SPEAKER BIOS AND ABSTRACTS

(in order of appearance)

DAY 1 – April 24th

MONTANA POLLINATOR RESEARCH SUMMIT – KEYNOTE ADDRESS

Keynote Speaker: Kim Szcodronski

State Wildlife Action Plan Coordinator, MT Fish, Wildlife & Parks

Bio: Kimberly Szcodronski is the State Wildlife Action Plan Coordinator for Montana Fish, Wildlife and Parks, based out of Missoula and Helena. Kim previously worked for the USGS Northern Rocky Mountain Science Center on wildlife disease and most recently, as an ecologist assisting eight states with climate-informed planning in State Wildlife Action Plans. Kim received her M.S. in Ecology and Evolutionary Biology from Iowa State University, where she conducted occupancy and mark-recapture surveys for a rare montane meadow butterfly in Grand Teton National Park. Over the past decade, Kim has worked for various state and federal agencies in Montana and Wyoming on a variety of wildlife species including bears, birds, bighorn sheep, elk, wolves, and wolverines. Pronunciation: Szcodronski = *(skid-ron-ski)*

Presentation title: ***Adding Invertebrates to Montana's 2025 State Wildlife Action Plan Revision***

Abstract: State Wildlife Action Plans (SWAPs) play a critical role in prioritizing conservation and monitoring for species of greatest conservation need for state fish and wildlife agencies. SWAPs identify aquatic and terrestrial species of greatest conservation need and their habitats, describe threats that impact those species and habitats, highlight conservation actions to address those threats, and outline a monitoring plan. SWAPs are submitted on a 10-year cycle to the U.S. Fish and Wildlife Service and are required for states to be eligible for grants through the State Wildlife Grants Program. Montana Fish, Wildlife and Parks is currently working on the third iteration of Montana's SWAP that is due in October 2025. Like many other states, Montana has decided to include some species of aquatic and terrestrial invertebrates in their 2025 SWAP. Montana Fish, Wildlife and Parks is tasked with deciding which invertebrate species to include in the 2025 SWAP and what extent to incorporate those species into the required elements of the SWAP. Montana Fish, Wildlife and Parks does not have invertebrate expertise within the agency and would like to form an external team to assist Montana's SWAP Coordinator to incorporate terrestrial invertebrates, including pollinators, to the 2025 SWAP. At the inaugural Montana Pollinator Research Summit, Montana Fish, Wildlife and Parks is seeking input from partners in Montana on how to best incorporate insect pollinators to Montana's SWAP.

SESSION 1 – Pollinator Inventory and Monitoring

Bryce Maxell

Program Coordinator, Montana Natural Heritage Program

Presentation title: ***The Montana Natural Heritage Program – an overview***

Abstract:

Bio

CK Pei

Postdoctoral Research Fellow: University of North Dakota Aerospace, Dept of Earth System Science and Policy

Bio: CK received her undergraduate degree in Fisheries and Wildlife from Kansas State University and got her start working with pollinators with the KSU Entomology Department. She received her PhD in Range Science from North Dakota State University, working on a statewide survey for bees and associated plant communities and projects involving how bee communities interact on ND's novel grasslands.

Presentation title: ***A four-year survey of North Dakota's bees in all 53 counties to further our understanding of grassland bee communities in the Northern Great Plains***

Abstract: Awareness to the ecological importance and vulnerabilities of pollinating insects has ignited research and conservation efforts to mitigate pollinator population declines. However, much of this research has been concentrated in regions with many research institutions and higher human populations, leaving some regions such as the Northern Great Plains with less basic information such as species diversity and distributions. Additionally, such regions would lack current data to inform national efforts to conserve species of conservation concern such as bumble bees Bombus affinis, B. pensylvanicus, and B. terricola. In understanding the need of baseline information on pollinators in North Dakota (ND), ND state agencies funded North Dakota State University to conduct a statewide survey of bees (Hymenoptera: Apoidea: Anthophila) and their associated plant resources from 2017-2020. We established 477 survey sites at various grasslands managed by federal (n=159), state (n=187), private (n=124), and other (n=7) agencies. At every site, we performed netting surveys twice each season, recording both bees and floral species they were captured on. Additionally, we used passive bee bowl sampling to more fully represent bee communities at a subset of sites each year. We captured a combined total of 38,059 specimens from 317 bee species and morphospecies in five bee families. Bees captured in netting surveys interacted with 190 identified floral species. This dataset provides species-specific information such as distributions, phenology, and resource associations needed to inform conservation actions by agencies and other land managers while also contributing on-going ecological research involving bee communities on contemporary grassland systems.

