

BOULDER COUNTY NATURE ASSOCIATION

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

FALL NEWSLETTER 2019

Volume 37, Number 3

Burrowing Owl Survey *Letter from Sue Cass, BCNA board president*



Based on our experiences during the 2018 Burrowing Owl (BUOW) survey season on Boulder County Parks and Open Space (BCPOS) public lands and leased agricultural properties, we entered 2019 invigorated and with high hopes! There was an unusually large uptick in both the number of nesting BUOW pairs (20) and young fledged (61) on both BCPOS and City of Boulder Open Space and Mountain Parks (OSMP) properties in the County during the 2018 nesting season and the season ending report was a stunner!

The 2019 BUOW survey season has left us, volunteers and County staff alike, scratching our heads and searching for answers, especially since OSMP had a near normal year with seven nesting attempts, all successful, and twenty-seven young fledged! Only one active nest site was detected on BCPOS property where, on July 3rd and July 9th, two young were observed above ground being groomed and fed by attentive parents. Thank you, Mort and Lysa Wegman-French! On successive visits during the next two weeks no owls were observed and evidence of herbicide use near the nest burrow raised concerns. A dead owl was discovered in the vicinity, too decomposed to be autopsied. At that time, it became apparent the 2019 BCPOS BUOW nesting season would be a total loss!

BCPOS Senior Wildlife Biologist Susan Spaulding has indicated an intense back and forth with her Ag counterparts has produced succinct and redundant protocols to improve communication with tenants when owls are present, all well and good, but does nothing to explain how we went from ten nesting pairs and twenty seven fledged young on BCPOS properties in 2018 to this! If we get a hint, we will share it!

Thank you, 2019 Burrowing Owl Survey volunteers: Linda Andes-Georges, Larry Arp, Bryce Bolton, Kerrie Bryan, Sue Cass, Jean Crawford, Joseph Falke, Emily Friedberg, Paula Hansley, Brinda Henley, Tim Henson, Carol Kampert, Peter Kleinman, Sandra Laursen, Lark Latch, Kristin Laubach, Viki Lawrence, Maureen Lawry, Mort and Lysa Wegman-French, Carol McCasland, John Nelson, Joe and Beccy Pem, Danielle Pyovich, Connie Redak, Carol Stock, Bob and Ru Wing and Howard Witkin!

Because of YOU! ...
Nature classes were 100% filled
Research is being funded

We are partnering with other groups to work on issues of concern

NEW from BCNA

Butterflies of the Colorado Front Range

A Photographic Guide to 100 Species
Second Edition

by Janet R. Chu & Stephen R. Jones



Boulder County Nature Association

The brand new second edition of ***Butterflies of the Colorado Front Range: A Photographic Guide to 100 Species*** by Jan Chu and Steve Jones is now available in eBook format! At present, it is available through [Amazon Kindle books](#) for \$5.99. Soon it will also be available at Apple Books and BarnesandNoble.com.

A print version of the second edition is expected in February.

The ebook has the same great pictures and information that the new print book will have. It also has links that make it easy to compare similar butterflies and to go quickly to the page you want to read. And, of course, it is easily portable on your mobile devices such as iPhones or Android phones,

iPads or Android tablets. You can also read Kindle books on Macs or PCs.

This user-friendly book includes all new coverage of twenty additional species that weren't in the successful first edition. Easily identify butterflies using over 120 striking color photos of individuals in their natural setting, along with clear descriptions of both males and females. Each entry also includes that species' habitat and life cycle, the caterpillar's host plants, and look-alike butterflies.

The introduction includes tips on where to find butterflies, how to get close to them, and what we can do to attract them to our gardens and preserve their sensitive habitats. A month-by-month occurrence chart reveals when and where to look for your favorite butterflies in Boulder County.

The book complements the [Colorado Front Range Butterflies website](#).

To find out about classes, programs, challenges and what's going on in the natural world of Boulder County and beyond sign up for Nature-Net, BCNA's and Boulder County Audubon's email forum. To subscribe, send a blank message to nature-net-subscribe@yahoogroups.com

BCNA Research Grants in Action



Left: Western palm warbler (photo by Megan Boldenow). Right: Banding station at Roger's Grove Park, Longmont (photo by Colin Woolley, Banding Coordinator, Bird Conservancy of the Rockies).

