Legislative Open House

OCMVCD 2019

Agenda

- Welcome & Introductions
- OCMVCD Services
- The Science Behind Vector Control
- A Survivor's Story
- OCMVCD Challenges and Role in Public Health
- How You can Help

Scope and Governance

- Established in 1947 as the Orange County Mosquito Abatement District
  - Independent Special District governed by the California H&S Code
- Serves all of Orange County's 34 cities and unincorporated areas
  - 3.2 million residents
- Governed by a 35 member Board of Trustees
  - One City appointed representative from each city
  - One appointee from County

Scope and Governance

- California Health & Safety Code
  - Section 2040. Within the district's boundaries… a district may do all of the following:
    - Conduct surveillance programs of vectors and vector-borne diseases.
    - Take proper actions to prevent the occurrence of vectors and vector-borne diseases
    - Take proper actions to abate or control vectors and vector-borne diseases

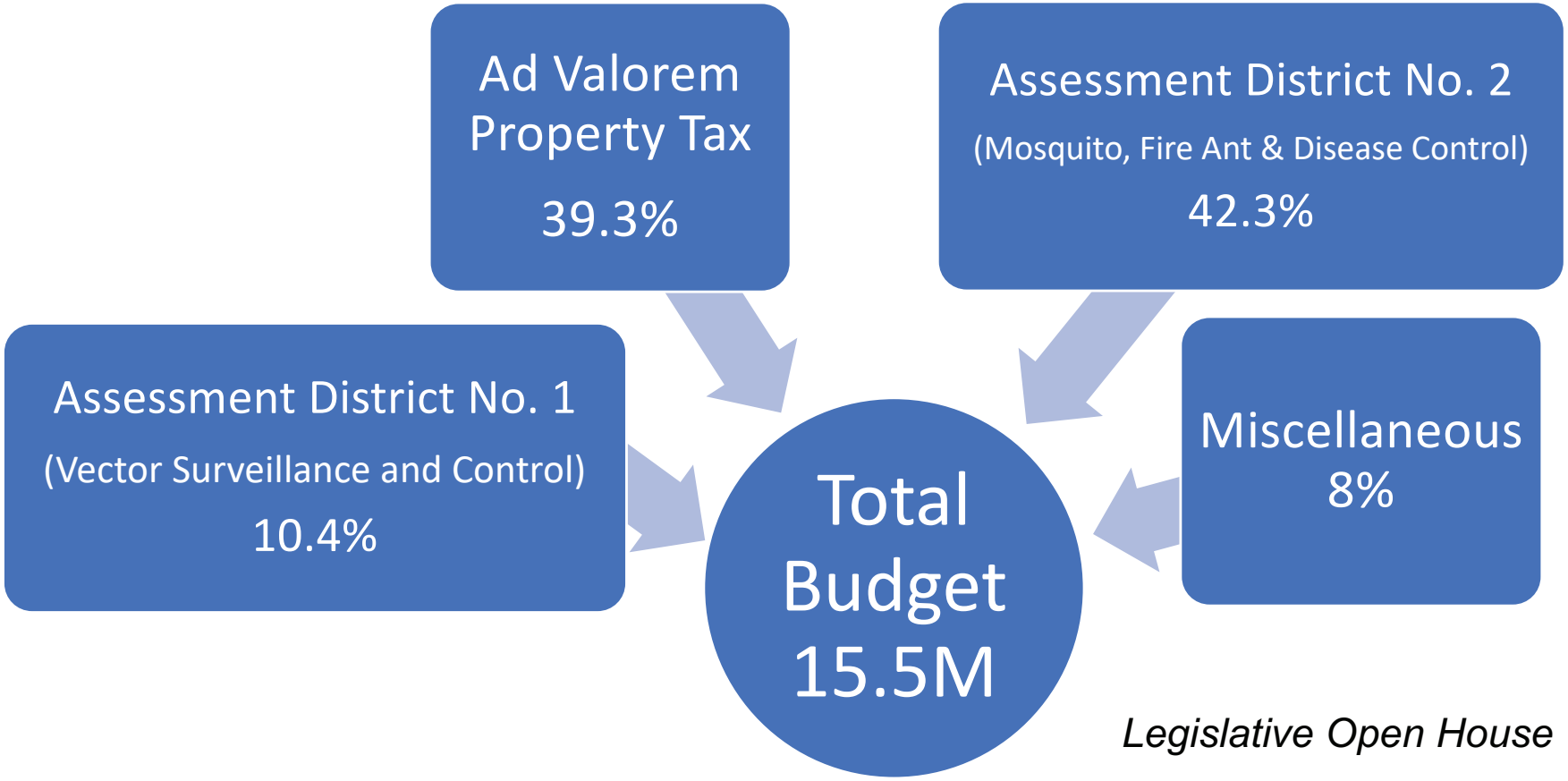
Our Mission

The mission of the Orange County Mosquito and Vector Control District is to provide the citizens of Orange County with the highest level of protection from vectors and vector-borne diseases.

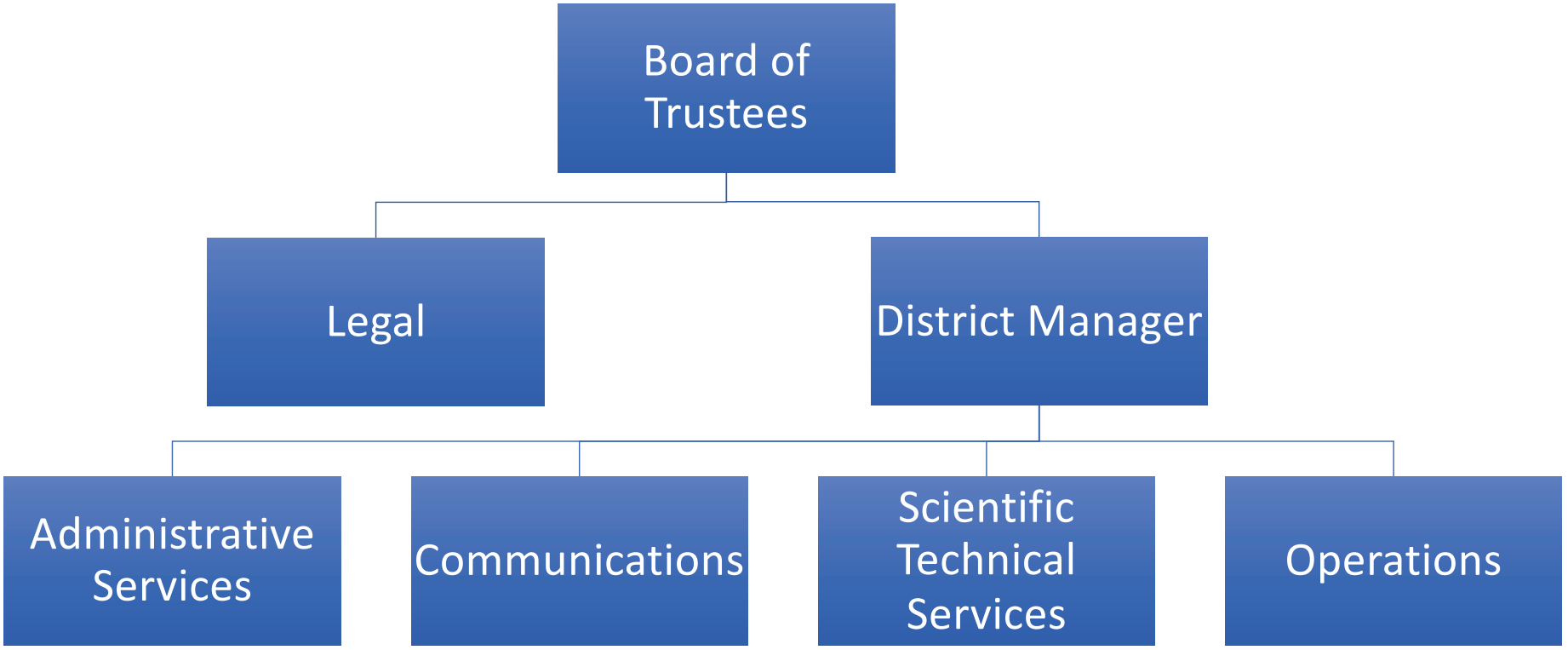
In achieving this mission, the Orange County Mosquito and Vector Control District shall:

- Be proactive in response to current and future vector threats.
- Respond effectively and courteously to the needs of the public.
- Inform and educate the public about the shared responsibility of vector control.
- Utilize the most effective and safest methods available for the control of vectors.
- Provide vector control services in the most cost-effective manner.

District Revenue



Organizational Chart

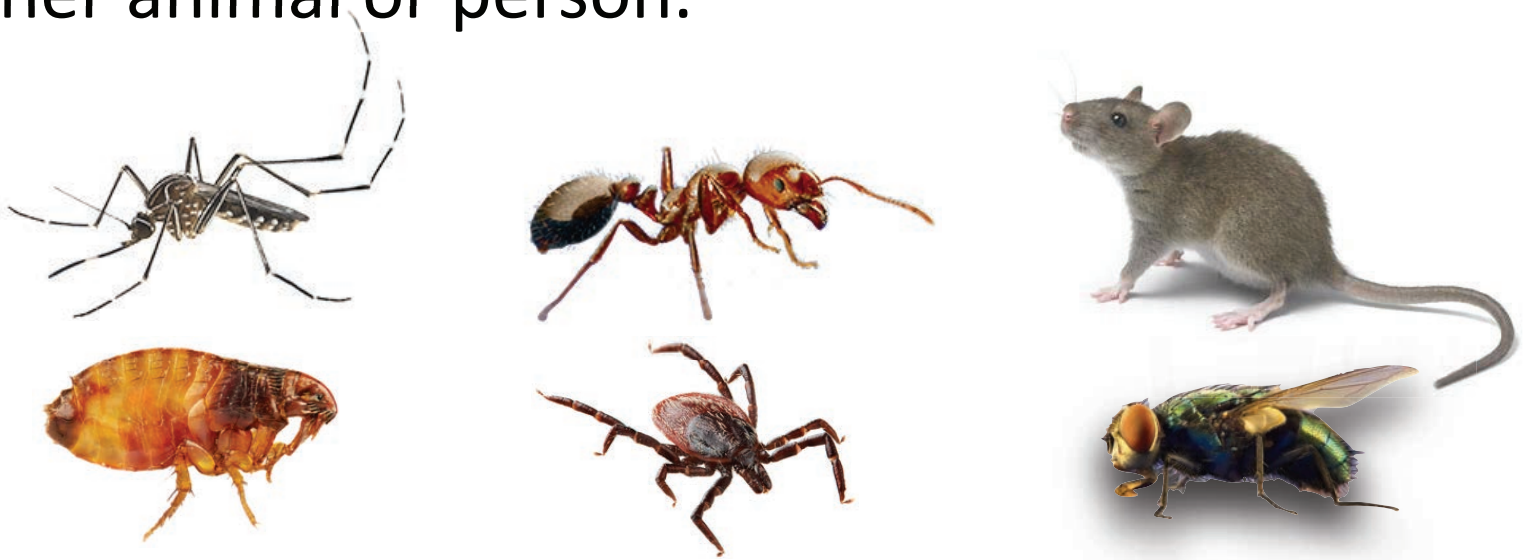


OCMVCD Staff

- 67 Full-time Employees
- Approx. 70 Seasonal or Part-time Employees
- Full Service Garage
- Independent Full Service Laboratory

