



Cass County Vector Control

Cass County North Dakota Vector Control Board

Wednesday March 25th, 2015

1 pm

Valley Room

Fargo City Hall

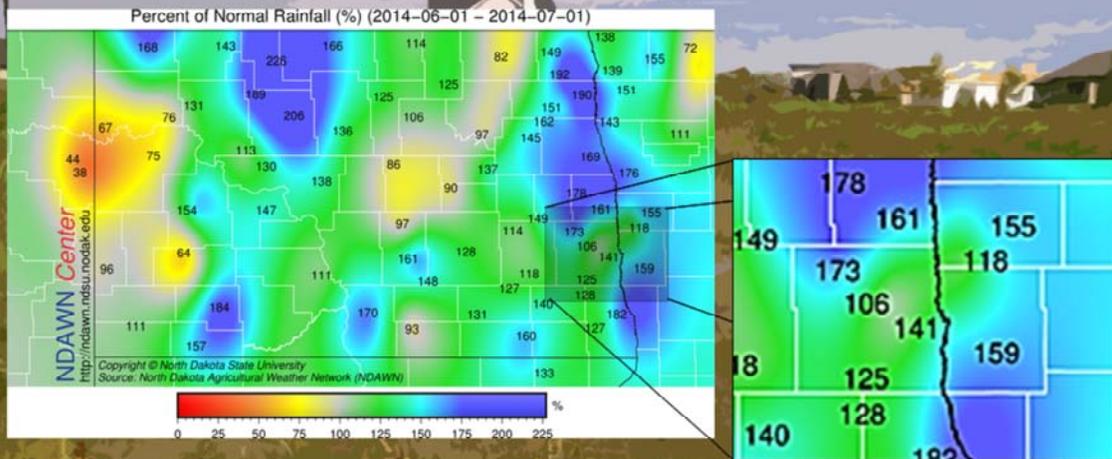
200 North Third Street

Fargo, ND 58102

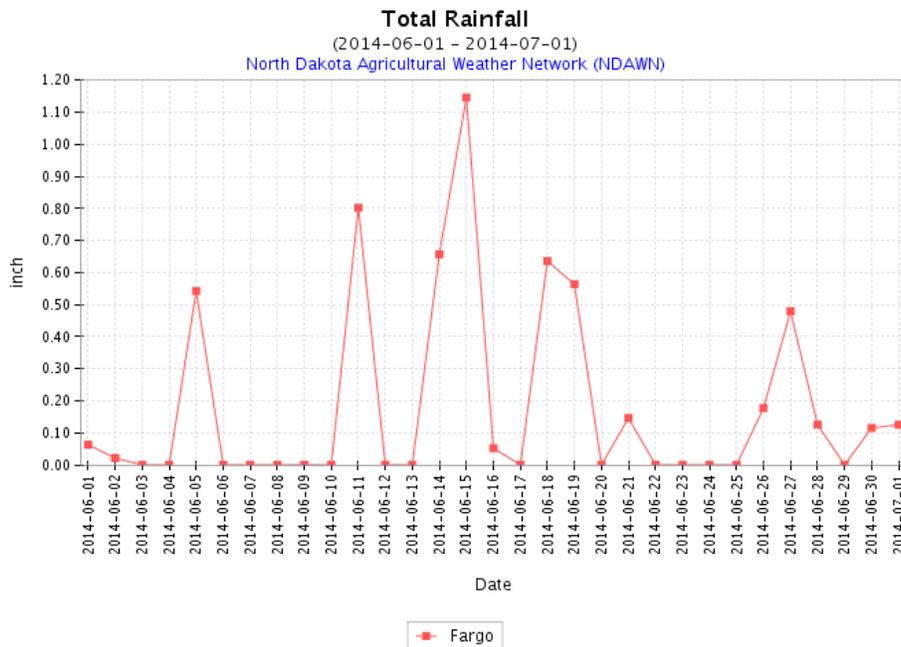
Agenda :

1. Jurisdictional Contracts for 2015
 - Moorhead, West Fargo, Fargo, & Others
2. Review of 2014
 - September Aerial Application
3. Comments and Discussion

2014:

