



Requesting an Aerial Application in a Post Disaster Situation

Jeff Brown

Brunswick County Mosquito Control





Overview

- Hurricane
 - Season
 - Lead time
- Governing Legislation
- Levels of Government Involved
- Responsibilities of each Agency
- Criteria For Reimbursement
 - Historical Data- Based on the CDC's Arbovirus Guidelines
 - Real time Data collection
 - Post storm Data Reporting



Requesting an Aerial Application in a Post Disaster Situation



Source: National Weather Service.



Agencies Involved in a Response

COMMISSIONERS

HEALTH AND HUMAN SERVICES

COUNTY MANAGER'S OFFICE

OPERATION SERVICES



NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

FINANCE MOSQUITO CONTROL



North Carolina Department of Agriculture & Consumer Services

Communicable Disease Branch (Medical Entomologists)



NCDHHS

Division of Public Health



Centers for Disease Control and Prevention

...s, Protecting People™

COUNTY ATTORNEY'S OFFICE



NORTH CAROLINA DEPARTMENT OF PUBLIC SAFETY



FEMA



EMERGENC

Epidemiology



NC COOPERATIVE EXTENSION



PUBLIC INFORMATION

State Laboratory of Public Health



Public Health Preparedness & Response Team

...ION HAS OFFICES IN EVERY COUNTY



beecheck
Apiary Registry by FieldWatch

Brunswick County GIS



Brunswick County Center

Parks & Recreation

TATE UNIVERSITY



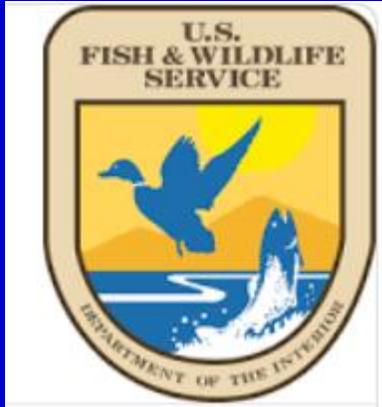
Participating Government Agencies



- Federal
- State
- County



Federal Government



Adulticides must be EPA approved

Spray polygons must be reviewed by USFWS prior to application



FEMA consults with CDC based on evidence defined in the FEMA Public Assistance Program and Policy Guide (PAPPAG) –Appendix G



National Response Framework

January 2008





Federal Governing Legislation

- FEMA Public Assistance Program and Policy Guide (PAPPG)
- FEMA consults with the CDC to determine the eligibility of mosquito abatement activities. FEMA only provides PA funding for the increased cost of mosquito abatement. This is the amount that exceeds the average amount based on the last 3 years of expenses for the same period.



APPENDIX G: MOSQUITO ABATEMENT

- FEMA may provide reimbursement for mosquito abatement measures at the written request of the State, Territorial, Tribal, or local public health officials after FEMA consults with the Centers for Disease Control and Prevention (CDC), based on:
 - Higher levels of disease transmitting mosquitoes
 - A significant number of disease carrying mosquitoes in the area.
- The potential for disease transmission and human exposure to disease carrying mosquitoes based on the detection of arboviral diseases in sentinel organisms (poultry, wild birds, mosquito pools) in the impacted area prior to the storm event, discovered during surveillance as part of mosquito abatement activities, or reported human cases in which transmission occurred prior to the storm event.



APPENDIX G: MOSQUITO ABATEMENT (Continued)

- A determination that a significant increase in the mosquito population and/or the change of biting mosquito species poses a threat to emergency workers who are required to work out-of-doors, thereby significantly hampering response and recovery efforts.
 - Such evidence may include an abnormal rise in landing rates or trap counts, significant changes in species composition or estimate of infection rates, when compared to pre-disaster surveillance results.
- Verification from medical facilities within the affected area that an increase in the general public's exposure to mosquitoes has directly resulted in secondary infections, especially among those with weakened immune systems such as the elderly, the very young or the sick.



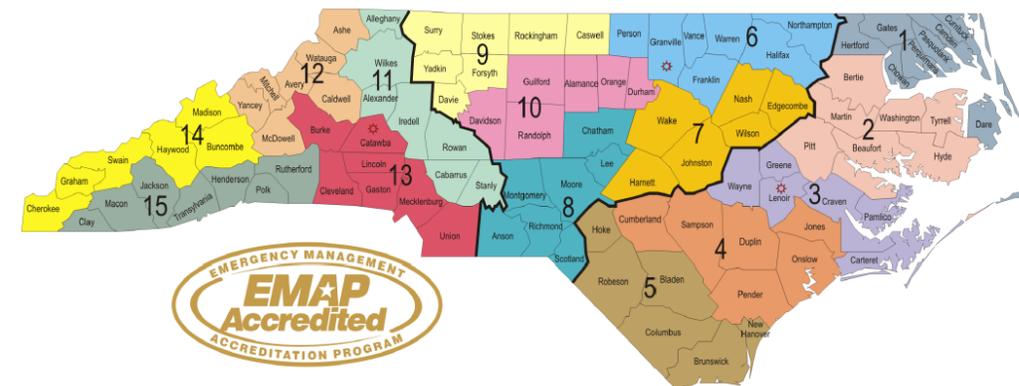
North Carolina Agencies



- North Carolina Emergency Management
- North Carolina Department of Agriculture
- North Carolina Department of Health and Human Services
- North Carolina Division of Water Quality



