ADA COUNTY
Mosquito Abatement

975 E. Pine Ave.
Meridian, Idaho 83642
(208) 577-4646

West Nile Virus
Ada County Weed & Pest
Response Plan

This West Nile Response Plan is intended to educate residents of Ada County about the West Nile virus and inform them of the Counties preparation's to combat the virus. This document will not reiterate our comprehensive plan. Instead this response plan is an extension of the comprehensive plan used to focus our efforts and further coordinate agencies in the event of a West Nile virus outbreak.

Mosquitoes like birds have many species and each species have different requirements for food and breeding habitat. Mosquitoes are pollinators and feed on nectar but all mosquito species require a blood meal as a protein source for their eggs to hatch. Mosquitoes will get this blood meal from birds, mammals, or reptiles that share their habitat. Birds are the dominant hosts and transportation for the West Nile virus. West Nile virus is moved from place to place as the birds migrate.

Mosquitoes that are capable of transmitting a disease from one species to another are called vectors. Not all mosquito species are considered West Nile vectors. There are over three thousand species of mosquitoes found worldwide. In Ada County we have identified nine species with six species being considered West Nile vectors. Of the six species that are vectors of West Nile only two are considered primary vectors. Primary vectors share habitat with the West Nile host and readily feed on humans transmitting the disease. Four species are considered secondary vectors. Secondary vectors usually feed on other animals only because humans are not frequently available in their habitat at the time they feed. The numbers really begin to sort out the problems. Our first goal is to identify and control the two primary species that vector the West Nile virus to man. By reducing their numbers we will lower the impact of West Nile virus in our human population. Next we will reduce the secondary West Nile vectors and provide a level of protection for our livestock.

To be infected with West Nile virus a mosquito must first feed from an infected bird (the host) and then feed on another species, usually man or livestock (the carrier) and infect them with the virus, (see illustration on the next page).

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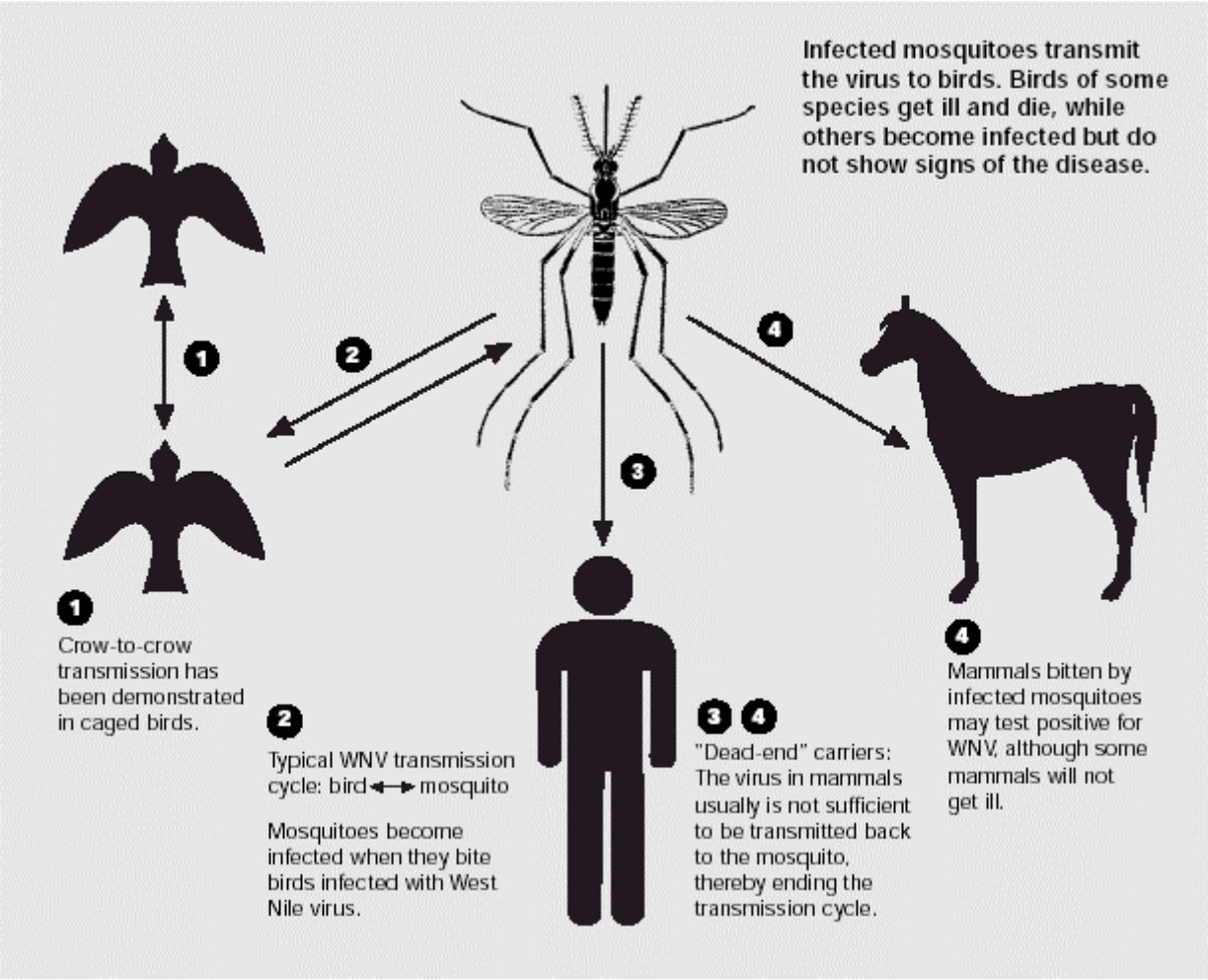
## Transmission Cycle

