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Conserving South Carolina's At-Risk Species:

Species facing threats to their survival

Frosted elfin

(*Callophrys irus*)



Frosted elfin / Will Cook

Description

The frosted elfin is in the family Lycaenidae (gossamer-wing butterflies). It has a wingspan of 1 to 1¼ inches. The upper-side of the wings are dark brown; males have a long, oval dark spot on the leading edge of the forewing. The underside of the wings are marked by an irregular postmedian line (fainter on the hindwing). On the hindwing, this line separates the darker basal area from the paler submarginal area, which is frosted with white scales and has a black spot above the tail. There is one short tail on the hindwing.

Range

The range of the frosted elfin extends throughout the eastern U.S. from western Maine to Florida and west to central Wisconsin and eastern Texas, but the butterfly is extremely local and usually scarce throughout this area. Within this range, there are three subspecies with regional distributions: *Callophrys irus irus* occupies the northern part of this range, with clusters in northern Florida and eastern Maryland; *Callophrys irus arsace* occurs from

southern New England south to coastal areas of North and South Carolina; *Callophrys irus hadra* is confined to east Texas and west Arkansas. In South Carolina, the species is known from the following counties: Aiken, Berkeley, Charleston, Chesterfield, and Georgetown.

Habitat

Frosted elfins require open woods, forest edges, fields, and scrub in which their larval hostplants grow. Increasingly, it is confined to disturbed patches such as powerline rights of way and along railroads and not purely natural habitat. Recorded hostplants are all in the pea family (*Fabaceae*). Wild indigo (*Baptisia tinctoria*) and wild (sundial) lupine (*Lupinus perennis*) are most frequently used. The subspecies vary in their hostplant preferences. *Callophrys irus irus* feed on both indigo and lupine, but the larvae of *arsace* and *hadra* only feed on indigo. There are also occasional records of frosted elfins feeding on blue false indigo (*B. australis*) and arrowhead rattlebox (*Crotalaria sagittalis*).

Status

NatureServe's Rounded Global Status is G3 - Vulnerable. Although the frosted elfin has a distribution that touches more than half of the states in the U.S., it is very rare or only locally distributed throughout this area. Given the reliance of the frosted elfin on wild lupine for larval survival, it is also worth noting the status of this plant.

Threats

The major threat to the frosted elfin is loss of habitat from development, succession, and fragmentation. Fire management of these areas can impact the butterflies if done poorly. In areas where gypsy moth is considered a forest pest, the spraying of Btk (*Bacillus thuringiensis kurstaki* - a bac-

teria employed in a biological insecticide used to eradicate the gypsy moth) poses a serious hazard to frosted elfin larvae.

Management/Protection Needs

Populations are often small and local and generally need conservation attention. As with many butterflies, protection and management of their habitat to ensure the presence of hostplant populations is the primary need. Due to the successional nature of the habitat, appropriate vegetation management is important as poor actions such as overgrazing or badly timed prescribed fire may negatively impact the butterflies. Gypsy moth suppression programs must consider the impacts on frosted elfin populations. Surveys for unidentified populations in all states where it is recorded would be useful and, in particular, surveys in those states and provinces from where it is extirpated should be done. Research into the impacts of habitat management, especially the use of fire, is a priority.

References

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- Shepherd, M. D. 2005. Species Profile: *Callophrys irus*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). Red List of Pollinator Insects of North America. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation.

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