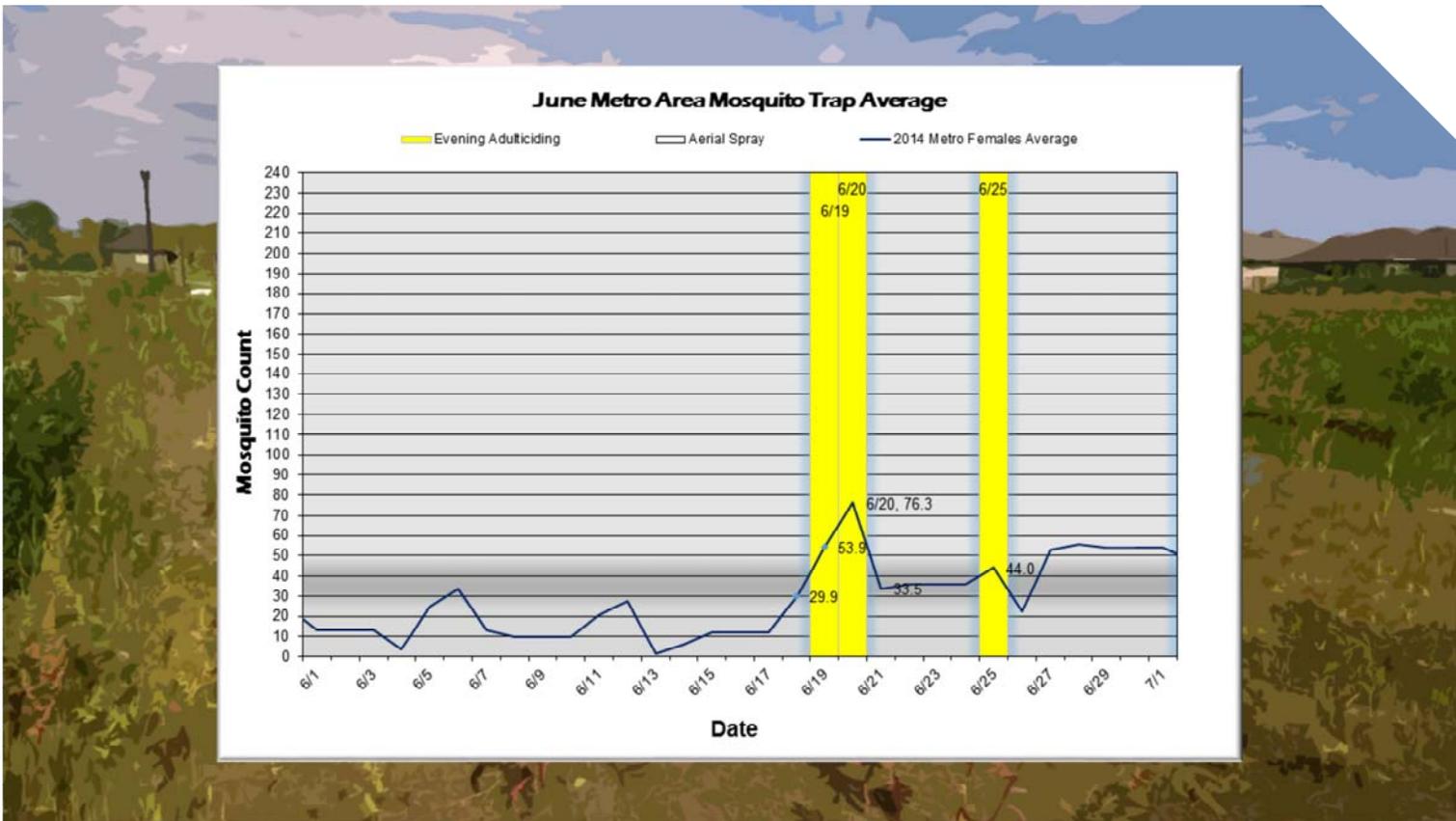


After a cool and somewhat dry May, precipitation was considerable and frequent in June.



Early efforts focused on continuous site visits and frequent larval control pesticide applications. In response to the frequent rain, additional residual (long lasting) larvicides were deployed in attempt to counter the frequent “flushing” of breeding sites.

Adult mosquitoes did eventually emerge. Corrective action was anticipated especially through the second half of the month and into July.



Given the likely event of trap counts exceeding threshold for adult mosquito nuisance, plans were made to conduct ground fogging during the week of 6/16-6/20. June 18th was scheduled for the first truck mounted adulticiding application in the metro for the season. Moorhead, West Fargo and Fargo all were scheduled for ground fogging applications.

The morning of Wednesday June 18th saw traps rise to 54 mosquitoes in traps in Fargo and West Fargo. Per usual, the collection period for that day's tally occurred the previous evening starting at 6pm on the 17th and running through the morning of the 18th until 6am.

Unfortunately, weather conditions were less than nominal for the application to be completed. Wind gusts above acceptable levels began around 10 pm caused a cancellation after approximately 90 minutes of work was completed. The spray was rescheduled for the following evening.

