

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Catocala caesia*

COMMON NAME: an underwing moth

Although not yet accepted, the “Bluish-gray Underwing” is suggested as the common name by the author.

SYNONYMS:

FAMILY: Lepidoptera: Erebidae

AUTHOR, PLACE OF PUBLICATION: Hawks, David C. 2010. Review of the *Catocala delilah* species complex (Lepidoptera, Erebidae). In: Contributions to the systematics of New World Macro-Moths II, B. Christian Schmidt and J. Donald Lafontaine, eds. ZooKeys 39.

TYPE LOCALITY: Arizona: Cochise County: Chiricahua Mountains: South Fork of Cave Creek.

TYPE SPECIMEN: HT: Peabody Museum of Nat. Hist. (PMNH), #ENT 721045), male. D.C. Hawks (s/n), May 28, 1985.

TAXONOMIC UNIQUENESS: *Catocala* is a large genus. There are over 100 species in North America (BugGuide 2019). *C. caesia* is included in the *Catocala delilah* species complex that is one of 20 groups that Barnes and McDunnough used in their 1918 monograph of the North American *Catocala* to subdivide the genus (Hawks 2010). According to Hawks 2010 review of this complex, it includes 10 species and 16 subspecies or synonyms. Five of these species, *C. desdemona*, *caesia*, *frederici*, *benjamini*, and *chelidonia*, are found in Arizona.

DESCRIPTION: *Head:* eye dark brown; vertex and palpi covered with dark-brown and white scales; antenna 26—28 mm, brown dorsally, reddish brown ventrally. *Thorax:* patagia and regulae mottled with white, tan, and dark-brown scales, patagia slightly darker; remainder of thorax covered dorsally by tan scales, especially posteriorly; ventrally covered by long thin off-white scales; tibiae clothed mainly with short, pale-tan scales, speckled with brown scales; mid-section of tibiae with brush of medium to long, straight, off-white and tan scales; tarsi pale tan, banded with dark brown. *Abdomen:* mostly orange, clothed with sparse, long, pale-tan scales, especially anteriorly; ventrally, pale, yellowish tan. *Forewing:* mean FW length 22.4 mm (males), 25.0 mm (females). Dorsal surface: patterns composed of black, dark brown, tan, and white scales, some scales iridescent bluish gray; basal line black, ending before meeting 2A; no basal dash; antemedial line and line basal to antemedial line black, blurred; reniform bluish gray and tan

outlined indistinctly with black; subreniform closed, whitish or tan, to indistinct, narrowly outlined with black; postmedial line black, indistinct, all teeth between M1 and inner margin subequal in length; area between postmedial and subterminal lines more brownish especially between M2 and inner margin; subterminal line black, blurred, often only teeth near M1 and M2 obvious; terminal line inconspicuous, usually present only as a series of black dots mid-way between ends of veins; fringe brown. Overall appearance of the dorsal forewing is mottled bluish gray and black. Ventral surface: base of wing pale yellowish tan, blending with indistinct postbasal band of yellow and brown scales; antemedial band pale yellowish tan, edges indistinct; medial band black, widest between M2 and Cul, narrowing markedly between Cu and inner margin, occasionally disappearing before reaching inner margin; postmedial band pale yellowish tan; outer band black, often interrupted by pale yellowish tan along a fold between Cu and 2A. Apex pale yellowish tan, blending smoothly with pale yellowish-tan marginal band; fringe pale yellowish tan with a few black scales at end of each vein. *Hindwing*: dorsal surface: basal area, postmedial band, apical spot, and fringe yellow orange; basal area with a few brown scales; inner band black, usually thin (3-4 mm at widest point); short hook usually apparent just anterior to anal spot; outer band black; anal spot nearly always separated from outer band by 2-3 mm; apical spot large, squared; fringe varying ly checkered with black scales originating from near ends of M1 to 2A. Ventral surface: basal area, postmedial band, apical spot, and fringe pale yellowish tan, a little brighter than ventral forewing; inner band black, distinctly narrower than on dorsal surface; outer band black, often connected with anal spot by thin array of black scales; apical spot sharply defined, squared, although occasionally blending with pale yellowish-tan marginal band when band wider than just width of fringe; fringe usually pure pale yellowish tan. Overall, there is no pronounced sexual dimorphism in *C. caesia* (Hawks 2010).