Mat Seidensticker

Executive Director, Northern Rockies Research & Educational Services

Bio: Mat is a wildlife researcher with over two decades of experience. He developed an interest in moths while studying Flammulated Owl breeding ecology and later recognized the need for organized moth research in Montana while helping examine the food sources of other winged nocturnal insectivores on MPG Ranch. Mat founded Northern Rockies Research & Educational Services (NRRES) in 2019, a non-profit organization dedicated to field-based insect studies, and the following year launched the Montana Moth Project, a long-term partnership with Chuck Harp (C.P. Gillette Museum of Arthropod Diversity) and Chris Grinter (California Academy of Sciences), to document moth diversity and distribution across Montana.

Presentation Title: ***The Montana Moth Project (MMP): Past, Present, and Future***

Abstract: Moths are arguably one of the most ecologically important groups of invertebrates in terrestrial habitats. Yet, despite their pivotal ecological roles, have historically been understudied in Montana. The inception of the Montana Moth Project (MMP) by NRRES in 2020 aims to rectify this gap, embarking on a comprehensive endeavor to document moth diversity and distribution across all 56 Montana counties. Over the years, the MMP and its partners have meticulously amassed collections of nearly 34,000 macro moth specimens, representing around 1,250 species from 50 counties at the C.P. Gillette Museum of Arthropod Diversity, and hundreds of micro moth species from various counties at the California Academy of Sciences. Among its achievements, the MMP has documented numerous first state records, scores of county records, and published two newly discovered species with at least three others awaiting formal description. The MMP also includes subprojects monitoring moth abundance and diversity related to climate and exploring moth pollination dynamics using DNA metabarcoding at MPG Ranch in west-central Montana. In this presentation, we will discuss the project's inception, current progress, and future endeavors while highlighting our research on MPG Ranch.

Cayley Faurot-Daniels

Master's Candidate, Department of Ecology at Montana State University, Bozeman, MT

Bio: Cayley Faurot-Daniels is a master's candidate in ecology and NSF graduate research fellow at Montana State University in Bozeman, Montana. Cayley earned her bachelor's degree in biology from California Polytechnic State University in San Luis Obispo, California in 2012. Prior to pursuing her graduate degree, Cayley was a biological technician for nearly ten years throughout the Rocky Mountains, including projects with bear DNA, wolves, amphibians, whitebark pine, and meltwater stoneflies, with winters spent as a laboratory technician in a honey bee virology lab. Her master's research now combines field and molecular techniques to study butterfly diversity in Glacier National Park, MT.

Presentation title: ***Monitoring butterflies of Glacier National Park using traditional and molecular techniques***

Abstract: Reports of changes in insect biodiversity across the globe are numerous, with estimates of broadscale declines of biodiversity and abundance over the past few decades common. Although the magnitude and direction of change varies across studies, continued and efficient monitoring of insect populations is warranted. Many studies report declines in terrestrial insects, implying threats to vital ecosystem services. Meanwhile, high elevation and high latitude systems are expected to warm at greater rates under current climate change scenarios. Here we report initial findings from a resurvey of butterfly diversity at 23 montane meadows in Glacier National Park, MT 35 years later. Preliminary results indicate that a similar number of species were found between the present (2022-2023) and past (1988-1989) surveys, 72 and 74 species, respectively. However, species lists between the two studies differed with 11 species found in the past survey and not the present and 9 species found in the present and not the past. Molecular detection of insects using environmental DNA (eDNA) has shown promise for monitoring biodiversity in a highly efficient and non-invasive manner. Therefore, resurvey efforts also included sampling of floral-associated eDNA to determine how butterfly detections from DNA metabarcoding and high throughput sequencing of the cytochrome oxidase subunit I (COI) barcode, which is commonly used for species identification, compared to traditional survey data. Specifically, eDNA that was obtained from wildflowers of 12 genera collected directly after butterfly surveys and from flowers that were visited by two butterfly species as part of a controlled experiment were analyzed.