The Bird Conservancy of the Rockies has been awarded a grant by BCNA for equipment to start a bird banding station at Roger's Grove Park in Longmont. The mission of Bird Conservancy of the Rockies is to conserve birds and their habitats through an integrated approach of science, education, and land stewardship. The grant from BCNA will allow the Conservancy not only to band birds so that their movement can be tracked, but also to bring in school groups to see the banding process and learn how banding birds helps monitor their life cycles and migrations.

A request for 2020 Grant Proposals (RFPs) will be sent out on November 4, 2019 and new grant applications are due February 16, 2020. Grants range from small projects to projects of several thousand dollars.

The Ken Evenson Memorial Grant is available for research on our native cats. Also available are general grants to fund projects that further our understanding of the ecosystems of Boulder County with an emphasis on the impacts of climate change and expanding Front Range development on our flora and fauna, streams, and recreation areas. Research findings should add to the knowledge base available to Boulder County decision-makers to both protect and enjoy our natural resources.

[Grant Application Guidelines](#)

Dragons and Damsels - Who Knew?

By *Mary Stuber*

Fossil records show that long before dinosaurs roamed the earth, gigantic dragonfly-like creatures inhabited the skies. The largest had a wingspan of almost 2 ½ feet – bigger than the wingspan of an American Kestrel at only 22 inches. At 17 inches from head to tail, they were among the largest insects to have ever lived. Thank goodness things have changed!



Widow Skimmer © Mary Stuber

In August, BCNA class participants looked at modern-day dragonflies and damselflies in Scott Severs' *Extraordinary Odonata – Dragonflies* class. Turns out, they are fascinating creatures. As cold-blooded insects, they can't fly until they warm up to about 65 degrees, so you don't have to get up at o'dark-thirty to see them. In late summer when birds are quiet, these insects abound. Their variation and striking colors make them fun to look for. There are over 60 species in Boulder County and their lifecycle is an amazing and sometimes horrifying tale.

We saw both dragonflies and damselflies, but what's the difference? **Dragonflies (*Anisoptera*)** are larger than damsels and are strong fliers with big compound eyes that almost meet on top of the head. Adults are fast fliers that tend to hunt in open areas and hold their wings straight out to the sides when perched. Their four gossamer wings move independently giving them the ability to fly forward, backward, sideways, or to hover in place, which allows them to easily outmaneuver and catch insect prey, especially mosquitoes. With their quick and agile flight, they avoid predators, like birds or frogs, and hide in vegetation when it is too cool to fly.

Damselflies (*Zygoptera*) are smaller. Their eyes do not meet at the top of the head and when perched, they fold their wings alongside or just above their abdomens. Some are only about an inch long and so impossibly thin that you could easily miss them.

Both dragonflies and damselflies have excellent eyesight and can see in almost every direction. Males find an appropriate mate by observing females' flight style, color, pattern, and size. Once found, the male must first subdue her. To do this, he approaches from behind, grabs the female in flight with his legs and sometimes will bite her. Pulling himself forward, he uses his cerci (appendages at the end of his abdomen) to grasp behind her head while continuing to fly in tandem. While coupled, the female curls her abdomen forward to retrieve the sperm, forming a heart-shaped copulatory wheel.



Copulatory wheel © Mary Stuber

Females will mate with multiple partners and only the last one will fertilize her eggs, so the male first scoops out any sperm from previous mating partners. After “cleaning house” and depositing his own sperm, he will guard her, chasing away any other male while she lays her eggs.

Some females fly low and drop their eggs on the water's surface. Others dip their abdomens in the water, releasing their eggs to sink to the bottom. Some inject them into plant stems, leaves, or woody debris near the water. The eggs will hatch within a few days to a few months.