State of North Carolina Division of Emergency Management



Western Branch
Mike Cook, Manager
3305-15 16th Avenue SE
Conover, NC 28613
828-466-5555

- | | |
|------|----------------|
| Area | Coordinator |
| 11 | Greg Atchley |
| 12 | Tiawana Ramsey |
| 13 | Jeff Cardwell |
| 14 | Jimmy Ramsey |
| 15 | Danny Gee |

Central Branch
Joe Wright, Manager
401 Central Ave.
Butner, NC 27509
919-575-4122

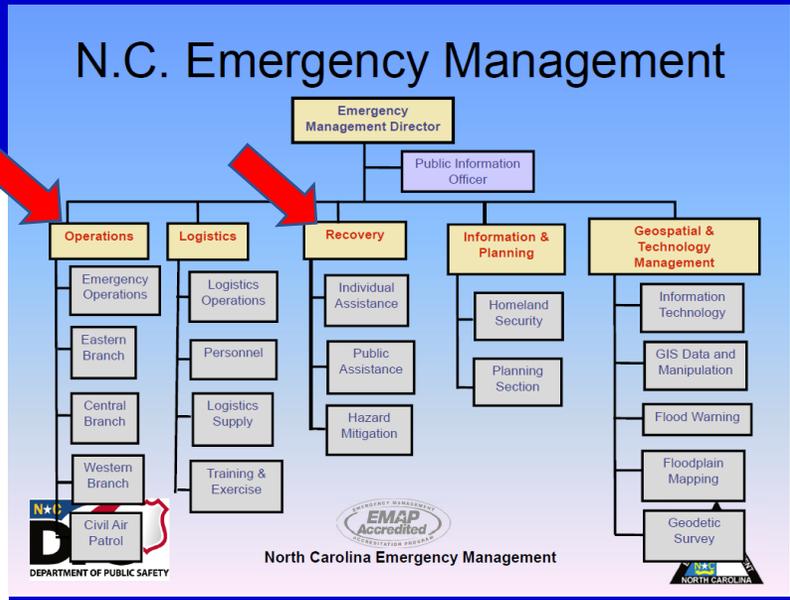
- | | |
|------|----------------|
| Area | Coordinator |
| 6 | Tim Byers |
| 7 | Alan Byrd |
| 8 | Steve Powers |
| 9 | Dennis Hancock |
| 10 | Ricky Tuttle |

Eastern Branch
Dianne Curtis, Manager
3802 Highway 58 North
Suite B
Kinston, NC 28502
252-520-4923

- | | |
|------|----------------|
| Area | Coordinator |
| 1 | Chris Gwin |
| 2 | Charles Tripp |
| 3 | Melissa Greene |
| 4 | Doug Haas |
| 5 | Paula Brown |



PREVENT. PROTECT. PREPARE.



- ### Human Services
- Shelters
 - Mass Feeding
 - Mental Health
 - Public Health
 - Public Water Supply
 - Food Banks
 - Animal Care



North Carolina Public Health Hierarchy

Department



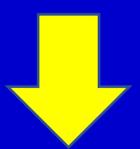
Division



Sections



Branches



- **Communicable Disease Branch (Medical Entomologists):** Current arboviral activity, support for initial request for assistance process.
- **Public Health Preparedness & Response Team:** "Statement of Need" goes to this office.



North Carolina Department of Agriculture



North Carolina Department of
Agriculture & Consumer Services



Pesticide Section



- Request for aerial exemption is sent here
- Documents showing product is licensed by EPA in North Carolina

N.C. COOPERATIVE EXTENSION HAS OFFICES IN EVERY COUNTY
[Brunswick County Center](#)



Beekeeper Information



Selecting an Aerial Product

- There are a number of products available for aerial mosquito control follow the link below for additional information about them from the US EPA

<https://www.epa.gov/mosquitocontrol/controlling-adult-mosquitoes>.

Things to consider when selecting an aerial product:

- Is the product labeled for aerial applications?
- What is the rate per acre range?
- What is the concentration of the Active Ingredient? Some products use the same AI but are available in different concentrations.
- Is there a water set back?
- Price per acre of technical product?
- Price per acre of finished spray. The difference between the two is the cost of the airplane.
- Is their specialized application software available for the aircraft?
- Night vision capabilities?



