



Missouri Quail Forever

Quarterly Partners' Report



Chad Doolen - Bollinger, Cape Girardeau, & Perry

July—September 2023

On Herbicide Use

Herbicides are an important tool for natural resource management. When used wisely and properly, these chemicals can help increase the success and quality of habitat restorations and, I would argue, promote sustainability of our natural resources and ecosystem services. They are also efficient and cost effective. Like many tools (not only those for natural resource management), however, improper use (whether intentional or not) can have significant negative side effects.

I have a significant amount of experience with herbicide application, but it was always at the guidance of a more knowledgeable supervisor. Looking back, I didn't really understand what chemicals I was using. I only knew what plants I was trying to treat on any given day. When stepping into the Farm Bill Biologist role, one of my goals was to better my own understanding of herbicides – what chemicals are available, what species they affect, when to use them, and how to use them, and so on and so forth. Like a lot of things, understanding these aspects of herbicides is complex, but without developing at least a little understanding of these aspects of herbicide applications, we run the risk of hurting the landscape and potentially ourselves. As I often find myself providing landowners with guidance on herbicide use, I think it's prudent to take a moment and review some basic information that will help landowners use herbicides more effectively.

I pretty much identify five basic aspects of using herbicides: application method, application rate, application timing, mode-of-action, and additives.

Application Methods

Most landowners are likely familiar with one or two methods. It can be simply defined as how the chemical is delivered to a plant. Common methods include foliar, cut-stump, hack-and-squirt, and basal bark applications. Wick applications are uncommon and underused for treating herbaceous species. Which method is used depends on what plants are being targeted, when they are treated, and even which chemical(s) are used (or vis versa).

A foliar application is simply spraying chemical onto the leaves of herbaceous and/or woody shrubs. Both broadcasting and spot treating involve foliar applications and are generally easy for a landowner to engage in. As little as a hand sprayer can be used for spot treatments. Largescale broadcasting can be more difficult to utilize, and many landowners needing to treat entire fields often hire a local vendor or supplier to conduct the spraying. A drawback to foliar applications is it can be difficult to avoid harming desirable vegetation. Spot treating helps avoid unwanted damage but may not entirely.

Remedy[®] Ultra

SPECIALTY HERBICIDE

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For the control of woody plants and broadleaf weeds on rangeland, permanent grass pastures, and conservation reserve program (CRP) acres (including fence rows and non-irrigation ditch banks within these areas).

GROUP	4	HERBICIDE
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Active Ingredient:
 Triclopyr: 2-[(3,5,6-trichloro-2-pyridinyl)oxy]acetic acid, butoxyethyl ester 60.45%
 Other Ingredients..... 39.55%
 Total 100.00%
 Acid Equivalent: triclopyr – 43.46% - 4 lb/gal

Precautionary Statements
Hazards to Humans and Domestic Animals
 EPA Reg. No. 62719-552



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Wick applications, which are not commonly used, are accomplished by running a soaked rope (attached to a supply of herbicide) over the top of vegetation. While it requires a special apparatus, small wick systems are not too expensive. This method also allows for treating undesirable vegetation (weeds) with minimal harm to desirable plants if those are shorter than the weeds. I'd like to see more folks using this application method, especially in the establishment phase of NWSG conversions and habitat plantings.

The other methods mentioned above are aimed at controlling larger woody shrubs and trees. They are common in woodland restorations and in reclaiming old fields from invasive species. Cut-stump applications typically follow Timber or Forest Stand Improvement practices and are used to prevent stump sprouting. Hack-and-Squirt applications are used to treat undesirable trees without felling them and consist of making several cuts on the trunk that are deep enough to reach the tree's vascular system. The cuts are sprayed with herbicide mix and the tree is allowed to die in place. I typically recommend basal bark treatments when someone is trying to control unruly species (i.e. Tree of Heaven) or where cutting isn't feasible.

Application Rates

Understanding application rates is where I see a lot of disconnect in landowners and the use of herbicides (I've made these mistakes personally in my learning process). Your application rate should always be based on the label for the product you are using and the species you are wanting to treat. Different species of plants carry different tolerances to active ingredients. Some plants will succumb to very low concentrations of a specific active ingredient, while it will require two to three times the concentration to control another species. You should only use the concentration required to control your target species.

It is common for a landowner to call me ten days after a herbicide treatment and ask why it didn't work. When applied at label rates, it should take no less than two weeks for plants to die. Successful applications require the chemical to be taken up by the plant and circulated through all its stems and roots, which takes roughly two weeks. If a plant dies within two or three days, the treatment probably didn't reach every part of the plant, and you can expect perennial species to return the following growing season if not sooner. If a quick kill is the result of using too high a concentration, leaching and runoff starts to impact plants and areas that were meant to be avoided. Continued over application can lead to resistance in species, making controlling those much more difficult.

Application Timing

Yes, timing matters a lot. If no simpler a reason than your target needs to be present to be treated. However, timing may also impact how high a concentration is needed to effectively control a plant. Several perennial species are more susceptible to certain chemicals earlier in the growing season. Others, including desirable species, may not exhibit tolerance to selective herbicides until they reach a certain growth stage. Many product labels address these timing-related concerns.

In addition, carefully choosing a time to spray may be useful in limiting and avoiding damage to desirable species. Spraying cool-season species in March, April, or May will avoid damaging the bulk of warm season grasses and forbs. Honeysuckles, which are on many managers' lists of invasives to treat, provide another example for illustrating use of timing. Both Bush and Japanese Honeysuckles stay green well after our native species have gone dormant in the fall. Both can be safely sprayed with little worry of damaging nearby dormant plants, which will not take up herbicide.



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On Herbicide Use continued

Mode-of-Action

Most probably wouldn't be able to tell someone what a mode-of-action is or even think about it when using herbicide. Still, it is important to have a simple grasp of the concept for long-term use of herbicides as management tools. Mode-of-Action refers to the chemical pathway (protein synthesis, photosynthesis, etc.) an active ingredient disrupts in a plant. Luckily, chemicals with the same or similar modes-of-action are placed in a product group. Therefore, modes-of-action can be managed without knowing specifics chemistry and plant physiology. Many products indicate the group number on the first page of the product label. If the group number is not indicated on the label, you may want to perform an internet search to find it.

Why would you want to manage modes-of-action? Plants developing resistance to chemicals decreases our ability to control them. It is effectively removing tools from our toolbox. When we periodically change modes-of-action, we significantly delay or prevent the possibility of plants becoming resistant. Diversity, even in our use of herbicides, is a good thing.

Additives

Additives include surfactants, oils, and even fertilizers. These can help increase the efficacy of a herbicide when added according to the product label. Surfactants help herbicides adhere to leaf surfaces. Most labels commonly call for including a non-ionic surfactant for foliar applications. Oils are used when we want to increase the herbicide's ability to penetrate leaf surfaces or layers of bark (such as in a basal bark application). Fertilizers, such as ammonium sulfate, increase a plant's metabolic processes, which helps encourage a plant to take up herbicide and circulate it throughout its stems and roots. I often recommend the inclusion of ammonium sulfate in tank mixes for converting cool-season grass pastures to native warm season grasses.

Closing Comments

While I think herbicides are in general a safe, effective, and efficient management tool, there are several active ingredients that I think should be avoided all together. One example, dicamba, has risen in popularity to control glyphosate-resistant weeds in agricultural operations. Dicamba is a very volatile (meaning it becomes a gas and travels in winds) chemical and rarely stays in the field it was sprayed on. If it doesn't outright kill trees or crops in neighboring areas, it will stress those plants either making them more susceptible to diseases and pest outbreaks or lowering production. Other chemicals are more readily transported in the water table and pose a risk to streams, aquatic organisms, and even our water supplies.

Many of the problems with herbicide use can be mitigated when following the product label for active ingredient you will be using. Labels are usually extensive and cover everything we have review here. They cover applications rates for various application methods, species susceptibility and tolerances, and even appropriate use with additives and other herbicides. Reviewing the label of the product(s) you will be using is a must. When you're ready to use herbicide, be sure to have your expectations set appropriately. Do not expect to see plants die immediately or even over two or three days. An application at an appropriate rate applied at an appropriate time with an appropriate method should take no less than two weeks to fully effect treated plants.



Random clouds close to sunset.

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Flames of Diversity

I recently worked with a couple other members of our Missouri QF Team to write a short, blog article on prescribed burning in the fall. As fire is an important natural resource management tool, I thought it may be worth rehashing some points in the article here.

Like herbicides, prescribed fire is a tool that is more complex than it may initially seem. I like to say, "fire is not fire is not fire." There are many factors that influence the impacts of a prescribed burn. Humidity, fuel loads, fuel types, and winds all influence fire behavior and the immediate results. In addition, seasonal timing of the burn (the main topic of our blog article) also influences the species and structural composition the following growing season. And in the long-term, a fire regime stabilizes a habitat or natural community (which, a stable natural community is a complex concept all on its own).

For now, let's focus on seasonality of burning. Anymore, Missouri's burn season is kind of long. It starts in late summer and runs through very early spring. While that is a very long opening, actual burn days will be determined by weather conditions. Therefore, the actual number of days for burning amount to just a handful throughout that long window. Still, it is important to pick a season within that window that meets your objectives.

Late summer or late growing season burns are seeing more and more use in the state. Remarkably, conditions this time of year can lend themselves to low and slow fires, especially in woodlands. High humidities and low wind speeds dramatically reduce the fire's rate of spread. Being this is still the growing season, above ground stems will be vulnerable. Therefore, these present good opportunities to thin dense cover. However, the results may not last as low severity may not damaged root systems. Several species of plants may capitalize on the release of nutrients and send up new shoots. The production of viable fruit, however, may be hampered. This can be useful for slowing recruitment of invasive species in an area.