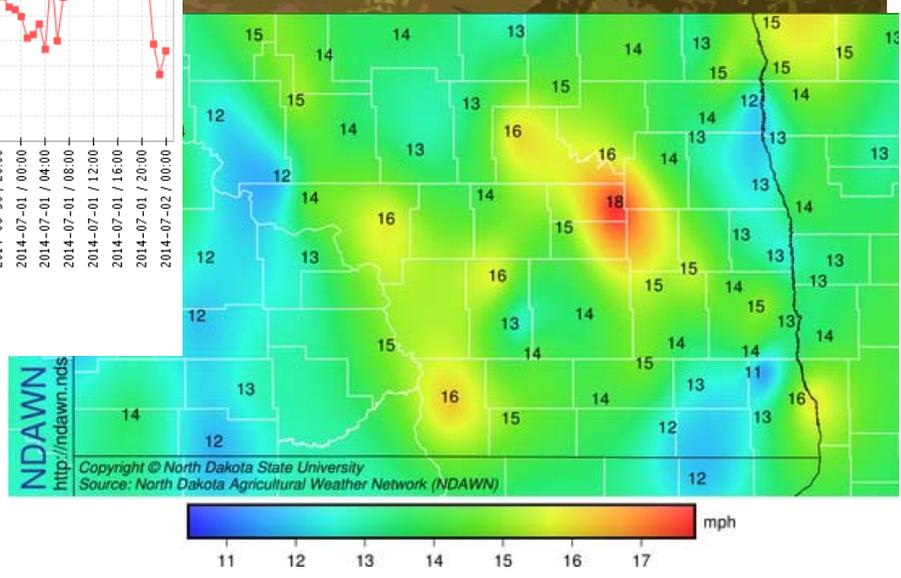
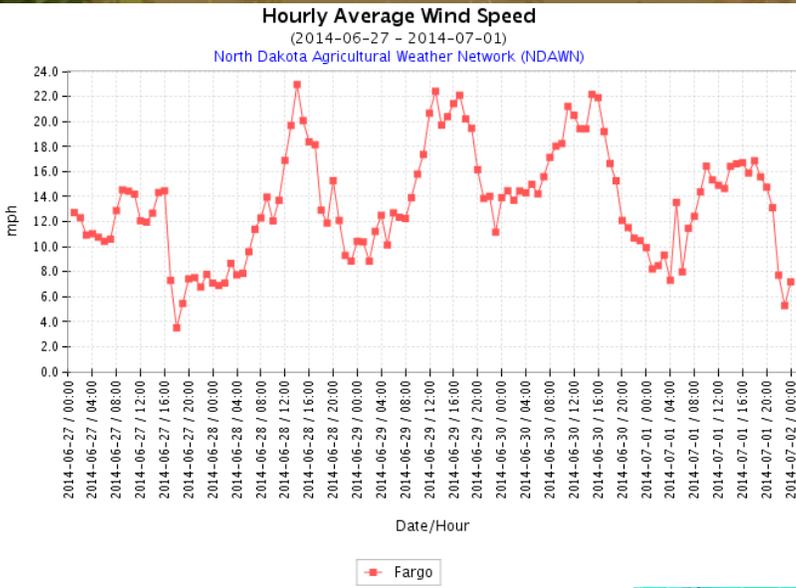
Thursday June 19th's application proceeded with adequate wind conditions and complete coverage was achieved.

Nuisance conditions were generally improved but were still not ideal. Trap collections hovered just around the threshold of 35 female mosquitoes. An additional truck mounted application was scheduled for Tuesday June 24th.

Nuisance conditions persisted after the second round of truck mounted applications. As the 4th of July Holiday loomed, aerial spraying preparations were underway.

Forecasted Winds for the 7 Days Prior to Friday 7/4

	Fri, 27 Jun						Sat, 28 Jun						Sun, 29 Jun						Mon, 30 Jun						Tue, 1 Jul						Wed, 2 Jul						Thu, 3 Jul																			
Hour	0	3	6	9	12	15	18	21	0	3	6	9	12	15	18	21	0	3	6	9	12	15	18	21	0	3	6	9	12	15	18	21	0	3	6	9	12	15	18	21	0	3	6	9	12	15	18	21	0	3	6	9	12	15	18	21
Wind (kts)																																																								
Gust																																																								
Sky																																																								