Project Specifications

- The scope of work for this contract consists of aerially treating approximately 323,000 acres of populated area in Brunswick County for mosquitoes.
- The adulticide product to be used is Dibrom concentrate (87.4% A.I.) containing 13.2 pounds of Naled per gallon at a rate of 0.66 ounces per acre.
- All aerial applications will adhere to the Dibrom concentrate product label requirements.
- Planes must be certified to fly in congested air space and meet all FAA requirements.
- Aircraft must have a flight guidance system with offset technologies. Aircraft must be equipped with spray optimization and guidance software that includes real-time meteorological data at the release height to optimize the treatment
- Pilots should be equipped with at least military grade ANVIS-6 night vision goggles for use on all night time spray missions.
- Contractor must have a North Carolina Aerial Applicators license.
- All North Carolina Department of Agriculture's (NCDA) aerial calibration and certification requirements must be met.
- Missions will be conducted in the evenings only between dusk and no later than 10:30PM and be coordinated through the county's mosquito control representative.
- A detailed set of maps showing spray time will be provided after each day's application.
- Time to complete mission: The services should be completed within a maximum of four (4) days should there be no adverse weather conditions.
- The county will conduct all pre and post trapping data analysis for the aerial applications.



NC Division of Water Quality

- National Pollution Discharge Elimination Permitting



- Notice of Intent
- Certificate of Coverage
 - NCG 56000
- PDMP Plan
- Annual permit \$100
- Emergency Considerations



Brunswick County Agencies



Participating Brunswick County Agencies



- Board of Commissioners
- County Manager
- County Attorney's Office
- Public Information Office
- Finance Office
- GIS Office
- Health and Human Services
- Emergency Services
- Operation Services
- Parks and Recreation
- County School System

Mosquito Control



The Health Department's Role in the Statement of Needs Letter



- The Health Department is the lead agency and approves and initiates the emergency request for mosquito control operations.
- Health Directors Letter Demonstration of Need for Mosquito Control Assistance as a Direct Result of hurricane Florence. (FEMA PAPPG_ Appendix G: Mosquito Abatement.
 - Verification from medical facilities within the affected area that an increase in the general public's exposure to mosquitoes has directly resulted in secondary infections, especially among those with weakened immune systems such as the elderly, the very young or the sick



Additional Health Director Pre-Application Responsibilities



- Inform all levels of County Management of the need for post disaster mosquito control and the potential costs.
- Health Director requests an Aerial Exemption through The North Carolina Department of Agriculture
- Letter of Authorization to contractor authorizing them to apply pesticides aerially for a specific contract period.
- Any pretreatment Notices: chemically sensitive individuals, school, parks etc.



Emergency's Management Role in the Statement of Needs Letter



- Emergency Management assists with collecting the following information for The Health Directors Demonstration of Need letter to FEMA
 - The amount and type of flooding
 - The extent and location of damage to housing
 - Extent, location and anticipated duration of power interruptions
 - The extent and duration of cleanup and recovery operations
- The emergency request is submitted through your local emergency management WED EOC and the request is moved forward through to the State FEMA liaison. The correct agency is **Public Health Preparedness & Response Team** with DHHS.



Mosquito Division's Role in the Statement of Needs Letter

- Emergency Management assists with collecting the following information for The Health Directors Demonstration of Need letter to FEMA
 - Higher levels of disease transmitting mosquitoes in the disaster area following the event.
 - A significant number of disease carrying mosquitoes in the area due to the increase in event-related standing water.
 - The potential for disease transmission and human exposure to disease carrying mosquitoes based on the detection of arboviral diseases in sentinel organisms in the impacted area prior to the storm event, discovered during surveillance as part of mosquito abatement activities or reported human cases in which transmission occurred prior to the storm event.
 - A determination that a significant increase in the mosquito population and/or the change in biting species poses a threat to emergency workers who are required to work outdoors, thereby significantly hampering response and recovery efforts.