Fall burns, those conducted in very late September through early November, are more in line with Missouri's natural history. Prior to European settlement of North America, most fires occurred in the fall. When fall burns are repeatedly utilized, managers will be replicating the historic cycle of fires and their influence on the landscape as closely as is possible in modern times. However, there are short-term benefits as well. Fall burning tends to thin the cover of large perennial species. Small annual forbs (and some small perennial species) will often express themselves where the cover was removed. This can be good for pollinators and nesting birds. Pollinators will be able to take advantage of a boom in flower and pollen production. The increase in pollinators will also provide many young birds, such as Bobwhites, with a critical protein source.

In terms of using fire as a tool, winter is a transitional time in Missouri. Dormancy of vegetation peaks, and risk of severe damage is perhaps the lowest of any season. Duff and leaf litter is still consumed allowing for the space needed for cool-season species to flourish, as with a fall burn. Winter burns can be difficult to implement. Cool rains, sleet, and snow often leave the ground and fuels saturated and unlikely to catch fire. Furthermore, there is never a clear start to spring, and waiting too long to conduct a winter burn leaves you looking at an early growing season, especially during a warm year.

Spring burns are conducted at the beginning of the growing season, typically in March. Spring provides a window to damage undesirable cool-season species with minimal harm to warm season annuals and perennial species. For example, it is a good time to address fescue in a field of native warm season grasses. Spring burns will often be followed by a flush of flowers and foliage production, especially in warm season species. Be aware that repeating spring fires with a relatively high frequency will eventually reduce the number of desirable cool-season species.



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Flames of Diversity continued

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To take this a step further, a fire regime is the influence of reoccurring fires on a landscape over time. In my experience, we don't have many in depth conversations around fire regimes, especially with landowners. There's probably a good reason for that in regard to working with landowners. Most of the time, we are simply trying to get the ball rolling and get some management on the ground. Trying to understand a fire regime at those early stages may be a lot to undertake. Still, if a landowner shows commitment to long-term management, it behooves addressing burning as part of a fire regime. Utilizing a fire regime will incorporate stability of species diversity, species structure (e.g. maintaining a herbaceous understory in a woodland).

Each natural resource manager will likely have their own nuanced view of seasonal burning. Some will think any growing season burn should be avoided. Others will use growing season burns to address undesirable vegetation. Regardless, all of us need to develop better understandings of the outcomes of choosing a season. Those expected outcomes should be weighed against the management objectives. If the results of burning during a specific season will meet objectives, then that season is the right season to burn. Objectives can change over time as well, and practice implementation changes accordingly. If the first burn on a site occurs in the summer, the next can be in fall.

Our blog article can be found here: quailforever.org/BlogLanding/Blogs/Quail-Forever/Fall-Burning-for-Bobwhites.aspx



Results of a 2023 summer burn at Current River Conservation Area.

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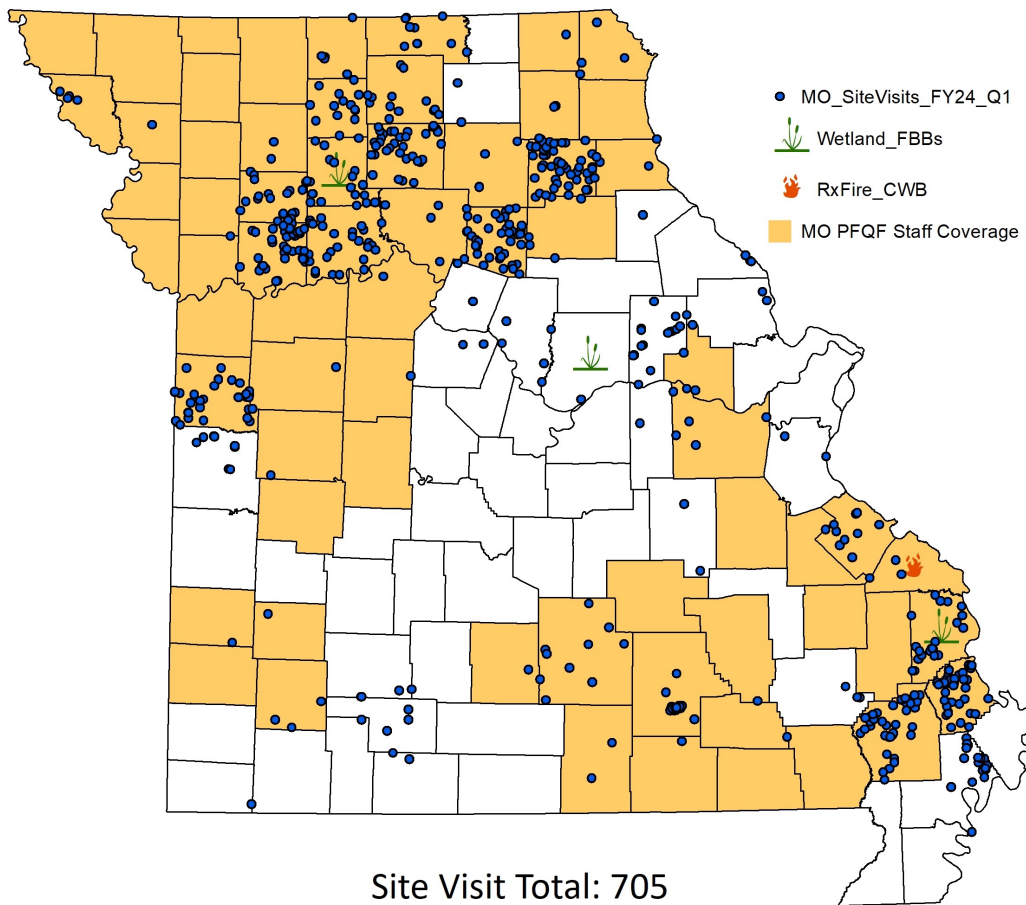
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MISSOURI PF/QF BIOLOGIST FOOTPRINT July 1, 2023 - Sept 30, 2023



*Site visit entries where coordinate data was captured.

Updated 10/13/2023



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(LEFT) FFA Career Day in Portageville; (RIGHT) CRP NWSG after emergency hay harvest

A New Start - the SEMO Habitat Chapter

Pheasants Forever/Quail Forever is a grassroots organization, and support from locals is essential. Local chapters recruit members and host fundraising events that benefit projects in their areas. A unique feature of PF/QF's chapter model is locally raised dollars stay with and are spent by the chapter that raised them. This gives chapter members significant influence on local projects. However, a chapter must be active to support local activities, and Covid really slowed local participation.

Quail Forever has started to reboot Missouri chapters that were active when Covid began and build new chapters where possible. As a result, a new chapter has formed in southeast Missouri. Please welcome the SEMO Habitat Chapter in Bollinger, Cape Girardeau, and Perry Counties! Over the summer, new members from each county have made the commitment to supporting QF and its wildlife habitat goals! Each of the chapter's new members are enthusiastic and looking forward to future. While we can expect to see some traditional QF style events, the members have voiced a desire to focus their support on working with habitat and developing unique recreational and educational opportunities geared towards natural resources and their long-term sustainability.

So far, the chapter has had three meetings. Shortly after the third meeting, they were able to start their first fundraiser. I don't think it will be long before the group is well known inside and outside of its counties! If you are interested in joining them, you can find more information (membership prices and meeting dates) here:

<https://pfqf.myeventscenter.com/event/Become-A-Member-Of-The-Semo-Habitat-Chapter-85810>

Quarterly Activities Summary

Conservation Planning

- 34 Landowner Contacts
- 44 Site Visits
- 23 Plans Written

Outreach

- Southeast Missouri Regional Grazing School
- FFA Career Day

Training/Meeting

- MDC SE Private Lands Meeting
- MDC Level 3 Fire Training
- NRCS Area 3 Staff Meeting

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Position Update

This quarter was spent wrapping up construction on a few really cool restoration projects. One in particular was a CCRP-CP23/MAWI in Boone county for a very conservation-minded and enthusiastic landowner. Upon completion, he was fortunate enough to receive a good amount of rain to partially fill his new pool and stimulate some moist soil vegetation. This immediately had the teal, geese, and doves flocking to it just weeks after completion. One other exciting adventure this quarter was a collaboration with The Nature Conservancy on a newly acquired property in Boone county along the MO River. We spent a day with them, MO River Relief, USGS, NRCS, Mizzou Agroforestry, USFWS service, and other partners sharing ideas on how to help TNC meet their land use objectives given what the property offered. After that, MO River Relief was gracious enough to take us out on the river to gain a different perspective of the property and elaborate on some of their ideas for the property. Just a few of the interesting events that comes with being a wetland biologist!

Taken over the water control structure on the Boone co CP23/MAWI



Boat ride with MO River Relief on the Big Muddy



Siren salamander caught while sampling invertebrates at Duck Creek CA



Conservation Technical Assistance Summary

Conservation Planning

- 44 Landowner Contacts
- 40 Site Visits
- 3 Topographic Surveys Completed
- 2 Topography Models



Field portion of Mr. Fredrickson's wetland workshop sampling invertebrates at Duck Creek CA

Trainings/Meeting Type	Outcome
Leigh Fredrickson's Moist Soil Management Workshop	Learned new ways to look at managing wetlands through various times of the year for migrating water birds
WETs In-Person Team Meeting	Reunited with the statewide Wetland Emphasis Team members and learned about how wetlands are built and managed differently across the state
The Nature Conservancy Conceptual Design Meeting	Collaborated with TNC, MO River Relief, USFWS, USGS, Mizzou Agroforestry, and other partners to help TNC meet their land use goals on a newly acquired property

@MissouriQF

MissouriPFQF.org



Moving Forward

Going into the fall and winter is one of my favorite times of year, as we begin to have more landowners reach out with interest in restoring wetlands on their land. We're also able to circle back to those who've already reached to complete topographic surveys now that crops will be harvested and leaves drop, allowing for more efficient surveying. Not to mention, the weather is bearable once again! I am also looking forward to meeting up with my Missouri Pheasants/Quail Forever team members to share what we've been working on and build on new ideas for the future. This year, we will be meeting in Eureka, MO and visiting sites that other Farm Bill Biologists have been making tremendous strides on, including one owned by our national sponsor, Dennis Brune of Alps Outdoors. This time of year is also special to me as I will be taking some time off enjoying our natural resources as they are meant to be, hunting pheasants and waterfowl in South Dakota with fellow conservationists!