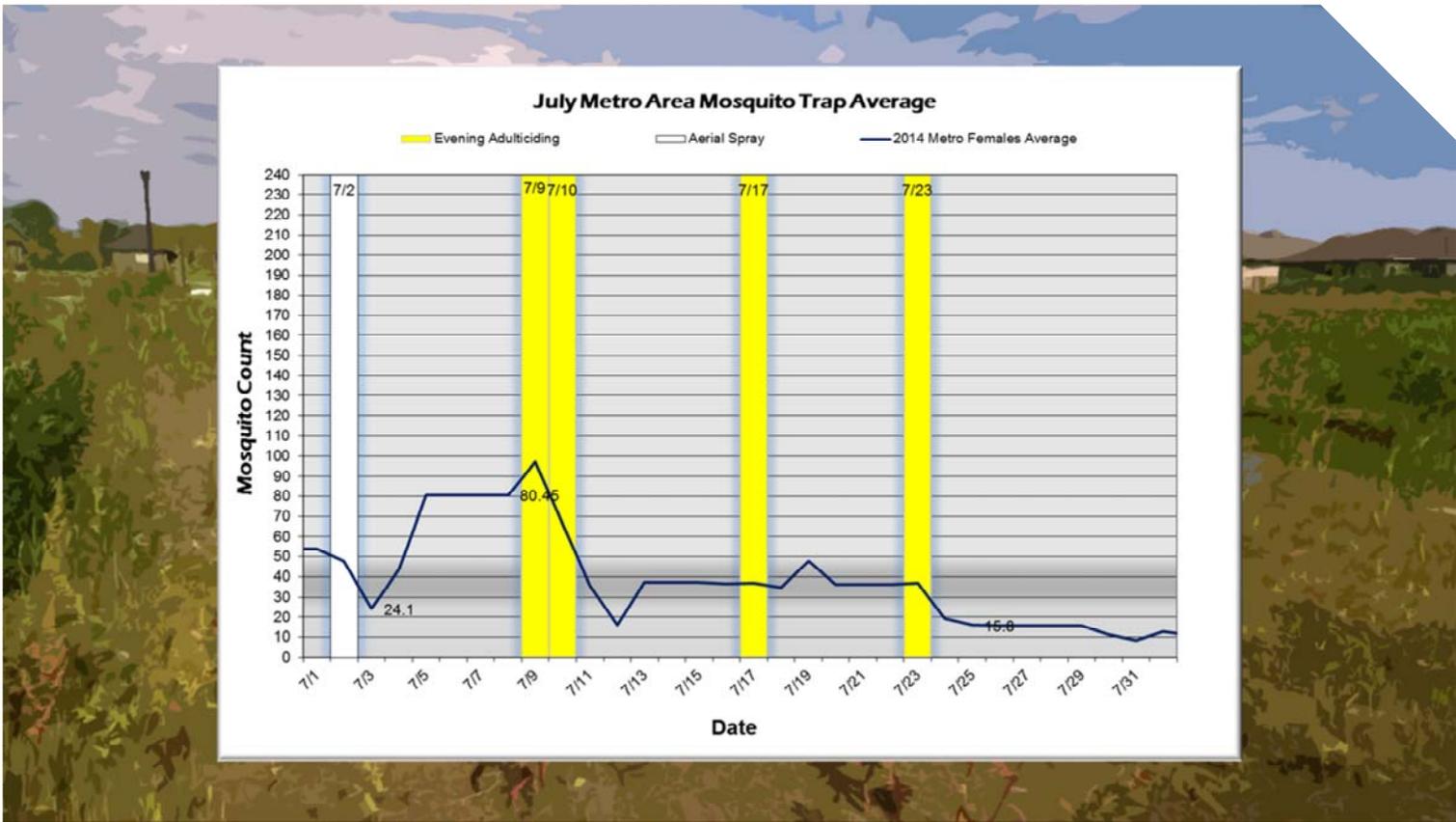
Average Wind Speed 6/27 - 7/1

By June 26th with traps above threshold and rising, the decision was made to schedule an aerial application for the metro area and surrounding subdivisions the following week.

The days leading up to the holiday were less than ideal for aerial spraying. Forecasted winds were well outside of the acceptable range for almost the entire period. Nonetheless, the consensus on June 27th was to schedule the application on July 1st.

In the days following the decision to aerial spray, it became clear that the July 1st option would not provide sufficient weather conditions. Specifically, the daytime maximum air temp for July 1st was 58 degrees and wind speeds at 8pm averaged 13 mph.

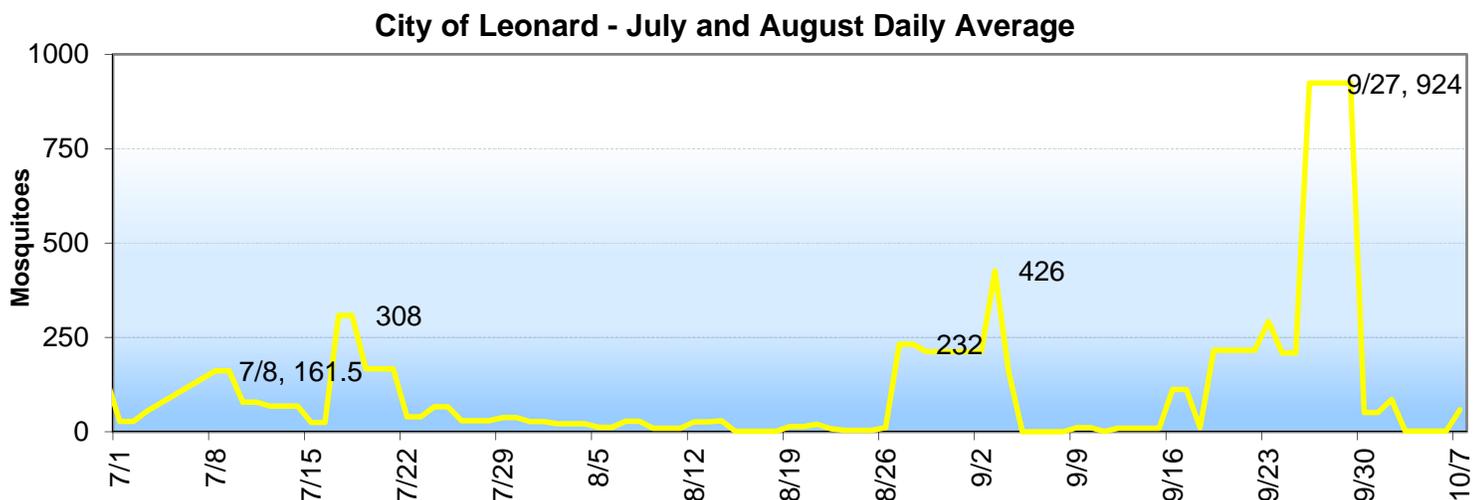
Ultimately the application proceeded on Wednesday July 2nd.



In conjunction with metro-wide aerial spraying, all 21 truck mounted ground units were deployed to cities and subdivisions to assist rural communities' nuisance mosquito conditions. Weather conditions improved somewhat on 7/2 with highs in the low 70's and a light north wind just above 1 mph.