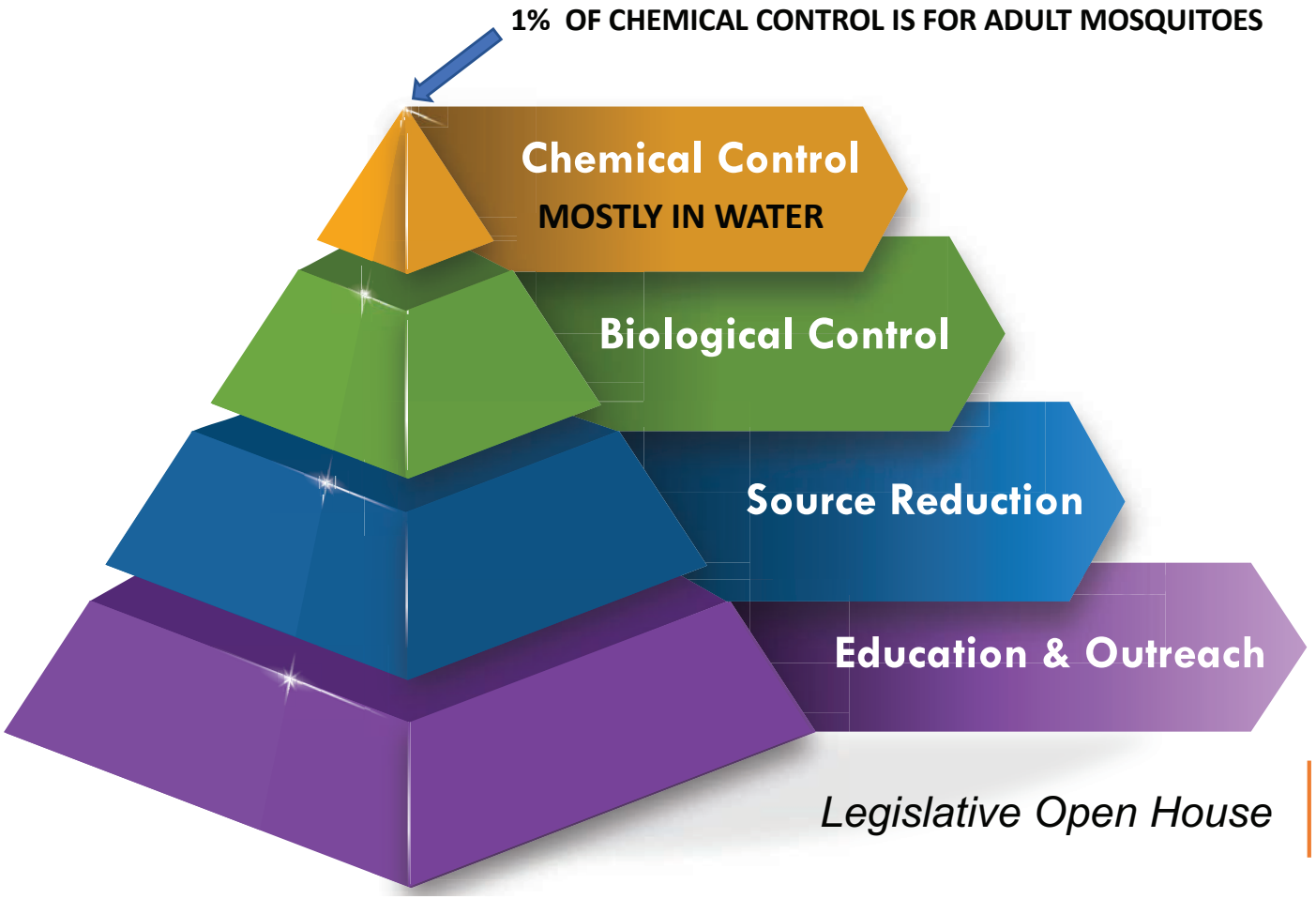
What is a Vector?

A **Vector** is an organism, typically a biting insect or tick, that transmits a disease or parasite from one animal to another animal or person.



Integrated Vector Management

CDPR IPM Achievement Award, 2018



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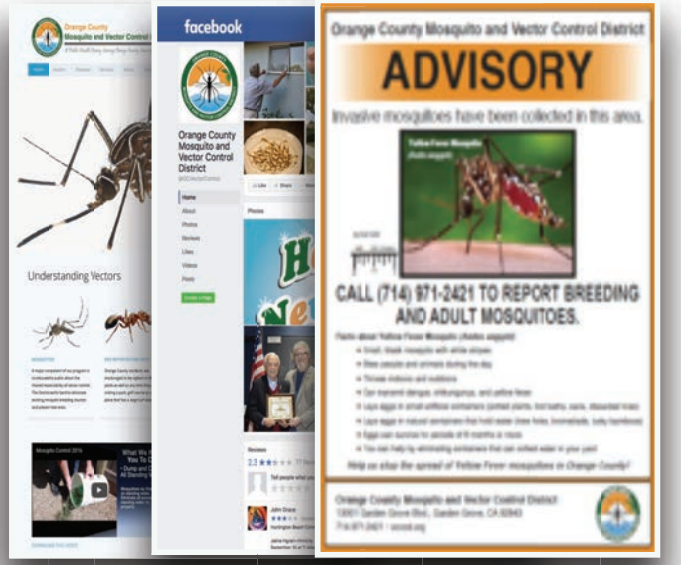
Integrated Vector Management

Surveillance

Source Reduction

Education



Integrated Vector Management

Chemical control FOR IMMATURE STAGES OF MOSQUITOES

Chemical control FOR ADULTS MOSQUITOES

Services We Provide

- **Education:** outreach events, presentations, literature, web, social media
- **Surveillance:** testing pathogens in mosquitoes, ticks, fleas, rodents, birds, sometimes opossums
- **Control** of mosquitoes, RIFA, rats
  - Source reduction
  - Biological control – Mosquitofish
  - Chemical control - larvicide, adulticide

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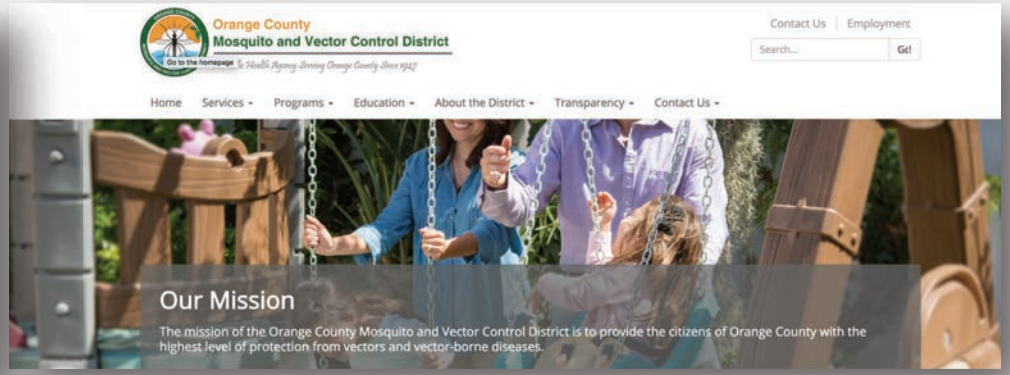
Communications

- Increase public awareness through public outreach campaigns, education programs and media sources
- Work collaboratively with elected officials
- Develop and maintain website



Education

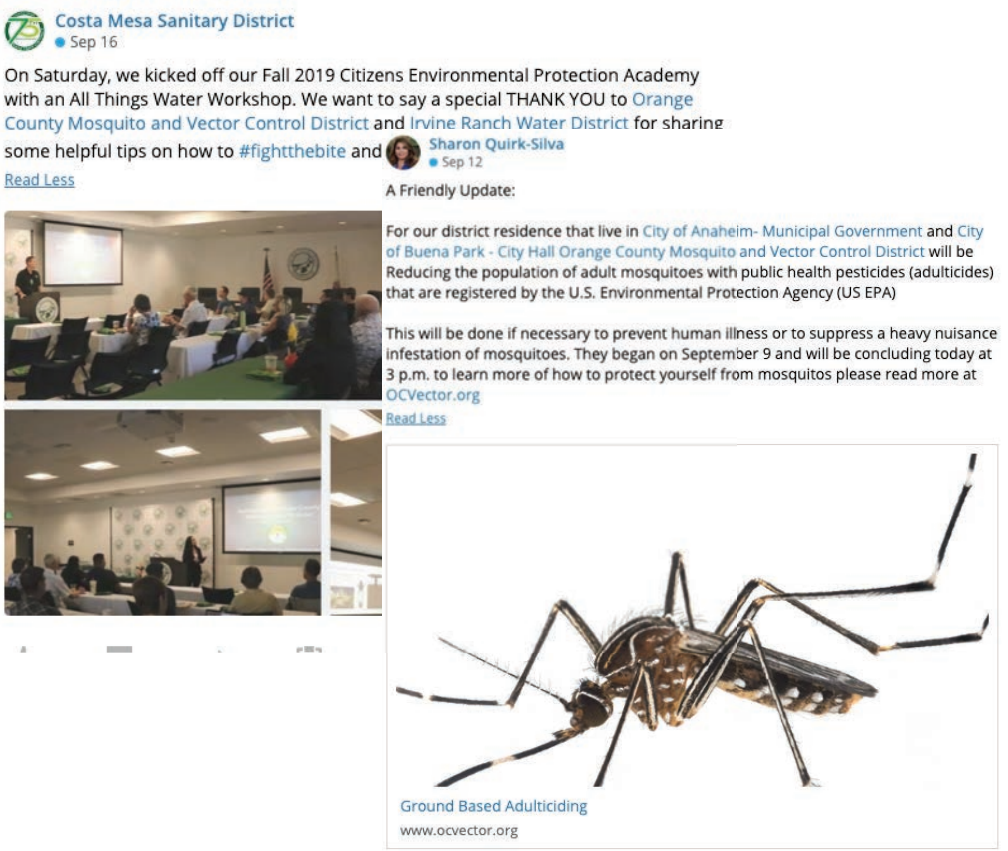
- Customer Service
- Website
- Media Relations
  - Press strategies
  - Social Media
- Education
  - For both the public and staff
- Government Affairs
  - State and Federal concerns

Public Awareness

- Classroom education programs
- Outreach
- Events
- Presentations
- Educational material
- Social media
- Public relations
- Large media campaigns

Working with Cities and Elected Officals

- City Public Information Officer emails and e-Alerts
- On-going meetings with City staff
- Collaboration on summer campaigns
- Assistance with Public Space Postings
- Partnership on shared social media messaging
- Meet with Legislative Staff



Working with Homeowners

- Check weekly for standing water
- Dump and drain any water
- Remove any items that can hold water
- Repair window and door screen
- Use EPA registered repellent

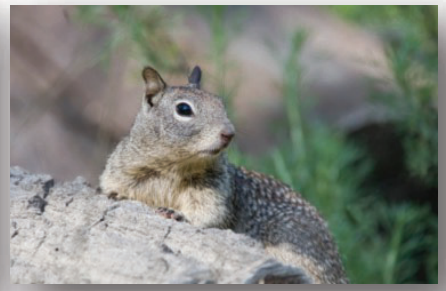
Surveillance

- Vector-Borne Disease Surveillance Programs
  - Monitor mosquito counts county-wide
- Monitor for newly introduced mosquitoes and mosquito-borne diseases
- Environmental Assessment/ Mosquito Fish Rearing Programs

Disease Surveillance

Monitor and conduct surveillance:

- **Mosquito-borne Encephalitis**
  - West Nile virus
- **New and Emerging Diseases**
- **Mammal-borne diseases**
  - Flea-borne Typhus
  - Hanta virus
  - Bubonic Plague
- **Other threats**