Our survey grade equipment overlooking a wetland in Randolph Co



Left: Another shot from the Boone Co CCRP CP23/MAWI



Above and Below: Setting water control structure on new WRE in Lincoln Co



Above: Monarch caterpillar on a milkweed sprout just after construction of the Boone Co CCRP CP23/MAWI

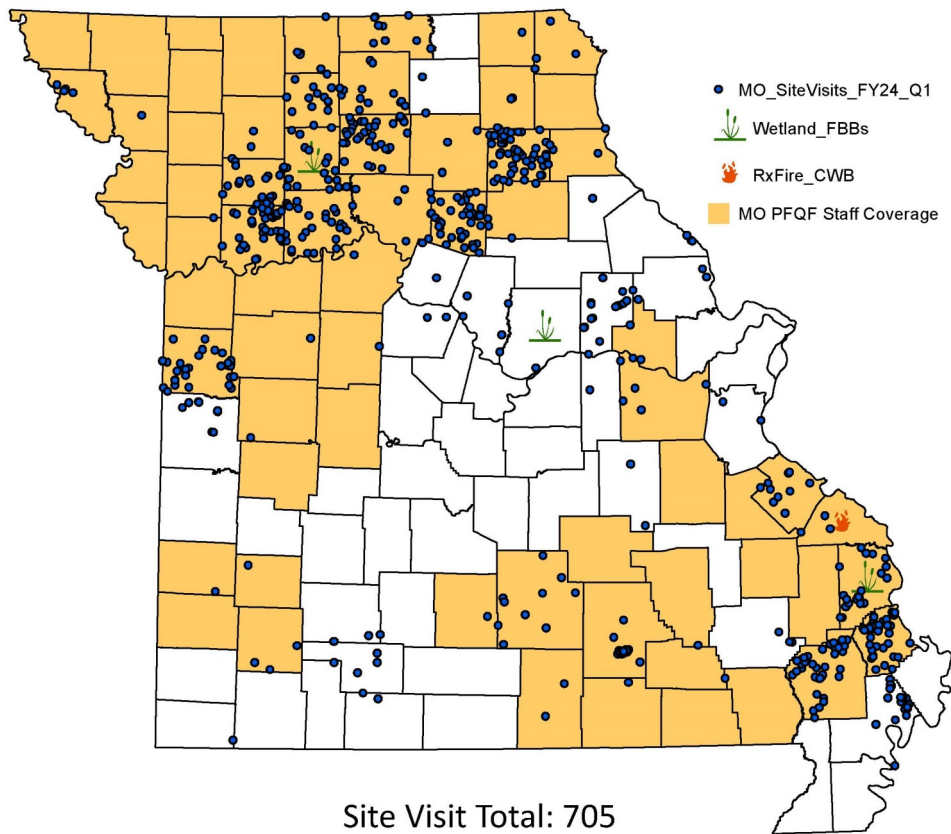




First Quarter of FY24

From July 1 through September 30, our team recorded 1189 landowner contacts and 657 site visits. The team impacted 22,661 acres. Outreach efforts reached 1,950 participants through workshops, meetings, and trainings.

MISSOURI PF/QF
BIOLOGIST FOOTPRINT
July 1, 2023 - Sept 30, 2023



Site Visit Total: 705

*Site visit entries where coordinate data was captured.

Updated 10/13/2023



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Emaily Lear - Ste. Genevieve, St. Francois and Madison

July - September 2023

What I've been up to...

CRP was in full swing the past few months! On top of the 24 plans written, I had four planting reviews and one expiring status review to complete. Though this wasn't my first CRP sign up it was a new learning experience being in a different state. I'm happy to say I survived and look forward to continuing on with a few I already have lined up for our next open enrollment period! Besides CRP, I had quite a few cool visits with landowners, as well as presenting at another grazing school and Lady Landowner Day, and I attended an EQIP training focused on Forestry efforts. I've also been apart of the planning committee for our State Habitat Meeting and wrote another article for our states social media page!



Conservation Planning

- Landowner Contacts; 26
- Site Visits; 21
- Plans written; 24
- Habitat recommendations; 26



CRP Practices	Acres Impacted
CP2 Permanent establishment of native grasses, forbs or legumes	281.81
CP33 Field borders; native WSG	15.10
CP22 Riparian buffers	21.74
Total	318.65

**If anyone wishes to discuss habitat projects or knows others who are interested; please contact me at the information below.*

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Missouri Quail Forever Quarterly Partners' Report



Emaily Lear - Ste. Genevieve, St. Francois and Madison

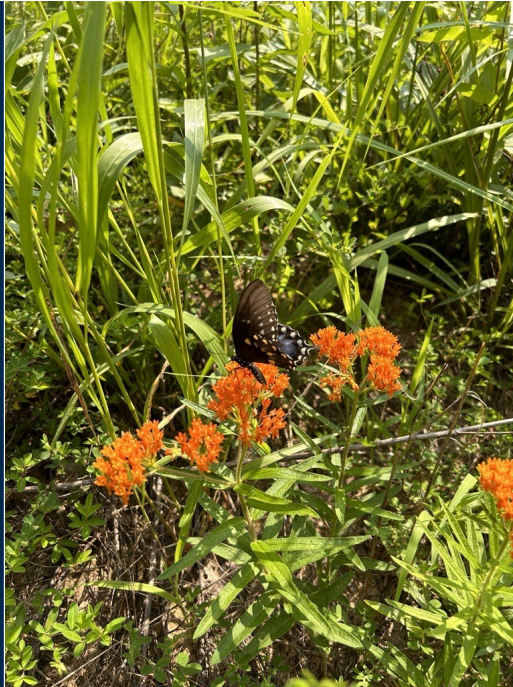
July - September 2023

This month I had the pleasure of doing a few outreach events, the most memorable being the Ste. Genevieve Lady Landowner Day hosted by the SWCD! The workshop was focused on lady landowners in the county, with a host of topics like Tools on the Farm, NRCS & What They do, the SWCD projects, and the presentation I gave on "The Buzz on Pollinators". I touched on what pollinators are, why they are important to us, and how we can make a difference by integrating it into farms or landscaping!

We then took the ladies to tour a local winery to learn about the process of making wine, learning about the stages from the start of the plant all the way to bottling it. Local staff had a wonderful time connecting with these ladies and discussing how we can help them with projects they hope to do in the future!



The past few months have been boasting some beautiful butterflies! To the far right is a monarch visiting some zinnia at Chaumette Winery and a Swallowtail with some late flowering Butterfly Milkweed! Above we have a landscape photo of the winery and a photo of myself from the presentation portion of the Lady Landowner Day in Ste. Genevieve.



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July - September 2023

Burning to Promote Forb Growth!

PC: Dylan Jacobs Habitat Crew Lead

Article written for social media Blitz Week; our focus being Pollinator Habitat!

Did you know that burning can be one of your most useful management tools for pollinator plantings? Utilizing it can provide the best habitat possible for those pollinators and other wildlife. Because fire can be manipulated to serve lots of different goals, we want to find the best time to use it to meet our goals and objectives.



Prescribed fire should be used as a long-term management practice and is typically recommended after the 2nd growing season to give forbs a better chance at establishment. Conducting a fall burn can knock back our rank, native warm-season grasses and allow better opportunity for those forbs to flourish. This burn period can often hit multiple management targets at once, for example controlling the spread of woody or invasive species. Burning to increase forb diversity is also great for our other wildlife interests, like Bobwhites! High forb diversity is known to produce high insect diversity, which is necessary for bobwhite chicks during the early stages of development, with a demand for a high protein diet this is crucial to increase their survival rate!

If you are interested in introducing prescribed fire to your land, make sure that you are fully prepared. The Missouri Department of Conservation offers a host of Landowner Workshops for landowners to become Certified Burners etc. Joining your local Prescribed Burn Association will also provide access to equipment and assistance on the fireline!

Monarch butterfly found in a blooming pollinator planting at the local Ste. Genevieve High School.



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July - September 2023

Something New I'm Learning!

LCAP is a new program to me since it is specific to Missouri, so I wanted to highlight a project Rachel Settle and I will be working on. We conducted a site visit in Madison County with a landowner, Travis DeGroot, who has done previous conservation work. He expressed interest in continuing with previous TSI and Prescribed burning efforts on his property. While on the visit we took a few practice inventories of the different stands that he prioritized for us and talked about his different options for developing a Forest Management Plan. I am excited to take the lead on this project and work towards Travis's goals for his unique property!



To the right are two species of late blooming plants. Far right we see Wingstem found during a CRP site visit and to its left is a bumblebee posing on a native *Aster* found at Elephant Rocks State Park!





