Wild Women of Reclamation Newsletter

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ASMR American Society of Mining and Reclamation

Greetings to all of our fellow Wild Women of Reclamation,

Welcome to our forth Wild Women of Reclamation Newsletter. Again, this has proven to be a great way to reach out to women and share our professional experiences and knowledge. The flower in the header is the common (or not so common anymore) milkweed, the egg laying host and favorite plant of the majestic monarch butterfly. (photo source www.friendsofthewildflowergarden.org/pages/plants/commonmilkweed.html.). In this edition of the newsletter, we have an article written from a presentation at the St. Louis ASMR meeting. Kristi Dodson presented on the plight of the monarch butterfly and what is being done and what can be done to prevent its further population decline and listing on the Federal Endangered Species listing. The complete presentation can be found at: https://www.asmr.us/Portals/0/Documents/Meetings/2018/5C-200-Dodson.pdf.

We had two interesting WWR presentations at our last ASMR meeting in St. Louis, Missouri. Almost 30 attendees listened to Dr. Jennifer Franklin, an Associate Professor in Forestry from the University of Tennessee, Knoxville, and Ms. Summer King, the Environmental Scientist for the Quapaw Tribe of Oklahoma, describe how their career paths were not straight forward and many choices were made at crossroads in their career and education paths that eventually led them into the field of reclamation. Dr. Franklin is a role model both in her teaching and as an advisor for graduate students in Forestry, many who present at ASMR conferences, while Summer is graciously dealing with a predominately male contractor work force on the Tar Creek Superfund former lead zinc mine restoration project.

Please remember to register for the 36th Annual Meeting of the American Society of Mining & Reclamation in Big Sky, Montana, June 3-7, 2019. Abstracts are due January 25, 2019 so hopefully many of you will submit one for either an oral or poster presentation. New this year is also a video presentation option. Conference details and registration is at www.asmr.us/. The Wild Women of Reclamation will be hosting the annual get-together breakfast on Tuesday, June 4, at 7am at the conference hotel. The routine will be the same. Grab your breakfast and come to the appointed meeting room for a group photo, two presentations and some networking. Now is also a great time to contact your connections from last year so that you can make arrangements to meet in Big Sky. If you are new to the reclamation field, this is a great way to make contacts. If you are a student, this is a good way to meet industry contacts. Please don't be shy. And if you are, bring a female friend. Stay tuned for the announcement of the special speakers at this year's breakfast.

Also, if you are a runner or a walker, please bring your sneakers to the conference and join the Haulin' ASMR group at 6:30 am in the hotel lobby June 3-7 to get some early morning fresh and thin (7000'elevation) air and meet some new friends.

This newsletter format is meant to be a quick read and easy to put together every few months, but it will only be successful if we get stories from you. The submissions could be something factual about your research or your reclamation project or it could just be commentary on a relevant topic. Submissions should be one to two pages in length and include a few photos, if possible. A brief biography (max. ½ page) about who you are and a photo will also make you more recognizable at the next conference. This is a free networking bonus! Including contact information may result in a request for additional information, collaboration potential or just a comment on your article.

We hope you enjoy reading this edition and we look forward to seeing many of you in Big Sky!

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ASMR 2018 Wild Women

Kristi Dodson has worked for the Illinois Department of Natural Resources/Office of Mines and Minerals/Land Reclamation Division for 4.5 years, first as an Inspector and currently as a Natural Resources Specialist. She is responsible for the threatened and endangered species and wildlife related issues for the program as well as some bond release duties. Before she moved to Illinois, she was an Assistant Professor of Biology at South Plains College in Levelland, Texas where she taught General Zoology, Botany, Wildlife Management, and Genetics. She also had the opportunity to teach Yoga for the Physical Education Department for several years. Kristi graduated from Sul Ross State University in Alpine, Texas with a Master of Science in Biology and received a Master of Arts in Environmental Studies from University of Illinois at Springfield. Ms. Dodson is also a Certified Wildlife Biologist through the Wildlife Society. Kristi spends a lot of time gardening, canning, boating and fishing during the summers and enjoys jogging, weight lifting, anything outdoors and spending time with her little family of 2 plus one cat. She can be reached at kristi.dodson2@illinois.gov.