Controlling for Rats

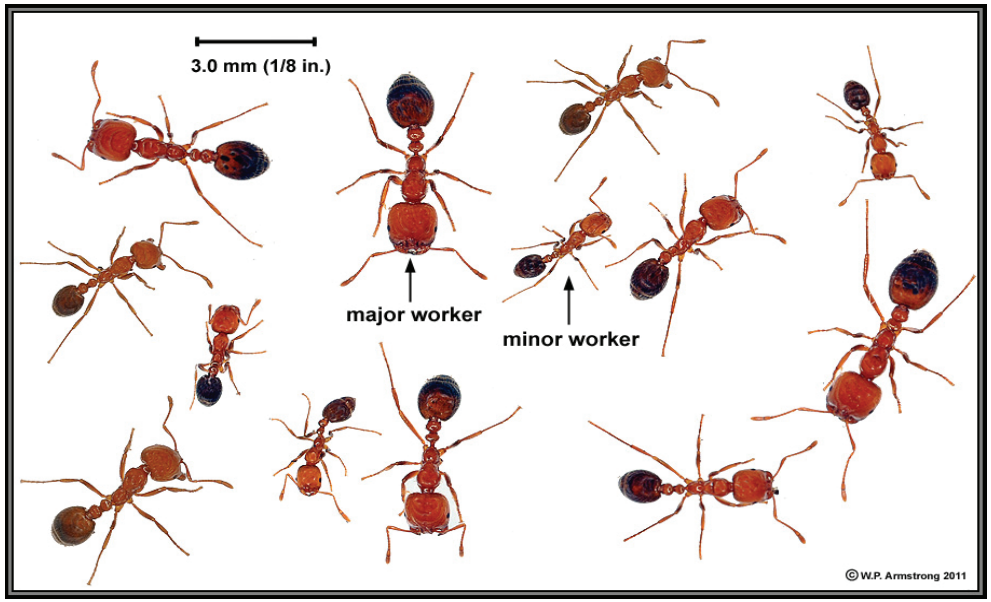
- Using snap-traps to control rats is an acceptable, efficient, and humane way to get rats under control
- Educating on rat attractants such as
  - Food sources
  - Habitat
  - Water

Operations: Controlling for Rats

- The District modified our rat control program due:
  - Growing concerns and evidence showing secondary poisoning of wildlife
  - Increasing regulatory restrictions
  - Our commitment to integrated vector management practices (IVM)

Controlling Red Imported Fire Ants

- RIFA are invasive ants that bite and sting
- RIFA differ from other common ants by there multiple sizes



Red Imported Fire Ants (RIFA)

- RIFA Imported into Orange County in 1999
- RIFA can both bite and sting

Red Imported Fire Ants

- Control for Red Imported Fire Ants
- Inspectors treat:
  - Schools
  - Golf courses
  - Common areas
  - Homes
- Ant baits are applied at 2 oz/acre

Flies

- Inspectors will ID the fly species and determine where the maggots are breeding so to eliminate that breeding source
- Control is achieved by sanitation

Mosquitoes

Yellow Fever Mosquito
Aedes aegypti

- Zika
- Dengue viruses
- Yellow fever
- Chikungunya
- West Nile virus
- Dog heartworm

Asian Tiger Mosquito
Aedes albopictus

- Dengue viruses
- Zika
- Chikungunya
- West Nile virus
- Dog heartworm

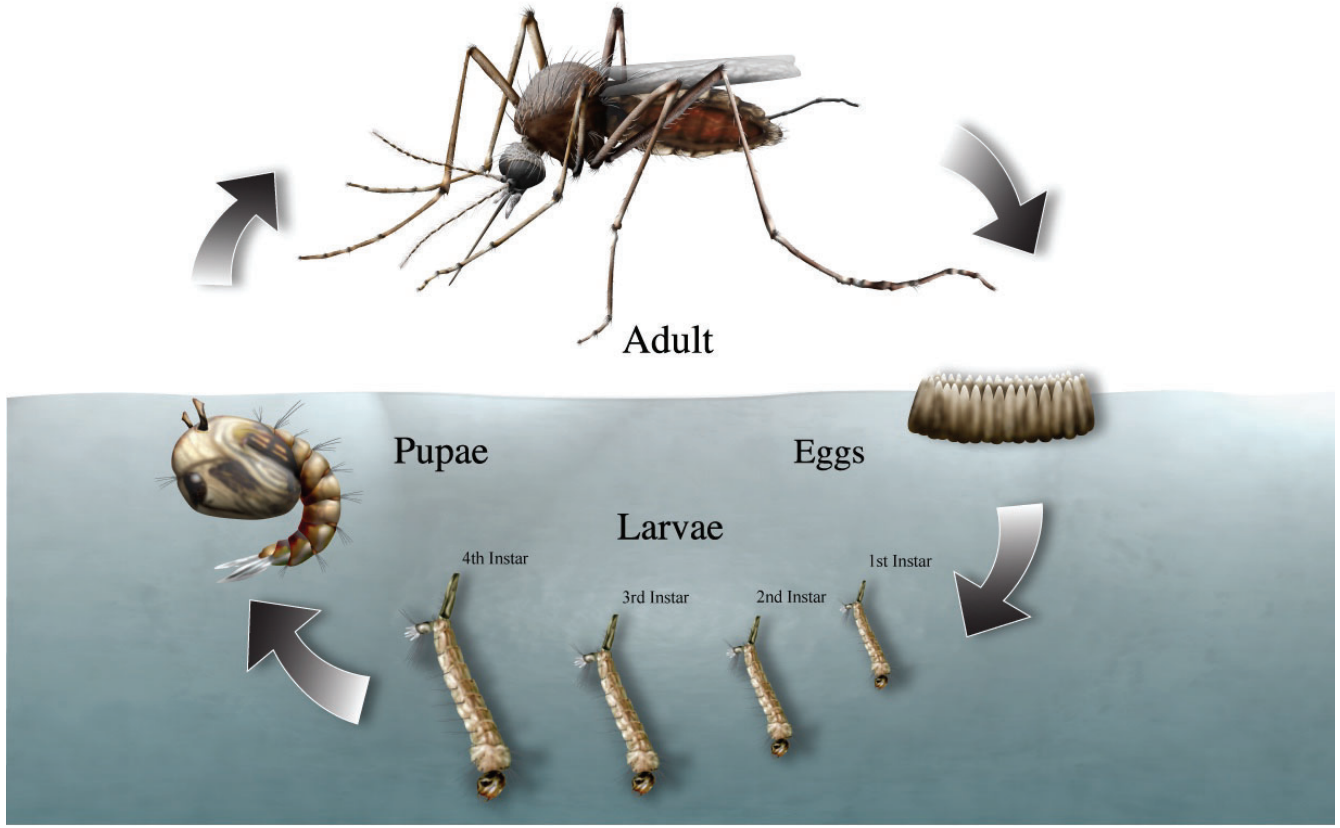
Australian Backyard Mosquito
Aedes notoscriptus

- Dog heartworm

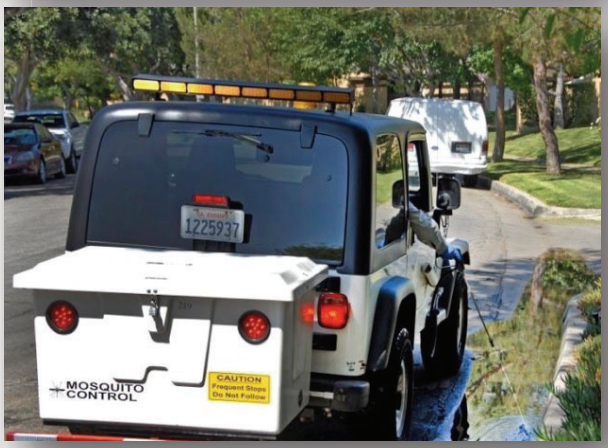
Southern House Mosquito
Culex quinquefasciatus

- West Nile virus

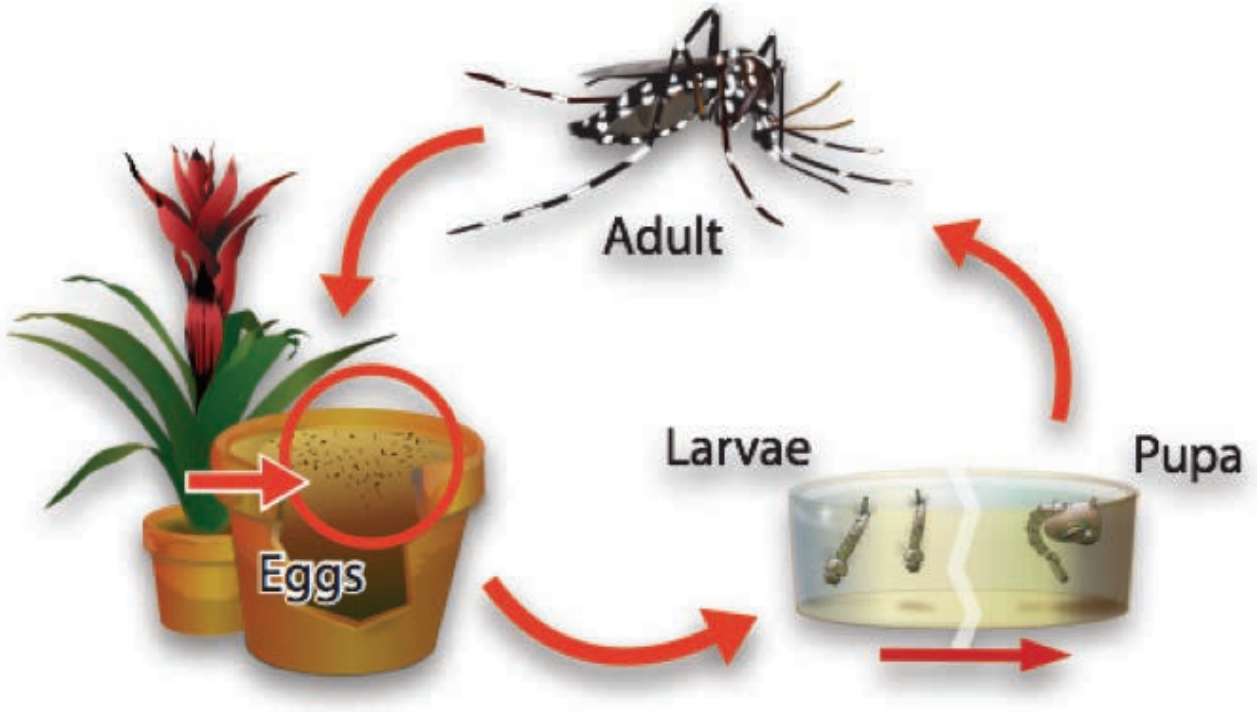
Culex Mosquito Life Cycle



Culex Mosquito Breeding Sources



Aedes Mosquito Life Cycle

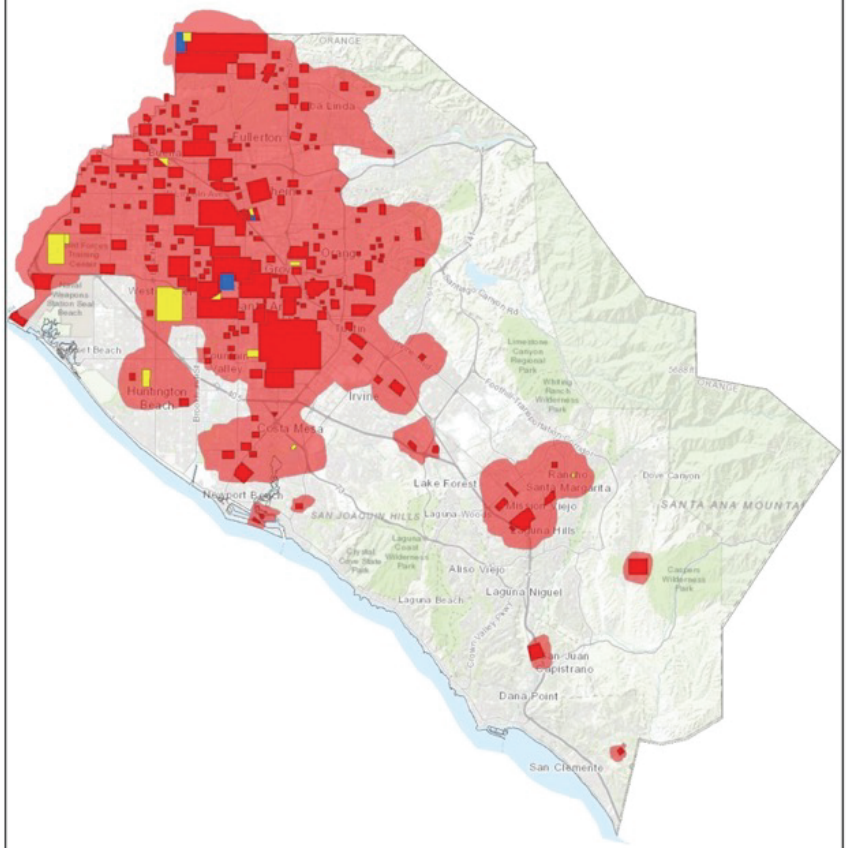


Invasive Mosquito Breeding






2019 and 2020 Prediction



Invasive Aedes in OC

2016 = 3,500 acres or 5.0 sq miles
2017 = 17,000 acres or 26 sq miles
2018 = 45,600 acres or 71 sq miles
2019 = 67,633 acres or 105 sq miles
2020 = 89,666 acres or 140 sq miles

Livable area of Orange County = 320,000 or 500 sq miles

*Predictions use current data and reasonable assumptions that conditions will not change significantly in the future.