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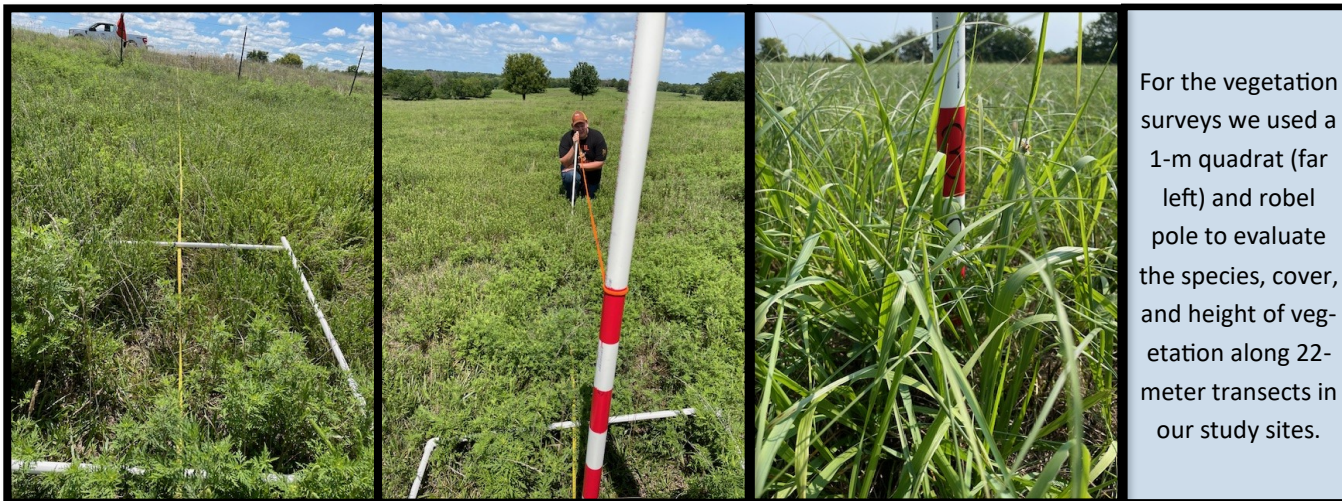


Haley Lockard - Cass, Johnson, Pettis

July - Sept 2023

Transecting the Prairie

This quarter continued to be busy with the WLFW Bobwhite Framework Outcomes Assessment. In July and August we conducted vegetation surveys at each Spring survey location. During the surveys, we evaluated the cover and dominant species present along four transects. These data paired with the audio recordings taken in the spring will help researchers better understand habitat use by quail and other grassland birds.



For the vegetation surveys we used a 1-m quadrat (far left) and robel pole to evaluate the species, cover, and height of vegetation along 22-meter transects in our study sites.

<u>Conservation Planning</u>
• 103 Landowner Contacts
• 55 Site Visits
• 19 Conservation Plans
• 3 Eligibility & Ranking Assessments
• 16 Status Reviews/check-outs
• 7 Practice Certifications
• 25 Surveys & Data Collection

Delivery Activities	Acres
Assessment Acres	339.27
Eligibility & Ranking Assessments	66.68
Status Reviews	272.59
Conservation Planning	384.99
Conservation Plans	384.99
Practice Certification	43.66
Conservation Cover Standard - 327	10.90
Field Border - 386	13.83
Forest Stand Improvement - 666	18.93
Grand Total	767.92

<u>Outcomes Assessment Activity</u>
• 10 ARU units
• 9 Landowners participating in 10 EQIP contracts
• 11 ARU deployments
• 25 Vegetation surveys

265 people reached at
4 Outreach Events and Trainings

Connect with Us!



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Senior WLFW Farm Bill Wildlife Biologist

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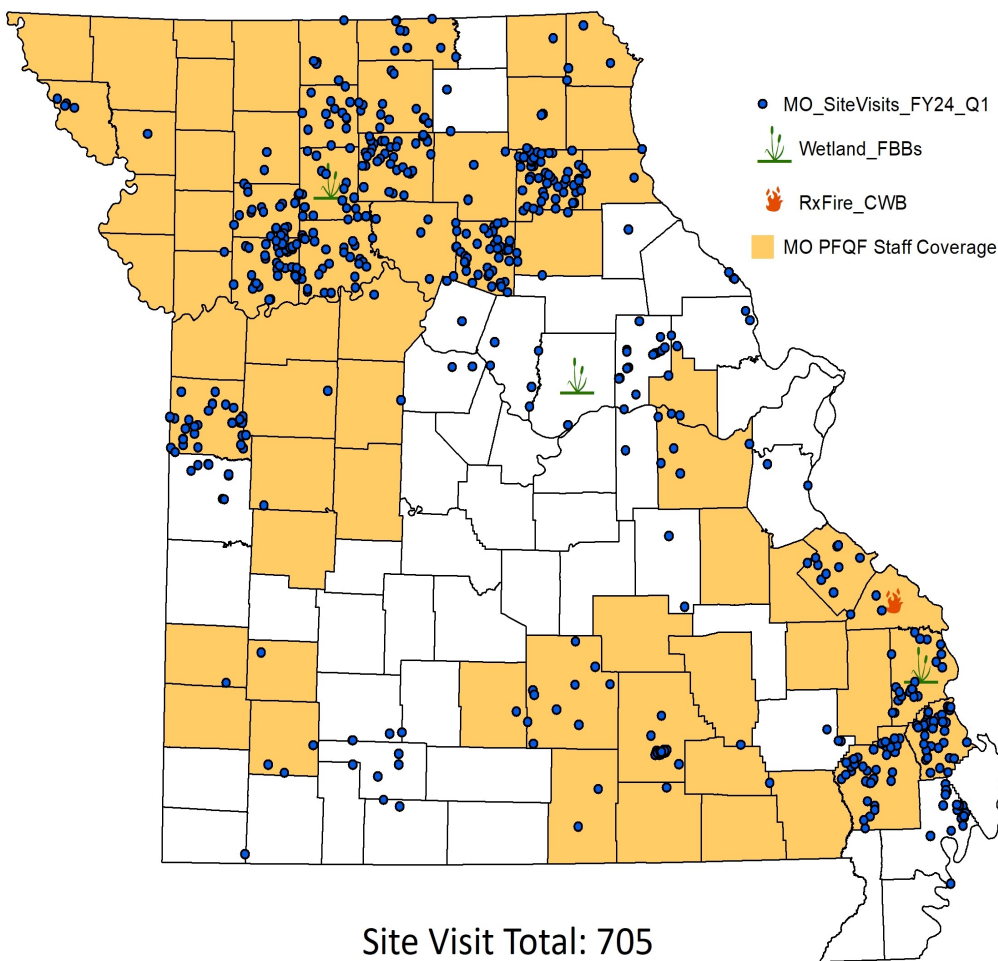
Haley Lockard

April – June 2023

Looking Forward...

- Hire and Onboard current FBB vacancies in southern Missouri
- Conduct Fall covey count survey portion of WLFW Outcomes Assessment on EQIP/CSP contracts
- Continue to provide technical assistance to landowners
- Assist NRCS with EQIP, CSP and RCPP applications and conservation planning

MISSOURI PF/QF BIOLOGIST FOOTPRINT July 1, 2023 - Sept 30, 2023



Haley Lockard
Senior WLFW Farm Bill Wildlife Biologist

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Sr. Coordinating Wildlife Biologist

Quarterly Partners' Report



JAKE SWAFFORD - Missouri

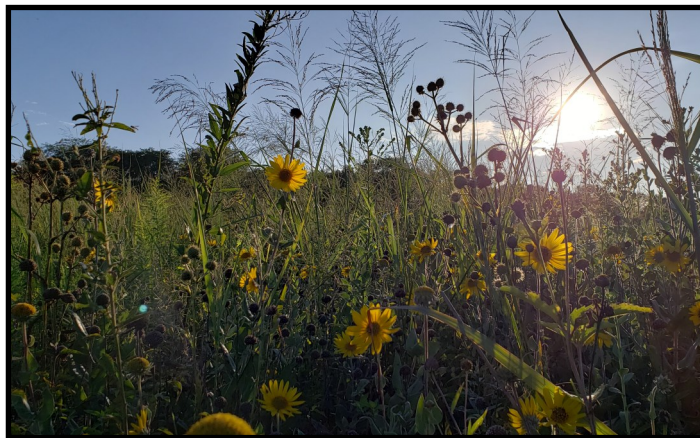
July – September 2023

Position Update

The past 3 months have been busy but rewarding. I've been meeting with staff to conduct annual reviews, engaging with new initiatives and partnership opportunities, and participating in various board and committee meetings. I'm thrilled to be involved in so many exciting opportunities, each working to make a difference for conservation in our state. I have also been working to get ready for another Regional Conservation Partnership Program (RCPP) signup this fall. I'm looking forward to attending several meetings/conferences this October, networking with partners, and working to promote the Monarch RCPP that QF is leading.

RCPP– PRIME Holds Third Signup to Improve Monarch Habitat

The Regional Conservation Partnership Program (RCPP) known as PRIME – Project for Restoring and Improving Monarch Ecosystems is holding its third signup this fall. An announcement inviting landowners to apply for PRIME along with 6 other innovative RCPP projects went out earlier this month. This project aims to increase monarch and pollinator habitat in Northwest Missouri through land management practices and short-term land rental payments. PRIME will target lands expiring from Conservation Stewardship Program (CSP) and Conservation Reserve Program (CRP), enhancing monarch habitat by maintaining and restoring diverse native plant communities.



RCPP projects are unique in that they are projects funded through USDA's Natural Resources Conservation Service and led by partners like Pheasants Forever and Quail Forever. This project is led by QF with support from the Missouri Department of Conservation and the Saint Louis Zoo.

The purpose of PRIME is to establish and enhance monarch butterfly habitat across Northwest Missouri, its primary route through the state on its annual migration. Along with planting pollinator friendly plant species, PRIME is encouraging landowners to maintain and manage existing habitat for these at-risk pollinators. Prescribed burning is a terrific tool for maintaining and enhancing monarch butterfly and other wildlife habitat. PRIME offers financial assistance for prescribed burning, burn plan development, short-term land rental, and other supporting practices. Missouri Pheasants & Quail Forever also offers incentives for those interested in



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Sr. Coordinating Wildlife Biologist

Quarterly Partners' Report



JAKE SWAFFORD - Missouri

July – September 2023

working with prescribed fire contractors to carry out land management activities.

