

Identification Guide for Family Macromiidae (Cruisers) in Virginia

There are two (2) [genera](#) and five (5) [species](#) in [Family Macromiidae \(Cruisers\)](#) that can be found in the Commonwealth of Virginia.

Stream Cruiser ([Didymops transversa](#)). MAR 26 – SEP 11.

Allegheny River Cruiser ([Macromia alleghaniensis](#)). JUN 4 – AUG 27.

Swift River Cruiser ([Macromia illinoiensis](#)) MAY 08 – OCT 10. [This species includes two subspecies: *Macromia illinoiensis illinoiensis*; and *Macromia illinoiensis georgina*.]

Mountain River Cruiser ([Macromia margarita](#)). MAY 25 – JUN 15.

Royal River Cruiser ([Macromia taeniolata](#)). MAY 15 – OCT 10.

Source Credits: [A Checklist of North American Odonata](#)

Including English Name, Etymology, Type Locality, and Distribution, by Dennis R. Paulson and Sidney W. Dunkle. [Adult flight periods](#) excerpted from “CHECKLIST OF THE DRAGONFLIES AND DAMSELFLIES OF VIRGINIA, April 2017 and April 2020 updates” by Dr. Steve Roble, Staff Zoologist at the Virginia Department of Conservation and Recreation, Division of Natural Heritage.

General Characteristics for Cruisers

All cruisers have a single stripe on the [lateral](#) sides of their [thorax](#). All cruisers have spots on top of their [frons](#) with the notable exception of Royal River Cruiser (*Macromia taeniolata*), a *key field mark for that species*.

Genus *Didymops*

Stream Cruiser

Stream Cruiser (*Didymops transversa*) is so distinctive in its appearance that no other species of dragonfly looks similar.



Photo credit: [Walter Sanford](#). Stream Cruiser (male).

The following [composite image](#) shows two (2) female terminal [appendages](#) in the background photo; three (3) male appendages are shown in the inset photo.



Photo credit: [Walter Sanford](#). Stream Cruiser (female).

Genus *Macromia*

In contrast with [genus *Didymops*](#), the four species of [genus *Macromia*](#) look similar and can be difficult if not impossible to identify with certainty in the field (especially females of some species).

Accordingly, this identification guide will focus on genus *Macromia*. Our advice (say it over and over like a mantra): Shoot first (photos, that is) and ask questions later. At a minimum, we recommend photos that show both a [dorsal](#) view and [lateral](#) view. The more the better! All of that being said, be sure to get at least one “record shot” — get a shot, any shot, and refine the shot as the subject allows.

Photo-illustrated guides for each species in genus *Macromia* are divided into two sections: one part for males; another part for females. The following field marks can be used to differentiate male versus female dragonflies.

Male: [hamules](#) (secondary genitalia located underneath [abdominal](#) segments two and three (S2-3); three (3) terminal [appendages](#) including

two (2) [cerci](#) and one (1) [epiproct](#); and “indented” hind wings.

Female: thicker abdomen, no hamules; two (2) cerci; and rounded hind wings.

A three-step process can be used to determine the identity of species in genus *Macromia*.

1. Examine the [anterior](#) side of the [thorax](#) for the presence or absence of prominent frontal stripes, sometimes referred to as ante[humeral](#) stripes. This is a key field mark.
2. Examine the pattern of [abdominal](#) bands and spots. Bands on abdominal segments two and seven (S2 and S7) are key field marks. They can appear to be complete or broken dorsally, complete or broken laterally, or can encircle the entire abdominal segment.
3. Examine the pattern of [wing venation](#), as necessary, specifically the [forewing](#) triangle.

Females of Allegheny River Cruiser, Swift River Cruiser (especially the “*Illinois*” subspecies), and Mountain River Cruiser can be extremely difficult to identify.

Females can be very difficult to distinguish. *Source Credit: Paulson, Dennis. [Dragonflies and Damselflies of the East](#) (Princeton Field Guides) (Kindle Location 7243). Princeton University Press. Kindle Edition.*

Where the ranges of the two subspecies of Swift River Cruiser overlap (including the eastern Piedmont and Coastal Plain of Virginia) individuals with intermediate characteristics might be encountered. It will be impossible to assign these individuals to either subspecies. (Donnelly, Tennessen.)

Prominent frontal stripes **are present** in two species of genus *Macromia*: Royal River Cruiser (*Macromia taeniolata*); and Swift “Georgia” River

Cruiser (*Macromia illinoiensis georgina*).

Royal River Cruiser

Male field marks: No pale spots on top of frons; prominent frontal stripes; no club.



Photo used with written permission from [Larry Lynch](#).

Female field marks: No pale spots on top of frons; prominent frontal stripes; either small paired spots or no spots at the base of abdominal segment eight (S8).



Photo used with written permission from [Larry Lynch](#).

Swift “Georgia” River Cruiser

Male field marks: Pale yellow spots on top of frons; prominent frontal stripes; prominent club.