Proactive Management of Imperiled Species to Avoid Federal Listing: Monarch Butterfly Habitat Enhancement on Mined Lands

Kristi L. Dodson

The eastern population of the monarch butterfly has declined by 80% within the past 20 years leading several non-profit organizations to petition the U.S. Fish and Wildlife Service (USFWS) to list the species for protection under the Endangered Species Act. Utilizing a proactive pre-listing approach to conservation of the species, a Mid-America Monarch Conservation Strategy is being developed that involves multiple stakeholders. Efforts are focused on voluntary habitat restoration/enhancement and promotion of land management best practices to avoid federal listing and subsequent regulatory requirements. The strategy document and other information about the monarch butterfly and conservation initiative can be found on the Mid-West Association of Fish and Wildlife Agencies web page (http://www.mafwa.org/?page_id=2347). Formal public review and comment period concluded in May of 2018. Next steps include a partner conference in November of 2018 and an initial listing decision by the USFWS is expected in June of 2019.

The Illinois Department of Natural Resources/Land Reclamation Division participated in the regional strategy by surveying the Office of Surface Mining Reclamation and Enforcement (OSMRE), other states with coal regulatory and abandoned mined lands (AML) programs, and drafting a chapter section focused on non-rights-of-way energy infrastructure. The mined lands chapter section focused on potential scale of efforts, current initiatives, and strategies for improvement.

Approximately 1,234,624 acres of land are bonded through coal mining regulatory programs across the states of Texas, West Virginia, Ohio, Oklahoma, Pennsylvania, Kansas, Kentucky, Missouri, Arkansas, Illinois, and Indiana, all in various stages of operations and reclamation. The post-mining land uses of these acres vary between Fish and Wildlife Habitat types, Forest, Industrial/Commercial, Cropland, Pasture and others. Several states responded to inquiries regarding the available potential monarch butterfly habitat acreage within their respective programs. Looking specifically at Fish and Wildlife Habitat, Pasture/Hay, and limited Forest post-mining land uses, there are approximately 504,000 acres bonded and in various stages of operations or reclamation regulated by state regulatory programs across Arkansas, Illinois, Indiana, Kentucky, Ohio, Oklahoma, Missouri, Texas, and West Virginia. Readers should understand that this number does not reflect Pennsylvania and does not reflect each state's variation in post-mining land use terminology. For example, the acreage that Illinois contributed to this total does not reflect Fish and Wildlife Woody or Wetland habitat nor does it reflect Forest post-mining land uses. Also, forest land uses were not reported from all responding states. The total number of the potential scale of regulated mined land acres is likely higher than that reported here. According to the states that responded to inquiries regarding abandoned mined land program acreages, there are approximately 18,900 acres across Indiana, Iowa, and Missouri of unreclaimed project sites and Ohio reclaims about 1,500 acres per year. Figure 1 illustrates the major migration routes for the eastern monarch butterfly population in relation to the mid-west mining states discussed above.