Applications for PRIME's FY24 signup close on November 17th, and partners are excited to get to work planning. If you are interested in applying for PRIME, please reach out to your Quail Forever Farm Bill Biologist or NRCS staff. For more information on all of Missouri's available RCPP projects, check out this [link](#).

Training/Meeting Type	Outcome
CFM Affiliate Summit	Attended Conservation Federation of Missouri's annual Affiliate Summit to network with conservation groups across the state and learn about resources available to promote our organizations.
Turkey Habitat Initiative	Met with Missouri Turkey Biologist and National Wild Turkey Federation to discuss and build support for a turkey focused habitat initiative.
SRISP Board Meeting	Attended the Scenic Rivers Invasive Species Partnership (SRISP) board meeting to continue engaging in invasive species work and work to support the organization as it becomes its own entity .
Ecological Sciences Staff Meetings	Participated in the NRCS Ecological Sciences Teams monthly staff meetings discussing current conservation issues, NRCS technical assistance policy, business tools, and special initiatives delivery.

Looking Forward

- I will continue to lead the delivery of the Monarch PRIME- RCPP during it's third signup.
- Develop funding proposals for PF/QF initiatives as well as M4M, SRISP, and RxFire partnerships.
- Work with State Coordinator and partners to identify conservation priorities and assist with special initiatives to address them.
- Continue providing leadership to Quail Forever's Coordinating Biologist Team across the state.
- I will continue providing technical assistance to landowners in Missouri who are interested in establishing habitat for Monarchs, quail, and other upland wildlife.
- Work with partners to engage as a Sr. Coordinating Biologist to strategically provide lift to shared initiatives and priorities.



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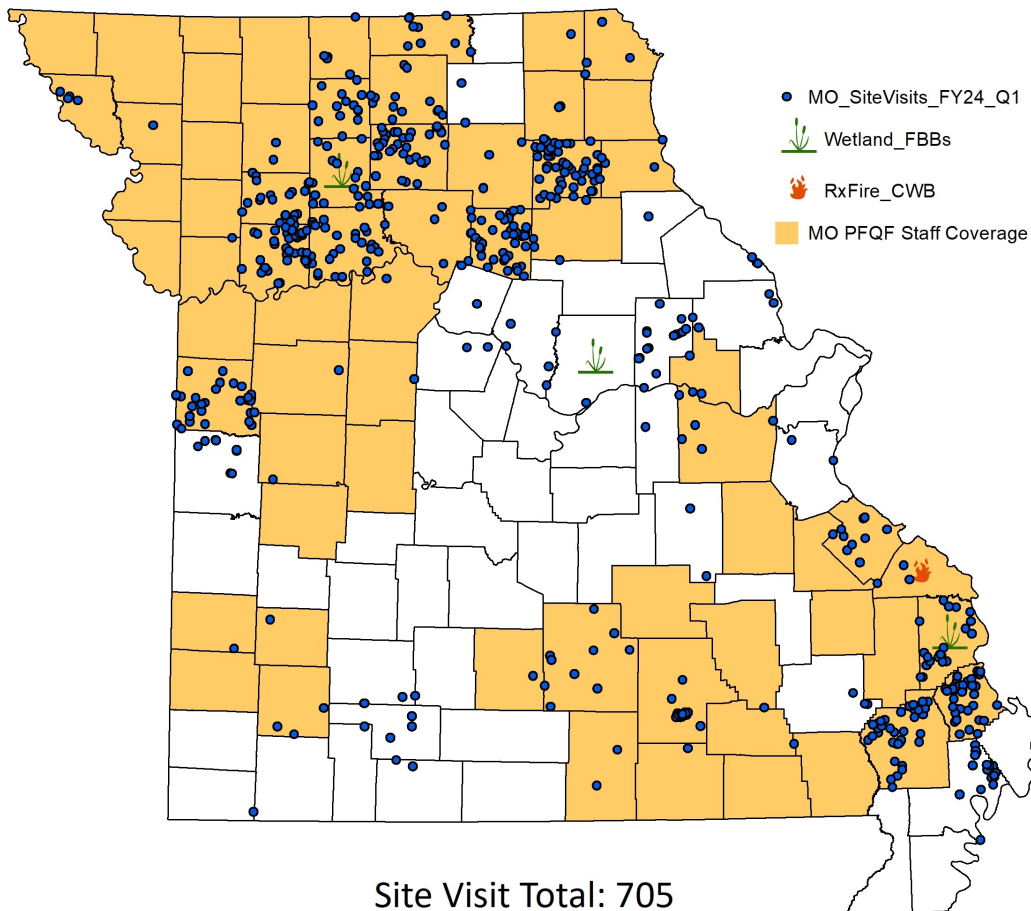
Sr. Coordinating Wildlife Biologist
Quarterly Partners' Report



JAKE SWAFFORD - Missouri

July – September 2023

MISSOURI PF/QF BIOLOGIST FOOTPRINT July 1, 2023 - Sept 30, 2023



Site Visit Total: 705

*Site visit entries where coordinate data was captured.

Updated 10/13/2023



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Position Update

Our wetland teams have undergone a lot of changes since the beginning of the year. On the WETs 1 team alone, we have added three new team members, an increase in personnel reflected across the state. With this increase in manpower, we are getting the opportunity to get a lot of projects kickstarted and to be able to address habitat needs and wetland repairs. For me, this is translating into the chance to transition from catch-as-you-can conservation, to being in a place where I can begin to focus on issues I have noted during monitoring and site visits and I can begin to reach out to landowners about developing plans to address phragmites spread, boost upland habitat value and write burn plans. With so many more knowledgeable team members, there are a lot of opportunities to learn new management techniques, to get hands on experience with surveying and design and to spend more time addressing landowner concerns. I have high hopes for what I can get done in the coming year within this new team structure.

Wetland Team Meeting

In late September, the four Missouri WETs teams grabbed our boots and headed down to Cape Girardeau for our fall meeting. Hosted by WETs East Team Leader, Brian LeGrand, and MDC's Tommy Marshall, we met to discuss ways to assist in putting wetlands on the ground effectively whether through WRE or by supporting MAWI and EQIP wetland development. In addition to this, we were afforded the opportunity to visit some very unique wetland sites under restoration in New Madrid and Stoddard Counties. Wetlands differ greatly across Missouri's diverse landscapes and the Bootheel's wetlands are no exception. Between negligible slope and sand, inclusions designing these wetlands really makes me appreciate all of our Northwest Missouri clay! Easement owner, Davis Minton took us on a tour of one of his Stoddard County wetlands. Mr. Minton, has real passion for his wetlands, and he took time to highlight that the project of restoring these habitats has been one of experimentation, innovation and persistence. The fruit of his efforts was visible behind him as herons, ducks, shorebirds, hawks and songbirds made use of diverse resources provided by his easement.



Davis Minton took the Wetland Teams on a tour of several of his easements in Stoddard County, MO. Here Mr. Minton is discussing his experiences managing his easements and how methods and knowledge have changed during his tenure.



Emergency Drought Haying

Parched conditions have definitely been a theme of my first two years on the WETs 1 Team here in Chillicothe. In July, as we finished up our yearly monitoring, the word went to landowners that they would be able to do a limited haying on certain areas of the easement. This measure was well received by our landowners with the scarcity of feed this summer making hay a valuable resource. From a management perspective, this haying could be leveraged to affect positive changes to vegetation composition. In northwest Missouri, we deal with a Reed Canary Grass invasion on a frequent basis. While not normally a desirable feed, producers in our region were seeking out even this less palatable grass over the drought. While this won't kill a Reeds, patch we were able to help some landowners strategize their haying with plans for burning and spraying to attempt to knock it back. Having landowners seek us out for these haying plans offered a great opportunity to get in contact with active land managers and discuss habitat improvements moving forward.



This particularly parched easement in Carroll County relies on a combination of flooding and precipitation for its water. Especially near the Missouri River bottoms these easements can struggle for water in dry years. Connection of the water table to the river means that a low Missouri River can pull water from the surrounding landscape.

Waiting for the Water

With what a dry year it has been, a lot of landowners have been reaching out to us with concerns about the integrity of their structures. While levees and water control structures always have the possibility to fail over time, in a lot of cases this struggle comes down to soils and precipitation. As our water tables dropped over the summer, wetlands with more permeable soils fell into a deficit that many landowners are still struggling to recover from.

This predicament makes the capture of any available water all the more urgent a goal. If pumping capabilities are present, now is the time to focus on putting water on the landscape. If an easement owner does not have access to a pump or a well then care should be taken to capture flood water whenever possible. Even a low intensity flood can provide water if the landowner can remove boards to let water in and be quick to replace them when the floodwater begins to recede.



Farm Bill Wildlife Biologist II **USDA**

Quarterly Partners' Report



Jeffrey Folkerts, NW Missouri WET Area 1

July — October 2023

In the Next Quarter

- Attend NRCS Cultural Resource Training in Columbia in October
- PFQF State All-Team Meeting in St. Louis.
- Begin fiscal year 2024 Easement monitoring.
- Develop educational materials and plan for spring outreach events.
- Perform quail count surveys in Livingston and Carroll Counties.

Conservation Planning

- 59 Landowner Contacts
- 28 Site Visits
- 1445 Assessed Acres
- 328 Habitat Recommendation Acres

Training/Meeting Type	Outcome
MDC Fire Training Level 3	Attended a 3 day training at the end of July to become certified to write burn plans for landowners. Hosted by MDC and assisted by PFQF Wes Buchheit, we discussed how to safely plan fires and methods for achieving specific habitat goals through prescribed burning.
Wetland Fall Team Meeting	The WETs staff met in Cape Girardeau to receive updates on programmatic goals and challenges. Local WETs staff led tours of Bootheel WRE sites and the team discussed wetland design and restoration efforts in this unique landscape.