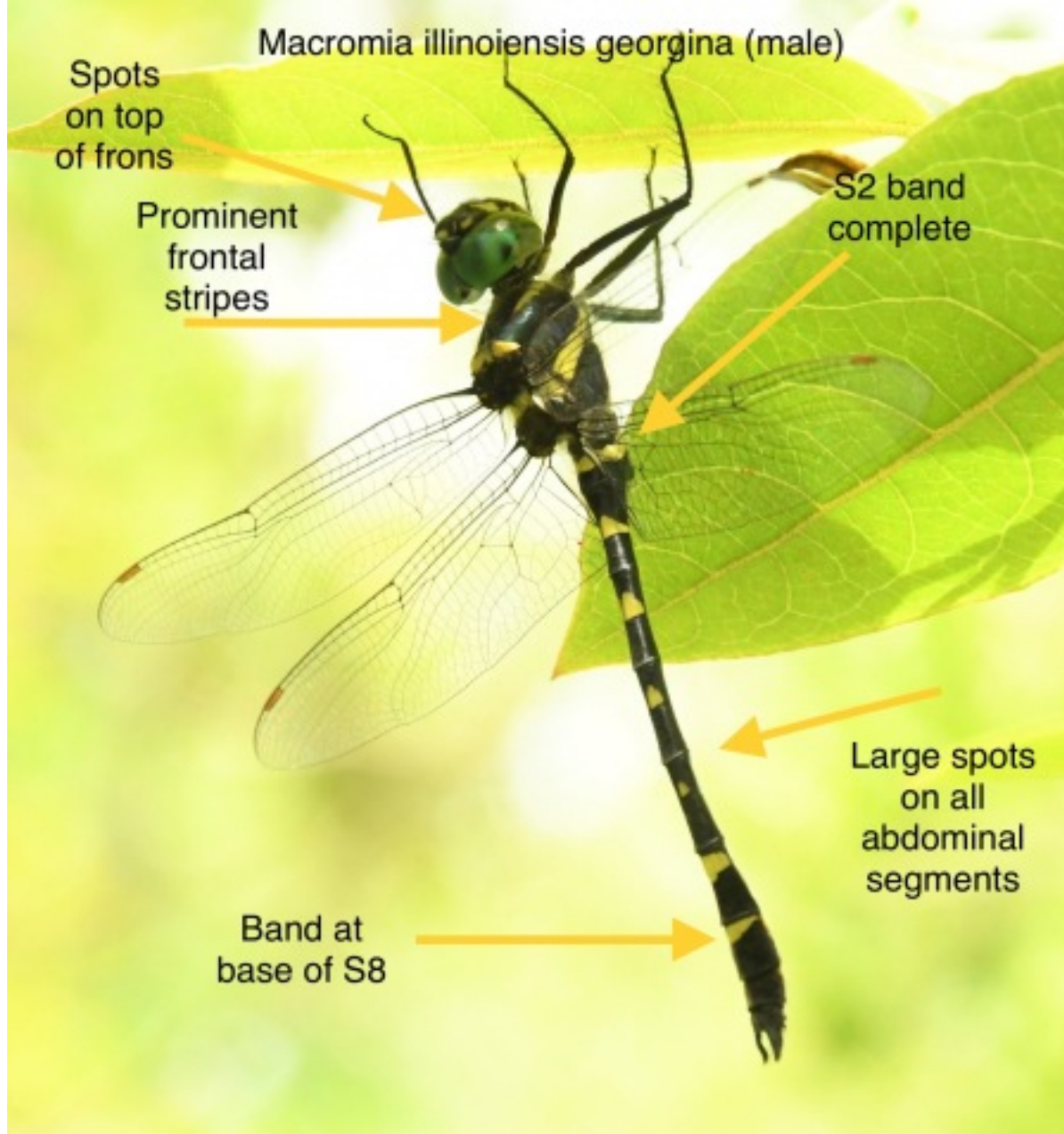


Photo used with written permission from [Joseph Girgente](#).

Female field marks: Pale yellow spots on top of frons; prominent frontal stripes; prominent yellow crossbar or band at base of abdominal segment eight (S8).