- Mosquitoes become infected when they take a blood meal from an infected bird.
- The virus circulates and multiplies in the mosquito's blood for several days.
- The virus then penetrates the mosquito's salivary glands.
- After an incubation period of 10 to 14 days, the infected mosquito can transmit West Nile virus to humans and animals while taking its next blood meal.
- During the feeding, the saliva and virus are injected into the animal or human, where it multiplies and may cause illness.




*Source: Pennsylvania State University*

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West Nile virus is an arbovirus carried by birds and transferred to humans and other animals, by mosquitoes. Since its first documented occurrence in the United States, in New York in 1999, it has continued to move west with varying degrees of severity. As a new comer to the U.S., this virus has demonstrated an unpredictable behavior. Some areas are hit hard by the virus while other areas seem to get passed by. Where West Nile has been a threat, it tends to show up in the late summer to early fall. The virus is then present in the community and continues to reproduce. During the next season the virus will ramp upwards affecting both humans and animals in the community. As quickly as West Nile becomes a threat the cases begin to subside becoming a residual problem the community has to live with.

Constant vigilance is needed to forewarn our community of the West Nile presence. To accomplish this we use surveillance. Surveillance is monitoring the mosquito species by trapping and identifying mosquitoes. Surveillance usually begins around May first, but may start a littler earlier or later depending on the year. Our surveillance program has 20 predefined locations that have mosquito traps set out at regular intervals. (Attachment 2) Data is collected and used to determine the historical count and species of mosquitoes in a given area (Attachment 3). If the total count or a vector species begins to increase it alerts our department to initiate control actions appropriate to reduce the mosquito population. When mosquitoes are caught in the trap they are examined and sorted by species. The different mosquito species in a trap are then tested for West Nile virus. The primary vectors are sent to the Idaho State Department of Health and Welfare, Bureau of Laboratories for testing. Our staff tests the secondary vectors. When the virus is found it triggers more rigorous surveillance and application efforts.

When West Nile virus is found in a trapped mosquito specimen our surveillance activity will increase. First we will double our surveillance, meaning we will set ten traps nightly instead of five. Second we will continue to trap at the virus positive location with five additional locations within a one-mile radius surrounding the positive trap location. This information will help us pinpoint where the outbreak is occurring and what mosquito species is the vector. Our trapping, larvicide, adulticide and education programs will be driven by the surveillance results. Continued monitoring will determine if our increased activities are effective in reducing the virus and the mosquito populations.