Farm Bill Wildlife Biologist II **USDA**

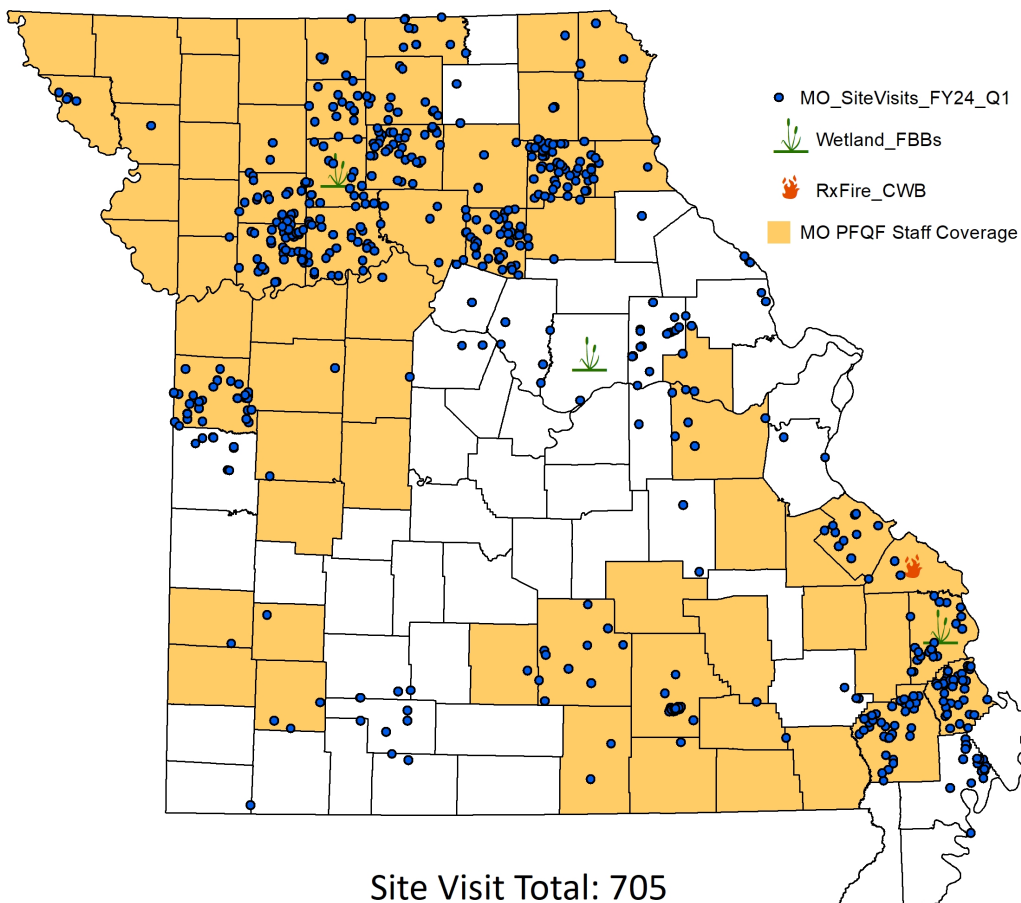
Quarterly Partners' Report



Jeffrey Folkerts, NW Missouri WET Area 1

July — October 2023

MISSOURI PF/QF BIOLOGIST FOOTPRINT July 1, 2023 - Sept 30, 2023



*Site visit entries where coordinate data was captured.

Updated 10/13/2023



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Farm Bill Biologist II

Quarterly Partners' Report



Jonathan Dew - Livingston, Linn, Carroll

July-September 2023

Position Update

The first quarter of FY'24 has started off with a bang. With the help of Farm Bill Intern Ethan Hoerr, I was able to complete numerous site visits, outreach events, and surveys.

I was able to take advantage of my Level 1 Conservation Planner certification this year during the CRP General Signup. I wrote a total of 37 Conservation Plans for a total of 2539 acres planned.

A large part of my workload this quarter was participating in a research project through Working lands for Wildlife and the University of Georgia. Ethan and I had our hands full completing point count surveys as well as vegetation sampling on multiple sites throughout my three counties.

This work will continue into the fall with covey counts and well as ARU deployments to determine the status of quail populations in the area.

Conservation Planning	Acres Impact-ed
Total Acres Planned	2539.35
-Conservation Cover	1790.25
Brush Management	159.04
Tree and Shrub Estab-lishment	15.00
Early Successional Habitat Development	267.91

Conservation Planning

- 137 Landowner Contacts
- 90 Site Visits
- 37 Habitat Management Plan
- 3 Outreach Events
- 9 Surveys/Data Collection

Training/Meeting Type	Outcome
MDC Level 3 Fire Training	A group of Farm Bill Biologists and I traveled down to Cape Girardeau to attend MDC's Level 3 Fire Training Course. Once completed, I am now certified to write prescribed burn plans.
PBA Interest Meeting	I had the pleasure to help organize and attend a potential prescribed burn association startup meeting. If the group is successful, they will be able to provide an amazing resource for prescribed burn efforts in the area.
NRCS Area 1 Civil Rights Meeting	NRCS holds a Civil Rights Meeting once a year for all area staff. During this event, there were guest presenters from a variety of different backgrounds which provided an alternate outlook for common issues.

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Farm Bill Biologist II

Quarterly Partners' Report



Jonathan Dew - Livingston, Linn, Carroll

July–September 2023

Working Lands for Wildlife ARU Study

During this summer, I had the pleasure to work on a project conducted through multiple partners such as WLFW, the University of Georgia, Quail Forever, and NRCS. This study's goal was to determine the effects certain management practices had on overall quail and other songbird populations over a set timeframe. This study required ARU's (Acoustic Recording Units) to be deployed on properties where management has been done to listen for quail calls. This information is then used to determine population density and the effectiveness of the practices. I was pleased to hear bobwhites at every site that sampled during the study.

These monarch caterpillars were found on a participant's CSP Monarch Planting involved in the study.



Quail Forever Intern Ethan Hoerr participating in the vegetation survey associated with the ARU Study.

The fieldwork associated with the study included point count surveys to insure the accuracy of the units. Once quail locations were identified, GPS coordinates were marked. A vegetation survey was then conducted in areas where quail were heard, as well as areas where no quail were identified. This was to determine what vegetation species and qualities quail prefer. I will have the opportunity to survey this properties again this fall by deploying the ARU units and conducting cover counts.



Farm Bill Biologist II

Quarterly Partners' Report



Jonathan Dew - Livingston, Linn, Carroll

July–September 2023

Outreach & Education

One of the most enjoyable aspects of my position is interacting with the public to discuss important topics in the world of conservation. I had that exact opportunity this summer at Dunn Ranch for their annual Prairie Days. There were booths from many organizations such as MDC, USFWS, NRCS, The Nature Conservancy and many more. Activities included Bison tours, Prairie Plant and Pollinator ID, and discussions about the many species that can be found at Dunn Ranch. Participants even had the chance to spot Prairie Chickens which are endangered within the state and can be found throughout the property in small numbers.

I spent the day speaking with landowners about my position with Quail Forever and the current conditions of quail and other upland birds in the area. After experiencing how much success Dunn Ranch has had improving wildlife populations, participants were eager to discuss how to improve habitat on their own properties.



**If anyone wishes to discuss habitat projects or knows others who are interested; please contact me at the information below.*

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Farm Bill Biologist II Quarterly Partners' Report



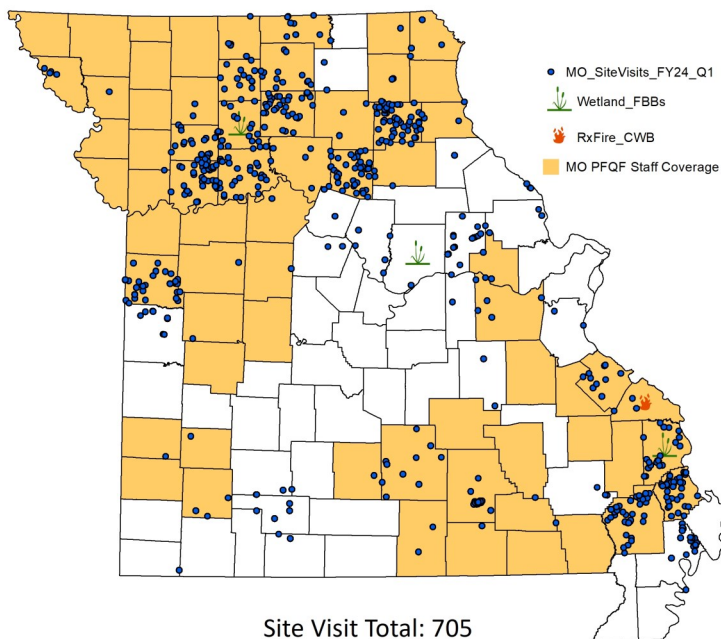
Jonathan Dew - Livingston, Linn, Carroll

July–September 2023

Leaving Our Mark On Missouri

- The Farm Bill Biologists across the State recorded 1,189 Landowner Contacts and 657 Site Visits.
- Total Acres Impacted is 28,325.
- Outreach efforts reached 3209 participants through workshops, meetings, and trainings.

MISSOURI PF/QF BIOLOGIST FOOTPRINT July 1, 2023 - Sept 30, 2023



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Updated 10/13/2023



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Senior Farm Bill Wildlife Biologist



Quarterly Partners' Report

Joshua Marshall - Sullivan, Grundy, Putnam, and Mercer Counties

JUL – SEP 2023

Quarterly Overview

During this for quarter, I started out by wrapping up my time with my intern and completed CRP site visits for the year. I also spent time outside doing site visits for future contracts, burn plans, and contract checkouts. I was afforded the opportunity to attend a few workshops and host a booth to help educate others about habitat and quail. While in the office, I kept busy by fielding landowner's questions, helping them navigate through sign-up forms, and fill out and explain job sheets so they would be able to create quality native habitat on their property. It was a rapid end to the summer and things are looking promising as we head into our fall, dormant season.