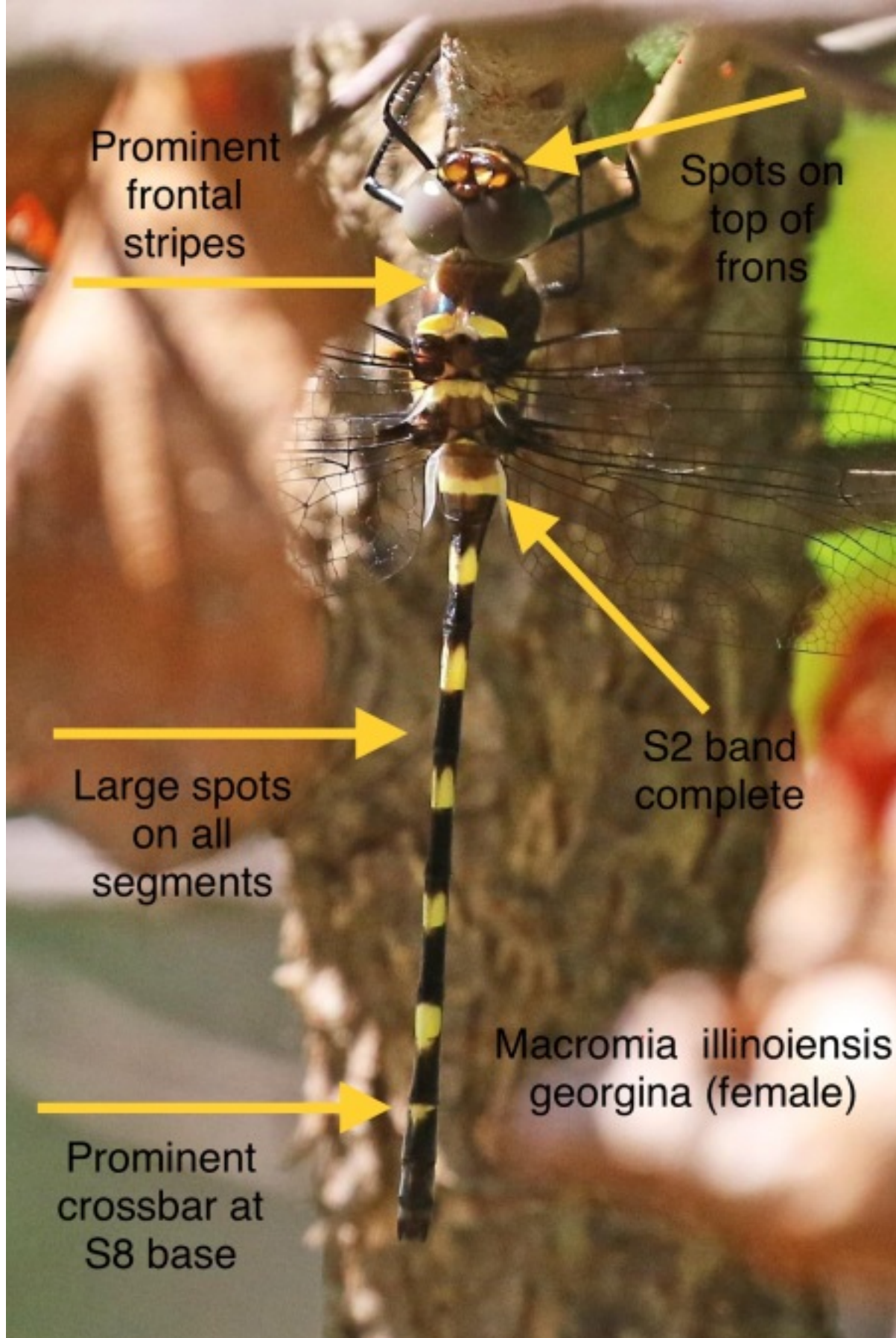


Photo used with written permission from [Larry Lynch](#).

Prominent frontal stripes **are absent** in three species of genus *Macromia*: Allegheny River Cruiser (*Macromia alleghaniensis*); Swift “Illinois” River Cruiser (*Macromia illinoiensis illinoiensis*); and Mountain River Cruiser (*Macromia margarita*).

Allegheny River Cruiser

Editor's Note: Frontal stripes are present in many individuals, but they are generally short and less prominent.

Male field marks: Band on abdominal segment two (S2) slightly broken dorsally, complete laterally; band on abdominal segment seven (S7) completely encircles the abdomen; [mesotibial](#) keel length <20%. [See Michael Moore's excellent [annotated images](#) for good illustrations of mesotibial keels.]

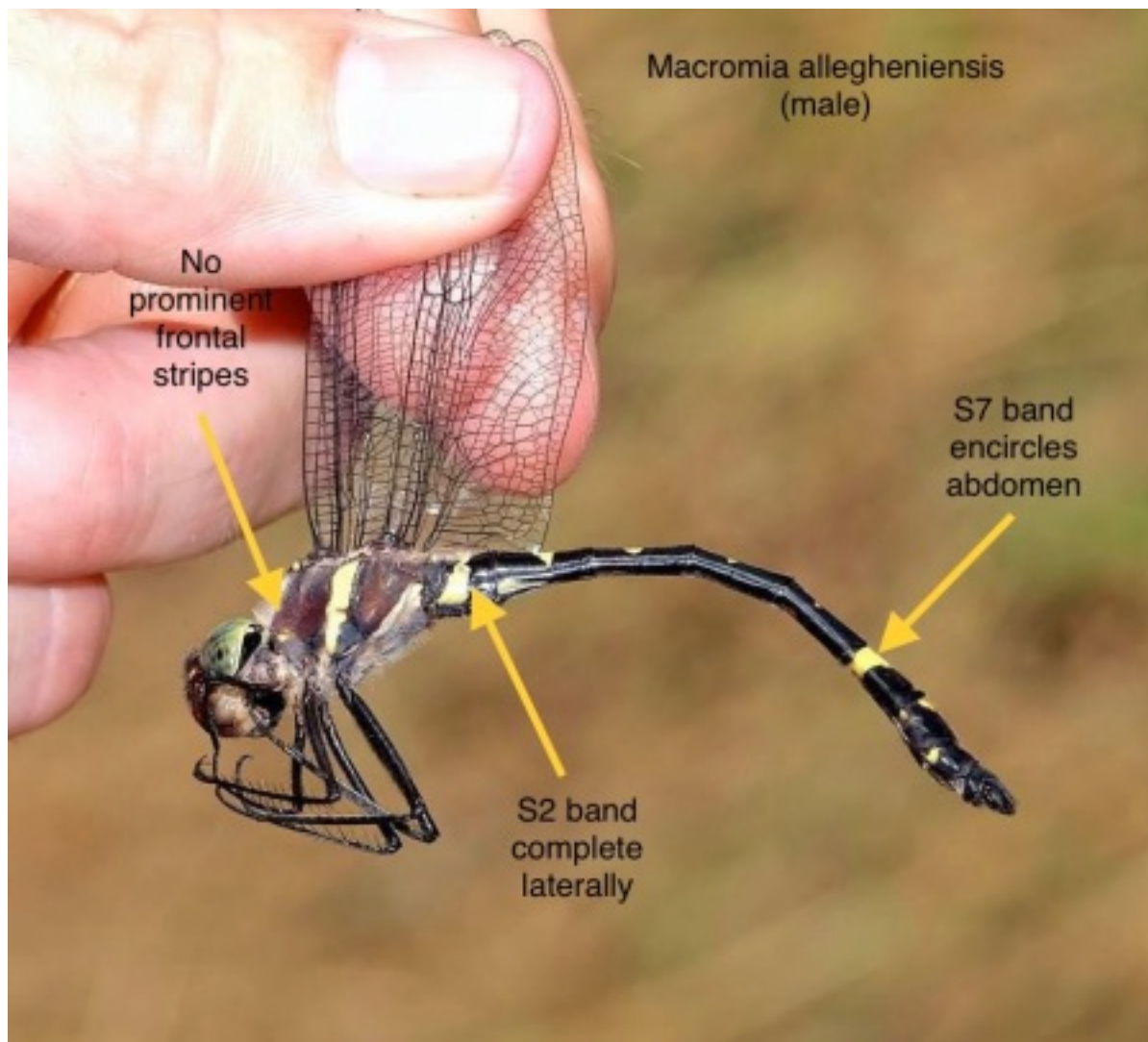


Photo credit: [Walter Sanford](#). Specimen collected by [Mike Blust](#).