Tabitha Graves

Supervisory Research Ecologist, US Geological Survey, Northern Rocky Mountain Science Center

Bio: Dr. Graves answers applied research questions at the intersection of wildlife biology, landscape ecology, and statistics addressing three broad themes:
(1) understand the influence of humans and land use on wildlife distributions and demographics,
(2) develop new analytical tools that address the influence of landscape features on animals, and
(3) improve efficiency of research and monitoring through optimal study design.

Presentation title: ***Advances to research and monitor bumblebees and other pollinators***

Abstract: With little knowledge of the ~4500 bees in North America and multiple bumble bee species in decline, we urgently need approaches to better sample pollinators, especially across broad areas. However, bumble bee and other pollinator identification requires specialized expertise and can be difficult in the field. New non-invasive approaches offer promise to accelerate understanding of species distributions, status, and needs for conservation. A non-lethal alternative that may be more cost-effective, appropriate for species of concern, and is suitable for engaging community scientists involves taking photographs of bumble bees in the field. Using photographs of 1418 bees and paired specimens of >565 bumblebees collected between 2018 and 2021, experts independently identified bees to assess the effectiveness of this approach. Experts identified 92.4% of bees from photographs and 98.2% of bees from specimens. Using paired data and a second opinion for specimens without matching identifications, we found a similar misidentification rate (2.7% for photographs and 2.5% specimens) and discuss approaches to maximize accuracy including photographic and bee handling techniques, collection of a subset of specimens in some cases, and focused identification training for species of concern and species frequently confused in a study area. We will also provide an overview of recent environmental DNA (eDNA) data collection from flower samples, lab and field experiments, and upcoming research seeking to develop eDNA techniques to inform broader understanding of the distributions and communities of pollinators as well as plant-pollinator networks. When combined with advances in statistical methods, such as those we used to assess the status and trends of the Western bumblebee, integrated techniques can improve understanding of conservation options.

SESSION 2 – Pollinator Habitat Conservation and Restoration

Justin Runyon

Research Entomologist, USDA Forest Service, Rocky Mountain Research Station, Bozeman, MT

Bio: Justin is a Research Entomologist with the US Forest Service's Rocky Mountain Research Station in Bozeman. His research focuses on interactions between plants and insects. Over the last decade he has studied interactions between pollinators and plants, especially the role floral scent plays in attracting bees. More recently, Justin has worked to understand and promote the use of native flowering plants in restoration to benefit pollinators.

Presentation title: ***Assessing pollinator friendliness of plants to restore habitat for bees***

Abstract: Insects, especially bees, are required for pollination of most plant species. However, many bee populations are declining and there is great interest among land managers to protect and restore pollinators. Increasing floral resources by revegetating with native flowering plants can benefit pollinators, but we lack

information about which plants work best. Identifying the native plant species most benefitting pollinators allows land managers to counteract pollinator declines and protect ecosystem services. We assessed the pollinator-friendliness of 24 native plant species that are available for revegetation projects on national forest lands in western Montana. Plant species that had the highest visitation rate, attracted the most bee species, supported specialist bee species, and bloomed for extended periods were considered pollinator friendly. Using this information, we created score cards for early, middle, and late season flowering plants that land managers can use to create restoration mixes that most benefit pollinators. The best mix of 9 plant species — 3 from each season — should support 80 percent of the 246 bee species found in this study. This framework can be used to assess pollinator friendliness of native plant species for other areas, forests, and public lands.

Anthony Vaudo

Research Biological Scientist, USDA Forest Service, Rocky Mountain Research Station, Moscow, ID

Bio: Anthony Vaudo is a pollination ecologist for the USDA Forest Service, Rocky Mountain Research Station. He received a MSc from University of Florida, a PhD from Penn State, and continued studying as a postdoc at Penn State, University of Kwazulu-Natal, and University of Nevada Reno. Anthony's research focuses on how different bee species forage to obtain and balance their nutrition from diverse plant species, and how this supports biodiversity. He uses this research to understand evolutionary and ecological foundations of bee and flower interactions and to develop restoration practices to support diverse and resilient plant-pollinator communities.

