

Calvert's Emerald Field Survey Report

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Agreement

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Florida Natural Areas Inventory
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Institute of Science and Public Affairs
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Photo credit: Female Calvert's Emerald (*Somatochlora calverti*) in Apalachicola National Forest. Photo by Robert Gundy.

Executive Summary

A Florida Natural Areas Inventory (FNAI) biologist visited seven sites in the Florida Panhandle surveying for Calvert's emerald (*Somatochlora calverti*). Five of these sites were previously documented locations. The remaining two locations were previously undocumented locations. Calvert's Emerald was found at two previously documented sites and both previously undocumented locations. The two newly documented sites did not increase the range extent for the species.

Whittle Road: Calvert's emerald was not observed.

Other odonates present: halloween pennant (*Celithemis eponina*), Carolina saddlebags (*Tramea carolina*), eastern pondhawk (*Erythemis simplicollis*), Georgia river cruiser (*Macromia illinoisensis georgina*)

Habitat: Restoration sandhill with seepage streams. Young (3-9 ft. tall) planted longleaf pine (*Pinus palustris*) with successional understory. No wiregrass (*Aristida stricta*) present. The understory mostly consisted of blackberry (*Rubus* sp.), eastern poison oak (*Toxicodendron pubescens*), and common persimmon (*Diospyros virginiana*).

Torrey State Park: Calvert's emerald was not observed.

Other odonates present: eastern ringtail (*Erpetogomphus designatus*) *S1, Georgia river cruiser, common whitetail (*Libellula lydia*), Carolina saddlebags, eastern pondhawk, ebony jewelwing (*Calyptera maculata*).

Habitat: Restoration sandhill with fingers of slope forest descending into steephead streams. The uplands by the road were natural, healthy herbaceous understory dominated by wiregrass (*Aristida stricta*) but almost entirely devoid of tree species. The uplands just above the slope forest contained spruce pine (*Pinus glabra*), shortleaf pine (*Pinus echinata*), sand post oak (*Quercus margarettae*), and sparkleberry (*Vaccinium arboreum*) with a sparsely herbaceous understory. The slope forest along Ferrell Branch included sparkleberry (*Vaccinium arboreum*), muscadine grape (*Vitis rotundifolia*), blackberry (*Rubus* sp.), sand post oak (*Quercus margarettae*), titi (*Cyrilla racemiflora*), needle palm (*Rhapidophyllum hystrix*), and Florida anise (*Illicium floridanum*). The seeps and streams along Ferrell Branch were largely blocked due to fallen canopy and midstory trees with extensive coverage of muscadine (*Vitis rotundifolia*). Many sections of the streamside that are now in full sunlight contained dense patches of blackberry (*Rubus* sp.).

McCook Road: Three Calvert's emeralds were documented.

Other odonates present: eastern pondhawk, eastern amberwing (*Perithemis tenera*), Carolina saddlebags, unidentified damselfly (family Zygoptera)

Habitat: Fire-suppressed sandhill between two creeks. The canopy consisted of longleaf pine (*Pinus palustris*) and turkey oak (*Quercus laevis*). There was a fairly dense midstory of sparkleberry (*Vaccinium arboreum*).

Joe Budd WMA/Lake Talquin SF: One Calvert's emerald was documented.

Other odonates present: comet darner (*Anax longipes*), eastern pondhawk, eastern amberwing, Carolina saddlebags, yellow-sided skimmer (*Libellula flavida*)

Habitat: Surveyed food plots and a clearing between stands of mesic flatwoods, sandhill, and seepage streams. Mesic flatwoods included longleaf pine (*Pinus palustris*), saw palmetto (*Serenoa repens*), American beautyberry (*Callicarpa americana*), common persimmon (*Diospyros virginiana*), and a number of herbaceous species. Sandhill included longleaf pine (*Pinus palustris*) and turkey oak (*Quercus laevis*) with a similar understory composition to the mesic flatwoods. The clearing consisted of many weedy species with interspersed hardwood snags.

Aeon Church Road, Apalachicola National Forest: Two Calvert's emeralds were documented.

Other odonates present: Georgia river cruiser, eastern pondhawk

Habitat: Along an orange clay road through sandhill habitat adjacent to a natural lake used for recreation. Plants included *Pinus palustris*, *Quercus laevis*, *Quercus sp.*, *Juniperus virginiana*, *Diospyros virginiana*, *Rhus copallinum*, *Callicarpa americana*, *Ilex vomitoria*, *Vaccinium arboreum*, *Cercis canadensis*, *Rubus sp.*, *Vitis rotundifolia*, *Erigeron sp.*, and *Parthenocissus quinquefolia*.

Silver Lake Recreation Area, Apalachicola National Forest: At least one Calvert's emerald was documented.

Other odonates present: Georgia river cruiser, eastern pondhawk, eastern amberwing, Carolina saddlebags, golden-winged skimmer (*Libellula auripennis*), Amanda's pennant (*Celithemis amanda*), great blue skimmer (*Libellula vibrans*), wandering glider (*Pantala flavescens*), blue dasher (*Pachydiplax longipennis*), phantom darner (*Triacanthagyna trifida*)

Habitat: Along a powerline corridor on a slope from sandhill down to a seepage stream with a sandy bottom. Sandhill plants included longleaf pine (*Pinus palustris*), turkey oak (*Quercus laevis*), muscadine (*Vitis rotundifolia*), common persimmon (*Diospyros virginiana*), winged sumac (*Rhus copallinum*), wiregrass (*Aristida stricta*), earleaf greenbrier (*Smilax auriculata*), shiny blueberry (*Vaccinium myrsinites*), dogtongue wild buckwheat (*Eriogonum tomentosum*), bracken (*Pteridium aquilinum*), and silkgrass (*Pityopsis sp.*). The habitat adjacent to the seepage stream included sphagnum moss (*Sphagnum sp.*), large gallberry (*Ilex coriacea*), sparkleberry (*Vaccinium arboreum*), black titi (*Cliftonia monophylla*), and sparse herbaceous vegetation interrupting a shallow layer of leaf litter.

Cody Church Road: No Calvert's emeralds were documented.

Other odonates present: eastern pondhawk, Carolina saddlebags, golden-winged skimmer, Amanda's pennant, great blue skimmer, common whitetail.

Additional Survey Needs

The following locations may harbor Calvert's emerald: Lake Talquin State Forest, Plank Road State Forest, St. Marks River Preserve State Park, Blackwater River State Forest, Eglin Air Force Base, Mike Roess Gold Head Branch State Park, Ralph E. Simmons State Forest, Munson Sandhills region of Apalachicola National Forest, Osceola National Forest. Similar habitat also exists at Greenwood Plantation and Arcadia Plantation in Thomas County, Georgia. To date, the aquatic nymph stage of this species has not been found in the wild. Because of the proximity of adults to seepage streams and the general biology of this genus, it is suspected Calvert's emerald nymphs occur in seepage streams. Surveys are needed along and near seepage streams. Somatochlora nymphs tend to occupy slow-moving streams deep in the substrate. Surveying for nymphs is temporarily damaging to the sensitive habitat because it requires a modest amount of digging and potential disturbance to beds of sphagnum moss (*Sphagnum* sp.). Experts suggest checking banks of streams deep in sand and muck, especially where the bank is undercut and sphagnum moss reaches the water (John Abott and Ken Tennesen, pers. comm.). Because Calvert's emerald nymphs take up to two years to reach the adult stage, timing of surveys for nymphs does not need to be restricted to the weeks when adults are flying.