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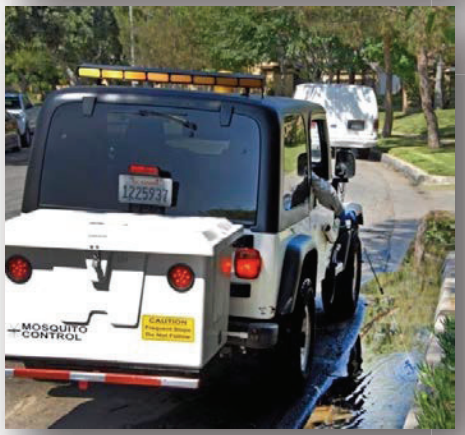
What Is the difference?

	Culex	Aedes
Breeding habits	Larger Sources	Backyard Sources
Biting habits	Bite at dusk and dawn, prefer birds	Bite during day, prefer mammals
Eggs	Eggs laid in rafts	Individual eggs
Breeding time	One week	Eggs viable for years in dry conditions
Where do they live	Outdoors	Indoor and Outdoors

Inspection and Control of Mosquitoes

- Maintaining a database of known breeding sources
  - Abandoned or unmaintained swimming pools
  - Gutters
  - Manholes and storm drains
  - Flood channels



Inspection and Control of Mosquitoes

- Work with cities and county staff to identify, repair or treat BMPs

Inspection and Control of Mosquitoes

- Identify new breeding sources through service requests and investigations
- Educating and controlling for invasive Aedes mosquito species in Orange County



Lunch

The Science behind Vector Control

Mosquitoes Control Is Complicated

Marshes and Wetlands

Improperly-Planned BMP

Nurseries

Pools and Spas

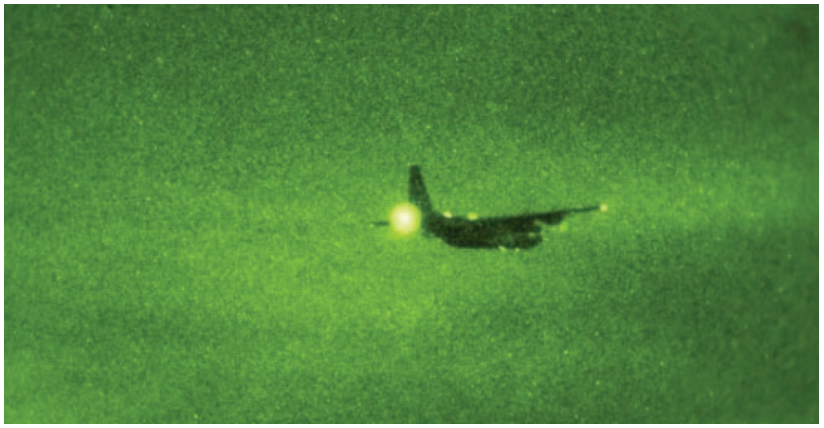
Drains/City Infrastructure

Backyard and Small Sources

Natural Control for Mosquitoes

- **Bats**
  - Fly for their requirements, not ours
  - Eat a few mosquitoes and prefer larger insects (e.g., moths)
  - Rabies & public health risk with bats
- **Birds**
  - Can not direct their distribution
  - Eat a few mosquitoes
    - Feed during day
- **Dragon Flies**
  - Can not direct their distribution
  - Eat many different types of insects
    - Feed during day

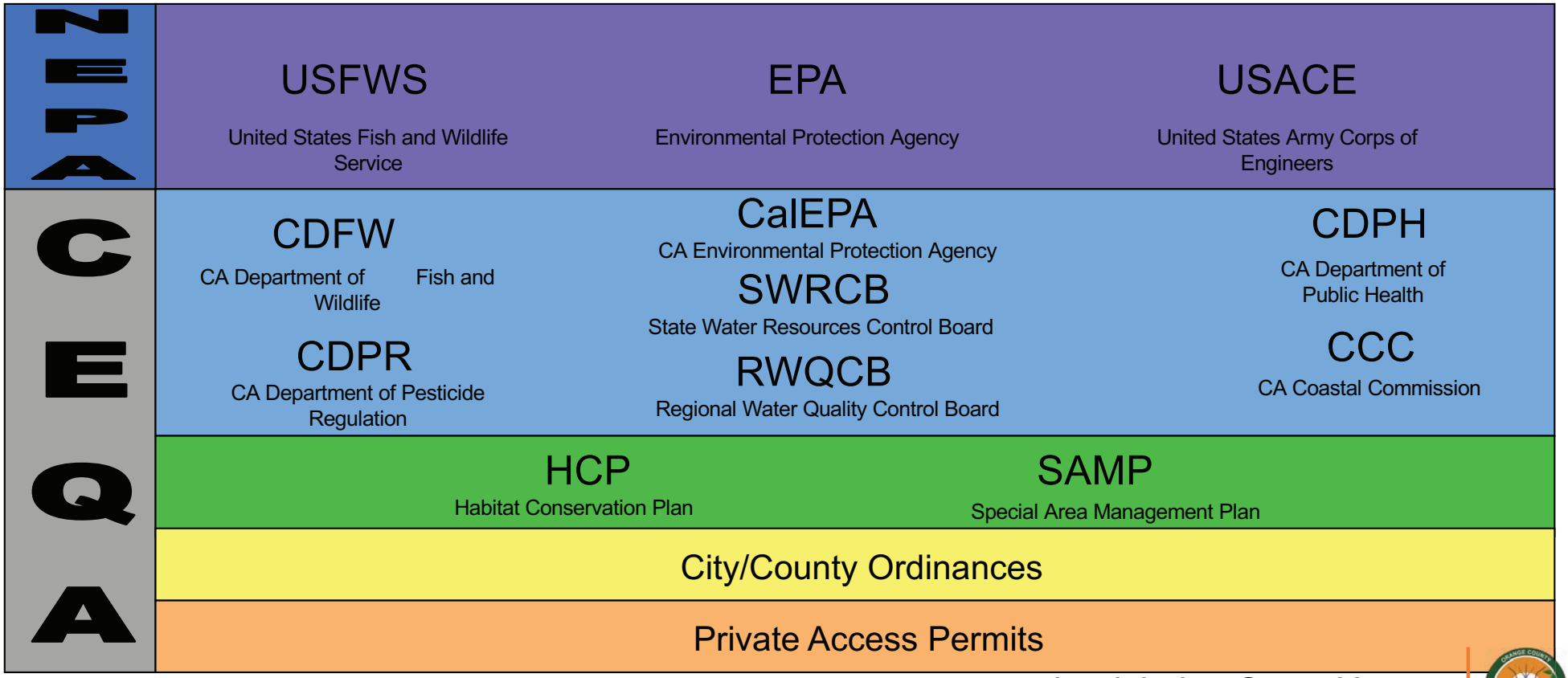
Preventing Annoyance & Disease



Early Days of Mosquito Control

- Draining of wetlands & use of oils (diesel oil)
- Application of potent insecticides (DDT)
  - Environmental affects ignored
- 1972: Creation of US EPA & Cal EPA put in place regulations

Environmental Regulatory Layers



Pesticide Regulations by EPA

- Registration based on assessment of risks and benefits
  - "Reasonable certainty of no harm", especially for children & sensitive subpopulations
- EPA sets pesticide use application rates (e.g., 1 – 3 oz/acre)
- EPA reviews each pesticide registration once every 15 years
  - Manufacture has to re-submit test data

Pesticide Registration Process

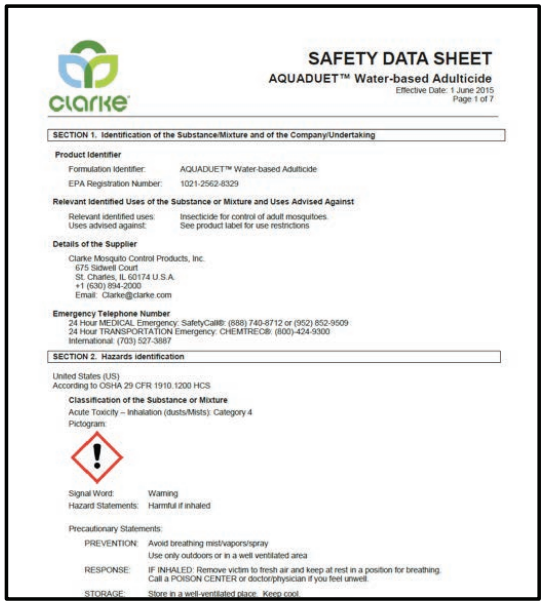
- Pesticide Registration takes 8 – 12 years thru EPA
  - Many products used in agriculture first
  - Evalua
- In Califor al EPA before th
  - An ext in CA
  - "Publi ent rating

"The Manufacture Bears the Burden that Benefits Exceed the Risk" (EPA)

EPA's Registration Review Program

EPA Policy for Human Health and Environmental Risk Assessment:

- Mutation & reproductive toxicity
- Acute & chronic toxicity testing
- Carcinogenic
- Immune system evaluation
- Environmental toxicity
  - Pollinator (honeybee) Protection
  - Endangered Species Act Evaluations
  - Bioaccumulation, mobility, & persistence
- Efficacy against mosquitoes



clarke

SAFETY DATA SHEET

AQUADUET™ Water-based Adulticide

Effective Date: 1 June 2015
Page 1 of 7

SECTION 1. Identification of the Substance/Mixture and of the Company/Undertaking

Product Identifier

Formulation Identifier: AQUADUET™ Water-based Adulticide
EPA Registration Number: 1021-2562-8329

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses: Insecticide for control of adult mosquitoes
Uses advised against: See product label for use restrictions

Details of the Supplier

Clarke Mosquito Control Products, Inc.
675 Sidwell Court
St. Charles, IL 60174 U.S.A.
+1 (630) 894-2000
Email: Clarke@clarke.com

Emergency Telephone Number

24 Hour MEDICAL Emergency: SafetyCall®: (888) 740-8712 or (952) 852-9509
24 Hour TRANSPORTATION Emergency: CHEMTREC®: (800)-424-9300
International: (703) 527-3887

SECTION 2. Hazards identification

United States (US)
According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Acute Toxicity – Inhalation (dusts/Mists): Category 4

Pictogram:

Signal Word: Warning
Hazard Statements: Harmful if inhaled

Precautionary Statements:

PREVENTION: Avoid breathing mist/vapors/spray
Use only outdoors or in a well ventilated area

RESPONSE: IF INHALED: Remove victim to fresh air and keep at rest in a position for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

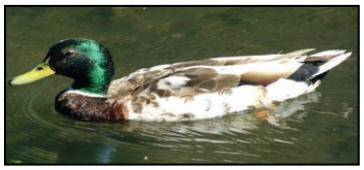
STORAGE: Store in a well-ventilated place. Keep cool.