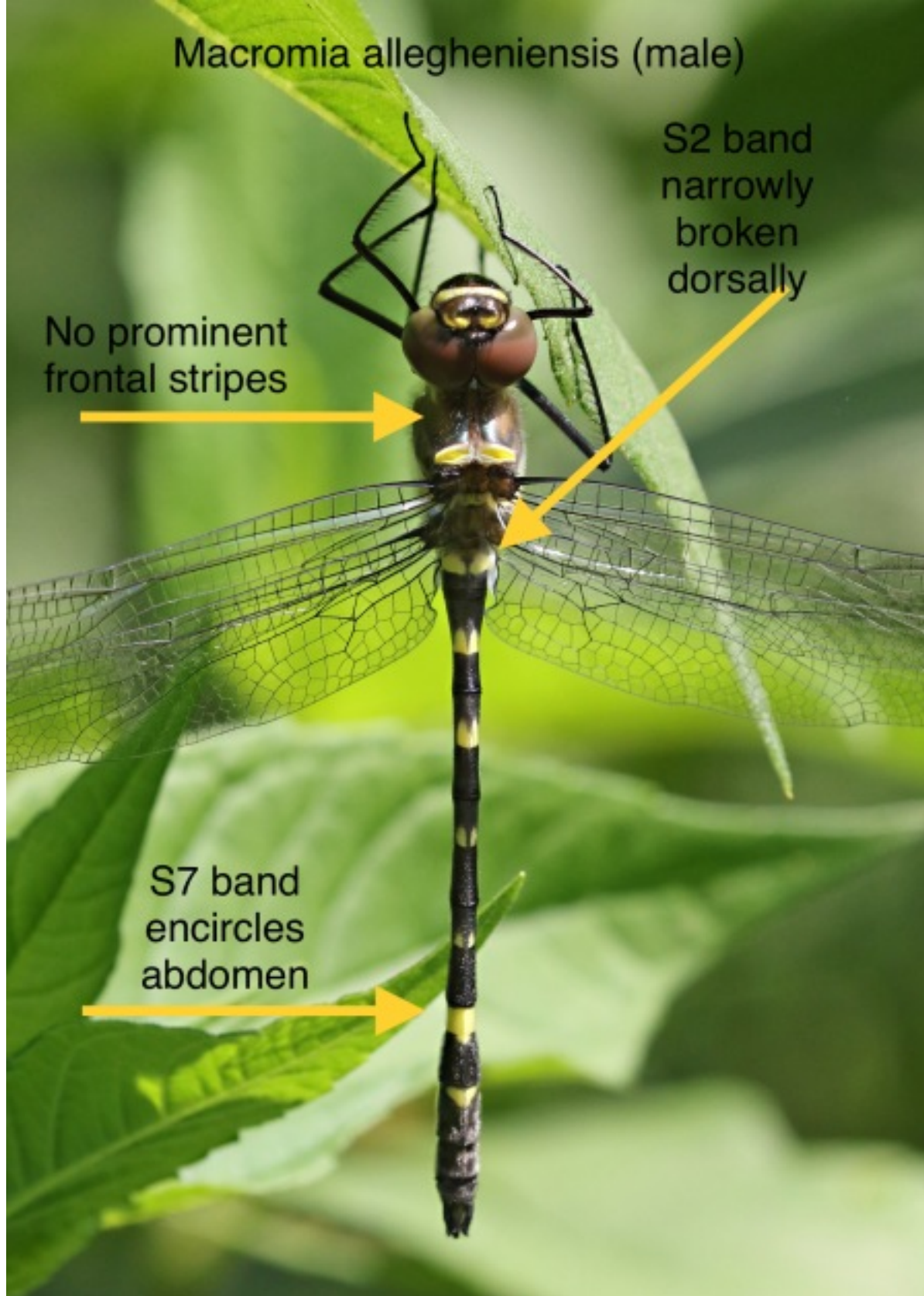


Photo used with written permission from [Larry Lynch](#).

Female field marks: Band on abdominal segment two (S2) broken dorsally, complete laterally; band on abdominal segment seven (S7) broken laterally.