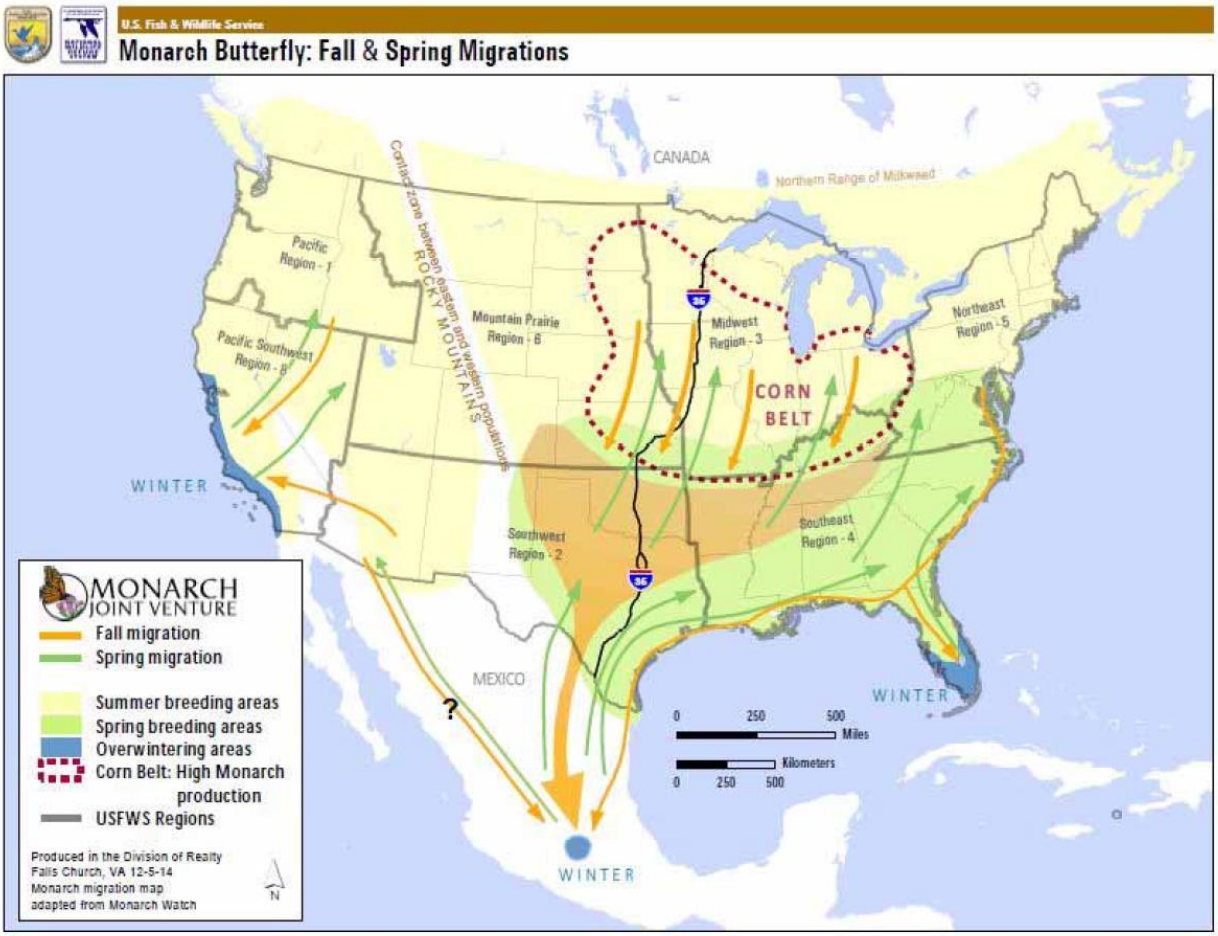

Figure 1 The mining states of the mid-west discussed in the text are located throughout the north and south core migration routes of the monarch butterfly eastern population. The vast amount of acreage in these regions bonded for mining and reclamation make state regulatory and abandoned mine lands programs important factors in monarch conservation.
Map source www.uwsp.edu/cnr-ap/.../FR.../JayWatson_HowYouCanHelpPollinators.pdf

OSMRE has embraced a science-based technology called the Forestry Reclamation Approach (FRA) on both active and abandoned mine site reclamation projects. This method focuses on planting native herbaceous and woody species on non-compacted soils which can greatly increase pollinator foraging opportunities and volunteer native species. In addition, the FRA Pollinator Advisory (https://arri.osmre.gov/FRA/Advisories/FRA-14-ReestablishingPollinatorHabitat-Feb2017.pdf) provides guidance on re-establishing pollinator habitat on mined lands with some nuances of mined lands considered. West Virginia is an example of a state RA (regulatory authority/title V) program that has adopted this approach.

