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NECTAR SOURCES FOR *EUMAEUS ATALA*  
(LEPIDOPTERA: LYCAENIDAE: THECLINAE)

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I report on nectar sources used by the tropical hairstreak butterfly *Eumaeus atala atala* Poey and the subspecies *E. atala florida* Röber (Lycaenidae: Lepidoptera), including those that have not been published previously. In addition to the importance and presence of larval host plants, availability of nectar sources for adults is also important in establishing viable populations. I also list the current conservation status of the atala butterfly as determined by 4 Florida State conservation agencies. The atala butterfly is a species almost wholly dependent on domestic gardens for its survival now because of the lack of wild lands in South Florida.

Reintroduction of the atala butterfly is vital to its recovery from a vulnerable status. This article will facilitate conservation and restoration efforts for this species of special concern, as well as encourage cultivation of butterfly gardens. *Eumaeus atala florida* is locally abundant when both nectar sources and larval food plants are available, but is otherwise rare. I have researched the nectar plants for the atala that have been documented previously in scientific journals and in popular articles, presenting them here as one unit. I have used the names of plants as originally recorded by those authors, although I have updated plant names that have changed. Plant taxonomy is according to Wunderlin (1998) and/or Correll & Correll (1996). Previously unrecorded nectar sources come from field observations over a period of 18 months from May 2003 to Sep 2005.

In Table 1, the nectar sources by family, genus and species (with original citations footnoted) are provided, along with the common name and origin of the plant. Favored plants, i.e., those on which I have noted numerous individuals nectaring simultaneously, are denoted by an asterisk. One interesting observation is that *Eumaeus atala atala* and *E. atala florida* both seem to prefer small white flowers with short corollas (Koi, unpublished data). This may be in part due to the short proboscis of all Lycaenidae hairstreaks, although the obvious color preference warrants further study.

While many other issues remain, such as spraying pesticides for mosquito control, I have been working with several organizations to re-introduce the butterfly within its former range for several years, including Everglades National Park. In addition to re-distributing butterfly populations, coontie is being replanted within historically documented areas, and plants are being re-distributed from development sites to safe locations. In South Florida, gardeners in cities such as Coconut Creek, Fort Lauderdale, Hollywood, Key Biscayne, and Wilton Manors are planting coontie and nectar sources for *E. atala florida*. Local chapters of the North American Butterfly Association and Native Plant Societies have been instrumental in this effort. The atala also seems to flourish in coastal environments (Kilmer 1993), of which gardeners should be aware; my most successful colonies support this observation (Koi, unpublished data).

Cultivated coontie plants are being used by some landscapers and homeowners as an ornamental (Minno 2002). The atala larvae in these isolated sites may become a pest problem (Culbert 1995) requiring human management of the colony (Koi, unpublished data).

The butterfly is currently listed by the Florida Commission of Rare and Endangered Plants and Animals as a “Species of Special Concern,” primarily due to habitat loss and development (Deyrup 1994). It is also listed as rare and vulnerable (S3) by the State of Florida (NatureServe 2005). The atala is listed under the Comprehensive Wildlife Conservation Strategy as one of over 900 species in greatest need of conservation (FWC 2005). It is also considered a species of management concern in the South Florida Multi-Species Recovery Plan (USFWS 1999).

