

INSECTS OF WESTERN NORTH AMERICA

9. The dragonflies and damselflies (Odonata) of Colorado: An updated annotated checklist



**Contributions of the
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Fort Collins, Colorado**

ISBN 1084-8819

Cover illustration. The genesis of our study, *Celithemis elisa*, Pella Crossing, Boulder County, Colorado, 16 July 2001. Photo by Inez Prather.

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9. The dragonflies and damselflies (Odonata) of Colorado:

An updated annotated checklist

by

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Issue date: February 10, 2015

Introduction

Evans (1988, 1995) listed 106 species of Odonata as known from Colorado using published and available museum specimen records. These two papers have been widely used to produce range and distribution maps, such as those in the Dot-map Project (Donnelly 2004 a, b, c) and within the Odonata Central database (Abbott 2006-2014).

The occurrence and distribution of the dragonflies and damselflies of Colorado is closely associated with the major geographical regions of the state, the Great Plains, the southern Rocky Mountains, and the Colorado Plateau (Chronic and Chronic 1972). The Great Plains Physiographic Province includes the eastern two-fifths of the state and is characterized by a gently sloping landscape once characterized by vast grasslands dominated by two C4 grass species, *Bouteloua gracilis* (Willd. ex Kunth) Lag. ex Griffiths (blue grama) and *Buchloë dactyloides* (Nutt.) (buffalo grass) (Paruelo et al. 2001) from 1,000 m to about 1,600 m in elevation (Chronic and Chronic 1972). Historically, this region of the arid high plains was characterized by extremes in terms of temperature and precipitation, and “aquatic communities reflected this precarious balance between flood and drying” (Dodds et al 2004). Other than the South Platte and Arkansas river drainages, relatively few permanent lotic habitats were available for Odonata species in this region of Colorado. Prairie playas, shallow and mostly ephemeral, were widespread but were, apparently, never surveyed in their natural state. By the 1850’s, irrigated agricultural practices substantially altered these habitats (Eschner et al. 1983, Fausch and Bestgen 1997, Strange et al. 1999). Smaller watersheds not directly influenced by irrigated agriculture were usually impacted by intensive livestock grazing (Gary et al. 1983, Dodds et al. 2004). Of these streams, very few are still in pristine condition (Bramblett and Fausch 1991, Labbe and Fausch 2000, Dodds et al. 2004, Zuellig et al. 2012). A few streams, such as the Republican and Purgatoire rivers support species such as *Erpetogomphus designatus* Hagen, *Gomphus externus* Hagen, *G. militaris* Hagen, and *Progomphus obscurus* (Rambur). But with the development of irrigated agriculture and cattle ranching beginning in the 1850s, the Great Plains became dotted with numerous reservoirs, ponds, and stock tanks. These new lentic habitats allowed common, widespread damselfly and dragonfly species to spread from more eastern and southern surrounding areas of the Midwest.

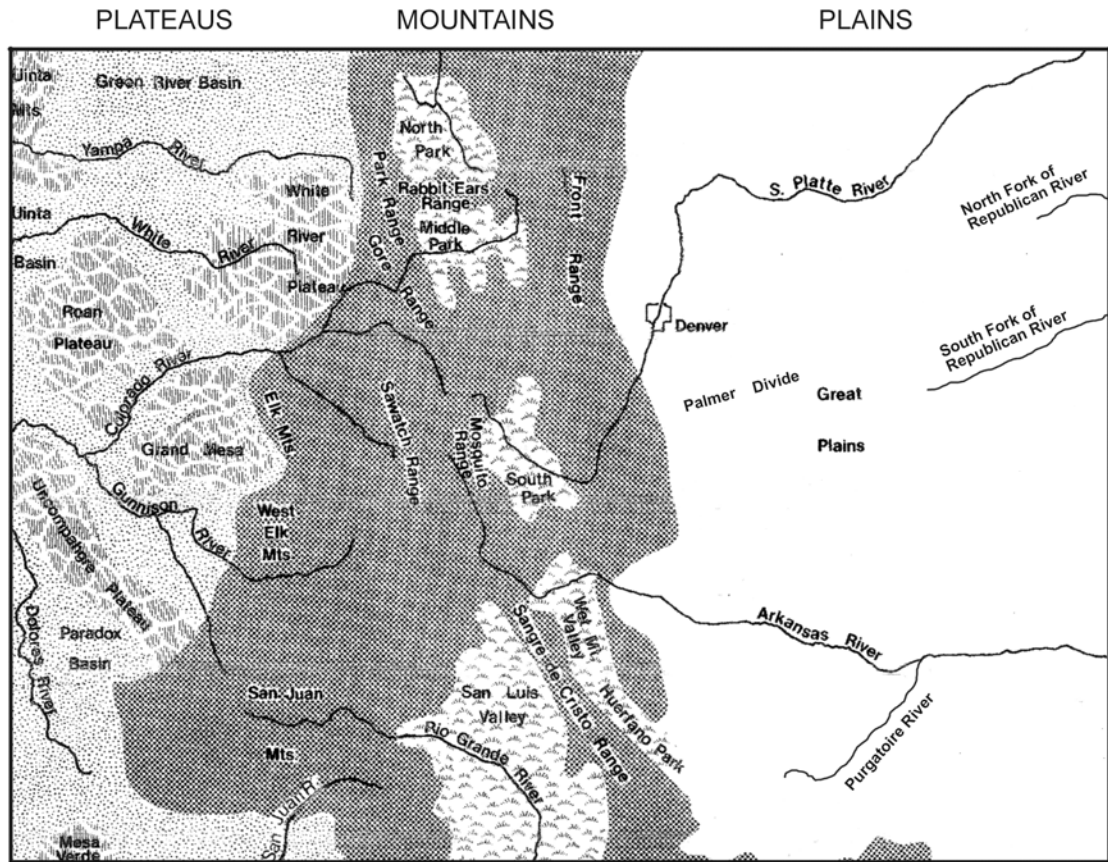


Fig. 1. Map of Colorado indicating physiographic provinces.

The southern Rocky Mountains are marked by foothills and montane areas dominated by shrubs and conifers (Chronic and Chronic 1972). The foothills of the Rocky Mountains rise abruptly from the Great Plains. As elevations increase, odonate diversity decreases. Relatively few species occur above 1,500-2,000 m above sea level (m.a.s.l.) (Dubois 2010). Mountain streams are mostly of high gradient, with coarse substrates not suitable for immature Odonata. They usually lack lotic Odonata except, perhaps, for certain dragonfly species, *Ophiogomphus severus* Hagen and *Aeshna umbrosa* Walker in the backwater areas. The numerous subalpine, alpine lakes and reservoirs are low in odonate diversity. This may be due to cold temperatures, depth, the stocking of salmonid fish, or a combination of these factors. The impact of stocked salmonids on prey taxa is not well studied (Knapp et al. 2001). Lakes such as Lily Lake in Larimer County, Mud Lake in Boulder County, and Lake Dorothy in Las Animas County have some macrophyte development and, especially if fishless, support often robust populations of both damselflies and dragonflies such as *Coenagrion resolutum*

(Hagen in Selys), *Enallagma boreale* (Selys), *A. eremita* Scudder, *A. juncea* (Linnaeus), *S. hudsonica* (Hagen in Selys), *S. semicircularis* (Selys), *Leucorrhinia borealis* Hagen, *L. hudsonica* (Selys) and *L. proxima* Calvert. Several of these species are common taxa in more northern areas of North America (Paulson 2009). A few species more commonly occurring at lower altitude such as *Lestes dryas* Kirby, *E. civile* (Hagen), *Ischnura damula* Calvert, *Libellula pulchella* Drury, and *L. quadrimaculata* Linnaeus can occur. The broad mountain valleys called “parks”, including the San Luis Valley, South Park, Middle Park, and North Park, with altitudes ranging from 2,000-2,800 m.a.s.l. have suitable odonate habitats but support relatively few species. In western Colorado, mountains and high plateaus dominate the landscape. Higher species diversity occurs in the deep valleys of the San Juan, Gunnison, Dolores, Colorado, White, Yampa, and Green river drainages below 2,000 m.a.s.l. Potter (2006) provided a checklist of the western Colorado species of Odonata. A few western species such as *I. cervula* Selys, *E. compositus* Hagen, and *Cordulegaster dorsalis* Hagen have been found in these valleys. The higher altitudes of the middle of the state seem to act as a barrier to adult Odonata dispersals. The lowest point of the Colorado’s Continental Divide is Cochetopa Pass at 3,057 m.a.s.l. Species that are common on one side of the Continental Divide can be rare or absent on the opposite side. Very common low elevation species are occasionally found as single individuals at much higher altitudes. These species may be simply occasional breeders or vagrants.

The purpose of this paper is to update the Odonata of Colorado, including making available new state records and correcting previously published information.

Methods and Material

We reviewed the material listed by Evans (1988, 1995) that is housed in the C. P. Gillette Museum of Arthropod Diversity, Colorado State University (CSUC). In so doing we identified new additions to the collection since Evans’ original studies. Since 2002, we have extensively collected and observed Odonata in Colorado, emphasizing localities that had provided specimens in the past and locating new habitats for poorly known taxa or with the potential for providing range extensions for known species. We examined published and online information such as Donnelly (2004 a, b, c) and Odonata Central (Abbott 2006-2014) for additional records. We contacted colleagues interested in

collecting, observing and photographing Odonata in Colorado, sharing findings and assisting in identifications. Finally, we submitted specimens to experts in some cases where we were unsure of identifications or disagreed with previous ones.