After the long holiday weekend, trap collection data indicated yet another rebound in adult mosquito counts. Back to back nights for truck mounted spraying were scheduled. That back to back application occurred in Fargo and West Fargo occurred on 7/9 and /710. Above threshold nuisance conditions persisted until the 23rd of July and required two additional truck mounted applications before counts were back to comfortable ranges.

Fortunately for metro, precipitation slowed to below normal amounts through August. Rural areas however continued to see significant rain. Particularly on the southern border of Cass County, Cities like Kindred and Leonard saw truly horrific New Jersey Trap collections as the season bore on.



The lull of the previous two months was disrupted early into September. A significant rainfall occurred on 9/5. This rainfall event would set the stage for the end of the season. Plans for aerial spraying were formulated in early September due to the anticipation of a large disruptive nuisance brood.

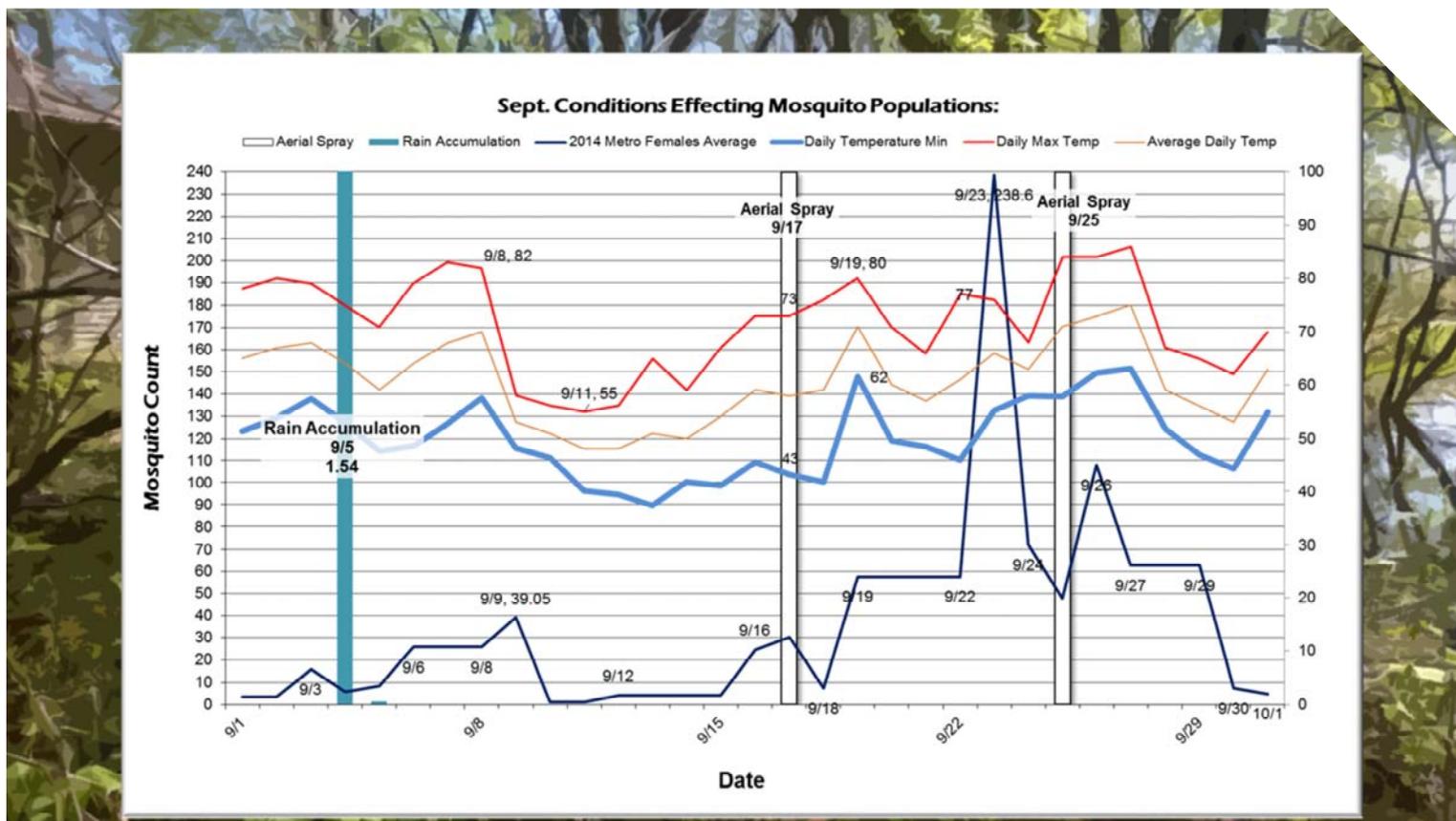
As experienced in past seasons- late September can present intense biting pressures and pose severe challenges to gain control. 2014 was no different. In particular - temperatures varied greatly after the primary rain event yet never reached a frost or freeze. As the forecast started to call for a warming trend around the mid point of the month and as the chance for a solid frost diminished, aerial spray planning began in earnest.