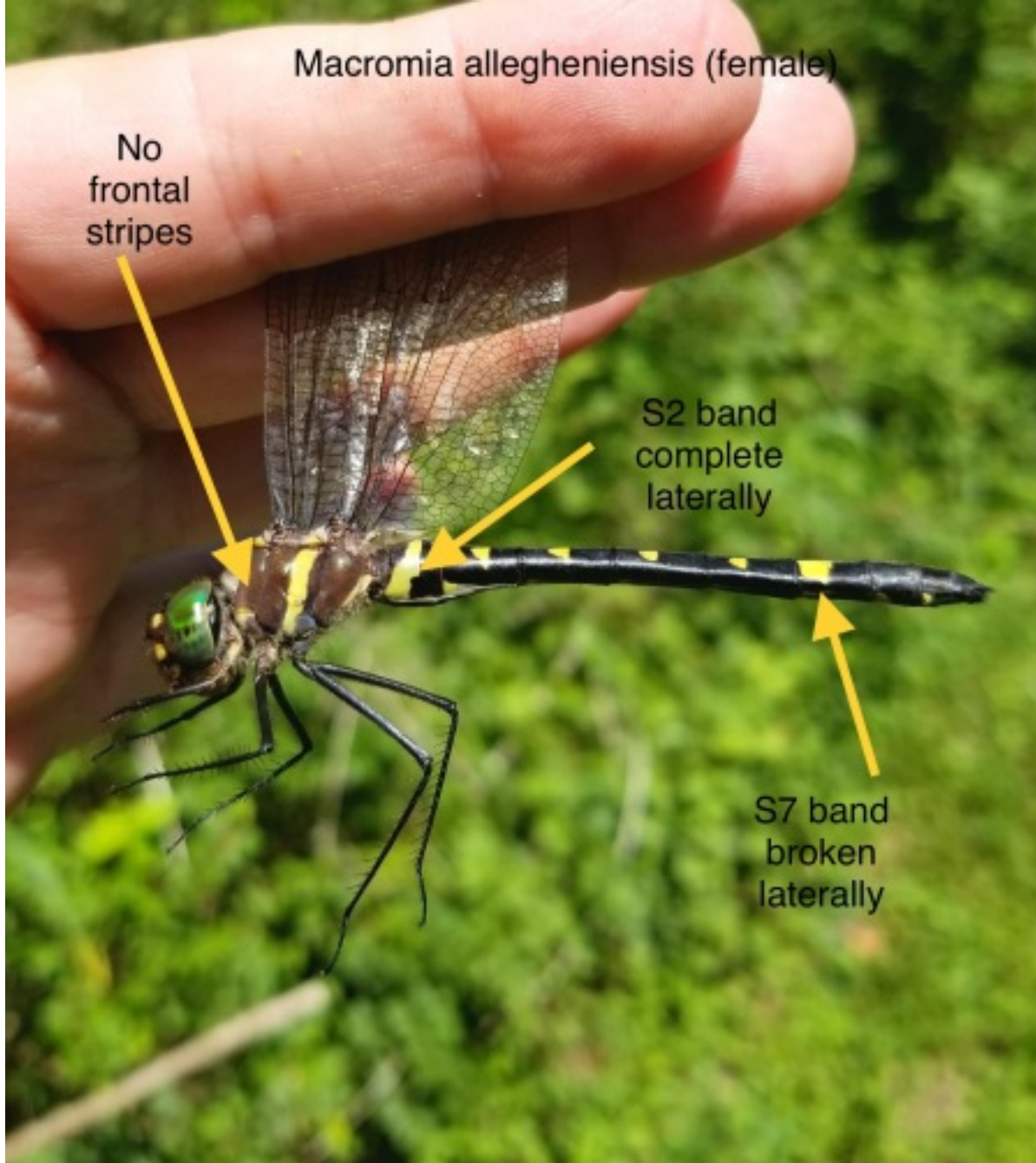


Photo credit: [Mike Boatwright](#).



Photo credit: [Mike Boatwright](#).

Swift “Illinois” River Cruiser

Male field marks: Band on abdominal segment two (S2) narrow and broken both dorsally and laterally; band on abdominal segment seven (S7) incomplete laterally; generally little or no yellow spots on middle abdominal segments; [mesotibial](#) keel length 25-50%.

Editor’s Note: This is the only species of genus *Macromia* with black [auricles](#).

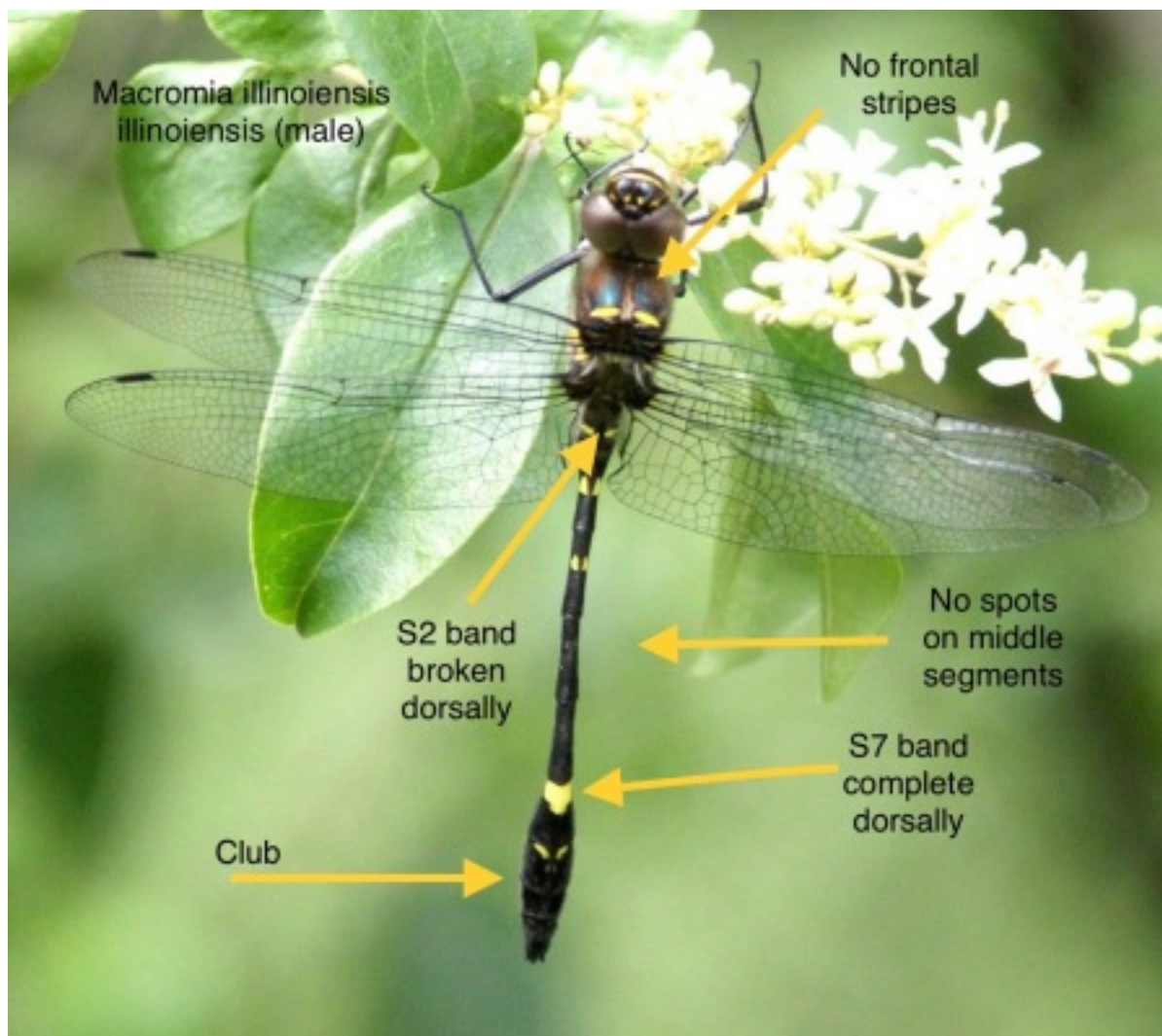


Photo credit: [Mike Boatwright](#).



Photo used with written permission from [Larry Lynch](#).