Results and Discussion

Of the 106 species that Evans (1988, 1995) listed, *Sympetrum atripes* (Hagen) and *S. occidentale* Bartenev are no longer recognized as valid taxa (Paulson 2009, Abbott 2005-2014, Needham et al. 2014). Three species, *C. erronea* Hagen in Selys, *Argia agriodes* Calvert and *Amphiagrion saucium* (Burmeister) were already considered unlikely as occurring in Colorado by Evans, and we concur. These species have known ranges that do not approximate Colorado (Westfall and May 2006, Needham et al. 2014). Of the 101 other species reported by Evans (1988, 1995), voucher specimens are available for 95 species and *Calopteryx aequabilis* Say and *S. ensigera* Martin were documented by descriptions and illustrations in the scientific literature. We have not found documentation from Colorado of the following four species listed by Evans (1988, 1995) and also subsequently indicated by Donnelly (2004 a, b, c) and Paulson (2009), but are included at the end of the following list with notations: *Hesperagrion heterodoxyn* (Selys), *A. persephone* Donnelly, *P. borealis* McLachlan, and *L. comanche* Calvert. Nineteen species are added that were not listed by Evans for a total of 120 species that are included in the updated Colorado list. Of these 19 added species, 17 are documented by specimens, *Pseudoleon superbus* (Hagen) has been documented with photographs and *E. geminatum* Kellicot is added to the list on the basis of Paulson (2009) including northeastern Colorado in that species range. The CSUC has voucher specimens for 112 of the 120 species; one is documented by photographs, two are documented by descriptions in the scientific literature and five species have been included as undocumented with explanations. In support of the assertion that the high elevations in the middle of the state act as a barrier to odonate dispersal, the Colorado ranges of the following species, *L. australis* Walker, *A. plana* Calvert, *A. alberta* Kennedy, *E. antennatum* (Say), *E. basidens* Calvert, *E. praevarum* Hagen, *I. verticalis* (Say), *I. cervula*, *G. militaris*, *Epithea petechialis* (Muttkowski), *Celithemis eponina* (Drury), *Erythemis simplicicollis* (Say) and *Perithemis tenera* (Say) are frequently found in the east or west but rarely, if ever, been found on the other side of the Divide. A map of the

distribution of records of *E. petechialis* is found on page 35. Very common low elevation species such as *E. civile*, *I. damula* and *L. pulchella* and *S. corruptum* (Hagen) are occasionally found as single individuals at much higher elevations but Odonata are almost unknown at elevations above 3,700 m.a.s.l. in Colorado (Dubois 2010). A more cryptic division seems to occur on the Great Plains in Colorado between the South Platte River Drainage and the Arkansas River Drainage. Part of this division, the Palmer Divide, juts east-northeast from the Front Range with elevations above 1700 m.a.s.l. and typical foothills habitat as far east as Lincoln County. A number of species such as *A. fumipennis* (Hagen), *A. nahuana* Calvert, *A. plana*, *I. denticollis* (Burmeister), *Tramea onusta* Hagen and *E. designatus* that are commonly found south and east of this Divide are uncommon to rare on the other side. Likewise, species such as *A. palmata* Hagen, *A. umbrosa*, *O. severus*, *E. boreale* Selys, and *Argia emma* Kennedy that occur regularly north and west of this divide have few records on the other side of the Divide. Maps that plot the occurrence of records of *A. fumipennis* and *O. severus*, illustrating this divide, are found on pages 15 and 32. Close to the eastern border, the Republican River drainage lies in the middle of this division, primarily in Yuma County. It has at least some of the species from each side, resulting in a more diverse Odonata fauna than is typical of the rest of the Great Plains region of Colorado. The transformation of the High Plains and western river valleys by irrigated agriculture has facilitated the dispersal of species from south and east of Colorado where odonate populations are more diverse. Species such as *A. alberta* Kennedy, *A. apicalis* (Say), *C. eponina*, and *Pachydiplax longipennis* (Burmeister) listed by Evans (1988) as “eastern species barely entering the state” and species such as *A. nahuana*, *A. plana*, *G. militaris*, *E. petechialis*, and *P. tenera* listed in the same publication as “Southern species that barely enter the southern border”, are now relatively common and continue to colonize the numerous reservoirs, ponds, and stock tanks of the region to the Front Range and beyond. A few western species such as *I. cervula*, *C. dorsalis*, and *E. compositus* have so far been found in Colorado only in a few deep river valleys near the Utah border. The sudden, and sometimes temporary, known range expansions of several eastern species such as *E. signatum* (Hagen), *E. basidens*, *C. elisa* (Hagen), *Dythemis fugax* Hagen, *Epithea princeps* Hagen, and *Dromogomphus spoliatus* (Hagen in Selys) in reclaimed gravel mining ponds such as Pella Crossing in

Boulder County, Valco Ponds in Pueblo County, Tamarack Pond in Logan County, Hale Ponds in Yuma County and Rifle Ponds State Wildlife Area in Garfield County may suggest these species were introduced by fish stocking or migratory birds (Bohonak and Jenkins 2003, Green and Fiquerola 2005).

There is still much to learn about the Odonata of Colorado. Relatively large areas, including entire counties, have not been adequately surveyed. This is especially true of the higher elevations, where flight seasons are short and collecting difficult due to unpredictable weather patterns. However, new information on Colorado's dragonflies and damselfies is constantly becoming available. For example, recently Cooper (2014) presented an informative overview of the common species of the Front Range of Colorado. We expect additional species and new range extensions for known species will continue to be found in Colorado. Please contact the authors or use Odonata Central if you have any new information.



Records of *Amphiagrion abbreviatum* (x), a widespread, easily-recognized species. Lack of records for this species indicates areas of the state that may have not been adequately surveyed for Odonata.

Annotated Checklist

* Denotes the 19 species not mentioned by Evans (1988, 1995).

***Zygoptera*-Damselflies**

Calopterygidae (Broad-winged Damsels)

***Calopteryx aequabilis* Say (River Jewelwing)**

Cockerell (1913) described a new subspecies based on a male specimen taken in 1907 in the mountains of Boulder County as *Agrion aequabile coloradicum*. This species is currently recognized as *C. aequabilis*. The Colorado subspecies is not generally recognized (Westfall and May 2006). Kennedy (1918) found another male specimen labeled as from Fort Collins, Larimer County. No female from Colorado has been described and no further records have been reported in the nearly 100 following years. Existing populations occur in adjacent Nebraska, and Utah (Odonata Central Abbott 2006-2014) and we are looking forward to the rediscovery of this beautiful damselfly in Colorado.

***Calopteryx maculata* (Beauvois) (Ebony Jewelwing)**

This species was considered to be limited to eastern Yuma County along permanent streams including Chief Creek, the Arikaree River, and the North and South Forks of the Republican River. At these streams, it is often a common and conspicuous damselfly flying mostly in partially shaded areas. Recently, however, a male was photographed by S. Mlodinow in the Crow Creek drainage near Briggsdale in Weld County (Odonata Central #423945 Abbott 2006-2014).



Calopteryx maculata, male. Yuma Co., Hale ponds, 3 August 2005.
Photo by Inez Prather.

***Hetaerina americana* (Fabricius) (American Rubyspot)**

This species occurs, occasionally numerous, along permanent streams and nearby ponds at lower elevations throughout the state, often one of the last Odonata species seen in the fall in Colorado. We have not found any records above 1,800 m.a.s.l.

Lestidae-Spreadwings

***Archilestes grandis* (Rambur) (Great Spreadwing)**

Adults of this large damselfly can be locally common in late summer and fall at ponds, ditches, stream pools, and water features, even in the urban areas of the Front Range such as the Denver Metro area. No specimens were examined that were collected above 2,000 m.a.s.l. or from northwestern Colorado.

****Lestes alacer* Hagen (Plateau Spreadwing)**

The CSUC has one male collected at Two Buttes State Wildlife Area, Baca County, taken by the authors on 6 July 2003. This species is present in the Texas Panhandle and northern New Mexico (Abbott 2011) 150-300 km south of southeastern Colorado but suitable habitats are often lacking in the intervening areas.

****Lestes australis* Walker (Southern Spreadwing)**

This species has been collected at many available habitats throughout the Great Plains. We have not seen any specimens collected above 1,800 m.a.s.l. Several specimens in the CSUC are historic collections originally identified as *L. disjunctus* Selys or *L. rectangularis* Say. We agree with Donnelly (2003) and recognize this species as distinct from *L. disjunctus*, as specimens examined from Colorado are readily separated by size as well as other characters (Westfall and May 2006). The Colorado populations of *L. australis* range from 41 to 46 mm in length, with Colorado populations of *L. disjunctus* being less than 38 mm in length. The two species are sympatric in Red Lion State Wildlife Area in Logan County.

***Lestes congener* Hagen (Spotted Spreadwing)**

This species is common to abundant in suitable habitats from the middle Great Plains westward to the Utah border, less common in the northeastern and southeastern corners of Colorado. *Lestes congener* has been collected above 3,000 m.a.s.l.