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Additional Mosquito Division Pre-Application Responsibilities

- Hold the line with ground based applications till aerial help arrives.
- Develop and maintain aerial application maps using
- Select an aerial pesticide product and preferred rate of application
- Get at least 3 Quotes from 3 vendors.
- Define the parameters of the application
- Ensure the United States Fish and Wildlife Service Review is complete.
- Collect pre treatment mosquito data from within the aerial polygons.
- Maintain Historical Weekly Mosquito Data
- Maintain Weekly Rainfall Data
- Current Arbovirus Disease activity
- Mosquito Pooling



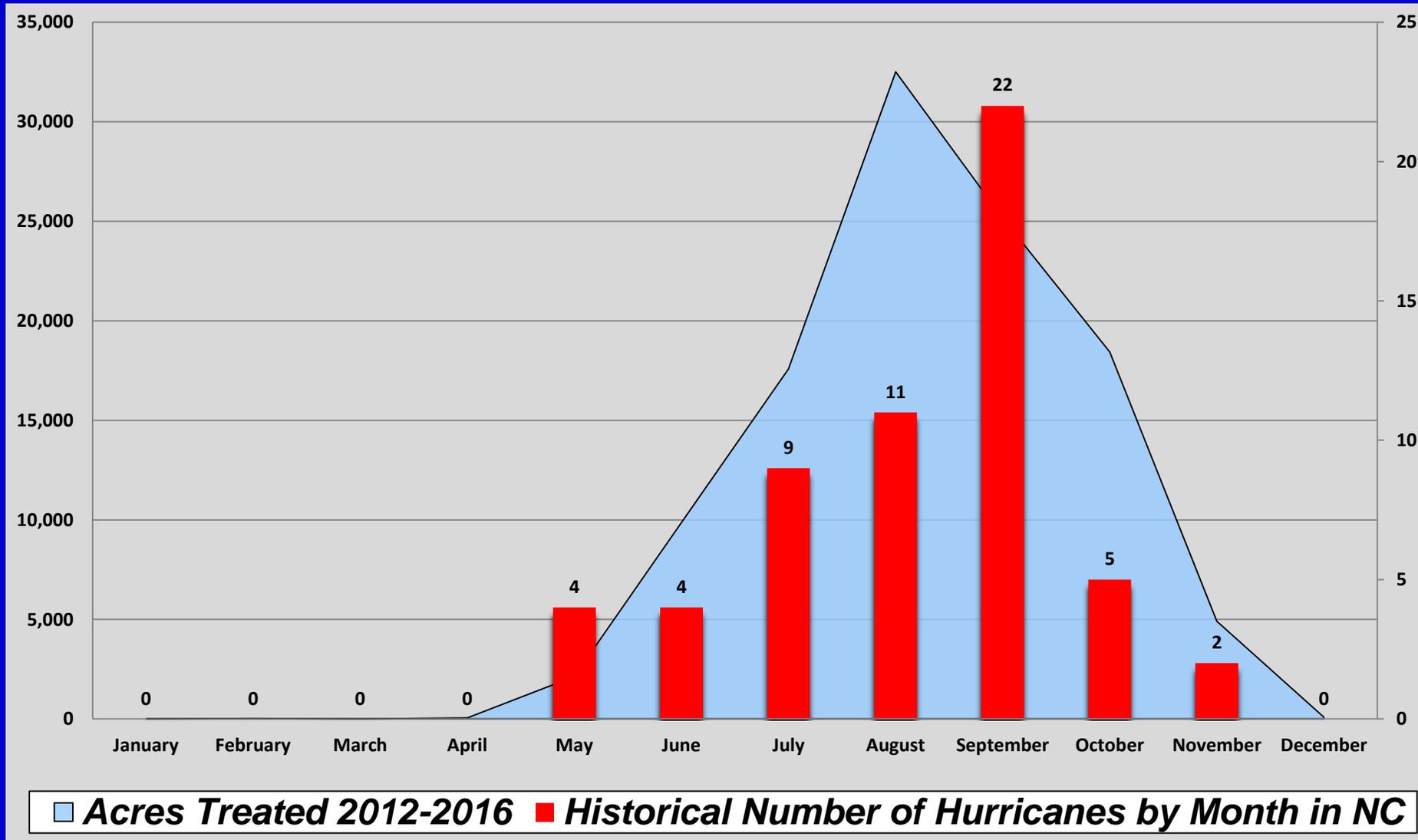
Additional Surveillance Considerations Compiled from Hurricane Matthew 2016



- Recorded Hurricanes vs. Acres
- Acres Treated By Month
- Adulticide Cost vs. Acres
- Adulticide Gallons vs. Acres
- Citizen Requests vs. Acres
- Precipitation vs. Acres
- Mosquito Trap Totals vs. Acres
- Oc. and Ps. Genera vs. Acres