Female field marks: Band on abdominal segment two (S2) broken dorsally and laterally; band on abdominal segment seven (S7) broken laterally; spots on dorsum of abdomen generally smaller and more triangular than those of Mountain River Cruiser.

Some females might not be identifiable without in-hand examination of the subgenital plate, tibia length, and wing venation (refer to the section entitled “Wing Venation” toward the end of this guide).



Photo credit: [Mike Boatwright](#).

Mountain River Cruiser

Editor's Note: Yellow stripe on the face is brighter with a more narrow brown boarder.

Male field marks: Band on abdominal segment two (S2) broken dorsally, complete laterally; band on abdominal segment seven (S7) incomplete laterally; mesotibial keel length >50%.

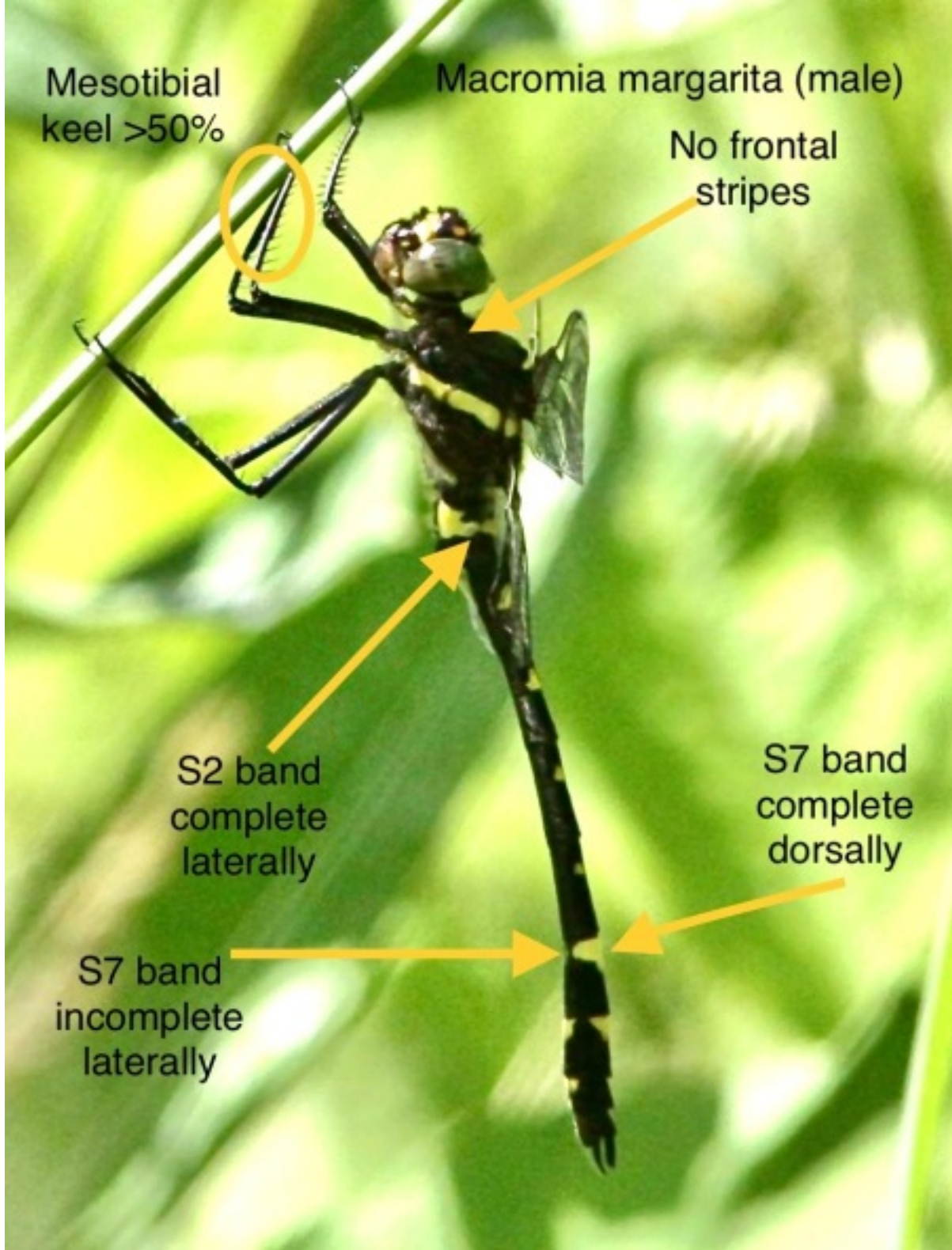


Photo credit: [Mike Boatwright](#).