In the field

A large portion of my time this quarter was spent wrapping up CRP checks. Intern, Stephen Coy, was with me for all of July through early August, and he was instrumental in helping with checks. I would not have been able to complete all the field reviews or expiring CRP checks without his help. He worked many long hot days walking CRP fields to inspect them. His efforts, diligence, and can do attitude was noted by several partners and all of us were sad to see him leave to go back to school. I hope that he had a successful summer of learning and that he can use his new skills to further his career in conservation.



Rough Blazing Star



Five bumble bees caught on native pollinator plot.



Jared identifying a bumble bee.

In August, I had the opportunity to join an MU Student, Jared Brabant, on his bumble bee surveys. We toured three different properties that had been planted to monarch or pollinator habitat through the federal cost share programs of EQIP or CSP. We took both vegetation surveys and surveyed the various bumble bees using the plot. It was enjoyable and educating walking the fields looking for bees to catch. Once we caught them, we placed them in individual vials and made note of what plant they were on and what their activity was (resting, pollinating, flying, etc.) Our surveys ran for a set amount of time based on the size of the plot. After the survey, Jared would identify each individual bumble bee and record the information we had collected on them. This project hopes to see an increase in native bumble bees around areas that are being restored to native wildflowers. I enjoy surveys like this because it helps me gain a better understanding of the positive affects that our conservation projects have on wildlife. I can then relay these results to landowners when talking about why native habitat is important.



Logan Baum teaching students about native thistles.

Trainings and Outreach

This year, I was able to help with two separate outreach events that I have worked in the past and look forward to continuing in the future. The first was the North Central Missouri Fair. Each day of the fair, the Missouri Department of Conservation hosted a booth that the public can come visit, ask questions, or pick up publications and information. This year, I worked with a conservation agent at the booth. I learned quite a bit about enforcement and the Missouri Wildlife Code that is used to protect our wildlife and natural areas. It was helpful having the agent there so he could answer questions about regulations while I talked about native habitat. I also helped with the annual Hundley Whaley MU Field Station FFA day. Myself and two other biologist talked with over 200 FFA students and advisors about the importance of pollinator plots to wildlife, landowners, and the general public. I look forward to this event every year because I always enjoy helping educate new generations about native habitat.

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Quarterly Partners' Report

Joshua Marshall - Sullivan, Grundy, Putnam, and Mercer Counties

JUL – SEP 2023

New Faces and New Opportunities

In September, we had a new Biologist join our team. Trevor Dubinski came to us from South East Missouri State University and Missouri State Parks. He studied conservation at SEMO and worked as a naturalist for Missouri State Parks. During his time there, he learned to interact with the public leading educational classes, and has a vast knowledge of treating invasive species. He will fill in the vacant Chariton, Macon, and Randolph Counties' Farm Bill Biologist spot. He will be stationed out of the Randolph County USDA office. I am excited to have Trevor on the team and I enjoy his enthusiasm and excitement for this position. He hit the ground running working with his neighboring Biologist, Will Robinson, on a site visit and drafting up a management plan for the landowner. He learns quick, seeks advice, and joins our partners to help landowners in his counties. He even assisted the Mid-Mo Uplanders with their annual banquet and joined in on helping with various tasks throughout the evening. I know he will be a great fit to our team in his new role and I look forward to the work he will do in the future.



Trevor Dubinski, Farm Bill Biologist I



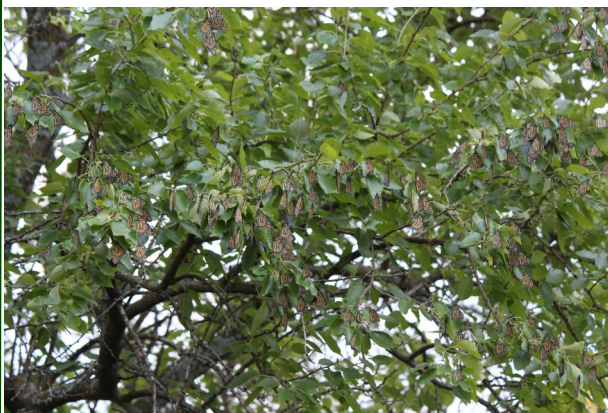
Azure Blue Sage, found on our farm.

My local chapter, the Green Hills Chapter of Pheasants Forever and Quail Forever, made their first donation to the State's Habitat Challenge Grant. These funds are earmarked for habitat conservation in their home county, Putnam, and neighboring Mercer County. I am excited for their contribution because it provides funds that are matched dollar for dollar by MDC to enhance or create native habitat. After conferring with the chapter, I have started the process for two projects using these funds. These projects will enhance an existing monarch planting and create a new monarch field that will benefit both upland birds and pollinators. The chapters in Missouri are incredible partners with our positions. Their donations allow us to enhance hundreds of acres across the state. I look forward to watching these projects grow and provide quality habitat in Putnam County.

Personal Note

While disking firebreaks for our fall burns on our property in Daviess County, my Dad mentioned to me that he spooked several large groups of Monarchs off the trees near our pollinator plots and SAFE fields. I called him for some more information. I mentioned that these may have been roost trees of resting Monarchs that were migrating through on their way to Mexico. We went out that night to look for some but most were still feeding in our fields. The next morning, I woke early and dove to the farm. I had to walk around to the backside of the tree but it was a successful trip. I spotted and photographed my first roost tree. There were hundreds of monarchs resting on a hedge tree, and it was an incredible site to see. I am glad to see our efforts of managing native habitat are paying off. Dad also saw a hen and rooster pheasant while disking and four quail. Changing from a heavy native warm season grass mix to a wildflower mix has really made a difference for all the wildlife on our property. In order to enhance the native forbs, we plan on burning between October and January this year. These weren't the only migrating monarchs I observed. I found several dozens feeding on Azure Blue Sage in a cut hay field and also found several on native thistles. I had some chapter members from Putnam County send me pictures of monarchs feeding in their new pollinator plots and they said there were hundreds feeding on the native sunflowers. I encourage you to go out in the late summer and see if you can find some migrating pollinators. It will change how you look at native wildflower habitat.

Monarch roost tree.



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Quarterly Partners' Report

Joshua Marshall - Sullivan, Grundy, Putnam, and Mercer Counties

JUL – SEP 2023

Trainings and Outreach	Summary
North Central Missouri State Fair	Worked an MDC booth and provided conservation information to fair attendees.
FFA Field Day	We talked to over 200 FFA students and sponsors about native pollinator plots.

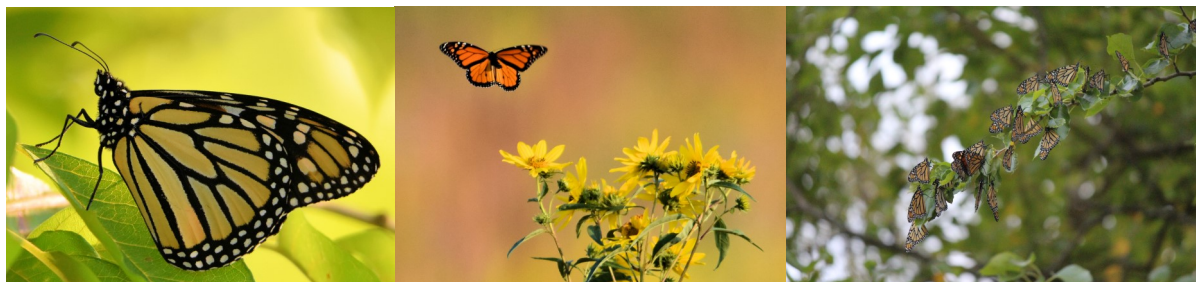
Looking Forward

- Oct 2nd-4th QF Missouri Team Meeting
- Oct 7th MDC Landowner Burn Workshop
- Oct 15th Poosey Fall Tour
- Oct 16th NE Region PLC Meeting
- Oct 30th Pack Test
- Nov 7th-8th NWF Conservation Outreach Training
- Dec 12th CRP Menu Meeting
- Dec 13th NRCS Area 2 Awards Meeting

Quarterly Numbers

- 150 Landowners Contacted
- 63 Site Visits

Program	Impacted Ac.
Assessed Acres	1937.68
Habitat Recommendations (planned)	94.33
Habitat Recommendations (Implemented)	118.8
Total	2150.81



Monarchs roosting and feeding on our family farm.

We have a lot of great content on our YouTube and social media pages and we are updating them daily. Subscribe to our pages for the latest information on conservation programs and happenings in Missouri.