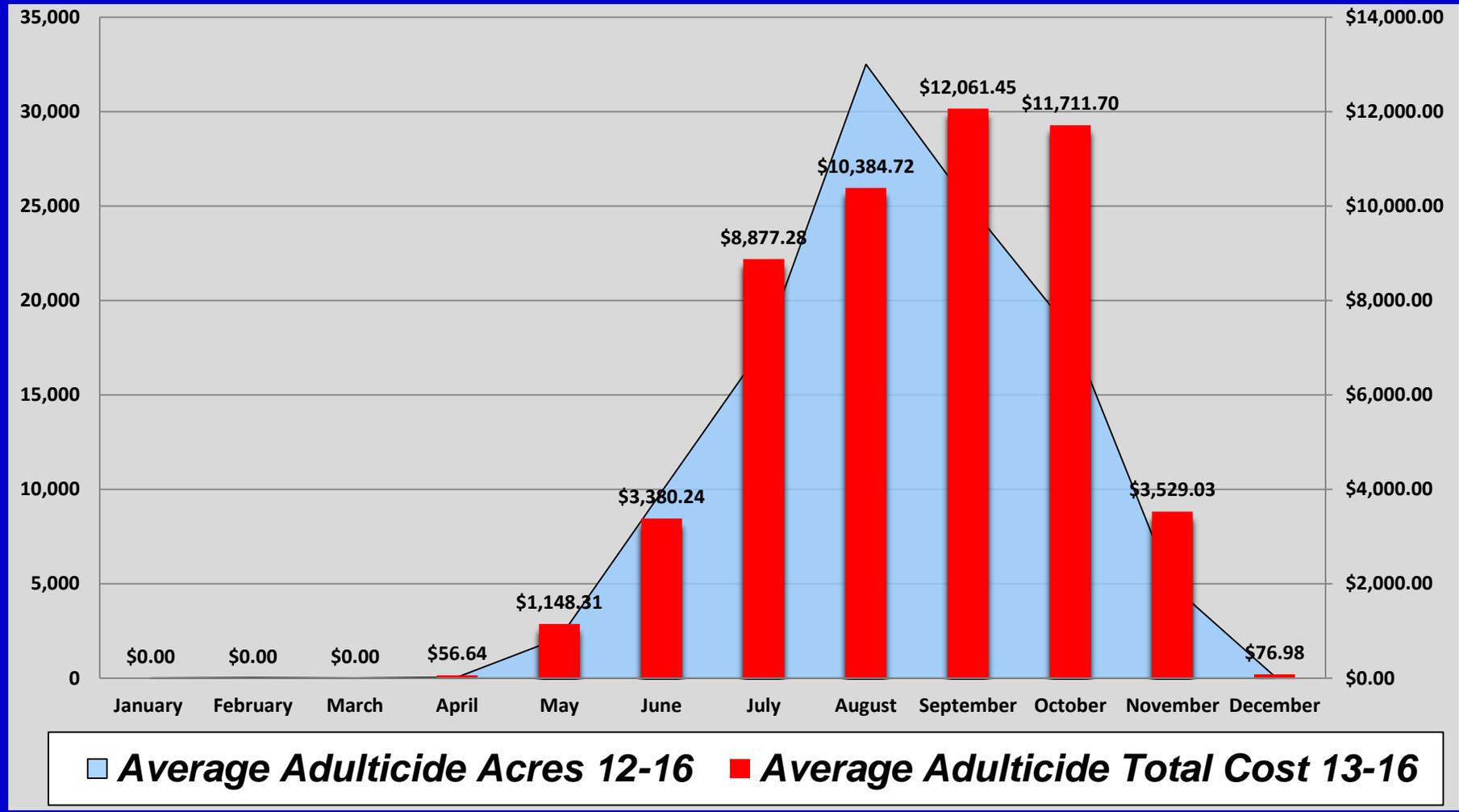


Hurricanes vs. Acres Treated



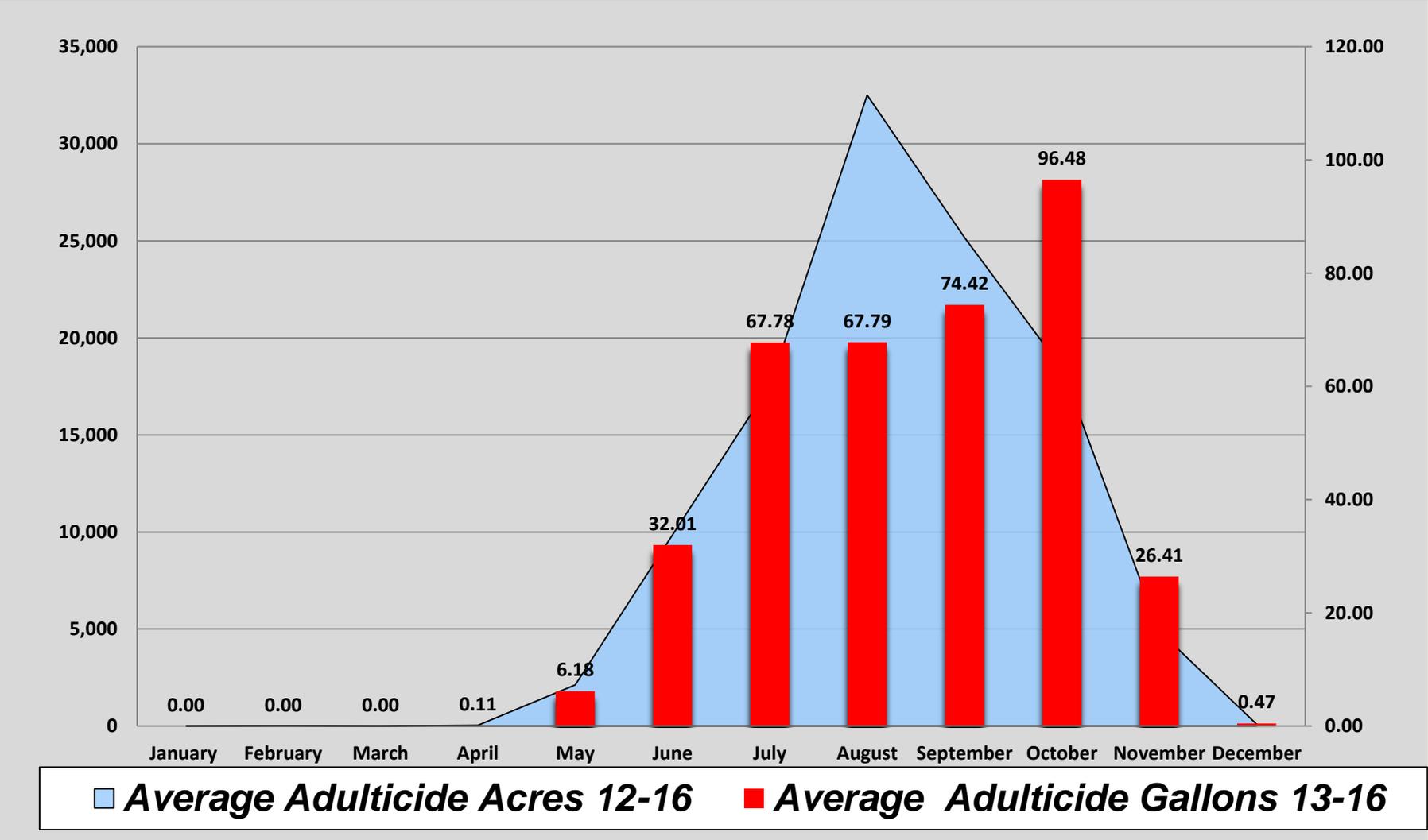