AIDS TO IDENTIFICATION: Most closely related to *C. frederici*. The ventral surface of the forewing and both surfaces of the hindwing are nearly identical in *C. caesia* and *C. frederici*, although *C. frederici* tends to have paler yellow-orange scales and slightly narrower black bands. However, the upper surface of the forewing of *C. frederici* is an even grayish to nearly off-white color, and there are almost no black scales present; all lines are less distinct in *C. frederici* than in *C. caesia*. The forewings are usually browner in *C. benjamini* than in *C. caesia*, although the former also may have a bluish cast; the antemedial and postmedial lines are also more distinct in *C. benjamini*, and the subreniform is sometimes open. The hindwing upperside of *C. benjamini* is a duller orange and more brown scales are present at the base. On the wing undersides, *C. benjamini* always has substantial dusky suffusion, especially on the forewing, and the apex of the forewing is brown. The general appearance of *C. caesia* is also like *C. desdemona*, although *C. caesia* is smaller and can always be separated from *C. desdemona* by the uniform size of the teeth of the postmedial band, and by the pure pale yellowish-tan color of the ventral surfaces (*C. desdemona* has a whitish shade along the costa of the forewing, and usually more dusky suffusion at the apex of the forewing underside), Hawks 2010.

ILLUSTRATIONS: Color photo (Hawks 2010).

TOTAL RANGE: The range of *Catocala caesia* is limited to the mountains of southeastern Arizona and southwestern New Mexico, and southward through the Sierra Madre Occidental in Chihuahua, and possibly into Durango. Arizona is the northern-most extent of its distribution.

RANGE WITHIN ARIZONA: Cave Creek and South Fork Cave Creek in the Chiricahua Mountains; Cottonwood Canyon in the Peloncillo Mountains; Cochise Stronghold in the Dragoon Mountains; Ash Canyon, Carr Canyon, Ramsey Canyon and Miller Canyon in the Huachuca Mountains (all Cochise County); and Santa Rita Mountains (Pima County).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Nocturnal, so found at lights. When a resting adult is touched or disturbed, it may quickly spread its forewings to reveal the startling hindwings beneath. This might scare a predator off, or allow the moth time to fly away.

REPRODUCTION: Adults fly from late May to October, although late emerging individuals are much less common than are those from May to July (Hawks 2010). Early June seems to be the peak flight time (Borth, personal communication, 2019). This is a species that exhibits a boom or bust pattern. It can have exceptionally good production years, or be quite scarce, but seems to have the ability to persist even after the lean years.

FOOD HABITS: One or more species of oak may be the host plant for *C. caesia*.

HABITAT: Several species of oak are found at each of the known collections sites (Hawks 2010). Habitat is not well known, but certainly some sort of oak woodland or oak scrub (NatureServe 2019).

ELEVATION: Not specified.

PLANT COMMUNITY: Several species of oak are always present.

POPULATION TRENDS: Unknown. There are probably less than 100 substantial occurrences and only about six have actually been documented (NatureServe 2019). *C. caesia* is ranked as imperiled globally, but has not yet been ranked subnationally (i.e., Arizona and/or New Mexico).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.
STATE STATUS: None.
OTHER STATUS: None.

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: None specified.

SUGGESTED PROJECTS: Additional life history information is needed, as well as verification that known locations are still extant or if new locations can be discovered. This species requires expertise to properly identify.

LAND MANAGEMENT/OWNERSHIP: Although exact sites have not been mapped, most collection sites are within National Forests (Chiricahua, Huachuca, Dragoon and Santa Rita Mountains) and probably DOD Fort Huachuca and private Nature Conservancy lands.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

BugGuide. Genus *Catocala* – Underwings. <https://bugguide.net/node/view/368>, accessed July 26, 2019.

Hawks, David C. 2010. Review of the *Catocala delilah* species complex (Lepidoptera, Erebidae). In: Contributions to the systematics of New World Macro-Moths II, B. Christian Schmidt and J. Donald Lafontaine, eds. ZooKeys 39 (Special Issue). Pensoft, Sofia, Bulgaria. 281 p.

NatureServe. 2019. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: July 25, 2019).

MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION: Generic epithet *Catocala* is Greek meaning "beautiful below." The name *caesia* is based on the Latin root caesi, referring to the bluish-gray color of the forewing.

C. caesia can be easy to confuse with *C. benjamini* and *C. frederici*, and their ranges do overlap. Both *C. caesia* and *C. benjamini* have also been conflated in the literature.

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