Lab Dose Response & Field Exposure Tests: Low to High Dosages thru Ingestion, Skin, Eyes, & Inhalation

Laboratory Tests:

- **Cell cultures** (mutations, chromosome)
- **Crustaceans** (shrimp, water fleas)
- **Fish** (trout, perch)
- **Birds** (duck, quail)
- **Mammals** (rats, mice, rabbits)





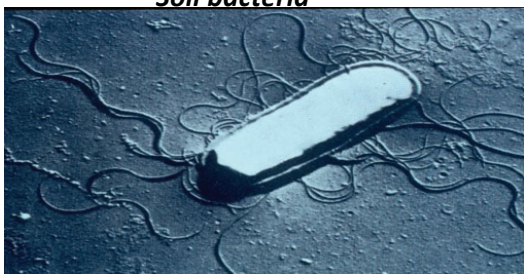

Field Tests after Spraying:

- **Movement in soil**
- **Residuals on fruits & vegetables, other food crops**
- **Dispersion in air**
- **Persistence & decay on crops & soil**


Era of Biorational Insecticides & Strategies: Integrated Pest Management After EPA & Laws, 1973 – Present

- **Microbial control agents (3)**
  - Bacteria (*Bti*, *Bs,* spinosad)
- **Insect growth hormones (2)**
  - More specific
  - Interfere with growth process
- **Lightweight oils (2)**
- **Biological (Mosquito fish)**
- **Habitat Manipulation**
- **Other Strategies**
  - Radiation
  - Genetic
  - Sterilization

Soil bacteria



EPA's Registration Review Program

EPA Policy For Human Health Risk Assessment

- EPA includes a **300 - 1,000x lower "Uncertainty Factor"** based upon the lowest lab dose that showed no harm in test animals
  - **"No Observable Effect Level" (NOEL)**

Mosc Control

Bacterial-derived insecticide,
Bacillus thuringiensis israelensis

Insect growth regulator
methoprene

CocoBear™ Mosquito Larvicidal Oil

Larvicidal oils. They are one of the simplest mosquito control tools available . . . yet they are also the most overlooked. Effective, easy to use — they came into use in the 50s in the form of diesel fuel and kerosene. But with the introduction of CocoBear from Clarke, now you have a superior choice!

CocoBear, a patent pending formulation, was 3 years in development at Clarke. We were driven by the objectives of creating a consistent, high performance larvicidal oil option without heavy reliance on petroleum oil. The result: a formulation that reduced petroleum distillates from 98.7% to 10% compared to predecessor GoldenBear.

PRODUCT HIGHLIGHTS

Product Characteristics

- Spreads fast/very fast. Usual larvicidal oil wind caution
- Works well in cooler temps (compared to Golden Bear)
- In field trials, was showing 100% control inside of 2 hrs
- Odor: Light coconut & soap
- Non-flammable
- In three freeze/thaw tests did not crystallize or separate
- No settling or separation noticed in storage

Use areas:

- Marshes
- Swamps
- Temporary rain pools
- Sloughs
- Settling Ponds
- Drainage areas
- Ditches
- Stagnant pools
- Standing water on irrigated cropland

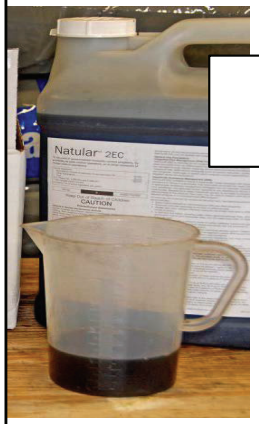
Rate

- 3 - 5 gals/ac

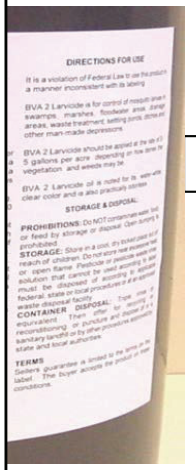
NOTES: As with some of the other larvicidal oils, need to be cautious to not get drift on desirable vegetation as leaf burning / discoloration has been observed in some trials.

Application equipment should have nylon or Viton seals as product may not be compatible with natural or nitrile rubber, neoprene or Tygon. May also react with brass, bronze, copper, lead, tin or zinc. So stainless steel, aluminum or carbon steel spray tips / tanks recommended.

GLOBAL HEADQUARTERS
110 E. Irving Park Road, 4th Floor, Roselle, IL 60172
Phone: +1.630.894.2000 Fax: +1.630.894.1774
www.clarke.com

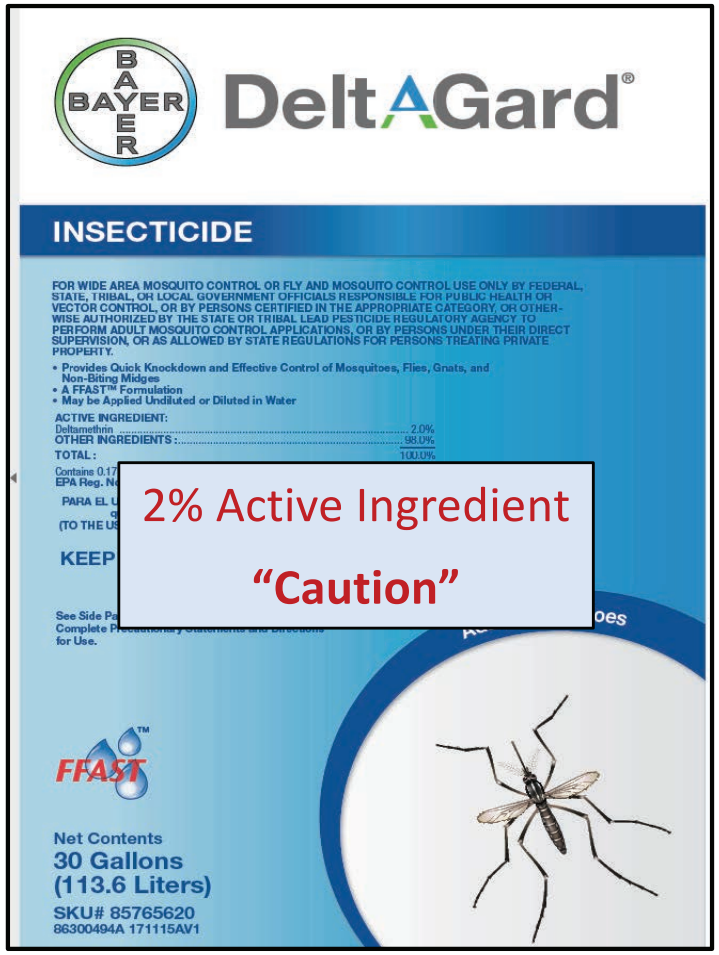


Bacterial-derived insecticide,
Saccharopolyspora spinosa

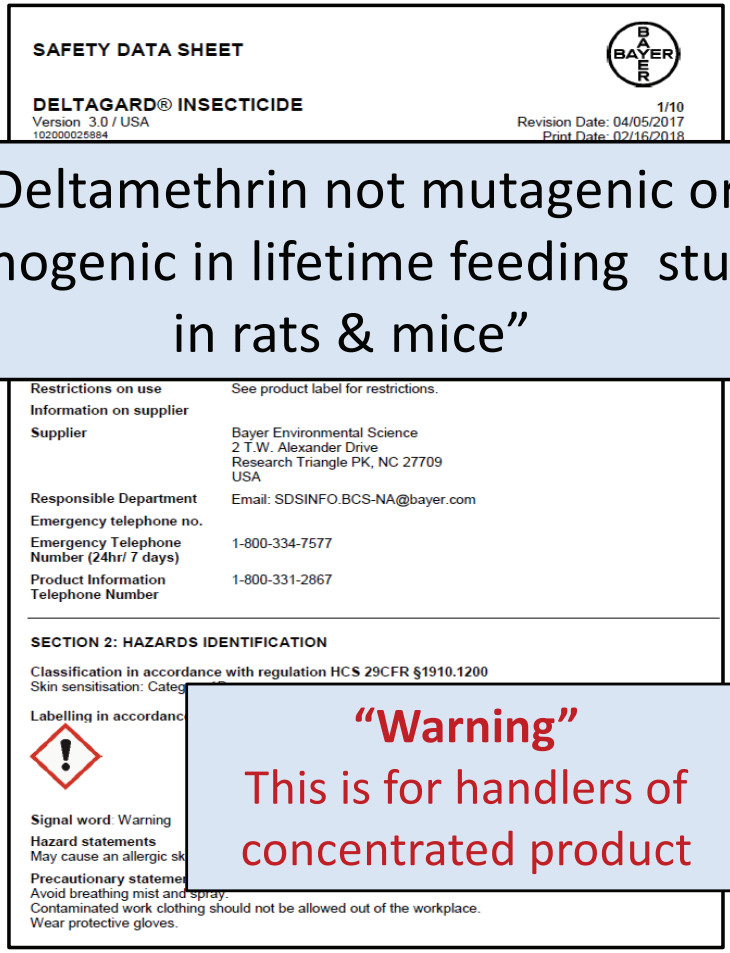


Light-weight oil

DeltaGard, Contains Deltamethrin, A Pyrethroid (Synthetic Version): A Public Health Adulticide, Its Label & Safety Data Sheet



"Deltamethrin not mutagenic or carcinogenic in lifetime feeding studies in rats & mice"



For Toxicologists, "The Dose Makes the Poison" for All Products Paracelsus

Acute toxicity — Life-threatening one-time doses

SUBSTANCE	FOUND IN	Lethal dose (LD50 mg/kg)	CATEGORY
Water	... Water	90000	Practically non-toxic
Sucrose	Table sugar	30000	
Monosodium glutamate	Flavor enhancer, soy, cheese	16000	
Ethanol	Alcoholic beverages	7000	
Glyphosate	Herbicide (RoundUp)	5600	
Aluminum hydroxide	Antacid, vaccine adjuvant	>5000	
Fructose	Fruits, component of sucrose	4000	Slightly toxic
Spinosad	Organic insecticide	3700	
Sodium chloride	Table salt	3000	
Eugenol	Clove oil, organic pesticide	2700	
Paracetamol (acetaminophen)	Tylenol, Panadol	2400	
Vanillin	Vanilla bean, vanilla sugar	1600	
Hydrogen peroxide 70%	Bleach, disinfectant	1000	
Theobromine	Chocolate, tea, guarana	950	
Copper sulfate	Organic fungicide	300	Moderately toxic
Chlorpyrifos	Organophosphate insecticide	230	
Caffeine	Natural pesticide, coffee plant	190	
Lead	Batteries, cables, paints	155*	
DDT	Restricted insecticide	100	
Rotenone	Restricted organic pesticide	60	
Vitamin D3	Supplements, fish, mushrooms	37	Highly toxic
Nicotine	Natural pesticide, tobacco	10	
Mycotoxin T2	Plant pathogen, moldy grain	5	
Aflatoxin	Soil fungus, moldy foods	5	
Hydrogen cyanide	Fruit pits, bitter cassava	4	
Botulinum toxin	Botox, Clostridium botulinium	0.001	

Lethal Dose 50% (LD50)

Food/Drug Products

Caffeine: 190 mg/kg
Aspirin: 1,200 mg/kg
Salt: 3,000 mg/kg
Alcohol: 7,000 mg/kg

Organic Pesticides

Copper Sulfate: 300 mg/kg
Eugenol: 2,700 mg/kg

Public Health Pesticides

Deltamethrin: 3,129 mg/kg
Bti: > 5,000 mg/kg
Methoprene: > 5,000 mg/kg
Oils: > 5,000 mg/kg

Chronic toxicity — Acceptable daily intakes of minimal concern

SUBSTANCE	FOUND IN	Limit mg/kg
Water	You know this one	50000
Sucrose	Table sugar	800
Ethanol	Alcoholic beverages	170
Monosodium glutamate	Cheese, soy, flavor enhancer	120
Sodium chloride	Table salt	60
Vanillin	Vanilla bean, vanilla sugar	10
Eugenol	Clove oil, organic pesticide	1
Glyphosate	Herbicide (RoundUp)	0.5
Copper sulfate	Organic fungicide	0.5
Aluminum hydroxide	Antacid, vaccine adjuvant	0.14
Paracetamol	Tylenol, Panadol	0.093
Spinosad	Organic insecticide	0.024
Hydrogen cyanide	Fruit pits, bitter cassava	0.012
DDT	Restricted insecticide	0.010
Lead	Batteries, cables, paints	0.007
Caffeine	Coffee, tea, chocolate	0.003
Vitamin D3	Supplements, fish	0.002
Chlorpyrifos	Organophosphate pesticide	0.001
Nicotine	Natural pesticide, tobacco	0.0008
Rotenone	Restricted organic pesticide	0.0004
Mycotoxin T2	Fusarium, moldy grain	0.00002

What is this Safety Data Sheet For (It's a Food Product)?