Total Adulticide Cost vs. Acres



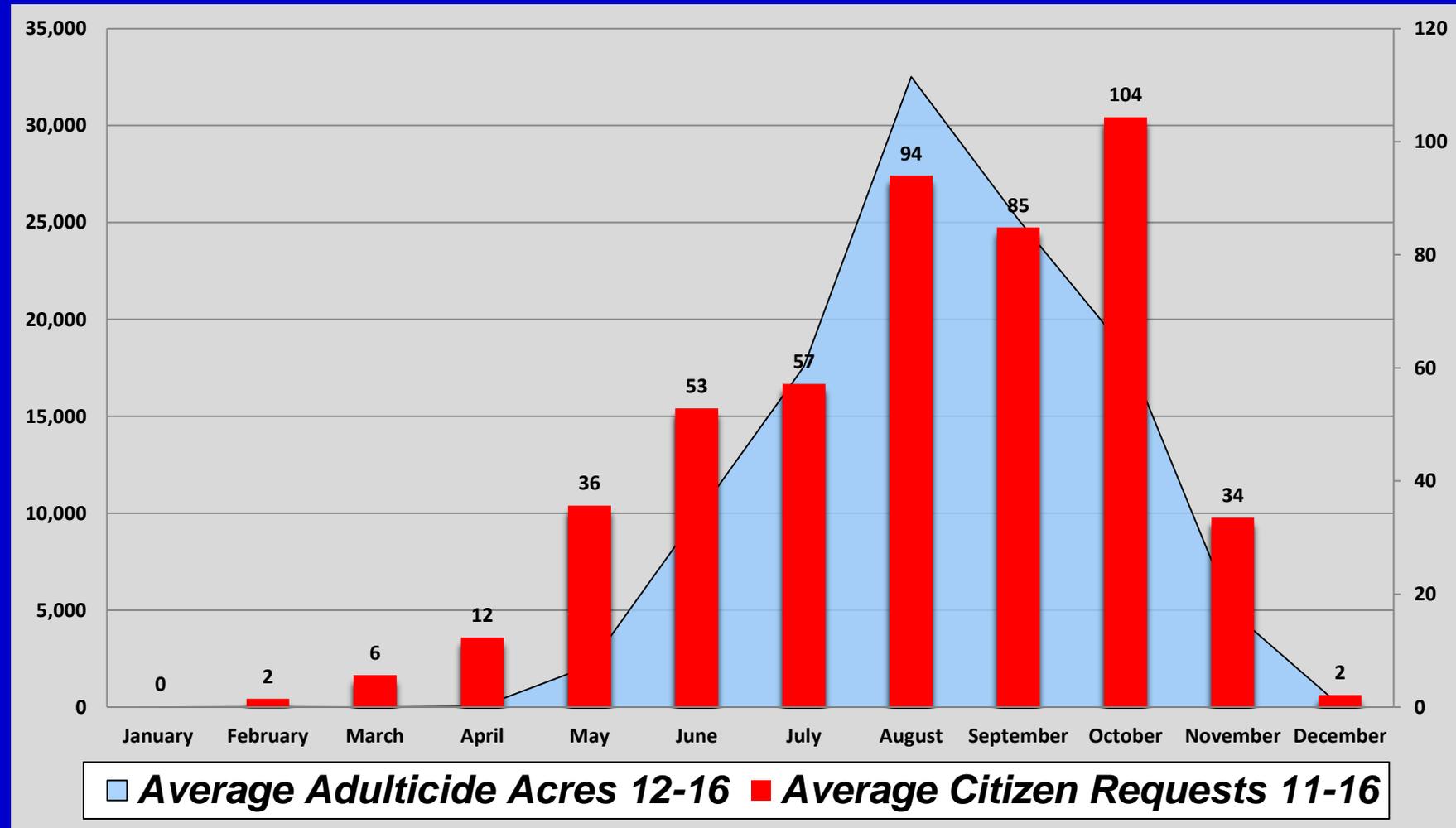


Adulticide Gallons vs. Acres