***Lestes disjunctus* Selys (Northern Spreadwing)**

This species can be abundant at certain sites in the montane region and in the western part of state, but is rarely collected on the Great Plains. It usually cannot be separated from *L. australis* by photographs so many records on Odonata Central (Abbott 2006-2014) cannot be assigned to species. It has been taken from low elevations in northeastern Colorado west to mountainous areas above 3,000 m.a.s.l.

***Lestes dryas* Kirby (Emerald Spreadwing)**

This species is easily found at higher montane elevations, to over 3000 m.a.s.l. and in western Colorado. *Lestes dryas* has also been uncommonly collected in suitable habitats of the northeastern Great Plains.

***Lestes forcipitus* Rambur (Sweetflag Spreadwing)**

This species is uncommonly found at prairie sloughs and playas in the northeastern part of the state, usually far outnumbered by *L. unguiculatus* Hagen and *L. congener*. The CSUC has specimens from Weld and Logan counties. Recently found in Washington County (Odonata Central #425421 Abbott 2006-2014) in the same part of the state and Pueblo County (Odonata Central #426492), a surprising southwestern range extension.

***Lestes rectangularis* Say (Slender Spreadwing)**

This species is sporadically found on the Great Plains perching in thick vegetation overhanging ponds and slow streams. The CSUC has specimens from Tamarack Pond in Logan County, Chief Creek, the Arikaree River and the South Fork of the Republican River in Yuma County and Two Buttes Creek in Baca County.

***Lestes unguiculatus* Hagen (Lyre-tipped Spreadwing)**

This species is a common species at suitable habitats on Great Plains, adults often occurring locally in large numbers; less frequently found in mountains east of the Continental Divide and rarely found in northwestern Colorado. We have found this species up to about 2,500 m.a.s.l. and frequently associated with bodies of water with *Typha* (cat-tails).

Coenagrionidae-Pond Damsels

Amphiagrion abbreviatum (Selys) (Western Red Damsel)

This species can be collected throughout the state at suitable habits, usually seepage areas or heavily-vegetated, slow flowing small streams and irrigation ditches. We expect this species will eventually be found in all 64 counties. We have not examined specimens from Colorado that in our opinion exhibit morphological characteristics of the similar eastern *A. saucium* (Burmeister) or intermediates. See map on page 9 for records of this species.

Argia alberta Kennedy (Paiute Dancer)

We find this species throughout eastern Colorado at elevations below 1,800 m.a.s.l. The CSUC has one specimen from western Colorado, taken in Archuleta County at 2,160 m.a.s.l.

Argia apicalis (Say) (Blue-fronted Dancer)

At the time we started our study of Odonata, this species appeared to be confined to the far eastern border areas of Colorado where it is numerous and conspicuous. It has more recently been found as far west as the Front Range uplift in Larimer and Pueblo counties and numerous areas in between.

Argia emma Kennedy (Emma's Dancer)

Adults of this species occur along some of the permanent rivers, such as the Poudre, St. Vrain, South Platte, Gunnison, Colorado, and Yampa in eastern and western Colorado below 2,000 m.a.s.l.

Argia fumipennis (Burmeister) (Variable Dancer)

This species occurs in southeastern Colorado, north to Yuma County and west to Pueblo County. Evans (1988) listed this species as *A. violacea* Hagen. Her listings of

specimens from Weld County in the CSUC refer to *A. emma*. Records for this species is given on map below.

***Argia lugens* (Hagen) (Sooty Dancer)**

First reported in Colorado by Bick (1978) this species is found at widely dispersed habitats along streams and rivers in the Arkansas River drainage from the southeastern corner of the state north and west to Fremont and El Paso counties. We have not seen any documented records from western Colorado, but Donnelly (2004c) listed this species from both Montezuma County, which seems credible, and San Juan County, a record that needs confirmation as there does not seem to be any suitable habitat in that county.



Records of *Argia fumipennis*, a species found in Colorado in the Arkansas and Republican River drainages on the eastern Great Plains.

***Argia moesta* (Hagen) (Powdered Dancer)**

We have found this species to be relatively common in eastern and southeastern Colorado, with a few records available north to the Wyoming and Nebraska state borders, and west to the Front Range. The Powdered Dancer is also common along certain sections of western Colorado rivers such as the Colorado River to about 1,800 m.a.s.l. The CSUC has one specimen from Custer County collected at 2,700 m.a.s.l.

***Argia nahuana* Calvert (Aztec Dancer)**

This southwestern species, first reported in Colorado by Bick (1978) can be locally common in Baca and eastern Las Animas County. It has also now been documented in other counties west to Pueblo County and north to Yuma County. Many specimens in Colorado do not have the forked humeral stripe that is illustrated in field guides (Abbott 2005, Paulson 2009) and can be mistaken for *Enallagma* species in the field.

***Argia plana* Calvert (Springwater Dancer)**

We have found this species to be uncommon but widespread at accessible habitats on the southeastern Great Plains. Males found in most areas of the state are bright blue and populations of dull purple males occur in Lincoln County. Donnelly (2004c) indicated records of the Springwater Dancer in southwestern Colorado. However, we have not examined any material from western Colorado that is this species.

***Argia sedula* (Hagen) (Blue-ringed Dancer)**

Adults typically occur along rivers, sloughs, and irrigation ditches on the Great Plains near the Kansas border. The CSUC has specimens taken by the authors from Yuma and Prowers counties. Specimens in the CSUC cited by Evans (1988) from Boulder, Larimer, and Moffat counties represent other taxa.

****Argia tibialis* (Rambur) (Blue-tipped Dancer)**

Three males of this species were collected by the authors at Hale Ponds State Wildlife Area on 25 June 2010. Westfall and May (2006) stated this species “occurs as far west as Colorado,” but we have not found published records or examined any previous material of this species in Colorado.



Argia tibialis, male. Photo by Paul Bedell.

***Argia vivida* Hagen in Selys (Vivid Dancer)**

We have collected this species from suitable habitats in the Great Plains close to the Front Range and in the Foothills below 2,000 m.a.s.l. in eastern Colorado and in western river valleys below 2,500 m.a.s.l. The Vivid Dancer is often locally abundant. We have not examined any material from areas where *A. plana* occurs but the two species can be found within 30 km of each other in Pueblo and El Paso counties. We have not been able to separate the two species in photographs and several records submitted to Odonata Central (Abbott 2006-2014) from the Great Plains cannot be identified to species.

***Coenagrion resolutum* (Hagen) (Taiga Bluet)**

This is the most widespread of the Colorado high-altitude-only species. The Taiga Bluet is often common at elevations of 2,200-3,300 m.a.s.l. throughout the Colorado Rockies.



Records of *Coenagrion resolutum*, a species that is widely distributed at higher elevations in Colorado.

***Enallagma anna* Williamson (River Bluet)**

We find this species associated with Great Plains and Foothill rivers along the northern Front Range. It is often the most numerous species on the Saint Vrain River in Boulder and Weld counties and on Clear Creek in Jefferson, Adams and Denver counties. More recently, it has been found on small, slow streams in Weld, Lincoln, El Paso, and Yuma counties on the Great Plains, a foothills stream in Custer County and at Rifle State Wildlife Area in Garfield County in western Colorado.

***Enallagma annexum* (Hagen) (Northern Bluet)**

Formerly this species was considered conspecific with *E. cyathigerum* (Charpentier), a Eurasian species (Westfall and May 2006). Evans (1988) records of *E. annexum* are under *E. cyathigerum*. The Northern Bluet was overlooked in Colorado until reported by Bick (1978). This species occurs throughout the state, except in the southeastern Great Plains and is most often found early in the flight season (May and June) at lower elevations and in summer (July, August) in the mountains.

***Enallagma antennatum* (Say) (Rainbow Bluet)**

Often a surprise and always a delight, Rainbow Bluets are found mostly as small local populations in widely scattered habitats, including both streams and ponds throughout the Great Plains as they go about their business, usually inconspicuously in emergent vegetation.

***Enallagma basidens* Calvert (Double-striped Bluet)**

This small species is relatively common but often unnoticed at ponds in eastern Colorado below 1,700 m.a.s.l. Donnelly (2004c) listed it from Garfield County in western Colorado. We have been unable to find any photos or specimens from western Colorado and speculate a temporary population may have been possibly introduced in the process of reclaiming gravel mines.

***Enallagma boreale* (Selys) (Boreal Bluet)**

The Boreal Bluet is a common species at suitable habitats in the montane areas of the state and western Colorado from about 2,000 to over 3,300 m.a.s.l. The CSUC also has specimens from the northern Great Plains from Douglas County to Sedgwick County. These Great Plains specimens were usually collected early or late in the flight season when few other *Enallagma* were flying. It is not known if they are present all summer and just overlooked in the large populations of *E. civile*, or if populations are truly bimodal.

***Enallagma carunculatum* Morse (Tule Bluet)**

Enallagma carunculatum is another common widespread Colorado damselfly, adults often occurring in large numbers active along lake and pond edges below 2,400 m.a.s.l.

***Enallagma civile* (Hagen) (Familiar Bluet)**

A low, swarming blue cloud along the edge of streams, sloughs, ponds, and lakes, the Familiar Bluet is a common to abundant damselfly throughout the state up to about 2,000 m.a.s.l. We have found it much less frequently at higher elevations, but records are available from sites as high as 3,600 m.a.s.l. In Colorado most females of both the blue and tan morphs, unlike other bluets in Colorado, have a yellowish-tan antehumeral stripe that contrasts with the other light-colored areas of the thorax as in the below photo.