Presentation title: ***Pollen nutrition, bee-flower interactions, and implications for conservation***
Abstract: Nutrition is recognized as a key factor to address bee declines, but providing appropriate nutrition for bees is challenging in open and modified landscapes. Pollen provides bees their main source of proteins and lipids; however, within natural communities we know surprisingly little about the nutritional value of plants to wild bees. Further, pollen nutrition has not previously been a priority when selecting plants for restoration efforts to support pollinators. I show that consideration of pollen nutritional quality can help explain patterns of interactions among wild bees visiting wildflowers, which sheds new light on the nutritional basis of pollination ecology. These data are practical as well and can directly help inform plans to restore bee habitat, conserve plant species, and design plant lists for bees in agricultural and urban areas but emphasizing nutritional diversity.

Clay Bolt

Manager of Pollinator Conservation, WWF-US, WWF-US

Bio: As the manager of pollinator conservation for World Wildlife Fund-US, Clay leads organizational strategy to protect pollinators through habitat restoration, pesticides reduction, and pro-pollinator policy. He was a leading voice in the fight to protect the rusty-patched bumble bee under the Endangered Species Act and the first photographer to document a living Wallace's Giant Bee—the world largest bee species—in the Indonesian islands of North Maluku.

Presentation title: ***Reseeding Grasslands in the Northern Great Plains to Benefit Pollinators***
Abstract: Since 2009, more than 33 million acres of native grassland and wildflower habitats have been destroyed in the US & Canadian portions of Great Plains alone. In 2021, to combat this loss, WWF launched an exciting effort to reseed thousands of

acres of previously disturbed grasslands and wildflower habitats, primarily on working rangeland, across the Northern Great Plains. During this presentation Clay will give an overview of how this work has developed, how its going, and WWF's plans to continue it in the future for the benefit of pollinators and grasslands biodiversity at large.

Dean Pearson

Research Ecologist, USDA Forest Service, Rocky Mountain Research Station, Missoula, MT

Bio: Dr. Dean Pearson is a Research Scientist with the Rocky Mountain Research Station, USDA FS where he has led a community ecology and invasive species research team since 2005. Dean has a BS in wildlife biology, a MS in zoology, and a PhD in organismal biology and ecology from the University of Montana where he is adjunct faculty with the Ecology and Evolution faculty.

Presentation Title: ***Inspiring citizens and municipalities to support pollinator conservation: the Pollinator Matrix tool***

Abstract: Anthropogenic impacts like climate change, pollution, and habitat loss present ominous environmental threats that can seem insurmountable to concerned citizens. Habitat loss and pesticide use present particularly acute threats to insect pollinators that are essential to human agricultural systems and therefor to human wellbeing. Herein, we demonstrate how individuals can take actions to benefit pollinators at local scales in their own backyards and communities. We introduced a simple, online modeling tool, The Matrix Pollinator Tool, that allows local citizens and municipalities to model how backyard and community-scale actions like planting native wildflowers and reducing pesticide use can increase pollinator populations. This tool is designed to provide a template for municipalities around the United States and beyond to inspire local action and empower local citizens to address anthropogenic threats for the betterment of the planet and for their own wellbeing.
The final pollinator model is not complete, but the Matrix modeling tool can be explored at https://matrix.mpgranch.com/#/.

Joshua W. Campbell

Research Ecologist, USDA-ARS Pest Management Research Unit, Northern Plains Agricultural Research Laboratory, Sidney, MT

Bio: Dr. Campbell has a PhD in entomology from the University of Georgia. He currently works for the USDA-ARS in Sidney Montana where he conducts pollinator research on native insects and honey bees.