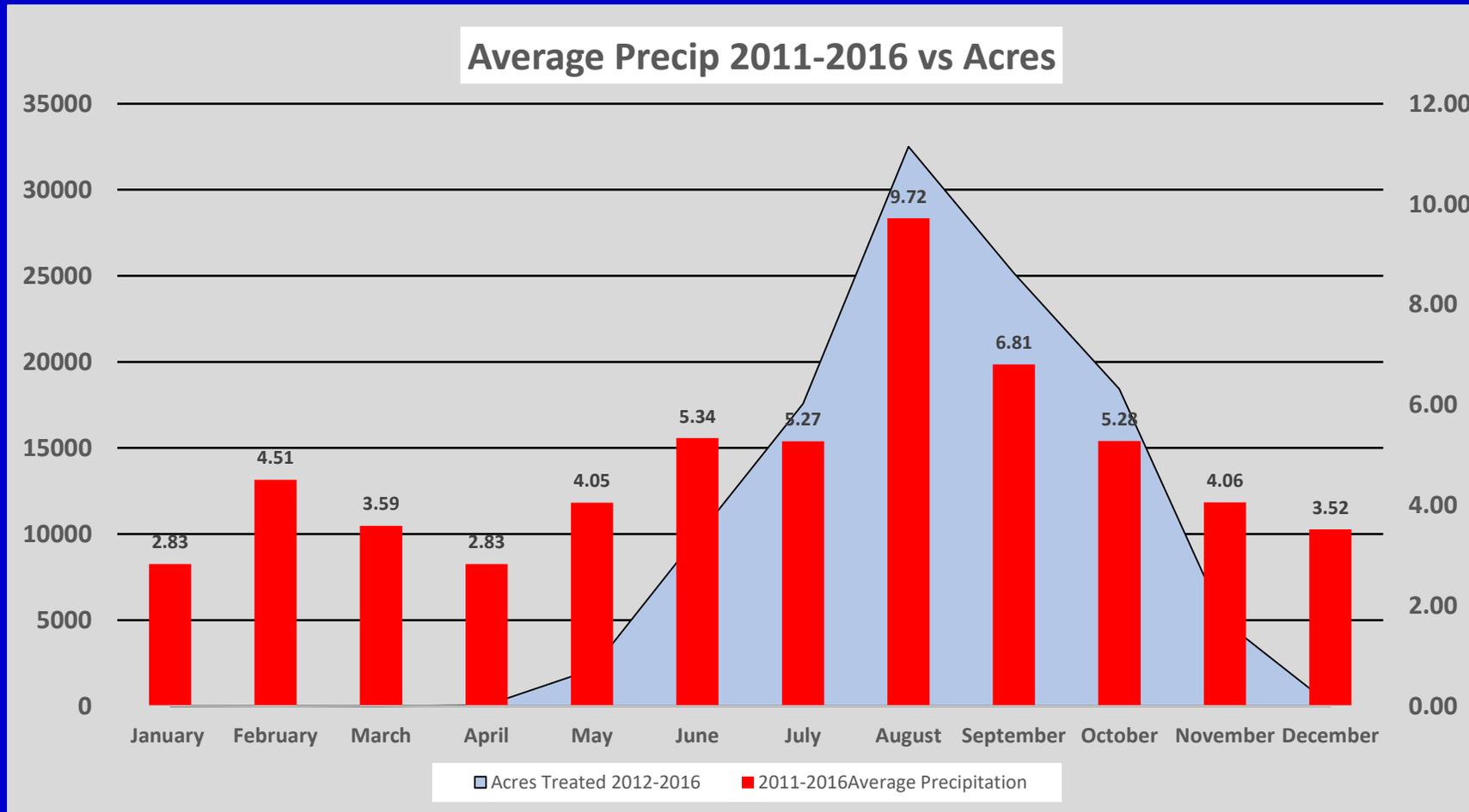


Citizen Requests vs. Acres



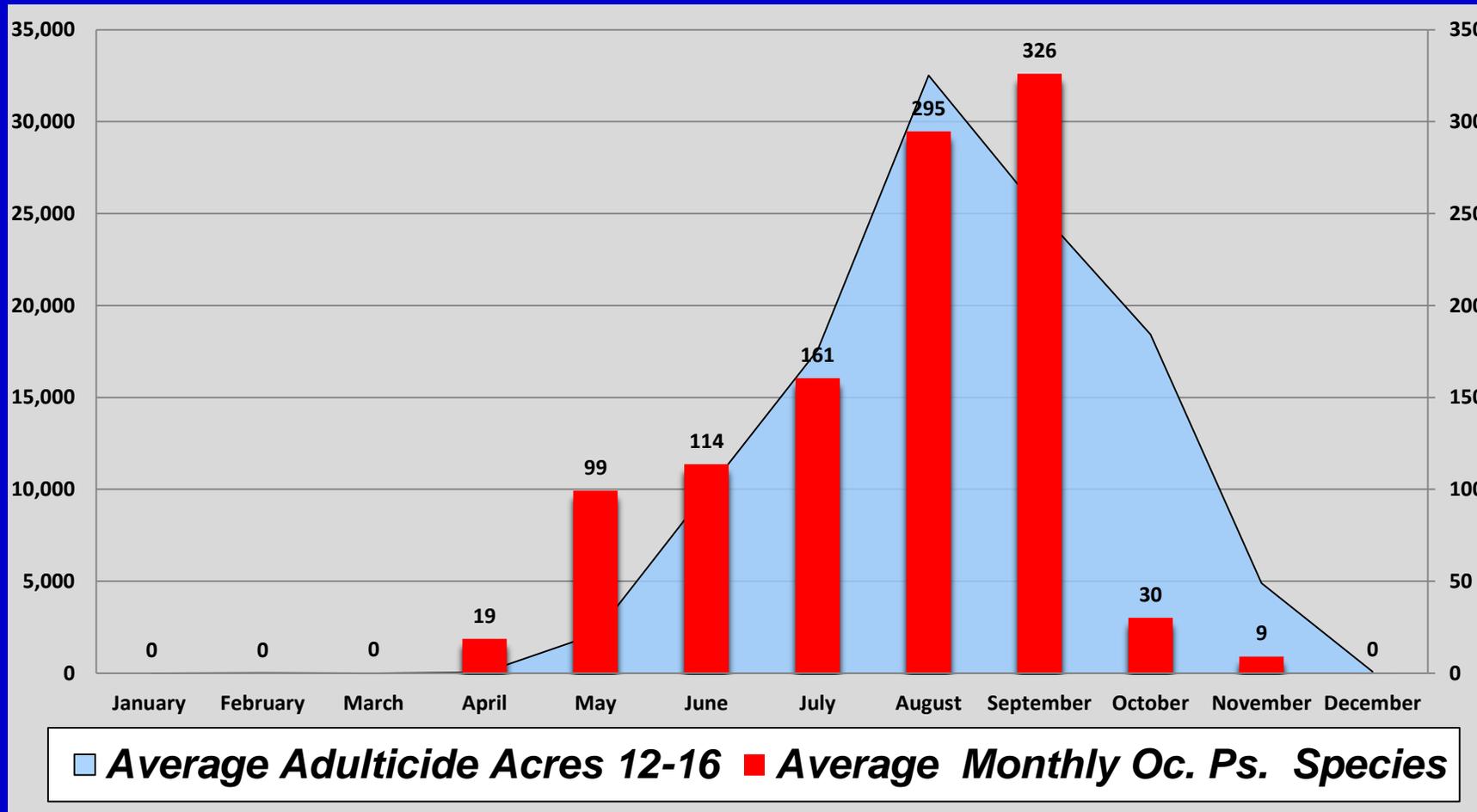


ILM 2011-2016 Ave. Precipitation vs. Acres





Oc. and Ps. Genera vs. Acres





Questions