Enallagma civile, female. Weld Co., Union Reservoir, 27 June 2014. Photo by Inez Prather.

***Enallagma clausum* Morse (Alkali Bluet)**

This species is at widely scattered localities in Colorado from ponds, sloughs and lakes in the San Luis Valley, where they are numerous and easily found, to playas and large lakes in the Great Plains and northwestern Colorado, where they are greatly outnumbered by other species of *Enallagma* and easily overlooked. Bird and Rulon (1933) found *E. clausum* at beaver ponds, 2,770 m.a.s.l. in Gunnison County. We have become aware of this species in populations of other *Enallagma* species by the unusual olive coloration of some females.

****Enallagma ebrium* (Hagen) (Marsh Bluet)**

This species was discovered by B. Smith-Patten and M. Patten in ponds and sloughs in Alamosa County in the San Luis Valley in 2013 (Odonata Central #401779 Abbott 2006-2014). We found it was common in the same habitats and even in atypical habitat at the edges of the Rio Grande (Paulson 2009) in Alamosa in 2014. This area is several hundred km from any other known population of Marsh Bluet.

***Enallagma hageni* (Walsh) (Hagen's Bluet)**

Bick and Hornuff (1974) reported they found one male at an unnamed location in Washington County. We have found *E. hageni* in Colorado only at seepage ponds below the Prewitt Reservoir Dam in Washington County. In this location it occurs with and is greatly outnumbered by *E. boreale*, *E. civile*, *E. carunculatum*, and *E. praevarum* and easily overlooked.

***Enallagma praevarum* (Hagen) (Arroyo Bluet)**

This is the most numerous Odonata species at many small ponds on the Great Plains and has also been found on a few slow streams. We have examined no specimens from higher than 1,600 m.a.s.l. or from western Colorado. Males in Colorado usually have a diamond or arrowhead-shaped black mark on abdominal segment two that sometimes spans the entire segment and an extended needle-like point on the black mark on segment three that help separate Arroyo Bluets from other *Enallagma* species in the field.



Enallagma praevarum, male. Photo by Inez Prather.

****Enallagma signatum* (Hagen) (Orange Bluet)**

Single specimens of this species collected from Yuma and Larimer counties in 1986 and 1990 were the only Colorado records until a robust population was found in Boulder County in 2002-2003. Since then, populations have been found in Larimer, Pueblo, Fremont, and Morgan counties on the Great Plains and at Rifle in Garfield County in western Colorado. The species seems to be increasing and spreading in Colorado.

***Enallagma vesperum* Calvert (Vesper Bluet)**

The CSUC has one specimen, a female collected on the Purgatoire River in Las Animas County on 6 September 1994. The previously published record of a female from

Yuma County (Evans 1988) was based on a misidentification of *E. signatum*, actually the first state record for that species.

***Ischnura barberi* Currie (Desert Forktail)**

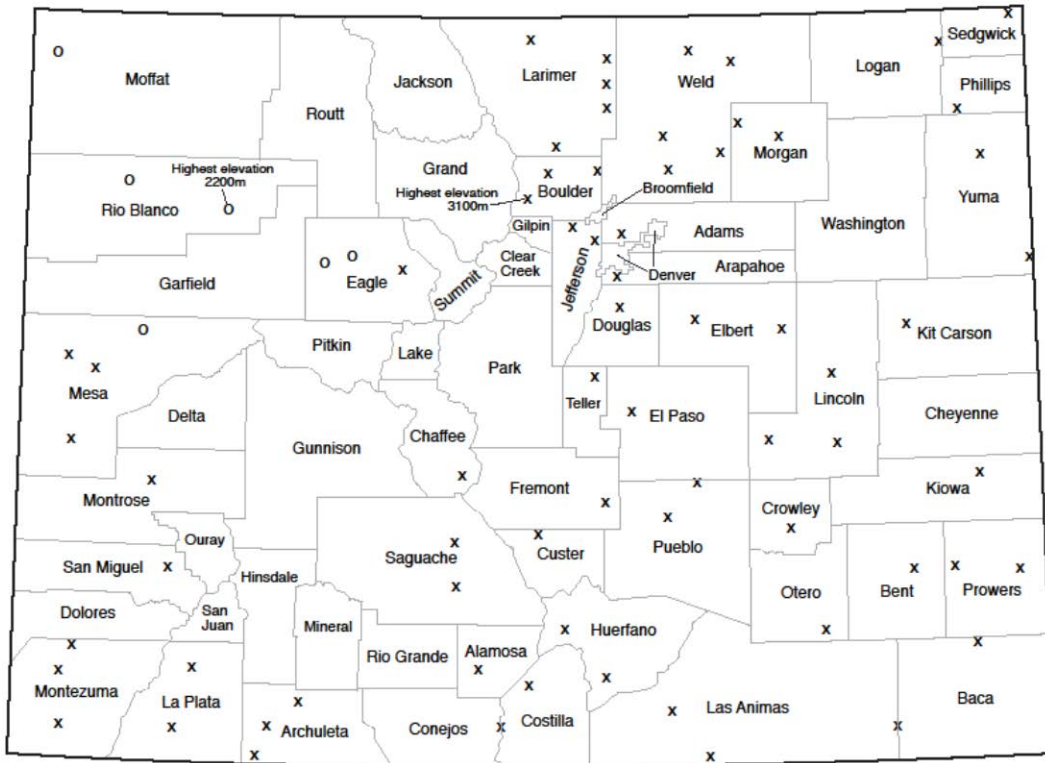
Evans (1988) listed this species for the state without any location or specimen records on the basis of Muttkowski (1910). We found and collected specimens in 2006 in gravel ponds near Grand Junction, Mesa County in western Colorado, and it was independently reported as occurring in Mesa County by Potter (2006). Recently, single specimens have been taken and photographed in Bent and Yuma counties and a population has been found in Cheyenne County on the Great Plains in eastern Colorado (M. Peterson 2014, personal communication).

***Ischnura cervula* Selys (Pacific Forktail)**

This species occurs in western Colorado from lentic habitats in the Colorado, Rio Blanco, Green, and Yampa river drainages to at least 2,200 m.a.s.l. We know of no verifiable records from east of the Continental Divide in Colorado. All specimens in the CSUC from eastern Colorado labelled “*Ischnura cervula*” are actually *I. damula*. Although both species have been found in the Colorado River Valley, we have not found any location where they are sympatric.

***Ischnura damula* Calvert (Plains Forktail)**

This species is usually the most commonly collected, photographed and observed forktail species throughout most of the state to about 1,800 m.a.s.l. and less commonly at higher elevations. We have one specimen from greater than 3,100 m.a.s.l. in Boulder County. We have examined no records from north of the Colorado River Valley in western Colorado.



Distribution of records of *Ischnura cervula* (o) and *Ischnura damula* (x).

***Ischnura demorsa* (Hagen) (Mexican Forktail)**

We have collected this species in Baca and Las Animas counties in southeastern Colorado, and Conejos and Costilla counties in the San Luis Valley. Evans (1988) listed it from Denver County (Calvert 1903) and cited a specimen in the United States National Museum, Smithsonian Institution, Washington D.C. from Larimer County and a specimen in the Museum of Zoology, University of Michigan, Ann Arbor from Prowers County. Typically, this species is far outnumbered by *I. perparva* or *I. verticalis* at Colorado locations and can be easily overlooked.

***Ischnura denticollis* (Burmeister) (Black-fronted Forktail)**

We observed and collected this species in southeastern Colorado north to Yuma and Lincoln counties and it has recently been photographed in Pueblo and Fremont Counties (Odonata Central # 427503 and 427487 Abbott 2006-2014) We determined that the reported specimens from Saguache County in the San Luis Valley (Evans 1995) are *I. damula*.

***Ischnura hastata* (Say) (Citrine Forktail)**

The CSUC has one specimen, a male collected by the authors at Two Buttes Reservoir in Baca County on 4 August 2005. Another was photographed by L. Semo near Beecher Island in Yuma County (Odonata Central #325897 Abbott 2006-2014). The previously published specimen from La Plata County listed by Evans (1988) as *Anomalagrion hastatum* (Say) in the CSUC collection is a male *Ischnura* now missing the terminalia, but clearly does not have the distinctive pterostigma of *I. hastata* and is probably *I. perparva*.

***Ischnura perparva* McLachlan (Western Forktail)**

This species is regularly found throughout the state at lower elevations. It has also rarely been found at high elevations, we have one specimen from 3,100 m.a.s.l. in Boulder County. On the eastern Great Plains and sometimes even in the foothills the Western Forktail is usually outnumbered by *I. verticalis* and easily overlooked.

***Ischnura verticalis* (Say) (Eastern Forktail)**

This species is commonly observed and collected from suitable habitats on the Great Plains and along the foothills of the Front Range to about 1,700 m.a.s.l.

Anisoptera-Dragonflies

Aeshnidae-Darners

***Aeshna constricta* Say (Lance-tipped Darner)**

The CSUC has three specimens collected by the authors from Walker State Wildlife Area, Mesa County in western Colorado and Tamarack Ranch State Wildlife Area, Logan County in northeastern Colorado. It has been more recently photographed in Yuma and Washington counties in northeastern Colorado by S. Mlodinow (Odonata Central #426163 and 334019 Abbott 2006-2014). As Dunkle (2000) stated that this species' habitat is "Marshy ponds and slow streams in the open below 1,000 ft" (308 m.a.s.l.). We do not expect to find this species at higher elevations in Colorado. The above specimens and photographs were taken at altitudes 1,100 to 1,400 m.a.s.l. and usually at temporary ponds, a typical habitat (Paulson 2009). Evans (1988) cited a record from Archuleta County (Hagen 1875) and a record from Grand County in CSUC, but this specimen is actually *A. palmata*.