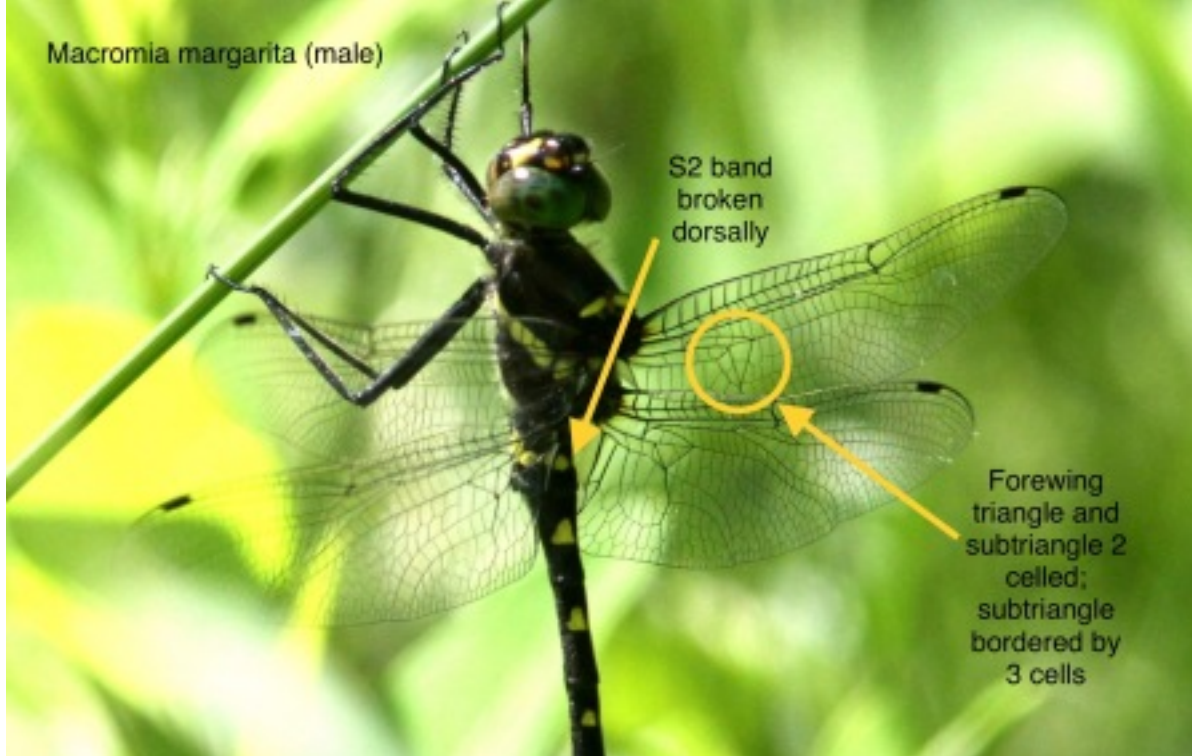


Photo credit: [Mike Boatwright](#).

Female field marks: Band on abdominal segment two (S2) broken dorsally and laterally; band on abdominal segment seven (S7) broken laterally; spots on dorsum of abdomen fairly large and squarish.

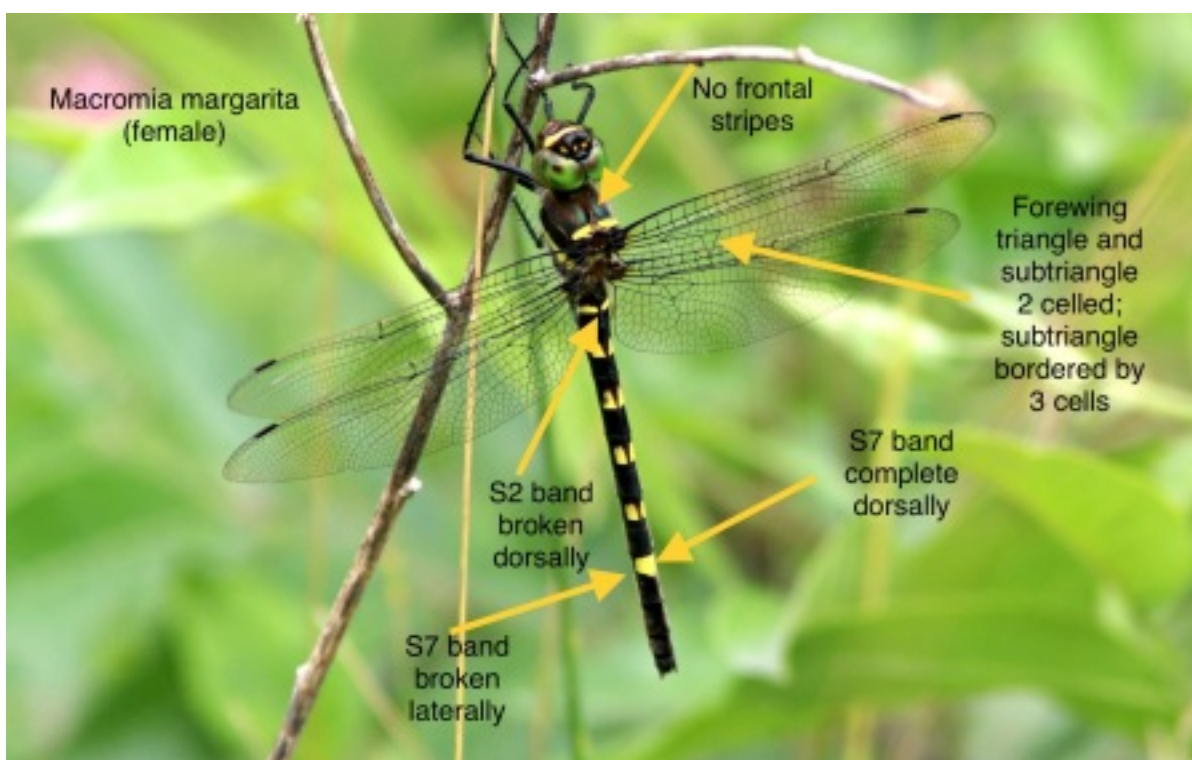


Photo credit: [Mike Boatwright](#).



Photo credit: [Mike Boatwright](#).

Wing venation

[Wing venation](#) can be used sometimes in conjunction with other characteristics to help distinguish some species of *Macromia* (river cruisers). However, there is variability within species. In addition, some individuals may exhibit different venation in each wing. Females generally have more crossveins than males. Therefore, one must not rely upon wing venation solely to make a positive identification. The information given here was derived from several scientific sources and represents the most commonly observed venation of both sexes within a species.

Mountain River Cruiser: Forewing triangle usually two-celled and subtriangle usually bordered by three cells; subtriangle one- or two-celled.

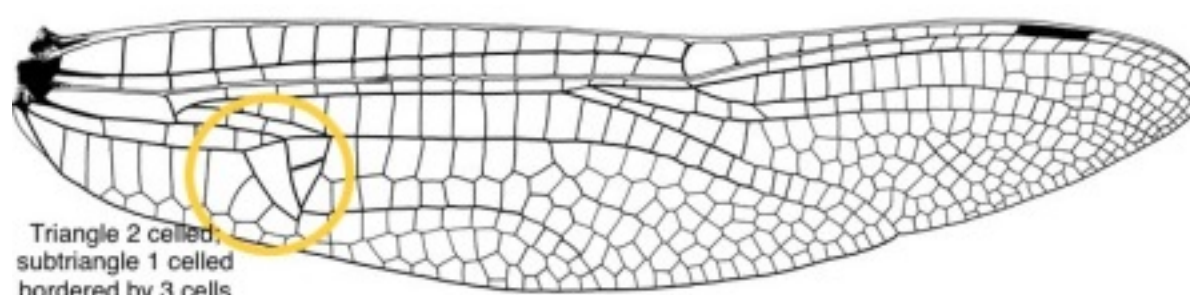


Photo credit: [Mike Boatwright](#).