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 3000 mg/kg [Rat.]. Acute dermal toxicity (LD50): >10000 mg/kg [Rabbit]. Acute toxicity of the dust (LC50): >42000 mg/m3 1 hours [Rat].

Mutagenic fo … **ia and/or yeast**

Special Remar … **00 mg/kg**

Special Remar …

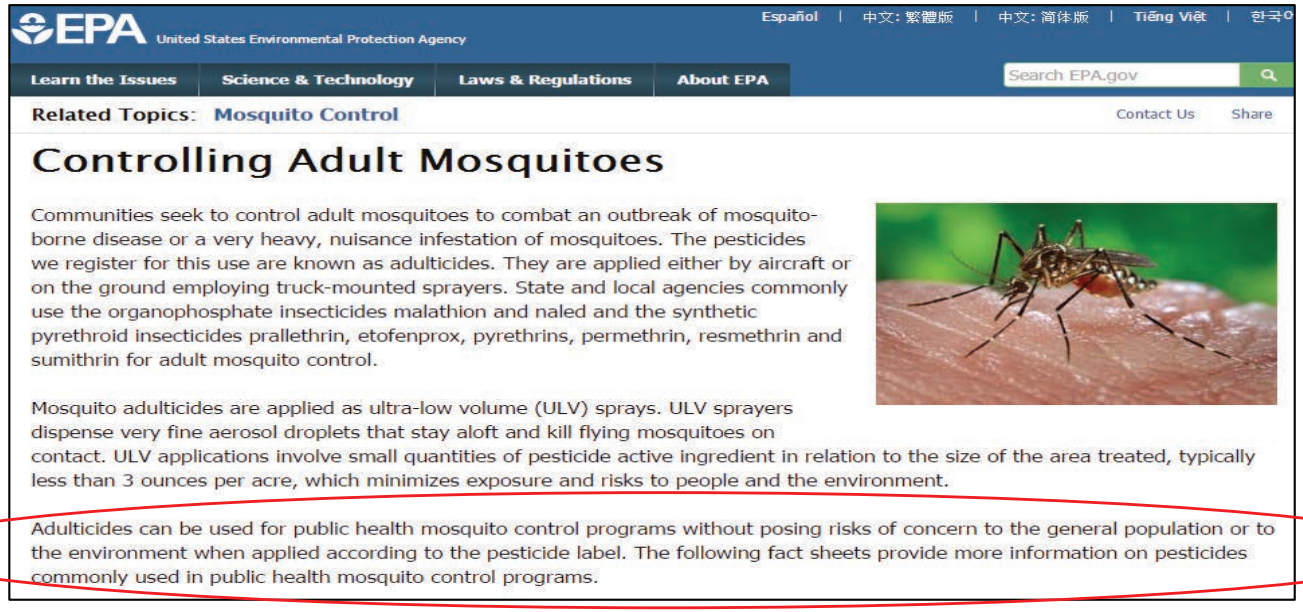
It's for Table Salt

Causes adv … **abortion)**

adverse reproductive effects and birth defects in animals, particularly rats and mice (fetotoxicity, abortion, musculoskeletal abnormalities, and maternal effects (effects on ovaries, fallopian tubes) by oral, intraperitoneal, intraplacental, intrauterine, parenteral, and subcutaneous routes. While sodium chloride has been used as a negative control n some reproductive studies, it has also been used as an example that almost any chemical can cause birth defects in experimental animals if studied under the right conditions (Nishimura & Miyamoto, 1969). In experimental animals, sodium chloride has caused delayed effects on newborns, has been fetotoxic, and has caused birth defects and abortions in rats and mice (RTECS, 1997). May affect genetic material (mutagenic)

Special Remarks on other Toxic Effects on Humans:
Acu … f large
qua … muscle
spa … may
pro … s and upper
respiratory tract.

May cause muscle spasicity/contraction…dehydration



EPA United States Environmental Protection Agency

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Controlling Adult Mosquitoes

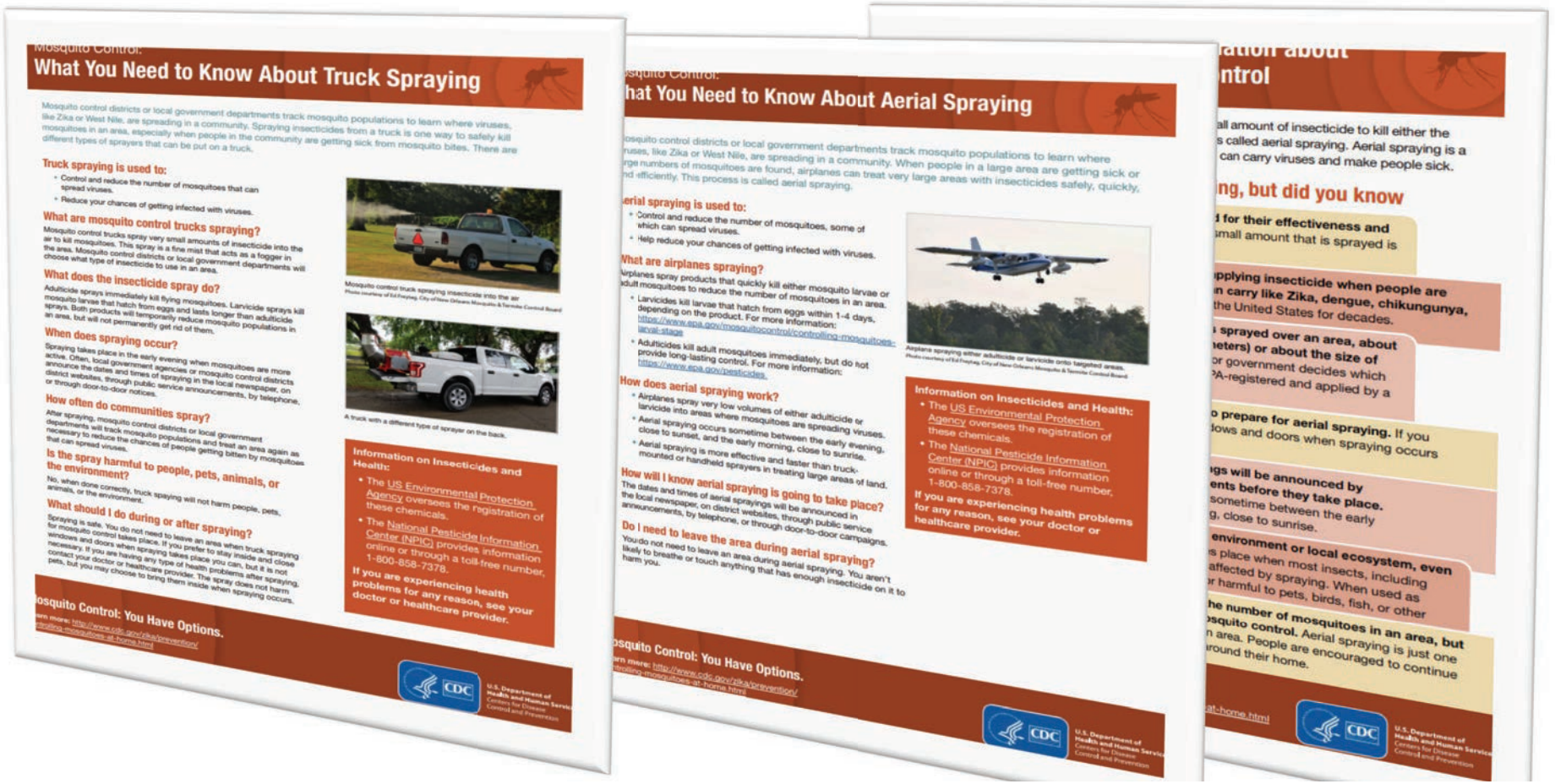
Communities seek to control adult mosquitoes to combat an outbreak of mosquito-borne disease or a very heavy, nuisance infestation of mosquitoes. The pesticides we register for this use are known as adulticides. They are applied either by aircraft or on the ground employing truck-mounted sprayers. State and local agencies commonly use the organophosphate insecticides malathion and naled and the synthetic pyrethroid insecticides prallethrin, etofenprox, pyrethrins, permethrin, resmethrin and sumithrin for adult mosquito control.

Mosquito adulticides are applied as ultra-low volume (ULV) sprays. ULV sprayers dispense very fine aerosol droplets that stay aloft and kill flying mosquitoes on contact. ULV applications involve small quantities of pesticide active ingredient in relation to the size of the area treated, typically less than 3 ounces per acre, which minimizes exposure and risks to people and the environment.

Adulticides can be used for public health mosquito control programs without posing risks of concern to the general population or to the environment when applied according to the pesticide label. The following fact sheets provide more information on pesticides commonly used in public health mosquito control programs.

"Adulticides can be used for public health mosquito control programs without posing risks of concern to the general population or to the environment when applied according to the pesticide label."

CDC Public Information Documents



Mosquito Control:
What You Need to Know About Truck Spraying

Mosquito control districts or local government departments track mosquito populations to learn where viruses, like Zika or West Nile, are spreading in a community. Spraying insecticides from a truck is one way to safely kill mosquitoes in an area, especially when people in the community are getting sick from mosquito bites. There are different types of sprayers that can be put on a truck.

Truck spraying is used to:

- Control and reduce the number of mosquitoes that can spread viruses.
- Reduce your chances of getting infected with viruses.

What are mosquito control trucks spraying?

Mosquito control trucks spray very small amounts of insecticide into the air to kill mosquitoes. This spray is a fine mist that acts as a fogger in the area. Mosquito control districts or local government departments will choose what type of insecticide to use in an area.

What does the insecticide spray do?

Adulticide sprays immediately kill flying mosquitoes. Larvicide sprays kill mosquito larvae that hatch from eggs and lasts longer than adulticide sprays. Both products will temporarily reduce mosquito populations in an area, but will not permanently get rid of them.

When does spraying occur?

Spraying takes place in the early evening when mosquitoes are more active. Often, local government agencies or mosquito control districts announce the dates and times of spraying in the local newspaper, on district websites, through public service announcements, by telephone, or through door-to-door notices.

How often do communities spray?

After spraying, mosquito control districts or local government departments will track mosquito populations and treat an area again as necessary to reduce the chances of people getting bitten by mosquitoes that can spread viruses.

Is the spray harmful to people, pets, animals, or the environment?

No, when done correctly, truck spaying will not harm people, pets, animals, or the environment.

What should I do during or after spraying?

Spraying is safe. You do not need to leave an area when truck spraying for mosquito control takes place. If you prefer to stay inside and close windows and doors when spraying takes place you can, but it is not necessary. If you are having any type of health problems after spraying, contact your doctor or healthcare provider. The spray does not harm pets, but you may choose to bring them inside when spraying occurs.

Mosquito control truck spraying insecticide into the air

A truck with a different type of sprayer on the back.

Information on Insecticides and Health:

- The US Environmental Protection Agency oversees the registration of these chemicals.
- The National Pesticide Information Center (NPIC) provides information online or through a toll-free number, 1-800-858-7378.