***Aeshna eremita* Scudder (Lake Darner)**

CSUC has specimens of this species only from high-elevation (above 2,500 m.a.s.l.) lakes in Larimer County. Ann Cooper photographed this species in Boulder County (Odonata Central # 426680 Abbott 2006-2014). Donnelly (2004a) lists it from Lake, Pitkin, and Summit counties also. These locations in Colorado represent the southernmost extent of the known range of *A. eremita*.

***Aeshna interrupta* Walker (Variable Darner)**

This species is often collected and observed throughout the state except on the far eastern and southeastern Great Plains. *Aeshna i. interna* Walker is the subspecies occurring in Colorado. Populations are almost always associated lentic habitats that include *Typha* (cat-tail) stands.

***Aeshna juncea* (Linnaeus) (Sedge Darner)**

This species is found in the mountains above 2,600 m.a.s.l. in elevation. The CSUC has specimens from Boulder and Larimer counties. Donnelly (2004a) lists this taxon from Moffat and Pitkin counties, Abbott (2006-2014, Odonata Central #298132) from Gunnison County and Hess (1940) from El Paso County or Teller County.

***Aeshna palmata* Hagen (Paddle-tailed Darner)**

A common and widespread species in Colorado, it occurs throughout the montane regions, western Colorado, and Great Plains as far east as eastern Weld County. Specimens have been taken from 1,400-3,300 m.a.s.l.

****Aeshna sitchensis* Hagen (Zigzag Darner)**

The CSUC has one specimen, a male taken at Pingree Park, Larimer County, by J. Anderson on 6 September 2010. The Zigzag Darner may also occur in the mountains of northwestern Colorado, an area much closer to its previously known range in Wyoming and Utah (Paulson 2009).

***Aeshna umbrosa* Walker (Shadow Darner)**

This species is collected and photographed on rivers and streams throughout the state but are represented by relatively few specimens in the CSUC. The highest altitude we have taken a specimen is from 2,100 m.a.s.l. in Montezuma County and the lowest altitude is 1,070 m.a.s.l. in Yuma County. It is one of the few species that is regularly found patrolling fast-flowing foothills streams.

***Anax junius* (Drury) Common Green Darner**

This annual migrant is found in suitable habitats throughout the state at lower elevations. Specimens were collected at elevations to about 2,500 m.a.s.l. It is a strong migrant (Paulson 2009), with many individuals appearing from the south in early spring. It should be noted there may be Colorado populations of this darner that successfully

overwinter as larvae. Additionally, as DuBois (2010) mentions, there may be nonmigratory populations.

***Rhionaeschna californica* (Calvert) (California Darner)**

This species is of localized occurrence in northwestern Colorado. The first specimen for the state was collected by K. Miller at Lake Christine, Eagle County on 22 May 1989. On 12 June 2009 a population was still extant at that site. Donnelly (2004a) also listed this species from Moffat County.

***Rhionaeschna multicolor* (Hagen) (Blue-eyed Darner)**

This species can be abundant throughout Colorado at elevations up to 2,100 m.a.s.l. and is the most collected and photographed darner in the state.

Gomphidae-Clubtails

***Arigomphus cornutus* (Tough) (Horned Clubtail)**

The CSUC has single adult specimens from Denver and Jefferson counties and a larva from Logan County. It was also photographed near Jamestown, Boulder County in August 2010 (Odonata Central #372063 Abbott 2006-2014) and Douglas County in 2013 (Odonata Central #402938 Abbott 2006-2014). These locations range from 1,100 to 2,700 m.a.s.l.

****Dromogomphus spoliatus* (Hagen) (Flag-tailed Spinyleg)**

The CSUC has two male specimens of this species both taken at Hale Ponds State Wildlife Area, Yuma County, 13 July 2007 by the authors and 4 September 2009 by D. Leatherman.

****Erpetogomphus compositus* Hagen in Selys (White-belted Ringtail)**

The CSUC has specimens from far western Colorado, the Dolores River, Mesa County (Prather and Prather 2004) and McElmo Creek, Montezuma County, taken by D. Leatherman on 26 August and 1 September 2009.

***Erpetogomphus designatus* Hagen in Selys (Eastern Ringtail)**

This eastern species is collected, sometimes only as single individuals, at suitable habitats in the Arkansas and Republican River drainages in the southeastern and eastern Great Plains. This species can be more common along the Arkansas River at Lamar, the lower Purgatoire River, and John Martin Reservoir.



Erpetogomphus designatus, male. Prowers Co., Arkansas River, 19 May 2011.
Photo by David Leatherman.

***Gomphus externus* Hagen in Selys (Plains Clubtail)**

The CSUC has specimens of this species from Bent, Yuma, and Las Animas counties. One was photographed in Logan County in 2010 by L. Semo (Odonata Central # 320118 Abbott 2006-2014).

***Gomphus graslinellus* Walsh (Pronghorn Clubtail)**

The CSUC has two adult specimens of this species from Larimer and Weld counties in North-central Colorado. Steve Hummel collected a specimen along the Poudre River in Larimer County July 2011 and R. Hopper photographed one at Long Pond, Larimer County on July 2013. Larvae have been found several times in the backwater areas of the Poudre River (Environmental Learning Center), Fort Collins, Larimer County.

***Gomphus militaris* Hagen in Selys (Sulphur-tipped Clubtail)**

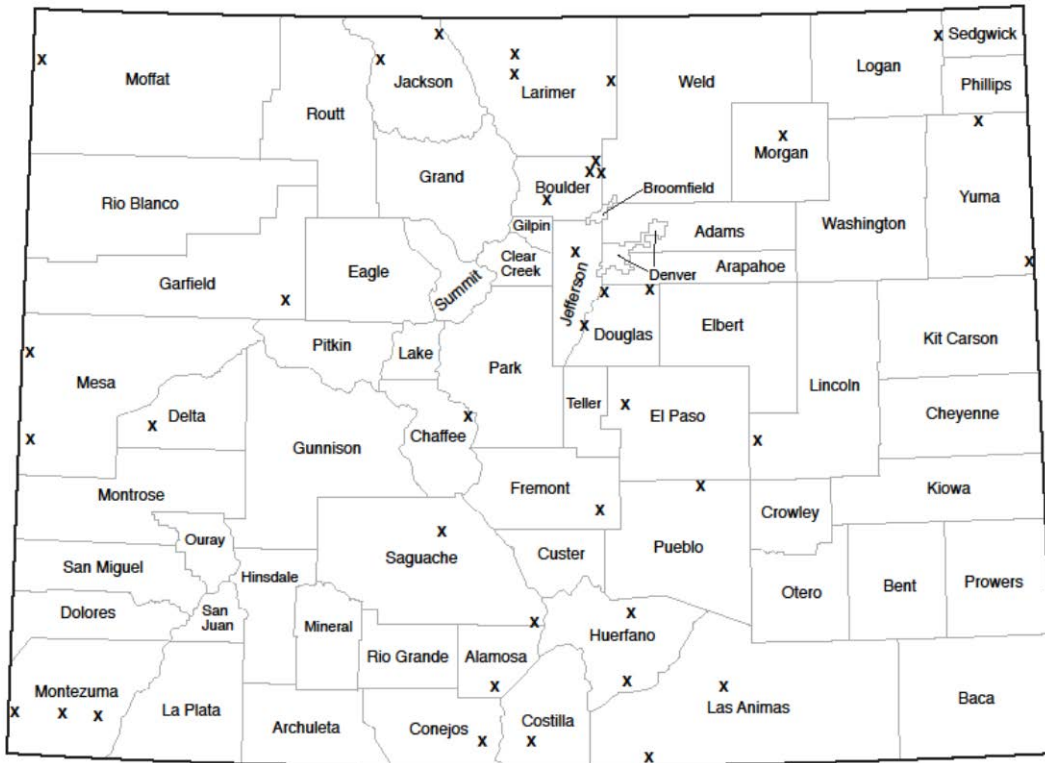
This species is the most commonly collected and photographed clubtail throughout the Great Plains. *Gomphus militaris* can be found abundantly at several sites close to the eastern border of Colorado. Evans (1988) reported it only from three southeastern counties but recent collections and photographs indicate it can be found west to at least 2700 m.a.s.l. in the foothills (Odonata Central #424292 Abbott 2006-2014) and north to close to the Wyoming and Nebraska borders.

Ophiogomphus severus Hagen (Pale Snaketail)



Ophiogomphus severus, female. Photo by Jerry Hatfield.

This is a common species of larger permanent streams and rivers between 1,500 and 2,500 m.a.s.l. throughout most of Colorado. It is often the most abundant dragonfly species along foothill lotic habitats. We have seen no records from the far eastern Great Plains south of Yuma County.



Records of *Ophiogomphus severus*, a common and widespread species in Colorado except on the southeastern Great Plains.

