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# Conserving South Carolina's At-Risk Species:

## *Species facing threats to their survival*

### Calvert's emerald (*Somatochlora calverti*)



*Calvert's emerald*/iNaturalist - Hibbitts

#### Description

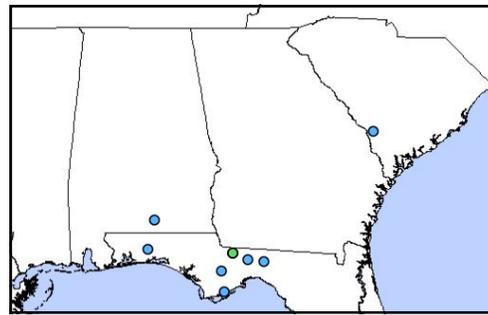
First described in 1933, this rare metallic-brown dragonfly has 2 white stripes on each side of the thorax, a finely ringed abdomen, and brilliant green eyes. In the male, the face is mostly brown with metallic green on top of the frons (upper half of the face). Males also have a white spot on abdominal segment 10. Pale rings at tip of the abdomen are diagnostic of females. Females also have a brown stripe in each wing. Individuals of both sexes fly rapidly up and down roads through sandy pinewoods with wavy (up and down) flight at head height, but this behavior is most often seen in males. The flight season is mid-June to late August.

#### Range

The Calvert's emerald has a limited range from the Florida Panhandle to Alabama, and a disjunct population in Allendale County, South Carolina. Eleven localities are known, but the species probably occurs in many small, discrete habitats. Range maps for the species include a narrow band through central Georgia to connect the Florida and South Carolina populations but it has not been collected in Georgia.

#### Habitat

While much has yet to be determined about the species' breeding habitat it is assumed to be boggy forest seepages. Adults feed over roads or among tree canopies. Mating pairs hang from tree twigs in the feeding areas. The thorn-like ovipositor of the female suggests that eggs may be laid in wet sand, mud or algae in or near very shallow water. Adults forage on midges and small insects along roads in forests, or high above treetops in open areas between tree crowns.



*Calvert's emerald* occurrences (accepted)

#### Status

The U.S. Fish and Wildlife Service was petitioned to list the species in April 2010 and published a substantial 90-day finding in September 2011 indicating listing may be warranted. This species is classified in the Natural Heritage designations as vulnerable (G3) with 21 - 80 occurrences.

#### Threats

Although no specific challenges can be defined for this species, there are several general activities that can affect dragonfly populations. The primary impact to terrestrial habitats lies in habitat conversion. For this forest dwelling species, land clearing and development represent the most significant challenge. While the specific larval habitat is unknown for this species, forest seepage areas are implicated. These habitats are particularly sensitive to changes in aboveground vegetative cover,

having a profound effect on water temperature, flow rates and sediment type.

#### Management/Protection Needs

More work needs to be done to determine the distribution of Calvert's emerald in South Carolina, specifically in the location where the state's only definitive specimen has been collected. Identifying and protecting the habitats that the Calvert's emerald depends upon for survival would also be of paramount importance as well as periodic monitoring of known populations. Forestry operations should follow best-management practices for water quality. Outreach and education to developers and local governments will assist with sharing information about minimizing the impacts from new home construction and commercial development.

#### References

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South Carolina Department of Natural Resources—State Wildlife Action Plan: 2010-2015.

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