Presentation title: ***Pollinators of invasive plants—case study of Russian Olive (Elaeagnus angustifolia)***

Abstract: Russian olive (*Elaeagnus angustifolia* L.) is an invasive tree in riparian areas throughout much of the western United States. It produces copious numbers of yellow flowers that are often visited by bees and other insects. Little research has examined the pollination ecology of Russian olive and how pollinator interactions contribute to variation in seed production. We conducted a field experiment in which flower clusters were bagged to exclude insect visitation. Seed production was compared between bagged flowers and unbagged flowers (open pollinated) from the same tree that were allowed insect visitors. Flower insect visitation surveys were used to determine the most likely

pollinators. Additionally, we assessed viability of seeds produced from unbagged and bagged flowers using germination trials and tetrazolium tests. Overall, unbagged flowers produced ~7x the number of seeds compared to bagged flowers, exemplifying the role insects play in the production of Russian olive seeds. Although numerous insects were found visiting Russian olive flowers, honey bees (*Apis mellifera* L.) accounted for over 80% of flower visits by insects. Seed viability was similar between bagged and unbagged branches, but varied across locations, suggesting site-level differences likely limit the outcomes of plant-pollinator interactions. Currently, biocontrol agents that target reproductive structures are being evaluated for use to limit the spread of Russian olive. Our data suggests that biocontrol agents that feed on flowers may be a viable option for reducing Russian olive propagule pressure.

SESSION 3 – SWAP Workshop

Facilitated Workshop: ***Information the Montana SWAP to include insect pollinators and other invertebrates.***
Facilitator: Bryce Christiaens, Director of Missoula County Department of Ecology and Extension

POSTER SESSION AND HAPPY HOUR/SOCIAL 4-7PM

Join us for light refreshments and poster presentations!

DAY 2 – April 25th

SESSION 4 – The Montana Bumble Bee Atlas

Rich Hatfield

Senior Endangered Species Conservation Biologist, Xerces Society for Invertebrate Conservation

Bio: With a background in conservation biology and education, Rich has been leading bumble bee conservation programs at the Xerces Society for more than a decade. In his role as Program Lead, he oversees bumble bee atlas projects in 20 states across the U.S., which annually engage thousands of people, and collect essential data to inform evidence-based conservation measures for imperiled bumble bees. Rich lives in Portland, OR, and when not chasing bumble bees (or often while chasing bumble bees) he can be found exploring the wonders of the Pacific Northwest with his family.

Presentation title: ***The Montana Bumble Bee Atlas***
Abstract: Bumble bees are essential pollinators in natural landscapes, gardens, and on farms. Unfortunately, nearly a quarter of North American bumble bee species are experiencing some degree of extinction risk, with many facing an uncertain future. Since 2018, the Xerces Society and partners have been conducting regional bumble bee atlas projects across the U.S. to better understand their status and to inform conservation actions and decision-making, helping to ensure efficient allocation of limited conservation resources. This model has engaged thousands of volunteers and collected nearly 100,000 bumble bee records across North America and will cover more than half of the contiguous United States in 2024. The data from these programs now inform endangered species listing decisions, regional conservation plans, restoration efforts, and land management strategies. We are excited to announce that in 2024, with the collaboration of local, state and federal partners, we are launching this program

in Montana. Significantly, Montana is home to at least 28 species of bumble bees, including three species that have been petitioned for endangered species protection. We will share detailed information about the program, and how you can get involved!

Michelle Toshack

Endangered Species Conservation Biologist, Xerces Society for Invertebrate Conservation

Bio: Michelle Toshack leads the Xerces Society's bumble bee atlas across Montana, based in Livingston. Michelle holds an M.S. in Biological Sciences from Simon Fraser University, where she researched pollinator biodiversity and the impacts of farming practices on bumble bees. She has led the strategy and implementation of numerous community science programs to advance conservation efforts. Michelle enjoys exploring Montana's natural beauty in many ways, especially ridge-top scrambling and mountain running.

Presentation title: ***The Montana Bumble Bee Atlas***
Abstract: (see above for abstract)

SESSION 5 – Leveraging Public Engagement for Pollinator Conservation

Rachel Dunham

Community Engagement and Volunteer Coordinator, The Xerces Society for Invertebrate Conservation

Bio: As a wildlife biologist with over 16 years of experience in outreach and volunteer management, Rachel has dedicated her life to inspiring people to care for wildlife. Rachel has worked at the Xerces Society for the past five years developing their volunteer Ambassador Program, X Kids, Bug Bater Podcast, and Xerces webinar series. Previous to Xerces, Rachel earned her master's in Wildlife Conservation and has worked for several private and government agencies in Alaska, Hawaii, Oregon, and Alberta. When not working, Rachel is out hiking with her partner, Chad, and dog, Bear.