Surprisingly, dragonflies and damselflies spend most of their lives underwater as larvae, or nymphs, where they develop for several months to several years. They breathe through **gills** – those of the dragonfly's are inside its rectum while the damselfly's gills extend out behind it like three delicate feathers. Dragonflies draw water in and out of their anus over the gills. They propel themselves forward to catch prey by forcing water out. Nymphs must molt or shed their skins multiple times as they grow. They are voracious predators, feeding on unsuspecting aquatic animals by suddenly thrusting out a long, extendable hinged lower jaw like the terrifying extra-terrestrial in the movie, *Alien*. At the same time, they must avoid becoming a meal for ducks, toads, fish, and even bigger damselfly and dragonfly larvae.

Odonata undergo *incomplete* metamorphosis, changing directly from nymph to adult with no pupal stage. Their final molt takes place out of the water. For several days they live near the water's margin and begin breathing air. When ready, they climb out onto a rock or vegetation. The carapace begins to split open and they struggle to push out, thorax first, and then head, legs, and wings. Grasping the empty exoskeleton, after their legs have hardened, they pull their abdomen free. They pump body fluids into their wings and take on their full adult shape, still clinging to the **exuvia** which will be left hanging where it emerged, a ghostly shell of its former self. It will take hours before their wings and bodies harden and they can begin hunting for food. The pale, soft-bodied stage after molting is called a **teneral**.



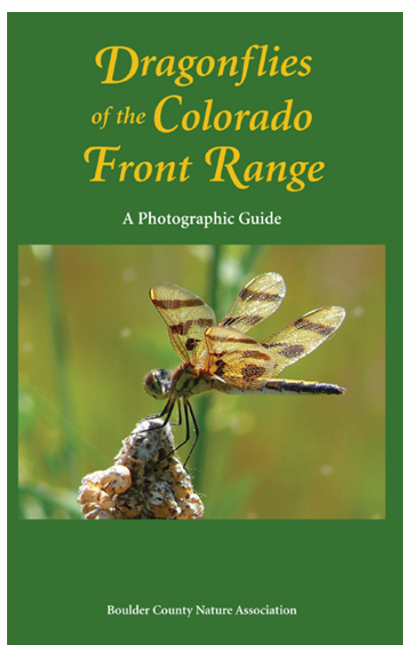
Exuvia © Mary Stuber

In about a week they will acquire their adult coloration and be sexually mature. The males are often more brightly colored than the females. Most adult dragonflies will live for just a few weeks so they waste no time getting around to mating. As long as the weather remains warm, the whole thing starts over again.

Most adult dragonflies will die as winter approaches, though a few larger species do migrate. But their nymphs feed actively and grow all winter, often beneath ice, to emerge as adults in early spring. Dragon/damselflies are like “canaries in a mine,” revealing the quality of our wetlands. Loss of their habitat to threats such as draining and development, climate change, pollution, or pesticides would be their certain undoing and send a grave message about our own survival.

The BCNA website has a [Calendar of Boulder County Events and Hearings](#) of interest to those working to meet BCNA's mission. It includes BCNA, Boulder County Audubon Society, Boulder County, and the cities of Boulder, Erie, Lafayette, Longmont and Louisville.

Want to learn more about dragonflies?



This colorful and informative guide by Ann Cooper is just the book for you, published by the Boulder County Nature Association.

It is available at special events hosted by BCNA, at the Boulder Audubon Chapter's annual holiday sale, at the Front Range Birding Company, 5360 Arapahoe Ave, Boulder and 10146 W San Juan Way, Littleton, or online through Amazon.

Are you interested in helping Boulder County Nature Association find new sales outlets for publications, serve the outlets we already have, and manage distributions? BCNA's Publications Committee is looking for sales and marketing volunteer help.

We currently have three sales items: *Dragonflies of the Colorado Front Range: A Photographic Guide* (paperback), and *Dawn Chorus in the Colorado Rockies* (CD), plus our new second edition of *Butterflies of the Colorado Front Range* (e-book format), now available on Amazon. We expect the printed version of the second edition to be available in February. Please contact BCNASales@bcna.org for more information.

A big thank you to all who currently support BCNA!. Without your assistance, we would not be able to accomplish all that we do for our community and for the natural world around us. Memberships for the calendar year renew in November and December, but you can renew for next year any time.

New members are always welcome!

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