In the days leading up to the 9/17 aerial application, numerous resident calls were received with severe complaints of daytime biting nuisance in air temperatures under 60 degrees. On-site landing counts conducted by Vector Control staff exceeded 5 mosquitoes per minute. Breeding site inspections indicated that the brood had emerged and was no longer in larval development process.

Ultimately, the decision was made to fly an aerial application.

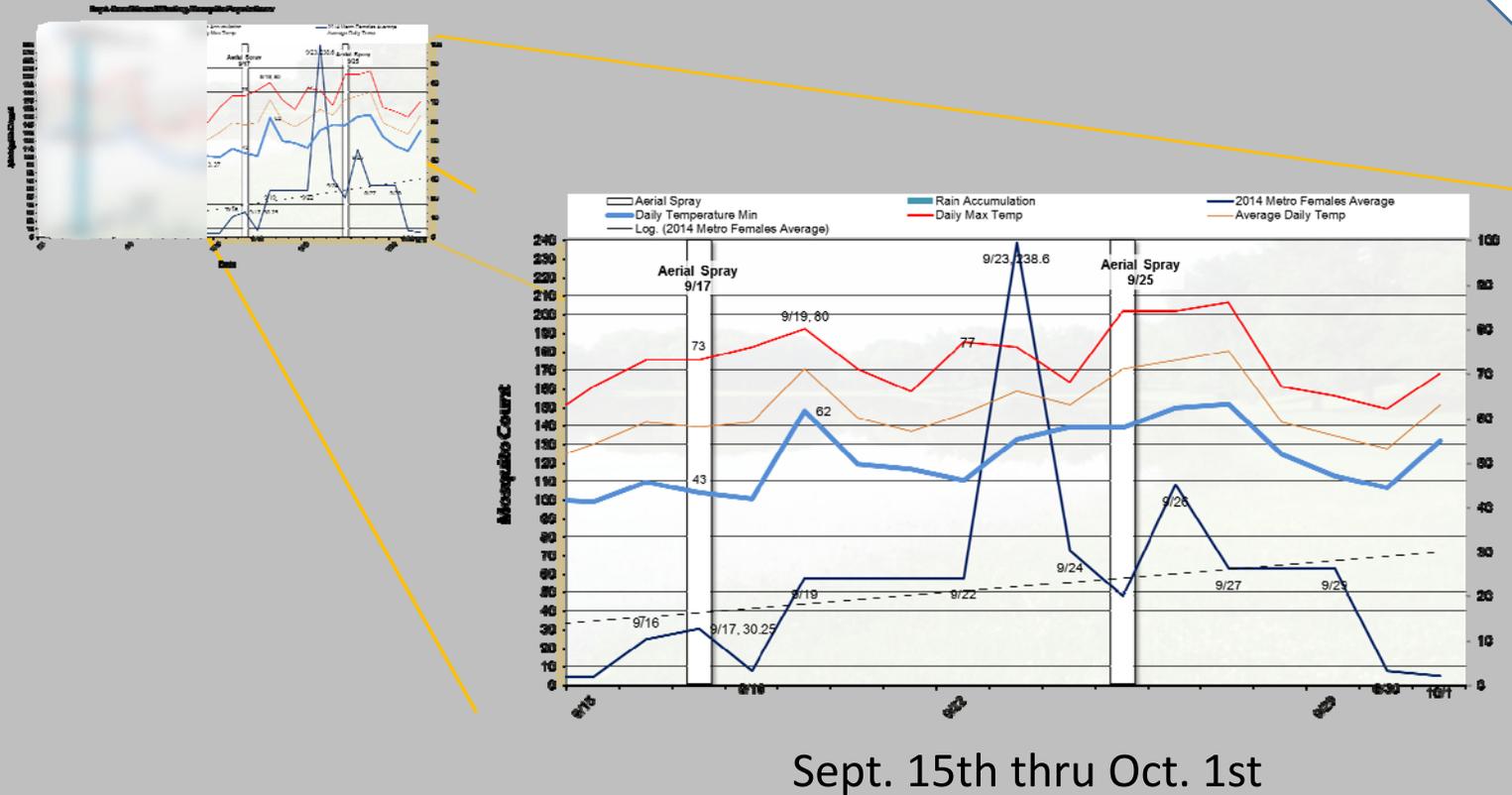
Many challenges are presented in late season applications when determining “Go/Don’t Go” for aerial spraying. Some of the questions that need to be answered are:

- Is there a frost/freeze forecast?
- What will be the length of time that an application will be beneficial, days? weeks?
- What is the duration and intensity of biting activity? (This challenge is especially difficult with temperatures in the bottom of the temperature/mosquito activity window)
- Will wind speeds and air temperature provide an adequate window to complete the application?
- Should the application occur in full daylight?
- Do any budgetary constraints exist?



Secondly, the long range forecast showed potential for above average temperatures for the following weeks (See Previous Page). Frost was not in the forecast for at least 10 days post application. Ultimately the goal was to provide control for the longest duration possible; in essence to get the largest and longest “bang for the buck”.

The aerial application proceeded on 9/17/2014 and concluded before midnight.