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**SUMMARY**

This list of nectar sources will assist lepidopterists and butterfly gardeners in South Florida choose and offer appropriate adult foods for the...
| Family (common name)                      | Genus species/original citations | Common name          | Origin  |
|------------------------------------------|-----------------------------------|----------------------|---------|
| **Anacardiaceae (Cashew Family)**        | *Rhus copallina* L. ⋆ ⋆ ⋆ ⋆   | Sumac                | FL      |
|                                          | *Schinus terebinthifolius* Raddi. L. ⋆ ⋆ ⋆ | Brazilian Pepper    | Trop. Am. |
| **Apiaceae (Carrot Family)**             | *Coriandrum sativum* L. ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Coriander            | Mediterranean |
| **Aquifoliaceae (Holly Family)**         | *Ilex cassinii* L. ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Dahoon holly         | FL      |
| **Aracaceae (Palm Family)**              | *Sabal palmetto* (Walter.) Lodd ex. Schult. & Schult. ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Cabbage Palm        | FL      |
|                                          | *Serenoa repens* (W. Bartram) Small ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Saw Palmetto        | FL      |
| **Apocynaceae (Milkweed)**               | *Asclepias curassavica* L. ⋆ ⋆ ⋆ ⋆ ⋆ | Milkweed             | WI      |
|                                          | *A. tuberosa* L. ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Butterweed           | FL      |
| **Asteraceae (Aster Family)**            | *Ageratum conyzoides* L. ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Tropical Whiteweed   | Trop. Am. |
|                                          | *A. houstonianum* Mill ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Bluemink             | Trop. Am. |
|                                          | *Bidens alba* var. *radiata* ⋆ ⋆ ⋆ ⋆ ⋆ | Spanish Needles      | FL      |
|                                          | *Carpephorus odoratissimus* ⋆ ⋆ | Pineland Purple      | FL      |
|                                          | *Chromolaena odorata* DC. ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | Jack-in-the-bush     | FL      |
|                                          | *Eupatorium odoratum* L. ⋆ ⋆ ⋆ ⋆ | Everglades Squarret  | WI      |
|                                          | *Eupatorium serotinum* Michx. ⋆ ⋆ ⋆ | Everglades Squarret  | FL      |
| **Buddlejaceae (Butterfly Family)**      | *Flaveria linearis*, Lag. ⋆ ⋆ ⋆ | Yellowtops aster     | FL      |
|                                          | *Gaillardia pulchella* Foug. ⋆ ⋆ | Blanketflower        | FL      |
|                                          | *Koanophyllum villosum* ⋆ SW. ⋆ ⋆ ⋆ ⋆ | Fl. Keys Thoroughwort | FL      |
|                                          | *Melandrera nivea* Rohr & Small ⋆ | (Everglades) Square Stem | FL, WI |
|                                          | *M. parvifolia* Rohr & Small ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ ⋆ | (Everglades) Square Stem | FL, WI |
|                                          | *Mikania scandens* (L.) Willd. ⋆ ⋆ ⋆ | Climbing hempvine    | WI, FL  |
|                                          | *Solidago sempervirens* L. ⋆ ⋆ | Seaside Goldenrod    | FL      |
|                                          | *Verbesina virginica* L. ⋆ ⋆ ⋆ ⋆ ⋆ | White Crownbeard     | FL      |
| **Boraginaceae (Borage Family)**         | *Buddleja lindleyana* L. ⋆ ⋆ ⋆ | Butterfly Bush       | China    |
|                                          | *B. madagascariensis* Lam. ⋆ ⋆ | Madagascar Butterfly-bush | Madagascar |
| **Combretaceae (Combretum Family)**      | *Cordia bahamensis* Urb. ⋆ ⋆ | Cat’s Tongue         | WI, FL  |
|                                          | *C. globosa* (Jacq.) Kunth. ⋆ ⋆ ⋆ | Bloodberry           | FL      |
| **Erythroxylaceae (Coca Family)**        | *Bucida buceras* L. ⋆ ⋆ ⋆ ⋆ | Black Olive          | WI      |
| **Fabaceae (Pea Family)**                | *Bucida molinetii* (G. Maza) Alain ⋆ ⋆ | Spiny Black Olive    | FL, WI  |
|                                          | *Terminalia catappa* L. ⋆ ⋆ ⋆ | West Indian Almond   | Asia    |
| **Euphorbiaceae (Spurge Family)**        | *Erythroxylum confusum* Britton ⋆ ⋆ ⋆ | Pigeon Berry         | WI, Trop. Am. |
|                                          | *Cnidoscolus chayamense* = *Jatropha integerrima* (Jacq.) | Chaya | Cuba |
| **Lauraceae (Laurel Family)**            | *Persea americana* Mill. ⋆ ⋆ ⋆ ⋆ ⋆ | Avocado              | Trop. Am. |
| **Lamiaceae (Mint Family)**              | *Callicarpa americana* L. ⋆ ⋆ | Beauty Berry         | FL      |
| **Oleaceae (Olive Family)**              | *Forestiera segregata* (Jacq.) Krug. & Urb. ⋆ | Swamp Privet         | FL      |
| **Oleaceae (Olax Family)**               | *Schoepfia chrysophylloides* (A. Rich) Planch. ⋆ | Whitewood (Graytwig) | FL      |
|                                          | *S. scheberi* (J. K. Gimel misapplied) ⋆ ⋆ | Whitewood (Graytwig) | FL      |
| **Plumbaginaceae (Leadwort Family)**     | *Plumbago scandens* L. ⋆ ⋆ ⋆ ⋆ | Doctorbush           | FL      |
| **Proteaceae (Protea Family)**           | *Macadamia integrifolia* L. ⋆ = *M. ternifolia* | Macadamia Nut        | Australia |
| **Rubiaceae (Madder Family)**            | *Exostema caribaum* ⋆ ⋆ ⋆ | Caribbean Princewood | WI, FL  |