Presentation title: ***Connecting People and Pollinators***
Abstract: Join Rachel Dunham, Xerces Society Community Engagement and Volunteer Coordinator, to learn about the programs Xerces offers to inspire the public to take action for pollinators. From kids to adults, even one small action can make a difference.

Clay Bolt

Manager of Pollinator Conservation, WWF-US, WWF-US

Bio: *see above in Session 2*
Presentation title: ***Macro Photography 101: Techniques for Better Insect Photography***
Abstract: Photographers, whether professional or passionate amateurs, have an opportunity to help insects out by raising awareness of their plight, increase support for insect conservation, and even compel decision makers pass pro-insect policy. Clay Bolt will share foundational macro photography techniques, with a focus on insects, that he's learned and practiced over his 20+ years of experience as a conservation photographer working for many of the world's leading conservation organizations. Clay's goal for this presentaiton is to provide each participant with building blocks that can improve their macro photography skills, allowing them to better document insects for scientific research, education, and advocacy.

Janene Lichtenberg

Chair, Wildlife and Fisheries Department, Salish Kootenai College

Bio:
Presentation title: ***From Bumble Bees to Berries: Engaging students in pollinator projects at SKC***
Abstract: Questions related to pollination ecology work well for undergraduate research projects based on the accessibility and ease of investigating flowering plants and their visitors. Furthermore, students appreciate the opportunity to conduct research that contributes to conservation of native plants and pollinators. Salish Kootenai College students have developed a variety of individualized projects exploring bumble bees and flowering plants. Project topics have included habitat comparisons, flower associations, and pollinator impacts. Through these projects, students have gained research skills, contributed to the knowledge of the bumble bee species found on the Flathead Reservation, and demonstrated the importance of bumble bees as the primary pollinators of huckleberry flowers.

Brenna Shea

Writer, educator, and bug wrangler at the Missoula Butterfly House and Insectarium

Bio: Brenna Shea is a decade-long resident of Missoula with a passion for science communication. After completing her bachelor's degree in biology at the University of Montana, she quickly found her footing with the Missoula Butterfly House and Insectarium: first as a volunteer, then as a full-time employee starting in 2018. Since then, she has found a knack for scientific writing & communication, and of course, a driving enthusiasm for the conservation of insects and their relatives.

Presentation Title: ***DNA Barcoding and the Future of Insect Identification***
Abstract: ***Adapted from the CDBN website:*** In collaboration with the DNA Learning Center (DNALC) in Long Island, New York, the Missoula Butterfly House and Insectarium invites community scientists to participate in

the Citizen DNA Barcode Network. With funding from the National Institute of General Medical Science, a branch of the National Institutes of Health, the program organizes national campaigns to map the ranges of species within three groups of insects: ants, mosquitoes, and beetles. These groups include bioindicators of environmental change, vectors of human disease, and economically important species whose ranges are being altered by global climate change. Participants use the technique of DNA barcoding to identify insect species and explore the biodiversity of these groups of insects in their communities. Why DNA barcoding?
A "DNA barcode" is a short, unique DNA sequence that can potentially identify each living thing. Classifying insects using complicated guides takes patience and extensive training, especially when identifying species that look very similar. These methods are often too slow to track species. DNA barcoding offers a simple solution by allowing community scientists to identify almost any insect. Participants will contribute to global biodiversity databases, improve range maps, and help track species' movements. By using DNA barcodes instead of traditional taxonomy methods, we can quickly and accurately assess our local ecosystems and how they are changing in response to human impacts.

Abiya (Abi) Saeed

MSU Extension Horticulture Specialist

Bio: As the Extension Horticulture Specialist for Montana State University, Abi assists Master Gardeners, home gardeners, commercial and private green industry professionals, and county and reservation extension offices with horticulture-related programming, questions, concerns, and diagnostics throughout Montana. Abi has a research background in pollinator conservation, integrated pest management, and pollinator health through the University of Kentucky. Using her passion for pollinator conservation and outreach, Abi has a decade of experience building programming and publications through her roles in Extension at Montana State University, Colorado State University, and Michigan State University. She is also a writer for the Garden Professors Blog and a recurring panelist on Montana Ag Live.

