

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

Invertebrate Abstract

Element Code: IIORT26020

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Stenopelmatus navajo*

COMMON NAME: Navajo Jerusalem Cricket

SYNONYMS:

FAMILY: Stenopelmatidae

AUTHOR, PLACE OF PUBLICATION: D.C.F. Rentz. New species and records of Western Orthoptera. The Pan-Pacific Entomologist 54(2): 81-97. 1978.

TYPE LOCALITY: Moenkopi, Coconino County, Arizona.

TYPE SPECIMEN: Holotype, CAS 12,775. F.G. Andrews and A.R. Hardy. 17 July 1975.

TAXONOMIC UNIQUENESS: There are 50 known species of Jerusalem crickets.

Stenopelmatus navajo is sympatric and closely related to *S. fuscus*. They can only be identified by study of live individuals. Drumming patterns of *S. navajo* and *S. fuscus* are also very similar and cannot be used for field identification.

DESCRIPTION: Size of *S. navajo* is very large for the genus. Ground color whitish, and the abdomen is bulky, and black-banded. They have a large head with a large powerful jaw, with which they can bite severely, although they are non-poisonous. The space between the eyes is wide. They are wingless, and have strong spiny legs, that allows they to burrow rather rapidly. The tarsi is not lobed, but more or less flattened laterally. The hind femora do not extend beyond the apex of the abdomen. This species usually occurs under stones in loose soils. Identification of species within this genus is difficult with preserved specimens, because color patterns may be lost.

AIDS TO IDENTIFICATION: Large size, pale coloration. However, this paleness makes them difficult to see on the sand dunes except when they are moving.

ILLUSTRATIONS: Black and white drawing (Rentz 1978)

Line drawing of cricket, dorsal view (Borror, 1970: 83)

TOTAL RANGE: Moenkopi to Petrified Forest National Park, Coconino and Navajo counties, Arizona.

RANGE WITHIN ARIZONA: See "Total Range."

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Nocturnal with activity beginning near dusk and extending to early morning, when they can be seen searching the sand from bush to bush. If disturbed, they may rapidly burrow into the sand. Activity appears to be limited to summer months, particularly July. Jerusalem crickets have the ability to regenerate legs. They live one to two years as adults.

Jerusalem crickets are sometimes found dead in swimming pools and ponded waters. This is either the result of a simple drowning or a parasite infection. The horsehair worm (*Gordius* spp. or *Paragordius* spp.) can inhabit the Jerusalem cricket's gut where it feeds. The worm can alter the behavior of the cricket and force it to seek water. Once in water, the worm bursts through the insect's abdomen and seeks a mate. The cricket then dies from the wound.

REPRODUCTION: Jerusalem crickets in general attract their mates by drumming their abdomen on the ground. Each species drums at a different rate. They also engage in post-coital cannibalism.

FOOD HABITS: Members of the family Stenopelmatidae are largely insectivorous. One source states that they eat plant roots.

HABITAT: Endemic to sand dunes and sandy washes in northern Arizona.

ELEVATION: 4,890 ft (1,490 m) according to HDMS (AGFD unpublished records accessed 2003).

PLANT COMMUNITY: Dominant shrubs are greasewood (*Sarcobatus* sp.) and Mormon tea (*Ephedra* sp.)

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1994]
[C2 USDI, FWS 1991]

STATE STATUS: None

OTHER STATUS: [Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005)]
Forest Service Sensitive (USDA, FS Region 3 1999)

MANAGEMENT FACTORS: Grazing, off-road vehicles and other forms of habitat modification, all of which are known to greatly damage sand dune systems, may adversely affect this species. At present, this species is not known to occur on any lands that have a protected status.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Work by R. Johnson indicates that this species is probably more common and widespread than was previously believed. However, because the distribution and abundance is still poorly known, surveys should be undertaken to better determine habitat, abundance and geographic distribution. During these surveys, a search should be instituted for *Daihinibaenetes arizonensis*, another little known species which appears to have similar habitat requirements for *Stenopelmatus navajo*.

LAND MANAGEMENT/OWNERSHIP: BIA – Hopi Reservation and Navajo Nation; Arizona State Land Department.

SOURCES OF FURTHER INFORMATION**REFERENCES:**

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

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Dave Weissman - Los Gatos, California 95032

ADDITIONAL INFORMATION:

Dr. Dave Weissman is the only person in the United States that works on the family Stenopelmatidae.

Individuals may be collected by sieving through sand in appropriate habitats or by driving roads at night. The best season for collection appears to be summer. Collected individuals should be photographed in color, and if possible, maintained alive for later identification.

Borror and White, 1970, assign *Stenopelmatus navajo* to the family Gryllacrididae and the subfamily Stenopelmatinae.

“No adult females have been discovered. The entire type series consists of males as indicated above. Such is unusual among Jerusalem crickets where most collections contain females and juvenile males.” (Rentz, 1978)

Other name for Jerusalem crickets include: Potato bugs, Ninas de la Tierra (Spanish for “Children of the Earth”), Chacos, Wo see ts’inii (Navajo for “skull insect” or “bone neck beetles”).

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