucher for payment of approved emergency funding.
9. Once agreement and voucher are returned by Grantee, the agreement shall be routed to Technical Services Manager and the WDA Director for approval and signature. The payment voucher shall be routed to the Weed and Pest Coordinator and Technical Services manager for approval of payment.
10. The fully signed agreement copy is submitted to fiscal personnel along with voucher.
11. Grantee is mailed their fully signed original.
12. Weed and Pest Coordinator is notified once the agreement process is complete.