Missouri Quail Forever     @MissouriQF

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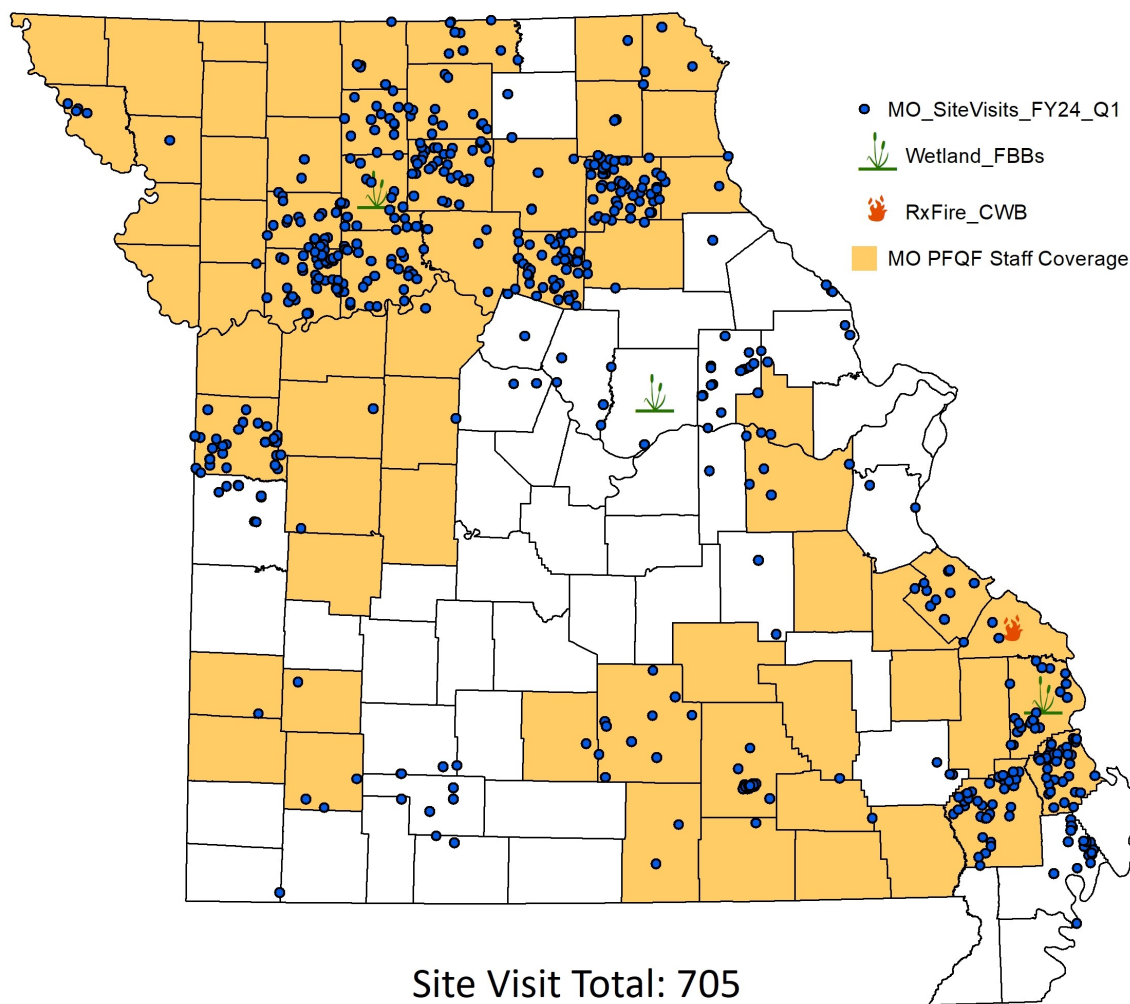
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Farm Bill Wildlife Biologist Quarterly Partners' Report



Kelsey DeZalia— Southeast Missouri

July 2023-September 2023

Serving Landowners Who Serve The Land

When opportunity comes knocking, you'd better answer the door. It may lead to something unexpected, yet wonderful. Each year the Lower Mississippi Joint Venture (LMJV) requests nominations for their Private Landowner Conservation Champion Award (PLCC).

“Private lands conservation is an integral part of achieving the LMJV’s vision of *A landscape supporting healthy native bird populations and other wildlife across the LMJV*. The LMJV Management Board believes that there are multiple benefits to formally recognizing the efforts of exceptional private lands stewards. “

I nominated Leigh and Judy Fredrickson of Stoddard county, Missouri and they were the selected champions! This was well-deserved as these two individuals have spent the entirety of their lives, enhancing their (just shy of) 200 acres to benefit a wide arrangement of wildlife species. From their efforts, their property has grown from an over-grazed, mowed area into a flourishing system.

After a delay due to weather, the award ceremony was held at Duck Creek CA back in July. At a place that these two know well, Leigh and Judy were surrounded by close friends, family, colleagues, and professionals.



Leigh and Judy Fredrickson holding their LMJV PLCC award

I could easily write about all their accomplishments on the farm, but I'd rather encourage you to approach them and ask for a tour of their property. They're goal is to open their property up as a means for education.

Reflecting back to my college days when I was studying textbooks co-authored by Dr. Fredrickson and walking through my life chain of events that led me to the friendship I have built with these two, truly baffles me. I am beyond honored to have been in a position to promote these two as true stewards of the land.

I will *forever* consider this a highlight of my career.



Left to right: Steven McKnight, Judy Fredrickson, Kelsey DeZalia, Leigh Fredrickson, & Jeff Raasch on the field tour of their property in Stoddard Co.

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Farm Bill Wildlife Biologist Quarterly Partners' Report



Kelsey DeZalia— Southeast Missouri

July 2023-September 2023

From the Ground Up

The construction of a new (or renewed) wetland into the wild system is grounds for excitement. But it doesn't come without hard work, diligence, and continued communication efforts. When the tractor wheels start turning, the ground starts transforming.

Doesn't it go, "with great power, comes great responsibility"? Designing and building a wetland requires a slough of considerations and research. Soils determine, apart from eligibility, where pool acres are placed versus where trees or grasslands are planted (if applicable). Hydrology. Where does the water drain from? Where can we direct it without impacting the surrounding properties? Where is a water control structure needed to be able to drain the area? Historical imagery can assist the teams with understanding what this area used to look like and how it used to function. Being able to capture some of those historical low areas in the creative borrows or pool areas can reestablish some aspects of what the land was like before it was in production. Levee construction is designed with the question of how much flow should the wetland be expected to handle and hold? Water depth is a critical consideration for optimal usage by waterbirds, shorebirds, and waterfowl.

Contractors with previous experience building WRP/WRE's move seamlessly around the landscape; digging, dumping, and smoothing the soil into creation of permanent habitat.

I'm sure this comes from never being the tractor operator trying to work with the soils that we refer to as "gumbo"; but I call that the "good stuff" when contractors across the board will refer to it from an opposite opinion. This is the extremely dense and, somehow, simultaneously sticky and slippery soil that'll cake onto your boots and/or tires. It's characteristics make it perfect for sealing up the ground to be able to hold water; but at times proves to be a nightmare for anyone trying to manipulate it with heavy equipment.

Wetland design combines art, social science, and environmental science beautifully. The true beauty comes from a "zoomed-out" look when you can look at pieces of the former floodplain, now restored for the benefit of Missourians and all things wild.



Above: Contractors moving dirt according to NRCS designs to direct water flow into a perimeter ditch



Above/Below: One of the last steps in the construction process is putting in the WCS to help drain or flood WRE pool acres



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Farm Bill Wildlife Biologist

Quarterly Partners' Report



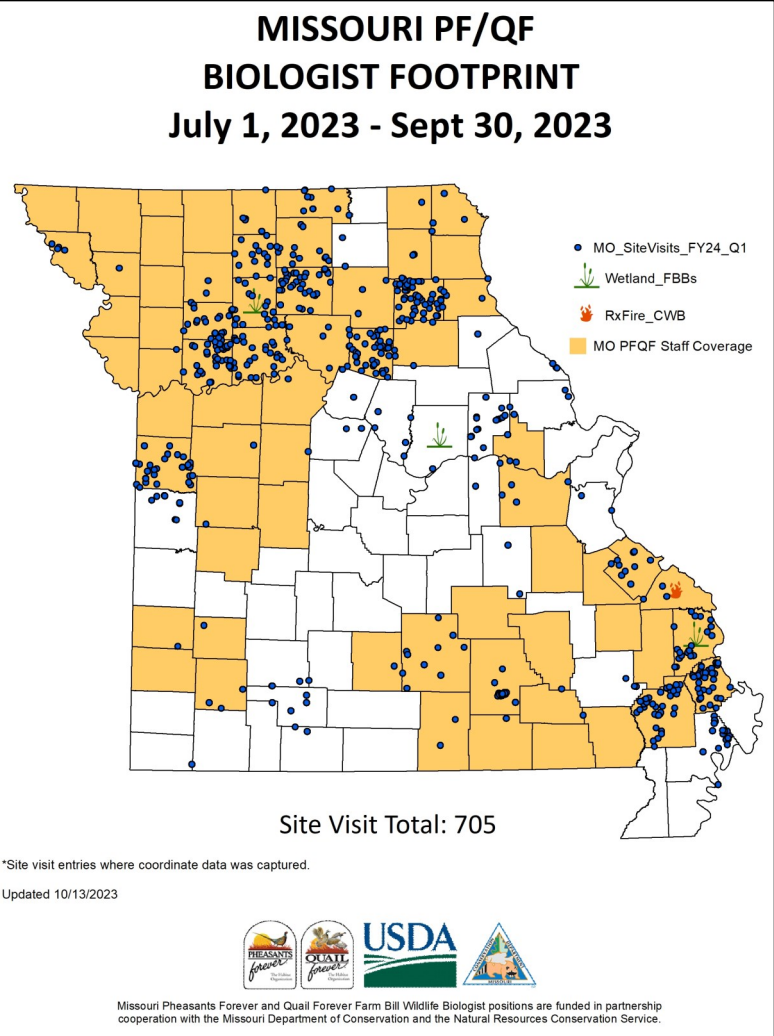
Kelsey DeZalia— Southeast Missouri

July 2023-September 2023



Conservation Technical Assistance Summary

- 20 landowner contacts
- 17 site visits



Training/Meeting Type	Outcome
CPR Training Jackson, MO	July 14th — Cape county fire dept. came to the Jackson office to refresh us on CPR procedures and application
LMVJV PLCC Award Ceremony Duck Creek CA	July 27th— Coordinated by yours truly, the event highlighted the tremendous land stewardship work of the Fredrickson's on their property in Stoddard county
Private Lands Partner Meeting Ellington, MO	August 3rd— A meeting for the private land professionals to highlight their current/future work and/or concerns.
Fall WET Meeting SEMO	Sept 19-21st— MO Wetland Emphasis Teams unite in SEMO to discuss various items and highlight Area 3 wetland work

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