***Progomphus obscurus* (Rambur) (Common Sanddragon)**

This species has been occasionally found at a few river sites with shifting sand bottoms on the far eastern Great Plains. It may have been more common and widespread before all the larger streams of eastern Colorado were greatly impacted by agriculture and urbanization, primarily due to diversion and dewatering. Hess (1940) indicated it was present in the Pikes Peak region (El Paso and surrounding counties) at 2,000 m.a.s.l. in elevation, but we have examined no material from that area.

***Stylurus intricatus* (Hagen) in Selys (Brimstone Clubtail)**

Stylurus intricatus was first reported in Colorado at Grand Junction in Mesa County by Kormondy (1960). The CSUC has two specimens: from the Dolores River in Mesa County in the far western portion of the state and the Purgatoire River in Otero

County in the southeastern portion of the state. Suitable riverine habitat in Colorado has been eliminated in most areas by development of water resources.

Cordulegastridae- Spiketails

***Cordulegaster dorsalis* Hagen in Selys (Pacific Spiketail)**

The CSUC has specimens of this beautiful species from West Creek in Mesa County and Beaver Creek in Moffat County (Prather and Prather 2004). Both locations are close to 1,800 m.a.s.l. Abbott (2006-2014, Odonata Central #317998) listed a record from Rifle Falls State Park in Garfield County at about 2,100 m.a.s.l. in elevation. The subspecies in Colorado is *C. d. deserticola* Cruden.

Corduliidae-Emeralds

***Cordulia shurtleffi* Scudder (American Emerald)**

This species is found associated with a few pristine lakes in the Colorado mountains above 2,700 m.a.s.l. It occurs in several of the same locations as *Somatochlora hudsonica* in the northern mountains but usually in smaller numbers. The range of American Emerald in Colorado is more extensive than the latter species, having been found as far south as Gunnison County (Dubois 2010).

***Epitheca cynosura* (Say) (Common Baskettail)**

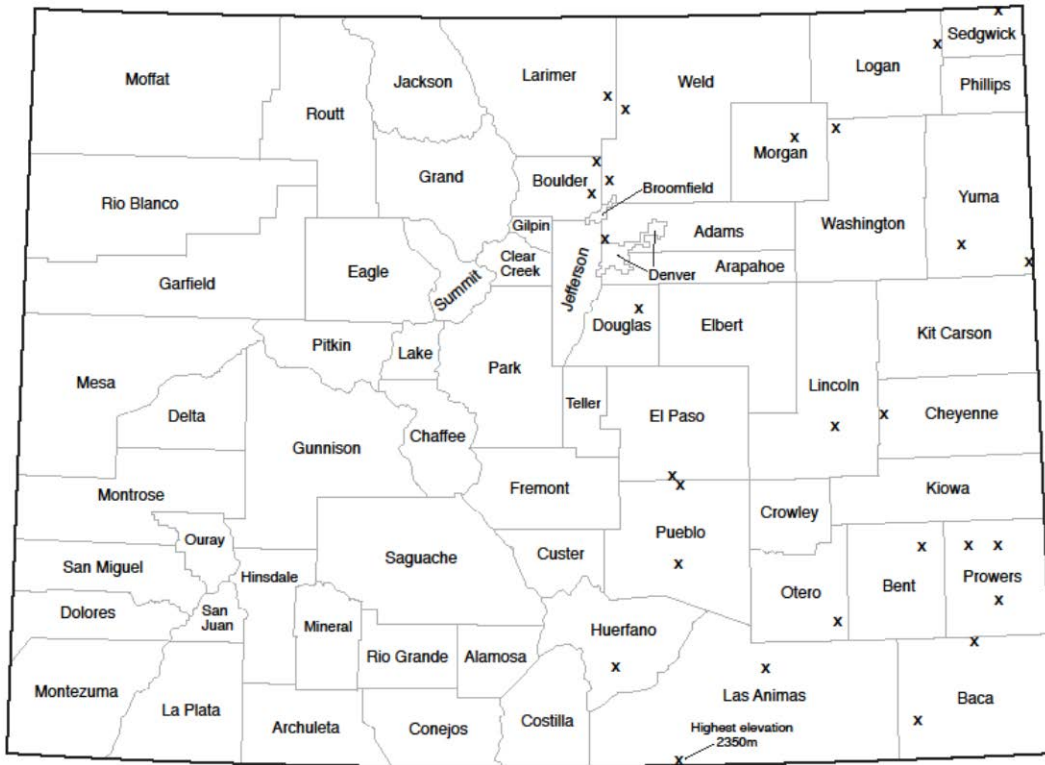
The CSUC has three male specimens that we believe to be this taxon from Hale Ponds, Yuma County close to the Kansas border. They are shorter (39-40 mm) and have relatively shorter abdomens than *E. petechialis* specimens taken at the same location. Specimens of *E. petechialis* collected throughout the Great Plains of Colorado consistently measure 41-43 mm in length. We have found other identifying characteristics (Needham et al. 2014) inadequate in separating these two taxa in Colorado if, in fact, there are two taxa.

***Epitheca petechialis* Muttkowski (Dot-winged Baskettail)**

This species has been collected throughout the Great Plains and at a foothill lentic habitat, Lake Maloya at the New Mexico border in Las Animas County, 2350 m.a.s.l. Numerous specimens examined have no obvious spots on the wings and could be identified using the key in Needham et al. (2014) to *E. cynosura* but are otherwise indistinguishable from specimens of *E. petechialis* with typical spotting on the wings. Additional material is needed to clarify the status of the two species in Colorado.



Epitheca petechialis, female without spots on antenodal veins. Lincoln Co., 1 June 2014.
Photo by Inez Prather.



Distributional records of *Epitheca petechialis*.

****Epitheca princeps* Hagen (Prince Baskettail)**

Males of this eastern species were observed at Hale Ponds, Yuma County annually 2007-2009. The authors collected three specimens on 13 July 2007 whose wings range from being mostly clear to having large typical black markings.

***Somatochlora ensigera* Martin (Plains Emerald)**

Williamson (1907) described a single male specimen taken in 1898 in Jefferson County at about 2400 m.a.s.l. as *S. charadraea*, a new species. The description matches and is accepted as synonymous with *S. ensigera* (Needham et al. 2014), described by Martin (1906). Hess (1940) listed it as occurring mostly “within a 25-mile radius of Pikes Peak” at elevations between 1800 and 2000 m.a.s.l. This area description could include parts of Pueblo, Fremont, Teller, El Paso, Park, and Douglas counties. We have found no specimens, photographs or literature records to document the occurrence of *S.*

ensigera in Colorado since 1932. It has been found more recently as close to Colorado as western Nebraska (Abbott 2006-2014).

***Somatochlora hudsonica* (Hagen) in Selys (Hudsonian Emerald)**

This species is occasionally found in relatively large numbers at edges of certain lentic habitats in northern mountains above 2,700 m.a.s.l. The CSUC has specimens from Boulder, Larimer and Park counties. The record from Teller County listed in Evans (1988) seems to be an error due to confusion between Teller Lakes (Gilpin or Boulder County) and Teller County.



Somatochlora hudsonica, male. Larimer Co., 23 July 2010.
Photo by Inez Prather.

***Somatochlora minor* Calvert (Ocellated Emerald)**

This species was first collected in Colorado by the H.E. and M.A. Evans at 2,400 m.a.s.l. along South Lone Pine Creek in Larimer County on 5 July 1984. We found it in the same area annually 2008-2011. David Leatherman captured a male in Grandview Cemetery, Fort. Collins, Larimer County (1,500 m.a.s.l.) in 2010 and one was photographed in Rocky Mountain National Park (Odonata Central #378357 Abbott 2006-2014) by J. Barr.

***Somatochlora semicircularis* (Selys) (Mountain Emerald)**

This species is found throughout the montane areas above 2,700 m.a.s.l. The CSUC has specimens from Boulder, Gilpin, Gunnison, Larimer, Mesa, Pitkin, Routt, and Summit counties. It seems to be much more widespread than *S. hudsonica*, but occurs in smaller numbers where the two species co-occur.

Libellulidae-Skimmers

****Brechmorhoga mendax* (Hagen) (Pale-faced Clubskimmer)**

Adult males of this species were found patrolling the Arkansas River in Bent County in June of 2010 by D. Leatherman. He collected one specimen on 15 June 2010 and the authors observed several and collected one on 18 June 2010. The CSUC has larval specimens collected from Fountain Creek in El Paso County. One was photographed in Yuma County in 2012 (Odonata Central #381597 Abbott 2006-2014) and in July 2014 a male was seen patrolling the swollen and muddy Purgatoire River in Bent County.

****Celithemis elisa* (Hagen) (Calico Pennant)**

This species is locally common in northeastern Colorado in recent years and appears to be expanding its range. It was first found in Boulder County in 2001 (Prather and Prather 2003) and adults have also now been collected and photographed in Larimer, Logan, Phillips, Yuma, and Kiowa counties.

***Celithemis eponina* (Drury) (Halloween Pennant)**

Evans (1988) listed this species as barely entering the state from the east, but *C. eponina* is now known from many sites throughout the Great Plains as far west as the Front Range, sometimes found in large numbers.

****Dythemis fugax* Hagen (Checkered Setwing)**

Bill Maynard discovered a robust population of this species at Valco Ponds, Pueblo County in 2012 (Odonata Central #377258 Abbott 2006-2014) and it was still extant in 2013 and 2014.