**Notes**: Genus or species may be native to more than one area. Asterisk denotes favored nectar sources. Abbreviations: FL—Florida; WI—West Indies; Trop. Am—Tropical America. ⋆ Denotes nectar sources used by *E. atala atala* as witnessed on Andros Island, Jun 2005, 1. Culbert (1995). 2. Gerberg and Arnett (1989) 3. Hammer (1995, 2005) 4. Koi, this note 5. Landolt (1984) 6. Lollar (2004) 7. Stewart (2004) 8. Tompkins, pers. comm. 9. Lana Edwards, pers. comm.
TABLE 1. (CONTINUED) NECTAR SOURCES FOR *EUMAEUS ATALA*.

| Family (common name) | Genus species/original citations | Common name | Origin |
|----------------------|----------------------------------|-------------|--------|
| **Psychotria nervosa** | L. | Wild Coffee | FL |
| **P. ligustrifolia** | (Northrop) Millspp. | Bahama Wild Coffee | FL |
| **P. sulzeri Small** | | Shortleaf Wild Coffee | FL, WI |
| **Randia aculeata** | L. | Indigoberry | FL |
| **Citrus sinensis** | L. | Sweet Orange | Asia |
| **Murraya koenogii** | L. | Curry Tree | Asia |
| **Dombeya spp.** | L. | Florida Powder Puff | Madagascar |
| **Citharexylum spinosum** | L. | Florida Fiddlewood | FL |
| **Duranta erecta** | L. | Golden Dewdrops | WI |
| **Nashia inaguensis** | L. | Moujene Tea | WI |
| **Lantana spp.** | L. | Lantana | FL, WI |
| **Petitia domingensis** | (Jacq.) Schult. | Bastard Stopper | WI |
| **Stachytarpheta jamaicensis** | L. | Blue Porterweed | FL |
| **S. cayennensis** | (L.C. Rich.) Vahl | Porterweed | FL |
| **S. franzii Pol.** | | Red Porterweed | Trop. Am. |
| **S. mutabilis Vahl** | | Pink Porterweed | Trop. Am. |

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atale butterfly. Providing both larval host plants and adult nectar sources on private homesteads is essential to maintain a viable, healthy sustainable population as wild lands decrease (Schultz 1999). The few remaining wild populations of the atala’s larval host plant, *Zamia floridana* (=*pumila*), often called “coontie,” are being lost as development continues throughout South Florida (Coile 2000). Additional news about *E. atala* colonies is located on the web at http://e-atala.blogspot.com.

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