Two state AML programs (Iowa and Missouri) have received grant funding from the National Fish and Wildlife Foundation (NFWF) to move forward with pollinator habitat and monarch butterfly conservation initiatives on their respective abandoned mined lands projects. Most RA programs currently encourage and support the voluntary addition of native milkweed species and other pollinator friendly forbs in the re-vegetation seed mixes for Fish and Wildlife Habitat and Pasture/Hay post-mining land uses. Some state RAs have seen voluntary adoption of these seed mixes and have approved adoption of best management practices (BMPs) for mowing and

maintenance to effectively cultivate pollinator friendly habitat. The Ohio RA program partnered with the USFWS to present educational information at a coal industry meeting to encourage potential habitat enhancement on mined lands. In addition, the encouragement of conservation buffers composed of native grasses and forbs in conjunction with agricultural production post-mining land use acreages is a fairly common practice among state RAs, particularly those coal mining states in the Midwest.

Improvement of current efforts regarding mined land reclamation for pollinator species, including the monarch butterfly, should focus on educational outreach and increasing an understanding with potential partners about the limitations faced on mined lands. These limitations include but are not limited to funding, landowner buy-in, regulations, effectiveness of native forbs for erosion control, and opposition from other sectors. General strategies to address these limitations are outlined below:

1. Although BMPs already exist for establishment of pollinator friendly habitat, coal regulatory programs require practices that are specifically tailored to mined lands that may still be in operation. For example, there will be limited or no capacity to burn on site, which is a major component of most BMPs for pollinator habitat. One approach to this issue is creating partnerships between stakeholders representing both mined land reclamation and conservation groups to draft appropriate mined land BMPs.

2. Access to cost effective pollinator friendly seed mixes that also function to adequately control erosion is limited. Seed mixes that contain native grasses and forbs are typically exponentially more expensive than standard pasture grass seed mixes. A company or state program that is reclaiming several hundreds of acres would need to have multiple thousands of dollars available in a budget to spend on native seeding materials. Concern has also been expressed that forb heavy seeding might contribute to sediment control issues leading to water quality violations and the need for expensive repairs on slopes. One approach to this issue is providing incentives to purchase higher priced seed mixes, such as cost sharing. Additionally, entering into agreements with state agencies or conservation organizations to offset the cost of seed while committing to set aside acreage specifically for monarch habitat could be effective. Research through universities or state agencies to develop native pollinator friendly seed mixes that also control erosion could stimulate increased conservation efforts on mined lands.

3. Education outreach and training for coal mine operators, consultants, land owners, and state programs is imperative for conservation efforts to take hold on mined lands. Resources that may benefit these stakeholders include explanations on how federal listing of the monarch butterfly could affect mining operations and permitting, and information explaining the human benefit for proactively conserving species in jeopardy.

4. Coal mining operations typically receive negative feedback and opposition from non-profit groups, conservation agencies, and universities regarding potential adverse effects on the environment from mining. While this is an understandable reaction, a conservation effort with a broad scope such as the monarch butterfly initiative

provides an opportunity for those groups to offer technical assistance and partnerships to operators and consultants for the benefit of the environment.

Mined lands provide a unique potential opportunity to increase pollinator habitat across the Midwest to benefit the monarch butterfly conservation initiative. Effective educational outreach to operators and consultants, consideration of monarch butterfly and pollinator seed mixes that are effective for erosion control, and fostering partnerships that defray pollinator habitat enhancement reclamation costs are necessary to move the initiative forward. The combined proactive conservation efforts of many stakeholders can potentially help stabilize the eastern monarch butterfly population and prevent federal listing of the species.

Figure 2 Jordan Grove Mine – photo courtesy of Larry Reuss, Prairie State Generating Company
Figure 3 Old Ed Mine – early season milkweed on reclaimed mined land, photo courtesy of Kristi Dodson

Figure 4 monarch photo Kevin Brown, Illinois Department of Natural Resources

Figure 5 www.treehugger.com/animals/indescribable-beauty-monarch-butterflies-filling-sky-video.htm