Dythemis fugax, male. Pueblo Co., 27 July 2012. Photo by Bill Maynard.

****Dythemis velox* Hagen (Swift Setwing)**

Males of this species were collected at Hale Ponds, Yuma County in 2006 and 2007. Another male specimen was taken in Baca County in 2010 by D. Leatherman.



Dythemis velox, male. Yuma Co., 3 August 2005. Photo by Inez Prather.

***Erythemis collocata* (Hagen) (Western Pondhawk)**

This species is common at ponds on the Great Plains and in the Colorado River Valley in western Colorado up to about 1600 m.a.s.l. The taxonomic relationship of this species with *E. simplicicollis* (Say) is not clear (Donnelly 2004d). There is sympatry at many sites on the Great Plains. Sometimes we have observed *E. simplicicollis* males in their “peculiar aerial performance” (Needham et al. 2014) of “leapfrogging” each other in flight while nearby *E. collocata* males do not interact except to chase individuals that approach closely. We have however, observed and collected mixed pairs in tandem.

***Erythemis simplicicollis* (Say) (Eastern Pondhawk)**

This species is often common at ponds and similar habitats on the Great Plains up to about 1600 m.a.s.l. Along the eastern border of the state, the Eastern Pondhawk is

much more common than *E. collocata* and it is less common than *E. collocata* along the Front Range.

****Erythemis vesiculosa* (Fabricius) (Great Pondhawk)**

Donnelly (2004b) listing this species in Kiowa County on the Great Plains was the only known record for this taxon from Colorado until 2012 when it expanded across the southwestern United States as far west as California, providing new state and county records. In Colorado patrolling males were found on a remnant slough on the nearly dry South Platte River near the Nebraska border in Sedgwick County, a pair in tandem was observed at Two Buttes Reservoir in Baca County and a single male was photographed in Fremont County. The Sedgwick County record is about 200 km north of any other reported record of *E. vesiculosa* (Abbott 2006-2014). The species has not been reported in Colorado since 2012.



Erythemis vesiculosa, male. Sedgwick Co., 8 June 2012. Photo by Inez Prather.

***Leucorrhinia borealis* (Hagen) (Boreal Whiteface)**

This species has been collected only at higher elevations in the northern montane areas. The CSUC has specimens from above 2,700 m.a.s.l. in Larimer and Rio Blanco counties. Bick and Hornuff (1974) captured two males in Mesa County.

****Leucorrhinia glacialis* Hagen (Crimson-ringed Whiteface)**

A female of this species was taken by A. Cooper near Hygiene, Boulder County in July of 2010 and the specimen is now in the CSUC. A male was photographed by A. DeGiovine-Olivera in Larimer County during the Dragonfly Society of the Americas convention in 2011 (Odonata Central #374194 Abbott 2006-2014).

***Leucorrhinia hudsonica* (Selys) (Hudsonian Whiteface)**

This relatively common species of the genus occurs above 2,400 m.a.s.l. in suitable habitats in northern and central montane areas of the state. Shallow fishless ponds and sloughs sometimes have scores of patrolling males. The CSUC has specimens from Boulder, Larimer, Eagle, Grand, Jackson, Gunnison, Mesa, and Pitkin counties.

***Leucorrhinia intacta* (Hagen) (Dot-tailed Whiteface)**

This species has been collected at scattered locations throughout the state usually below 2,000 m.a.s.l. We have rarely seen more than one or two at a time at any site.

***Leucorrhinia proxima* Calvert (Belted Whiteface)**

This species has been found in scattered locations in suitable habitats above 2,400 m.a.s.l. in the northern and western montane regions of the state. The CSUC has specimens from Boulder, Larimer, Jefferson, Moffat, and La Plata counties.

****Libellula composita* (Hagen) (Bleached Skimmer)**

This species occurs at spring-fed lakes, ponds, and sloughs on eastern plains, sometimes abundantly (Kondratieff and Durfee 2010). The first known specimen for the state was taken by B. Kondratieff in Lincoln County on 11 July 1991 and now has been also found in Weld, Kiowa, Prowers, Pueblo, and Bent counties.



Libellula composita, male. Prowers Co., Willow Creek, Lamar, July, 9 2009.
Photo by David Leatherman.

***Libellula forensis* Hagen (Eight-spotted Skimmer)**

This species occurs in ponds and small lakes, often with abundant macrophytes, throughout the state usually below 2,600 m.a.s.l. It may be absent from the extreme southeastern Great Plains.

***Libellula luctuosa* Burmeister (Widow Skimmer)**

This species is common, often the most conspicuous Odonata species, at suitable habitats on the Great Plains, and also rarely found in western Colorado river valleys below 1,700 m.a.s.l.

***Libellula nodisticta* Hagen (Hoary Skimmer)**

This species has been collected at Cottonwood Creek in Baca and Las Animas counties and at a hot springs in Saguache County at 2,400 m.a.s.l. Males have been photographed in 2013 and 2014 at Chico Basin Ranch in Pueblo County and the authors observed a male at the Rifle State Wildlife Area in Garfield County in 2011.



Libellula nodisticta, male. Las Animas/Baca Co. line, near Cottonwood Creek, 3 July 2005.
Photo by Inez Prather.

***Libellula pulchella* Drury (Twelve-spotted Skimmer)**

This conspicuous species is one of the most observed, collected and photographed species of Odonata in the state, occurring from lowest altitude to over 3,000 m.a.s.l. and border to border.

***Libellula quadrimaculata* Linnaeus (Four-spotted Skimmer)**

This Holarctic species occurs in suitable habitats, usually fishless ponds and small lakes, throughout the western two-thirds of the state from about 1,500 to over 3,000 m.a.s.l. Evans (1988) listed also a record from Yuma County in the eastern Great Plains.

Libellula saturata Uhler (Flame Skimmer)



Libellula saturata, male. Prowers Co., Clay Creek, 27 July 2007.
Photo by David Leatherman

This beautiful and distinctive species is collected and photographed throughout the Arkansas River Valley drainage in eastern Colorado and in western Colorado valleys below 1,800 m.a.s.l.

****Orthemis ferruginea* (Fabricius) (Roseate Skimmer)**

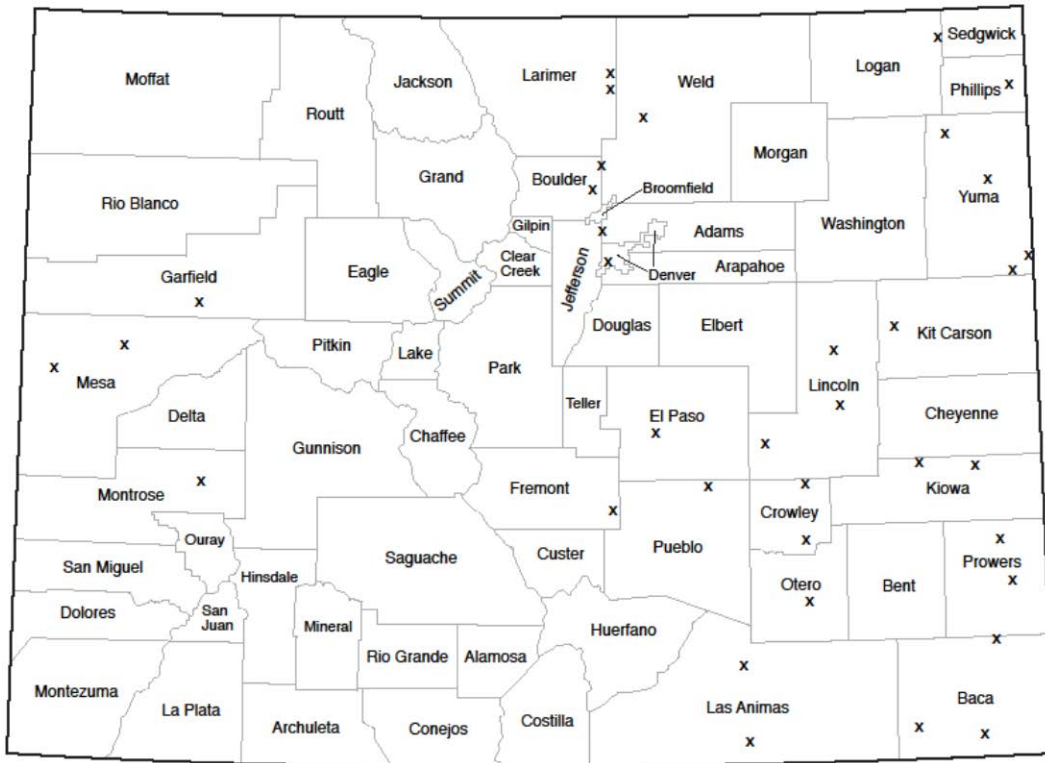


Orthemis ferruginea, male. Larimer Co., Cottonwood Hollow Natural Area, Fort Collins, 6 September 2007. Photo by David Leatherman.

This species, a strong flyer often found far from breeding habitats, has now been found at several sites in eastern Colorado. A male and female were collected at Fort Collins, Larimer County in 2007 by D. Leatherman. The authors collected specimens from Yuma and Baca counties and the species has also been observed in Kiowa, Jefferson, Sedgwick, and Fremont counties. Although mating pairs have been observed, it is not known if larva can overwinter in Colorado or if all the records have been of adults migrating from areas south of the state.

