

BCNA BUZZ ECO-SYMPOSIUM 2016



Boulder County Nature Association

Our mission: To educate, inform and inspire for the purpose of conserving and promoting resilient natural ecosystems in our region.



DON'T MISS IT!

Ecosystem Symposium
March 12th
9 am - 3 pm
Boulder County Parks and
Open Space
Prairie Rooms
5201 St. Vrain Road,
Longmont



Join Boulder County Nature Association for our yearly conference to present information and encourage discussion about a topic of



Many thanks to the sponsors who make this symposium possible: Boulder County Nature Association, Boulder County Parks and Open Space, City of Boulder Open Space and Mountain Parks, Boulder County Audubon Society and the Colorado Native Plant Society.

Photo by Casey A. Cass, University of Colorado Boulder

agricultural heritage, Boulder County's agricultural practices have done much to affect plant and wildlife populations -- for the good and otherwise. We will also look at the role of agriculture in releasing and storing carbon

extraordinary examples of historic and sustainable local agricultural production. These natural and agricultural resources don't only share the same space on OMSP, but are tied to each other's persistence and preservation in many cases. From irrigated hayfields and ditches that support rare and Federally listed species, to grasslands that require appropriate grazing to maintain native plant communities, OSMP strives to integrate agricultural management and natural resource protection to best advantage for both resources.

Many lessons have been learned and practices improved through successes and failures over a variety of habitats and over time. The result is ongoing learning with dynamic and adaptive systems of management that incorporate legacies of historic usage with increasing understanding of the interactions and interdependence of the resources to create a system of highly functional natural systems that maintain biodiversity, safeguard ecosystem services, and provide preservation of the area's agricultural heritage.

Boulder County Bees: an Overview of Diversity and Life Histories

Virginia Scott, University of Colorado

Boulder County supports a great number of very diverse bees. To date 562 species of bees have been documented from Boulder County alone. This equates to approximately 60% of the near 950

species known to occur in Colorado and nearly 15% of all North American bee species.

Boulder County's bee diversity can be attributed to both the wide range of habitats over the elevational gradient in our county and to the legacy of bee research that has been happening here over the past century. The bee fauna is genuinely rich, but well studied enough for that to be fully recognized.

Because of the long history of bee research in Boulder County, we have excellent background information for current and future research. Boulder County bee species come in a variety of sizes, shapes, and colors. They also vary in their biology, with some species being social, many being solitary nesters, and some species being parasitic on other bees. While many bee species are generalist foragers that collect pollen from a wide variety of plants, some bee species specialize by collecting pollen from only a few related plant species. Although the European honey bee lives in managed hives, most bees nest in the ground or in cavities in dead wood.

An introduction to bee diversity and life history traits is presented



The Habitat Value of Ditches

Erick Carlson, Colorado State University

In arid and semi-arid regions where crops are irrigated, a large proportion of water is moved from natural streams into constructed ditches and canals to locations where it is used. In many arid regions surface water occurs in only

a few perennial and some intermittent streams, and most of the water flows in man-made ditches and canals. Many manmade channels support aquatic and riparian ecosystems and but relatively little is known of their contribution to regional biodiversity. The riparian plant and aquatic insect communities of irrigation ditches were compared to natural streams and rivers in Larimer and Weld Counties. Each group had a wide diversity of physical and biological components, with surprising similarities and differences related to canopy type, channel width and location for plants and substrate, distance from diversion, and water temperature for insects. Biodiversity does not tell the whole story as invasive species and insects which tolerate lower water quality indicate changes in riparian and aquatic condition.



Water Challenges: The Pressures of Providing a Reliable Water Supply for Differing Agricultural Markets

Sean Cronin, St. Vrain and Left Hand Water Conservation District

Many are familiar with the agricultural industry's evolution and adaptation to changing free market conditions. Some believe these market places can be further influenced through local policy. A reliable water supply is crucial to a sustainable irrigated agriculture industry. At times local policies conflict with water management practices challenging the ability of local producers to meet policy expectations. Sean will explore this conflict further, and discuss additional pressures (climate change, storage, urbanization) to providing a reliable water supply.



