

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Invertebrate Abstract

Element Code: IILEPA6010

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Anthocharis cethura*
COMMON NAME: Desert Orangetip, Felder's Orangetip
SYNONYMS: *Anthocharis pima*
FAMILY: Pieridae

AUTHOR, PLACE OF PUBLICATION: C. & R. Felder, 1865; Reise Fregatte Novara, Lep. Rhop. (2): 182, pl. 25, f. 1-2.

TYPE LOCALITY: Species *Anthocharis cethura* – unknown. Subspecies *A.c. pima* - Pima Co., Arizona, according to F.M. Brown, Trans American Ent. Soc., 99: 45-46 (1973).

TYPE SPECIMEN: Species *Anthocharis cethura* – unknown. Subspecies *A.c. pima* - Lectotype in Carnegie Museum designated by F.M. Brown.

TAXONOMIC UNIQUENESS: The genus *Anthocharis* in the United States consists of three western and one eastern species. Two of these species (*Anthocharis sara* Lucas and *A. cethura* W.H. Edwards) occur in Arizona and are often sympatric. Both species contain many described subspecies. In Arizona there is just one subspecies of *Anthocharis cethura* and that is the race *pima*. *Pima* was originally described as a species and remained as such for nearly one hundred years. Field work over the past quarter century has yielded more information about this insect and now most workers consider *pima* a subspecies of *Anthocharis cethura*. (Brock and Prchal 2001).

DESCRIPTION: Wingspan (26-40 mm). Both sexes are similar and difficult to differentiate based upon wing coloration.

Upperside: Bright yellow on both wings. There is an orange patch at the apex of the forewing edged with heavy black scaling and rimmed with white. There is a slender black mark at the edge of the discal cell on the forewing. The wing edges are black spotted.

Underside: Hindwing is banded green and yellowish-white.

AIDS TO IDENTIFICATION: No other yellow butterfly in Arizona has orange wing tips except *Anthocharis sara*. *Anthocharis sara* males have redder tips, very little if any white at the edge of the forewing apex and are rarely yellow. Females are occasionally yellow with white at the apex like *pima* but differ by having a broken band of white or yellow between the orange patch and the apex of the forewing. Underneath the hindwing, *sara* has a more

striated banding pattern than *pima*. Both species are similar in size. *Pima* is never white in the Coronado National Forest region. About 90% of the *sara* are white with most of the yellow individuals being females. *Eurema mexicana* (Mexican Sulphur) is similar to *pima* in size and color but lacks orange in the forewing apex and has a pointed hindwing. (Brock and Prchal 2001).

ILLUSTRATIONS: Drawing of upperside and underside male (Opler and Wright, 1999: P. 9).
Color photo of upperside male (Bailowitz and Brock, 1991: Appendix A, Plate II).
B&W photo of upper and underside male (Bailowitz and Brock, 1991: P. 146).
Color photo of underside male (Scott, 1986: Plate 11).
Color drawing of upperside female (Howe, 1975: Plate 71).
Color drawing of upper and underside male (Howe, 1975: Plate 71).
Color photos (Brock and Prchal 2001).

TOTAL RANGE: Species: Nevada, southern California, extreme southwestern Utah, Arizona, southwestern New Mexico, extreme western Texas, southward to Baja, Sonora, and Chihuahua, Mexico.

Subspecies: Arizona through to southern New Mexico and extreme western Texas, then southward to at least central Sonora, Mexico and extreme northern Chihuahua, Mexico.

RANGE WITHIN ARIZONA: Occurs from extreme western Arizona eastward in desert areas below 1800m.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: The adults are among the first butterflies to fly in the spring. Males congregate on summits of desert hills to await virgin females. They are readily observed on hilltops between the hours of 10 AM and 2 PM on sunny days. Females are more rarely encountered and have been reported to be active more in the afternoon than the morning. They are best encountered in gullies and along hillsides. The adults have a swift and erratic flight and are difficult to follow in desert terrain. (Brock and Prchal 2001).

REPRODUCTION: Eggs are conical, bluish-green when first laid and soon turn orange. They are laid singly on various parts of the host.

Young caterpillars are green with a lateral purple stripe edged with white. They eat the buds and pods of the host. After molting into the last instar the larva undergoes a remarkable color change becoming mostly white with various yellow, black and bluish-gray markings.

The pupa is light brown to dark gray with a long cone on the head.

FOOD HABITS: The subspecies *pima* uses a variety of crucifers (Cruciferae). *Streptanthus carinatus* seems to be preferred in the Tucson Mountains, although larvae have been found and successfully reared on *Sisymbrium irio*, an introduced species in the same range. *Descuriania pinnata* and *Thysanocarpis curvipes* are used in the Santa Catalinas. (Bailowitz and Brock 1991). For the Coronado National Forest area, the following are documented food plants: *Streptanthus carinatus*, *Descurainia pinnata*, *Thysanocarpis curvipes*, *Sisymbrium irio* (an exotic), and *Caulanthus lasiophyllus* (Brock and Prchal 2001).

FLIGHT PERIOD: Records have been reported from 5 February to 21 April in a single brood. The brood probably lasts a month in any given colony.

HABITAT: In Arizona, they inhabit mostly Sonoran and Chihuahuan desertscrub, and range barely into grassland. Mostly below 1800m and mainly at the periphery of mountain islands. As a rule, when one encounters the oak belt, you are leaving *pima* country.

ELEVATION: Below 5,906 ft. (1800 m) according to Brock and Prchal (2001). Unpublished records in the Heritage Data Management System (AGFD, accessed 2001) range from 1,060 - 4,400 ft. (323 - 1342 m).

PLANT COMMUNITY:

POPULATION TRENDS:

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:	None
STATE STATUS:	None
OTHER STATUS:	Forest Service Sensitive (USDA, FS Region 3 1999)

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS:

LAND MANAGEMENT/OWNERSHIP: NPS - Organ Pipe Cactus National Monument;
USFS - Coronado National Forest; State Land Department; Private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Bailowitz, R.A., and J.P. Brock. 1991. Sonoran Arthropod Studies, Inc., Tucson, AZ. p. 146.
- Brock, J., and S. Prchal. 2001. Sensitive Insect Species of the Coronado National Forest. A Training Project by the Sonoran Arthropod Studies Institute, Tucson, AZ.
- Howe. 1975. The Butterflies of North America. Doubleday.
- <http://www.funet.fi/pub/sci/bio/life/insecta/lepidoptera/ditrysia/papilionoidea/pieridae/pierinae/anthocharis>.
- Miller and Brown. 1981. A Catalogue/Checklist of the Butterflies of America north of Mexico. The Lepidopterist's Society.
- Opler and Wright. 1999. Western Butterflies. Houghton Mifflin Company.
- Scott. 1986. Butterflies of North America. Stanford Press.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

James Brock - Sonoran Arthropod Studies Institute, Tucson, AZ.

ADDITIONAL INFORMATION:

This species is common and widespread. Most populations are on BLM, state, county or private lands. There is no reason for listing (FS sensitive) this species at this time. (Brock and Prchal 2001).

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