Sept. 15th thru Oct. 1st

Surveillance results the day following the aerial application did see a reduction in trap counts. However this trend was short lived. Counts rose dramatically above expectations over the weekend and early on in the following week. The overall trap average on Sept 23rd was the highest in calendar year 2014 and compares to other “high water marks” typically seen during June or July.

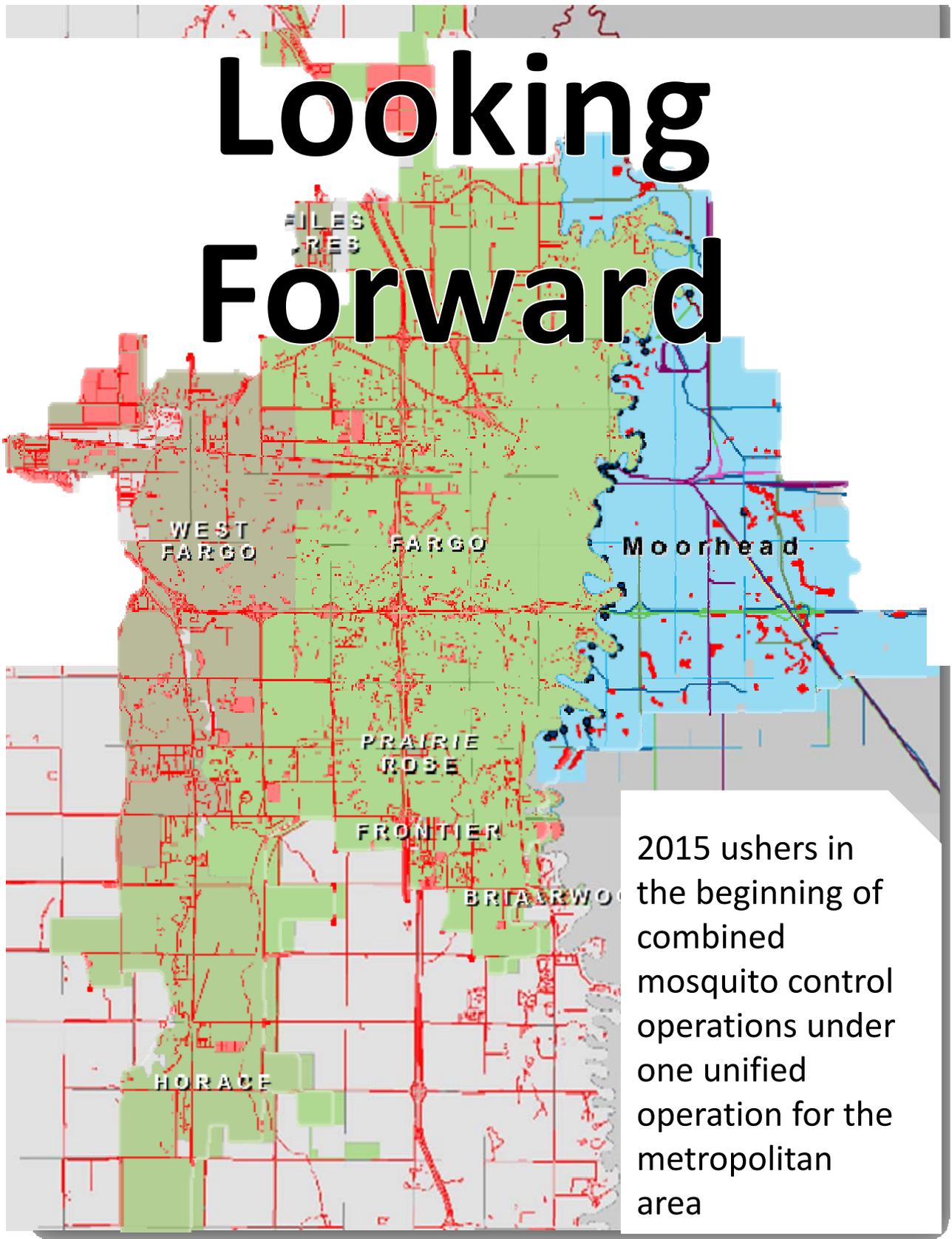
Clearly another aerial application was needed and was scheduled. Given the conditions, a change in tactics was reasonable if not necessary. This application would be attempted over two early evenings and would be flown “east/west”. These changes were to make best use of both warm temperatures and atmospheric wind conditions ie drift.

The first night of the planned application on Sept 24th was unfortunately scrubbed due to lower than forecasted temperatures and poor wind. The night of Thursday Sept 25th appeared to be more ideal and would still allow for Metrowide coverage, therefore the application was moved.

The days following the 24th application saw above average temps and an overall reduction of the adult mosquito population. However, below threshold numbers were not observed again until temperatures fell to seasonal averages.

Clearly there is no magic bullet and no such thing as perfect conditions. The tasks given this year to the aerial applicator were extremely challenging and near the limit of possibility. Cass County Vector Control is greatly appreciative of the service provided by our aerial applicator crew.

Looking Forward



2015 ushers in the beginning of combined mosquito control operations under one unified operation for the metropolitan area

For many years a joint mosquito control program for Cass County North Dakota and Clay County Minnesota has been desired by community leaders and those directly involved in the control of mosquitoes. Specifically, in 1987 the Fargo-Moorhead Metropolitan Council of Government composed a Metropolitan Mosquito Abatement Plan. The plan outlaid a number of ambitious goals which are just now coming to fruition.