Presentation Title: ***Engaging Montanans with Pollinator Conservation through Extension***

Abstract: As a Land Grant Institution, Montana State University's Extension Programming works on bridging the gap between the latest research, and applied tools for all Montanans to improve their lives and communities. Since 2020, one of the focal areas for public outreach through MSU Extension's Integrated Pest Management Team has been Pollinator Conservation. This presentation summarizes some of the observed trends from providing pollinator conservation information throughout the state of Montana to audiences ranging from home gardeners to green industry professionals, and the various partnerships that help increase the impact of this messaging.

SESSION 6 – Case Study from Colorado and a Montana Pollinator Network

Virtual Panel Discussion: *The Colorado Pollinator Network: Building a Collaborative Community for Pollinator Conservation*

Panel Description: The Colorado Pollinator Network (CPN) was established in 2016 to support organizations and individuals throughout Colorado in collaborating to make a positive impact on the

health and conservation of our state pollinators. This network shares information about the best practices, resources, and knowledge to support education initiatives, conservation, restoration, and creation of habitats and research on pollinators in the state. The last eight years have brought many challenges and opportunities in the field, and the role and function of CPN has changed during that time as well. The purpose of this panel discussion is to discuss how this network came to be and explore the successes, lessons learned and the future path of CPN.

Panelists

Sonya Anderson, an Assistant Curator in the Horticulture Department at Denver Botanic Gardens,

takes care of the educational Birds and Bees Walk, a lively pollinator and wildlife garden, the Steppe Garden, and the Darlene Radichel Plant Select Garden. Sonya's exploration into the realm of pollinating insects and their plant companions began with her hands-on pollinator observations in these gardens. Moving beyond pollinator syndromes, she sought to personally witness the interactions between pollinators and plants to inform her plantings and garden design. This journey has led her deeper into the captivating and intricate world of pollination.

Steve Armstead is a Pollinator Conservation and Nature-Based Climate Solutions Specialist for the

Xerces Society for Invertebrate Conservation working in Colorado. His work focuses on efforts to coordinate, manage and create high quality, connected, climate-resilient pollinator habitat. Steve has been working with the City of Boulder on their pollinator conservation and nature-based climate initiatives, while also exploring ways to expand and leverage support for pollinator conservation and climate solution efforts throughout the region. He has over three decades of experience working in natural lands management, environmental planning, and community engagement. Steve holds a Master's Degree in Museum and Field Studies from the University of Colorado – Boulder where he studied and surveyed butterflies and he's remained an active butterfly enthusiast. Steve recently co-authored the *Colorado Native Pollinating Insects Health Study* for the Department of Natural Resources, leading Xerces' assessment and development of best management practices.

Dr. Adrian Carper is a researcher at the University of Colorado Boulder. He helped lead the statewide Scientific Review of native pollinating insects for the CO DNR Pollinating Insects Health Study. He received his PhD in Ecology and Evolutionary Biology from Dartmouth College and has studied pollinators in CO for the past decade. Through his research he has worked with agencies, municipalities, organizations, and many vested communities interested in pollinator conservation from the high plains to the high alpine. His current research through the Museum of Natural History focuses on the impacts of human land-use on native bee communities and how natural history knowledge can help inform their conservation. In the Dept. of Ecology and Evolutionary Biology, he focuses on butterflies, and the impacts of exotic plants on the chemical ecology of multitrophic interactions.

Amy Yarger, the Senior Director of Horticulture at Butterfly Pavilion, has worked in the public horticulture field since 1996. She received a bachelor's degree in ecology and evolutionary biology at the University of California, Irvine and then went on to study plant-animal interactions at the University of Michigan. Her master's thesis concerned the effects of invasive weeds on pollinator-plant relationships. Amy currently leads Butterfly Pavilion's local pollinator habitat initiatives, such as the Baseline Pollinator District, Manitou Springs Pollinator District and the Urban Prairies Project, which restores habitat in urban and suburban natural areas. Her work at the Butterfly Pavilion, where she has worked since 2000, touches on many of her passions: plants, insects, habitat conservation and science education.

Facilitated Discussion: *Developing a Montana Pollinator Network*

Facilitator: Bryce Christiaens, Director of Missoula County Department of Ecology and Extension