Agricultural Greenhouse Gas Production and the Web of Population in the U.S. Great Plains

Myron Gutmann, University of Colorado, Boulder

The Great Plains region of the United States is an agricultural production center for the global market and an important source of greenhouse gas emissions. This research uses historical agricultural census data and ecosystem models to estimate the magnitude of annual fluxes from all agricultural sources-cropping, livestock raising, irrigation, fertilizer production, and tractor use-from 1870 to 2000, and then



asks new questions about the role of population. The results show that carbon released during the plowout of native grasslands was the largest source of greenhouse gas emissions before 1930, while livestock production, direct energy use, and soil nitrous oxide emissions are currently the largest sources. Climatic factors mediate these emissions, with cool and wet weather promoting carbon sequestration and hot and dry weather increasing greenhouse gas release. Because most production in the Great Plains is sent to other markets, local population is not well correlated with agricultural GHG emissions. A new analysis of the population-driven conversion of land from agriculture to lawns partly confirms that conclusion, but also suggests that urban and suburban development has led to other large increases in GHG emissions from vehicles and other sources.

Conservation on Private Lands: Mountain Plover as a Model for Land Stewardship

**Angela M. Dwyer, Bird Conservancy of
the Rockies**



The Bird Conservancy of the Rockies has been working to conserve birds and their habitats for nearly 30 years through an integrative model of Science, Stewardship and Education. Land stewardship plays a vital role in conservation programs as more than 70% of the U.S. is privately owned. One successful private land program involves the Mountain Plover, a Nebraska state-threatened species. They construct their nests on crop fields and thus are at risk of potential accidental loss due to farming operations. For 15 years we have built a model of land stewardship by using Mountain Plover as a connection to the farming community of Kimball, Nebraska. Our Landowner Outreach Biologist is a third generation farmer and rancher and has recruited 80 other farmers to conserve nearly 900 Mountain Plover nests by locating and marking them with brightly colored stakes such that farmers to drive around nests with no loss to farming productivity. This model has led to numerous research and outreach opportunities for landowners, many of whom also continue to participate in other conservation efforts.

**MEMBERSHIP RENEWAL SEASON IS HERE!
DON'T FORGET TO RENEW YOUR MEMBERSHIP
ALL MEMBERSHIPS (EXCEPT LIFE MEMBERS) EXPIRED DECEMBER 2015**
Keep receiving the BCNA BUZZ, the NEWSLETTER, get first chance at our
wonderful classes and field trips.

Your membership benefits will expire soon if you haven't renewed. If
you have any questions, contact me: Cindy Maynard, Membership Chair
cmaynardre@gmail.com



YAMPA VALLEY CRANE FESTIVAL

Craving Cranes? Come visit Steamboat Springs and the beautiful Yampa Valley in Northwest Colorado for the 5th annual Yampa Valley Crane Festival- September 8-11, 2016. Witness hundreds of Greater Sandhill Cranes dancing and feeding in the fields. Enjoy four event-filled days featuring guided crane viewings, nature and bird walks, expert speakers, films, a crane and bird art exhibit, workshops, children's activities, live owls, ranch tours, a community barbecue at The Nature Conservancy's Carpenter Ranch, and more. Speakers include Nyamba Batbayar, Director of Wildlife Science and Conservation Center of Mongolia; Barry Hartup, Director of Veterinary Service for the International Crane Foundation; Ted Floyd, editor of Birding magazine, and Paul Tebbel, crane biologist and former director of Audubon's Rowe Sanctuary. Please visit www.coloradocranes.org for a complete festival schedule or our Facebook page <https://www.facebook.com/YampaValleyCraneFestival>. Questions? Email coloradocranes@gmail.com

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