Specifically the 1987 MetroCOG report identified the following objectives for mosquito abatement:

1. Joint Surveillance and Monitoring
2. Centralized Mosquito Data Center
3. Public Education and Information
4. Enlistment of Homeowner Cooperation in Mosquito Control
- 5. Inter-local Service Delivery Agreements**
6. Coordination of Abatement Efforts

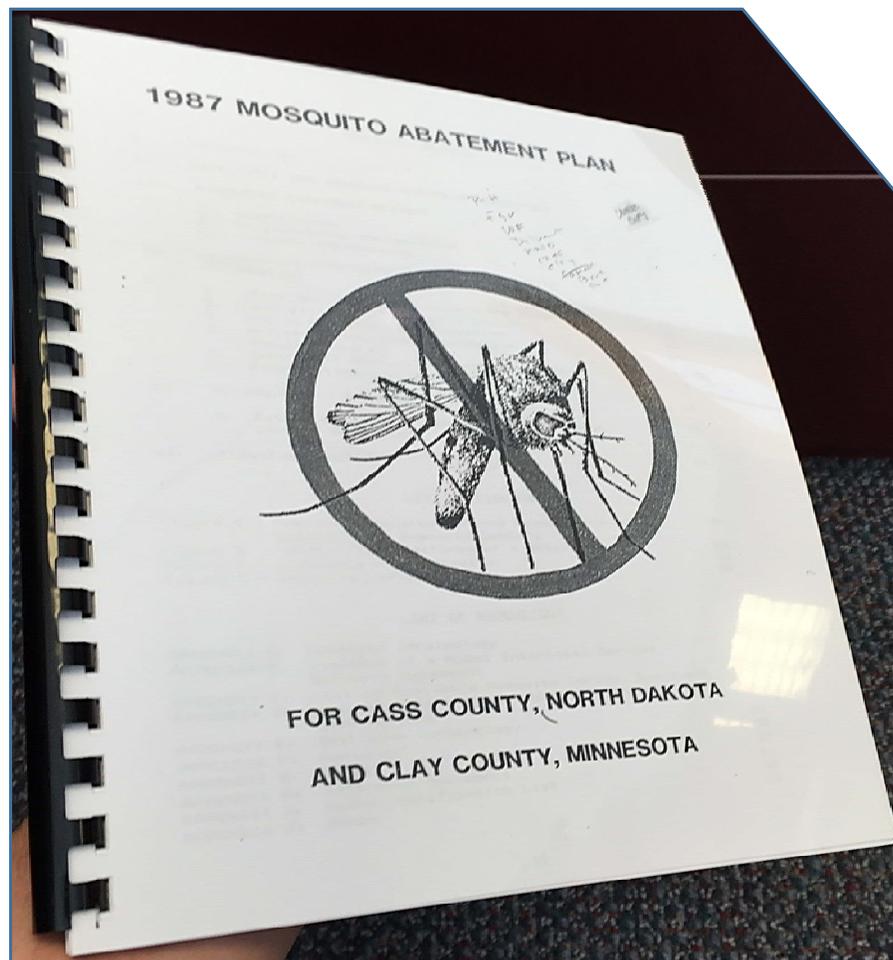
To date, many of the above objectives have been realized. The most illustrative being the coordination of abatement efforts seen specifically when organizing aerial adult control applications. Another example would be the joint surveillance agreements enacted in 2014.

The final missing piece of the plan, Inter-local Service Delivery agreements, will materialize in full for the 2015 season.

Within the service delivery agreements section of the 1987 plan the following advantages are outlined.

- A mosquito control program, which is needed in neighboring jurisdictions, can be coordinated and uniformly administered.
- Duplication of mosquito control efforts will be eliminated.
- Expensive equipment and technical expertise can be shared.

Cass County Vector Control looks forward to continued success of joint operations in the coming years while remaining mindful of the challenges that inevitably lay ahead.



2015 Contract Revenue

Contract Revenue	Fargo	Moorhead	West Fargo	Horace	Larval OTHERS	Clay PH	Rural Cities	Subtotal	Total
Larval Control	\$ 290,000	\$ 56,500	\$ 56,000	\$ 10,000	\$ 6,000			\$ 346,000	
Admin		\$ 20,000				\$ 1,000		\$ 21,000	
Evening Fogging	\$ 12,000	\$ 7,500	\$ 4,000	\$ 600			\$ 7,500	\$ 31,600	
Lab Services						\$ 1,500			
Totals	\$ 302,000	\$ 84,000	\$ 60,000	\$ 10,600	\$ 6,000	\$ 2,500	\$ 7,500		\$ 465,100.00

As of this writing, the spring is still too distant to make any concrete statements on “how the season will be”. However a few indicators are present- The National Drought Monitor is showing abnormal dryness in the region and the 90 forecast is showing equal chances of precipitation and temperature. Regardless of how the weather does eventual turn out; contract mechanisms are in place to best deal with both very rainy conditions and at the other end of the spectrum- very dry conditions.