If you are experiencing health problems for any reason, see your doctor or healthcare provider.

osquito Control: You Have Options.

arn more: http://www.cdc.gov/zika/prevention/controlling-mosquitoes-at-home.html

CDC U.S. Department of Health and Human Services Centers for Disease Control and Prevention

hat You Need to Know About Aerial Spraying

osquito control districts or local government departments track mosquito populations to learn where ruses, like Zika or West Nile, are spreading in a community. When people in a large area are getting sick or rge numbers of mosquitoes are found, airplanes can treat very large areas with insecticides safely, quickly, nd efficiently. This process is called aerial spraying.

erial spraying is used to:

- Control and reduce the number of mosquitoes, some of which can spread viruses.
- Help reduce your chances of getting infected with viruses.

What are airplanes spraying?

Airplanes spray products that quickly kill either mosquito larvae or adult mosquitoes to reduce the number of mosquitoes in an area.

- Larvicides kill larvae that hatch from eggs within 1-4 days, depending on the product. For more information: https://www.epa.gov/mosquitocontrol/controlling-mosquitoes-larval-stage
- Adulticides kill adult mosquitoes immediately, but do not provide long-lasting control. For more information: https://www.epa.gov/pesticides

How does aerial spraying work?

- Airplanes spray very low volumes of either adulticide or larvicide into areas where mosquitoes are spreading viruses.
- Aerial spraying occurs sometime between the early evening, close to sunset, and the early morning, close to sunrise.
- Aerial spraying is more effective and faster than truck-mounted or handheld sprayers in treating large areas of land.

How will I know aerial spraying is going to take place?

The dates and times of aerial sprayings will be announced in the local newspaper, on district websites, through public service announcements, by telephone, or through door-to-door campaigns.

Do I need to leave the area during aerial spraying?

You do not need to leave an area during aerial spraying. You aren't likely to breathe or touch anything that has enough insecticide on it to harm you.

Airplane spraying either adulticide or larvicide onto targeted areas.

Information on Insecticides and Health:

- The US Environmental Protection Agency oversees the registration of these chemicals.
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CDC U.S. Department of Health and Human Services Centers for Disease Control and Prevention

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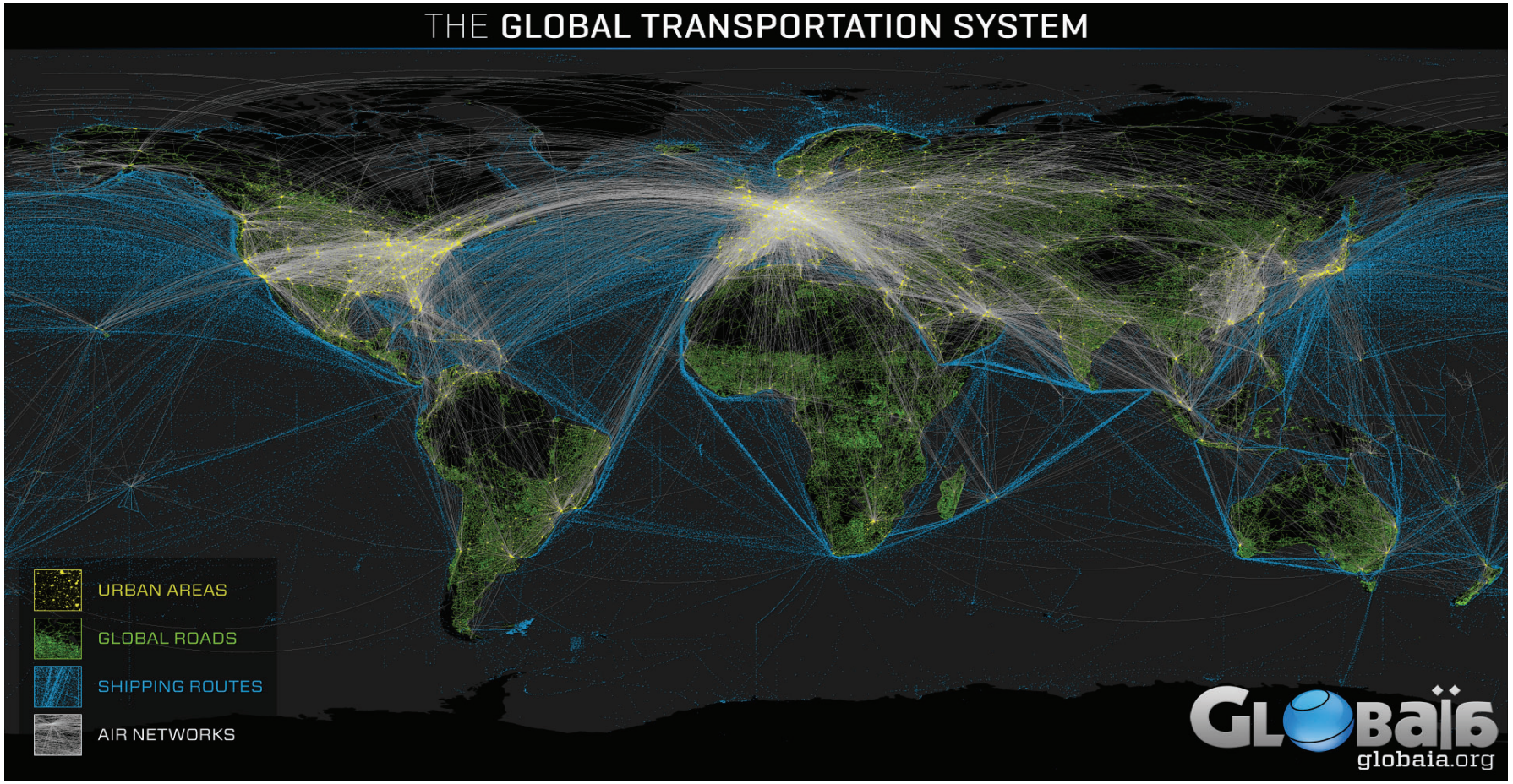
osquito control. Aerial spraying is just one
n area. People are encouraged to continue
round their home.

at-home.html

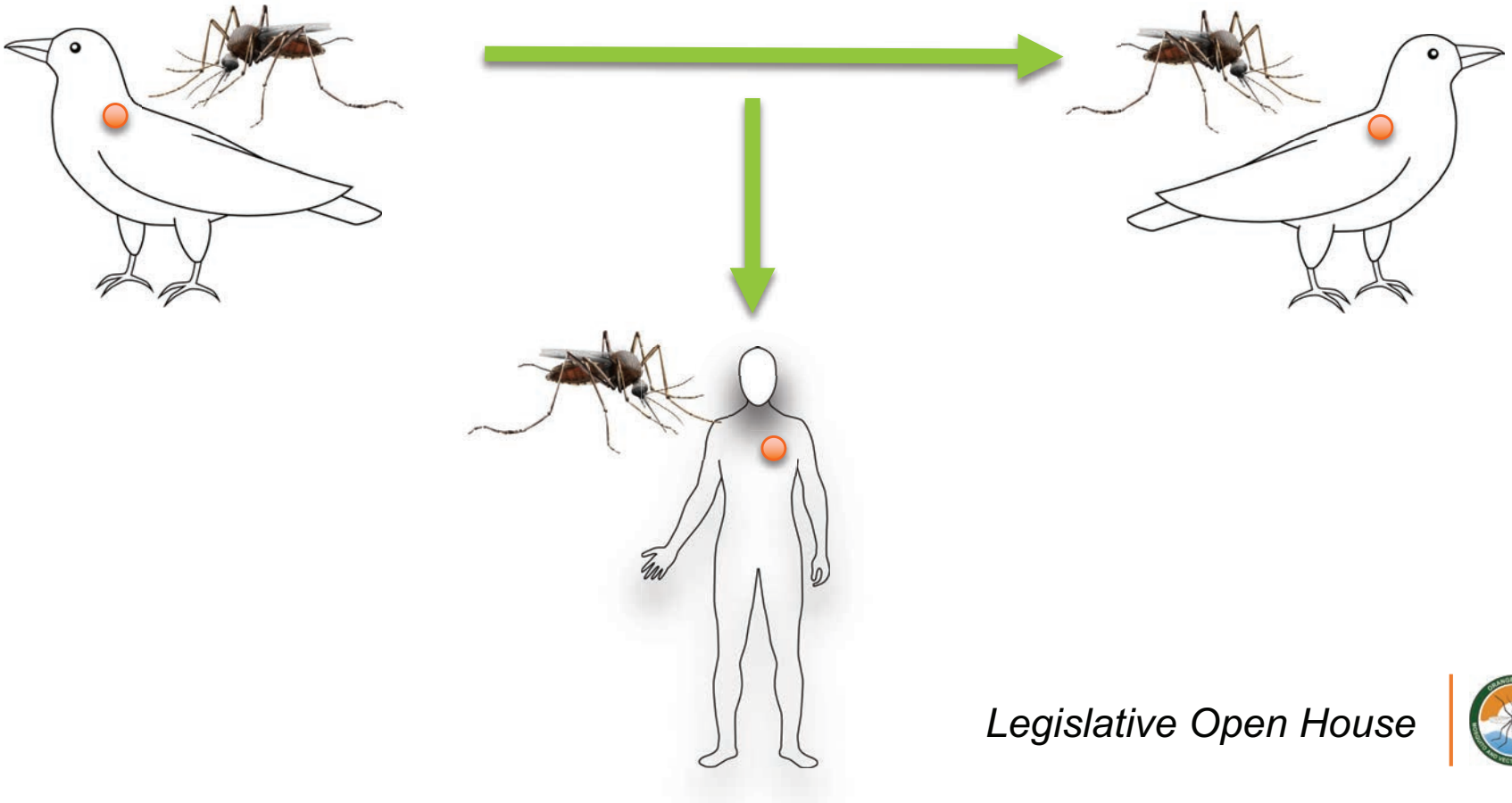
CDC U.S. Department of Health and Human Services Centers for Disease Control and Prevention

Vector Control and Public Health

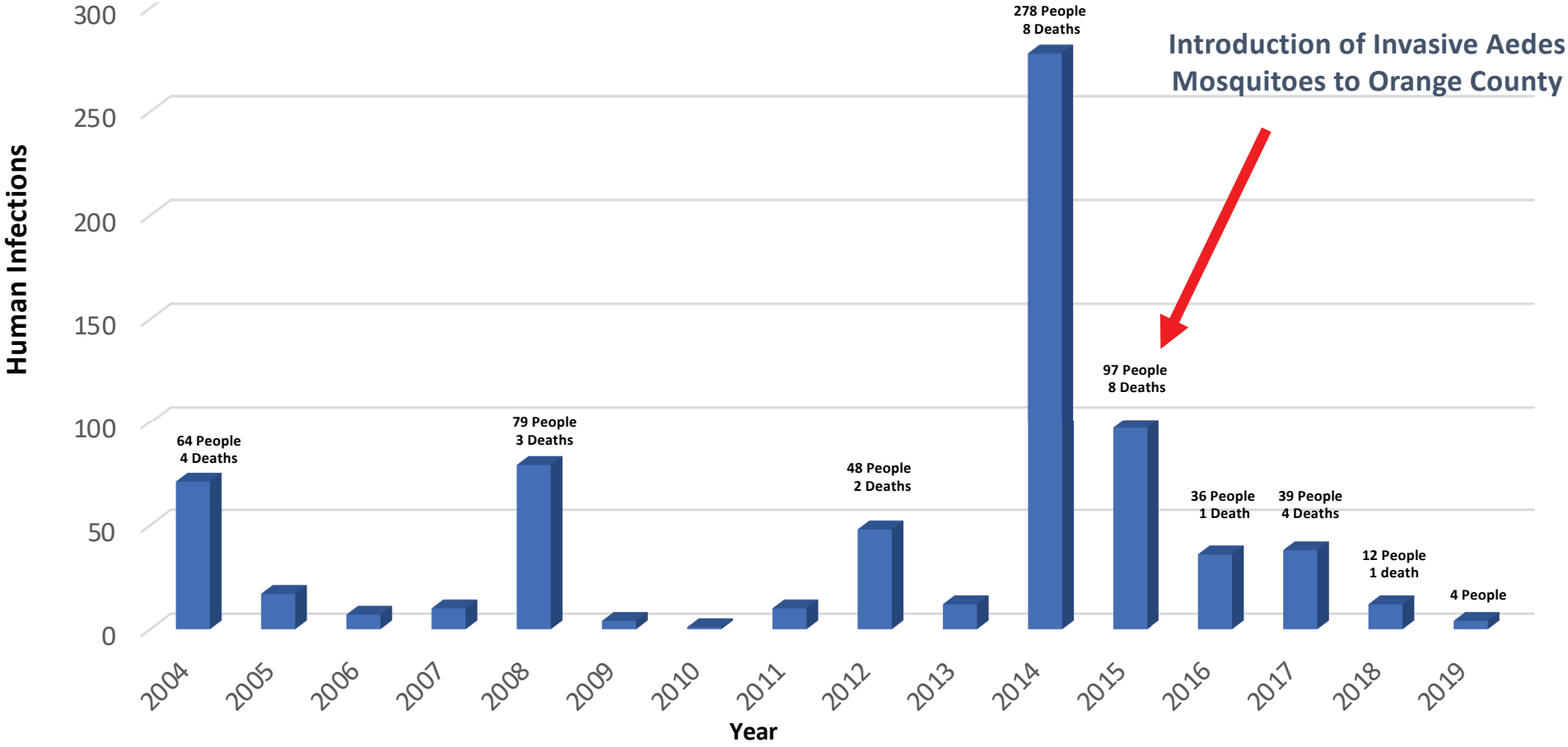
Vectors & Diseases Move Worldwide



Vector-borne Disease (Zoonotic)