***Pachydiplax longipennis* (Burmeister) (Blue Dasher)**

This species is often common in suitable habits such as shallow ponds and reservoirs on the Colorado Great Plains below 1,800 m.a.s.l. It also occurs at similar altitude in the river valleys of western Colorado in Montrose, Mesa, and Garfield counties.



Distribution of records of *Pachydiplax longipennis*, a common and widespread species at lower altitudes in Colorado.

***Pantala flavescens* (Fabricius) (Wandering Glider)**

This migratory species colonizes usually fishless habitats throughout the Great Plains and is known from Mesa County in western Colorado below 1,600 m.a.s.l.

***Pantala hymenaea* (Say) (Spot-winged Glider)**

This migrant species is sometimes observed locally, for example at John Martin Reservoir, Bent County, in large numbers and occasionally it is found elsewhere on the Great Plains. David Leatherman took a specimen in Montezuma County in western Colorado in August 2009.

Perithemis tenera (Say) (Eastern Amberwing)



Perithemis tenera, male. Larimer Co., Prospect Ponds Natural Area, Fort Collins, 15 July 2008. Photo by David Leatherman.

This species occurs at lakes and ponds on the Great Plains, with sometimes dozens of individuals being found. The Eastern Amberwing seems to have spread rapidly to the west and north in Colorado. Evans (1988) listed it only from Baca County. Presently, it now has been recorded west to Fremont County and north to Larimer County on the Great Plains. We have seen no records from the mountains or Western Colorado.

***Plathemis lydia* (Drury) (Common Whitetail)**

This widespread North American species is common at a wide variety of lentic and lotic habitats on the Great Plains below 1,800 m.a.s.l. Evans (1988) indicated a record from Archuleta County in western Colorado.

***Plathemis subornata* Hagen (Desert Whitetail)**

This beautiful southwestern species occurs in scattered sites, mostly springs and seeps on the Great Plains in eastern Colorado and in Archuleta (Williamson 1906) and Mesa counties in western Colorado below 1900 m.a.s.l.

****Pseudoleon superbis* (Hagen) (Filigree Skimmer)**

Eric Eaton photographed a male in El Paso County in 2014 (Odonata Central #424292 Abbott 2006-2014) Searches by several individuals in the following days failed to locate this or other individuals. Although, the habitat was similar to habitats we have seen for this species in Arizona, this site is 300 km north of available reported records for the Filigree Skimmer (Odonata Central Abbott 2006-2014).



Pseudoleon superbus, male. El Paso Co., 3 July 2014. Photo by Eric Eaton.

***Sympetrum corruptum* (Hagen) (Variegated Meadowhawk)**

The Variegated Meadowhawk is one of the most common dragonflies throughout the state below 2,300 m.a.s.l. We have seen large swarms of this species in eastern Colorado and it has sometimes been found at elevations as high as 3,962 m.a.s.l. (Bethel 1915). Adults, perhaps migrants from the south, are active as early as February and individuals are found as late as November and December.

***Sympetrum costiferum* (Hagen) (Saffron-winged Meadowhawk)**



Sympetrum costiferum, male. Larimer Co., Cottonwood Hollow Natural Area, Fort Collins, Oct 5, 2009. Photo by David Leatherman.

Sympetrum costiferum occurs in late summer and fall in the foothills and nearby Great Plains along the Front Range of Larimer to Costilla counties.

***Sympetrum danae* (Sulzer) (Black Meadowhawk)**

This distinctive meadowhawk occurs uncommonly in the montane region of the state at suitable habitats up to 3,000 m.a.s.l. and sometimes as low as 1,500 m.a.s.l. in western Colorado and on the Great Plains near the Front Range.

***Sympetrum internum* Montgomery (Cherry-faced Meadowhawk)**

This species occurs throughout most of the state, sometimes in abundance at suitable habitats, usually at 1,000 to 3,100 m.a.s.l. We have found no records from the Great Plains south of Lincoln County and east of Pueblo County.

***Sympetrum madidum* (Hagen) (Red-veined Meadowhawk)**

Evans (1988) cited a single record of this species in Colorado from Gunnison County. In 2008, we discovered a robust population in the Lost Lake area north of Red Feather Lakes in Larimer County. Another population was found at Sombrero Marsh, Boulder County in 2009 and 2010. There are records now available from eastern Colorado counties of Logan and Weld and also from western Colorado in Moffat County. This species may be expanding its range in Colorado.

***Sympetrum obtrusum* (Hagen) White-faced Meadowhawk**

This species appears to be common throughout the state except in the southernmost tier of counties and the southeastern portion of the Great Plains where there are very few records. We have examined specimens from the lowest altitude of the state to about 2,300 m.a.s.l.

***Sympetrum pallipes* (Hagen) (Striped Meadowhawk)**

This species inhabits suitable habitats from the western edge of the Great Plains near the Front Range west to the Utah border below 2,400 m.a.s.l. It is much less common farther east in the Great Plains. We have one specimen from the eastern Great Plains in Logan County and B. Maynard photographed another specimen in Prowers County in 2013 (Odonata Central # 400481 Abbott 2006-2014).

***Sympetrum rubicundulum* (Say) (Ruby Meadowhawk)**

We have collected adults of this species only at prairie playas in Logan and Sedgwick counties. Donnelly (2004c) indicated locations from Morgan County and S.

Mlodinow photographed one in Washington County (Odonata central #326645 Abbott 2006-2914). Evans (1988) indicated records from other counties but specimens in the CSUC represent other taxa, mostly *S. internum*. Colorado specimens of both sexes have extensive orange wing bases.



Sympetrum rubicundulum, female. Logan Co., Tamarack Ranch, 27 August 2010.
Photo by Inez Prather.

***Sympetrum semicinatum* (Say) (Band-winged Meadowhawk)**

This common and conspicuous dragonfly has been collected throughout the state below 2,100 m.a.s.l. The amount of amber in the wings varies considerably in Colorado, but most individuals match the description of *S. semicinatum fasciatum* Walker, formerly considered a form of *S. occidentale* Bartenev, now considered conspecific with *S. semicinatum* (Abbott 2005, Paulson 2009).

***Sympetrum vicinum* (Hagen) (Autumn Meadowhawk)**

This species has been collected from suitable sites throughout the Great Plains in Colorado. A record of one male and two female teneral at 2773 m.a.s.l. in Gunnison County (Bird and Rulon 1933) needs verification as the Autumn Meadowhawk has not otherwise been found at high altitude or west of the Continental Divide in Colorado.

***Tramea lacerata* Hagen (Black Saddlebags)**

This species is relatively common throughout the Great Plains, but has only rarely been found in the river valleys of western Colorado below 1,600 m.a.s.l.

***Tramea onusta* Hagen (Red Saddlebags)**

This species is commonly found on the southern Great Plains, sometimes “swarming” locally in large numbers. Less commonly found on the northern Colorado Great Plains and in the river valleys of western Colorado below 1,650 m.a.s.l.

Unverified Species

We have been unable to examine specimens or find descriptions or photographs of the following species in Colorado.

****Enallagma geminatum* Kellicott (Skimming Bluet)**

Paulson (2009) indicated by a range map the occurrence of this species in northeastern Colorado. We have not been able to verify its occurrence but it has been found within 10km of the Colorado border in the South Platte River Valley in Nebraska. (Odonata Central #336380 Abbott 2006-2014).

***Hesperagrion heterodoxyn* (Selys) (Painted Damsel)**

Donnelly (2004c) lists this species from Mesa, Boulder, and Larimer counties, using records from Evans (1988 and personal communication). We found that the records from Boulder and Larimer counties were based on misidentifications and we could find no specimens to verify the Mesa County record. There are records of Painted Damsel from the Rio Grande Valley in northern New Mexico within 150 km of the Colorado border (Abbott 2006-2014).

***Aeshna persephone* Donnelly (Persephone's Darner)**

Evans (1995) listed a record from Mesa County which was subsequently indicated by Donnelly (2004a) and Paulsen (2009) but we have been unable to confirm the occurrence of this species in Colorado. The closest known localities to Colorado for this species are in south-central Utah and north-central Arizona (Odonata Central Abbott 2006-2014)

***Progomphus borealis* McLachlan in Selys (Gray Sanddragon)**

Byers (1939) included Colorado in the range of this species based on Hess (1940) then unpublished paper listing of *P. obscurus* in the Pikes Peak region. Byers (1939) considered that *P. borealis* was the more likely species in that area. Evans (1988) included the Gray Sanddragon in her list of Colorado species but we know of no available specimens from Colorado. The known range of this species includes eastern Utah and northern Arizona and New Mexico (Paulson 2009, Abbott 2006-2014).

***Libellula comanche* Calvert (Comanche Skimmer)**

Evans (1988) included this species without location based on Montgomery (1968). However, no specimens or photographs were examined during this study. *Libellula comanche* is reported from just south and east of Colorado in New Mexico, Oklahoma, and Kansas (Paulson 2009, Abbott 2006-2014).

Acknowledgments

We thank Ann Cooper, David A. Leatherman, Bill Maynard, and Mark Peterson for joining our Odonata-hunting expeditions, helping collect records and for voucher photographs, John C. Abbott, Director, Wild Basin Wilderness Preserve, Wild Basin Creative Research Center, St. Edward's University, Austin, Texas for assisting in specimen identifications and especially Boris C. Kondratieff, Colorado State University for considerable help in collecting records and producing this manuscript.

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