With our current staff it would be impossible to provide surveillance for more than two positive locations. We have the equipment and manpower to increase our adulticide program by fifty percent. Our department has the equipment to expand our larvicide program by thirty percent. The timing of West Nile usually coincides with a decreased workload for the noxious weed control program. Currently we have cross-trained several employees that can be shifted to the mosquito program if an emergency dictated.

When West Nile virus is confirmed and the locations are growing in numbers the relevant information will be shared with other agencies. Educational information will be given out via several media outlets to alert the public, building a partnership to determine a solution. Governing agencies will review all the data and determine a level that would trigger an emergency declaration. As the data continues to build appropriate plans would be formed for coordinated emergency control applications.

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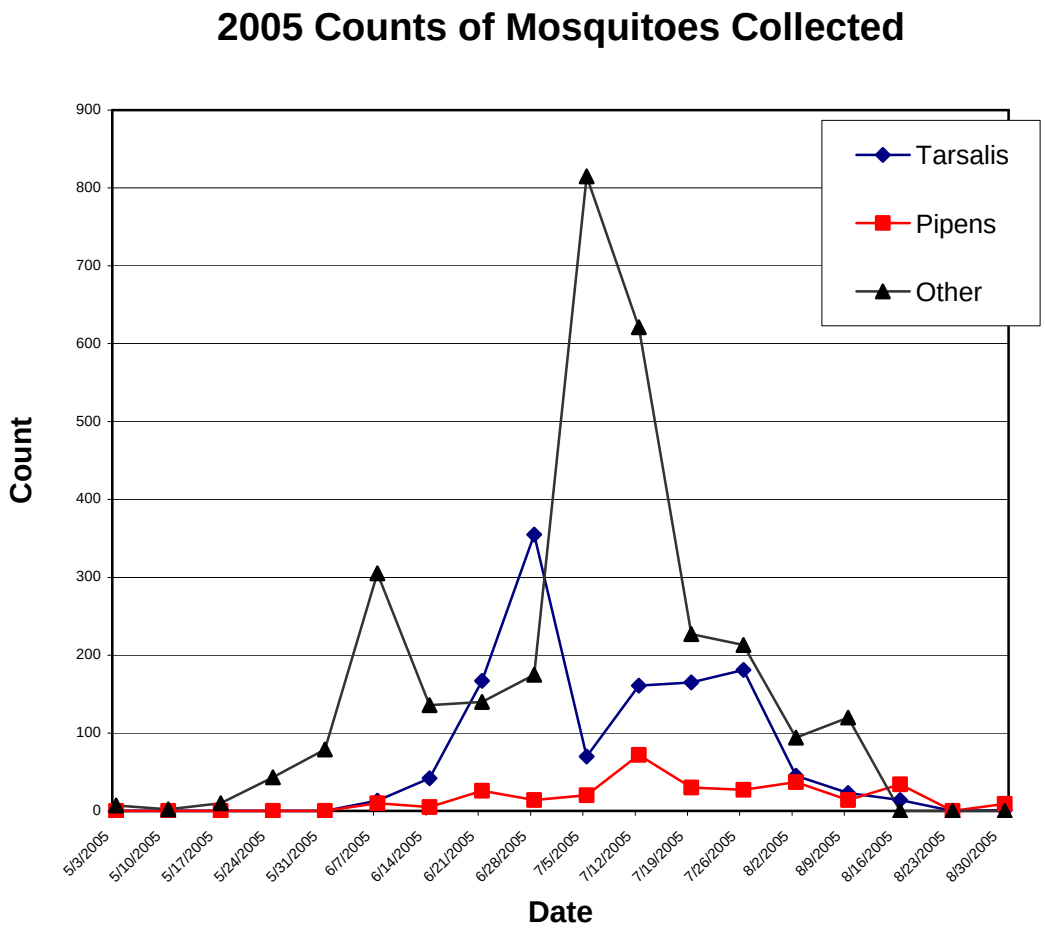


Attachment two