Annual West Nile Infections in Orange County, 2004 – 2019:
724 Infections & 31 Deaths

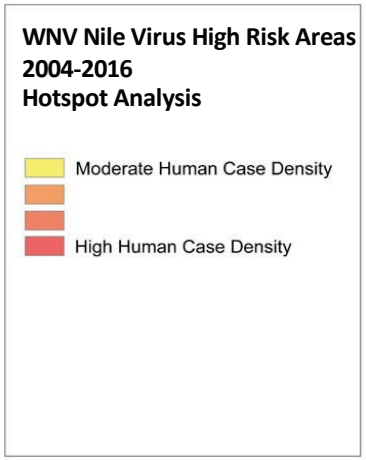


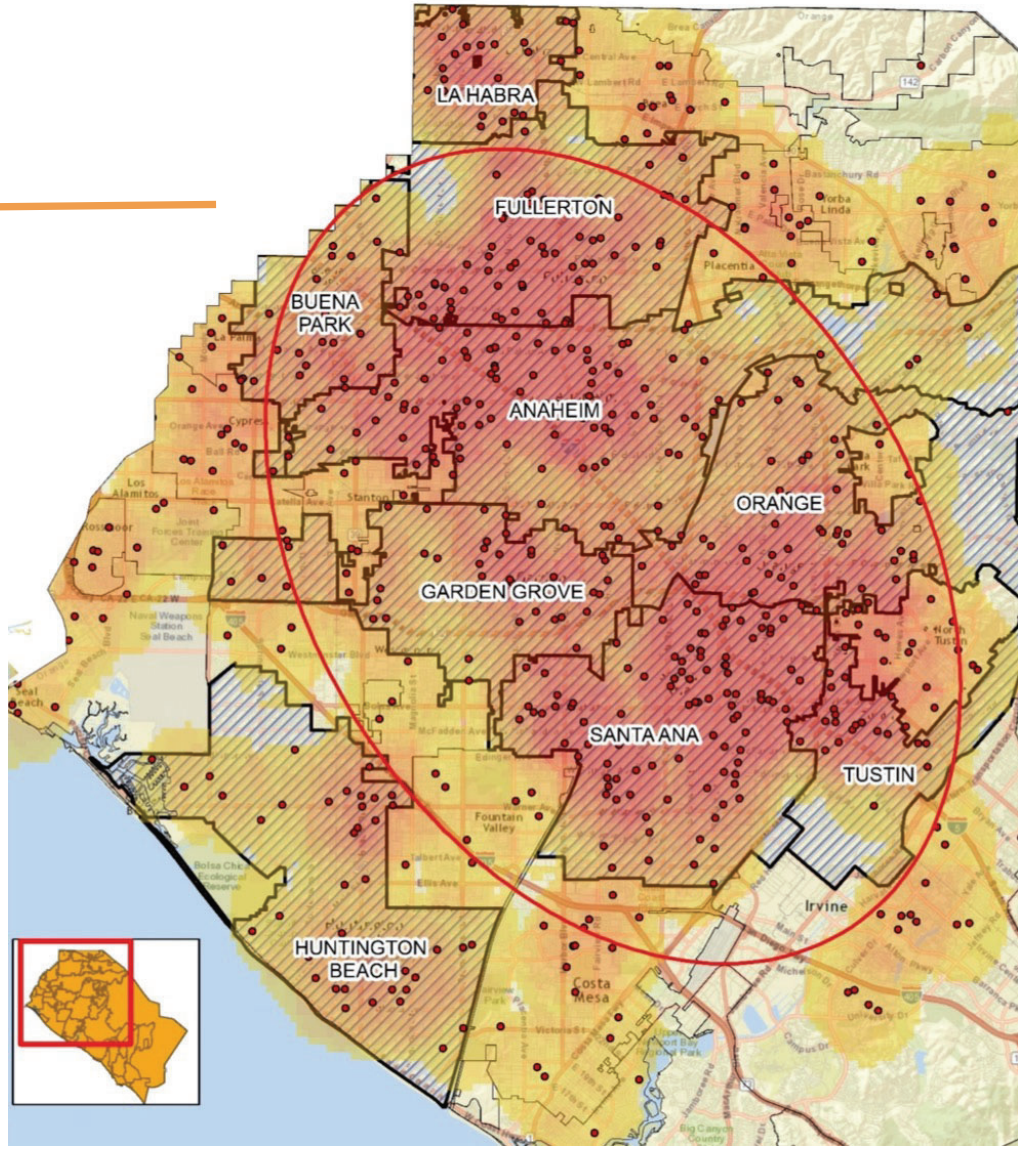
High Risk 9 Cities

- Program created in 2017
- District Staff met with city representatives from the nine cities with historically the most human cases of WNV
- Worked with each city to find unknown water sources
- Trained city field staff to look for mosquito-breeding sources in the field
- Worked with city communications department to help with mosquito awareness in their cities

High Risk 9 Cities

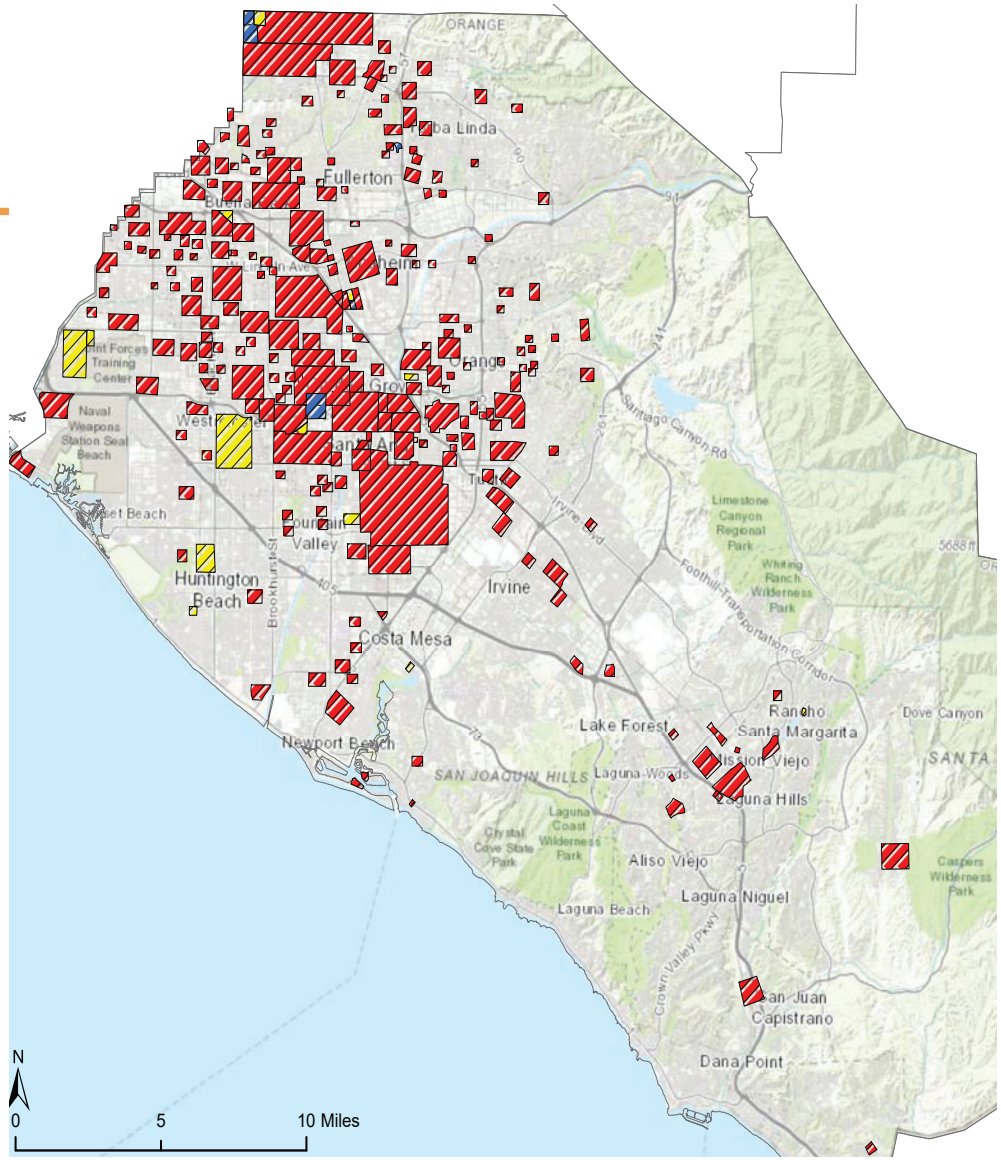
- Santa Ana
- Anaheim
- Fullerton
- Orange
- Garden Grove
- Huntington Beach
- Tustin
- La Habra
- Buena Park





Aedes and Disease

- Travel related cases of Dengue
  - 2019 (6)
- Other travel related disease



West Nile Virus Survivor
Mike Learakos

Challenges

Challenges

- Longer response time for service requests as Aedes expand
- Possible changes to how District responds to service requests
- OC residents will have to adapt to a new way of property management to reduce sources
- In high disease transmission years, District will prioritize WNV or other diseases over nuisance Aedes
- Regional Collaboration needed to address invasive Aedes response
- Disease outbreak response

Challenges

- Changing the message:
  - Residents need to change their perception
    - Adapt to a new way of property management to reduce sources
    - Pay attention to sources in their community
  - Perception of “It’s not going to happen to me” for disease transmission
  - Confusion between nuisance bites and disease carrying mosquitoes
- Non-Toxic/Anti-Pesticide Campaigns

Looking Ahead

The District's Goals

- Identify and reduce breeding sources in the backyard
- Vector Control is a shared responsibility
- District operations decisions are based on Integrated Vector Management principals
  - Public Outreach and Education
  - Surveillance
  - Quality Control and Research
  - Control of Vectors
- District's focus as a Public Health agency is disease prevention

Goals

- Expand awareness and engage residents, cities and elected officials
- Identify and use new technologies
  - Drones
  - Sterile Mosquito Programs

Drones

How You Can Help

Helping the District

- Be an advocate for the District
  - Legislation
  - Programs and Services
  - Collaboration and Partnerships
  - Community Awareness
  - Education

What You Can Do

- Include the District in emails and newsletter to constituents
- Collaborate on summer campaigns
- Assist with Public Space Postings
- Partner on shared social media messaging
  - Reshare alerts and notifications for your district
- Invite us to community outreach events and presentations

Questions