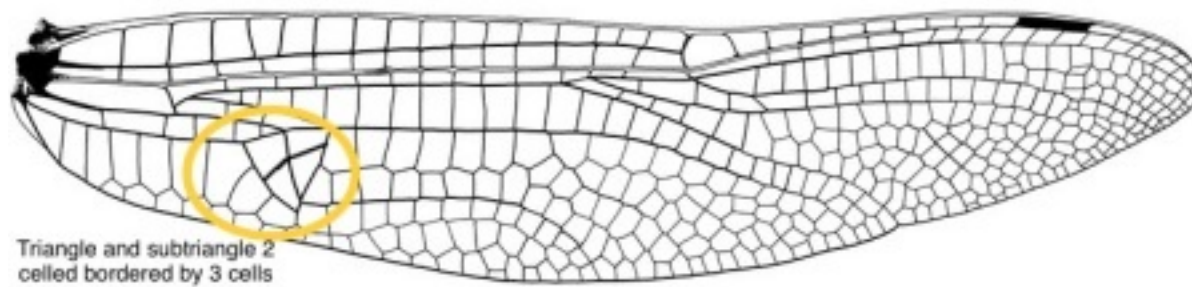


Photo credit: [Mike Boatwright](#).

Allegheny River Cruiser: Forewing triangle usually one-celled and subtriangle usually bordered by two cells; subtriangle usually one-celled.

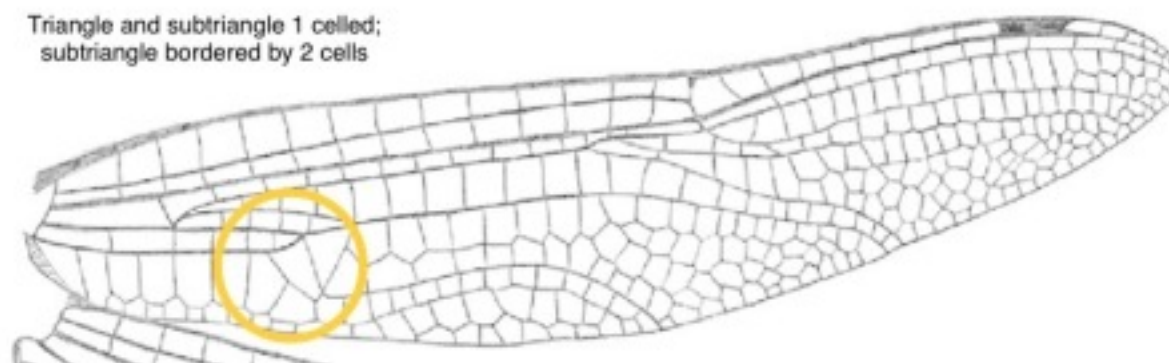


Photo credit: [Mike Boatwright](#).

Mountain River Cruiser: Forewing triangle 2 celled (90%) and subtriangle bordered by 3 cells (75%); subtriangle 2 celled (55%).

Allegheny River Cruiser: Forewing triangle 1 celled (100%) and subtriangle bordered by 2 cells (100%); subtriangle 1 celled (90%).

Swift “Illinois” River Cruiser: Forewing triangle 1 celled (90%) and subtriangle bordered by 2 cells (70%); subtriangle 1 celled (100%).

Swift “Georgia” River Cruiser: Forewing triangle 2 celled (75%) and subtriangle bordered 2 cells (65%); subtriangle 1 celled (75%).

Royal River Cruiser: Forewing triangle 2 celled (75%) and subtriangle bordered by 3 cells (90%); subtriangle 2 celled (90%).

Editor's Note: Percentage (%) refers to the percentage of wings showing the venation patterns, among study specimens. (Williamson, and Westfall.)

Related Resources

Williamson, Edward Bruce. 1909. "The North American dragonflies (Odonata) of the genus *Macromia*." Proceedings of the United States National Museum. 37 (1710):369–398, 7 figs., 2 pls..

<https://doi.org/10.5479/si.00963801.37-1710.369>

Westfall, M. J. "A NEW MACROMIA FROM NORTH CAROLINA." *Journal of the Elisha Mitchell Scientific Society*, vol. 63, no. 1, 1947, pp. 32–36.

JSTOR, <http://www.jstor.org/stable/24334074>.

Donnelly, T. & Tennessen, Kenneth. (1994). [Macromia illinoiensis and georgina: a study of their variation and apparent subspecific relationship \(Odonata: Corduliidae\)](#). Bulletin of American Odonatology. 2. 27.

Credits

Thanks to [Larry Lynch](#) and [Joseph Girgente](#) for permission to use their excellent photographs in this guide.

Also sincere thanks to my good friend [Mike Boatwright](#), without whom it would have been *impossible* for me to create this guide. Mike is a master at odonate identification based upon key field marks — his descriptors provide the essential framework for the guide. And Mike did most of the heavy lifting by annotating all but two of the images featured in this guide. Excellent work, Mike that I'm honored to be able to share with our fellow [odonate](#) enthusiasts.

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Tags: [Allegheny River Cruiser dragonfly](#), [Didymops transversa](#), [Family Macromiidae \(Cruisers\)](#), [Macromia alleghaniensis](#), [Macromia illinoiensis](#),

[Macromia margarita](#), [Macromia taeniolata](#), [Mountain River Cruiser dragonfly](#), [Royal River Cruiser dragonfly](#), [Stream Cruiser dragonfly](#), [Swift River Cruiser dragonfly](#)

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