NEW ZEALAND BIOSECURE
Entomology Laboratory

A DIVISION OF SMS SOUTHERN MONITORING SERVICES LIMITED

Aedes (Ochlerotatus) sierrensis (Ludlow)

western tree hole mosquito

NZ Status: Not present – Unwanted Organism

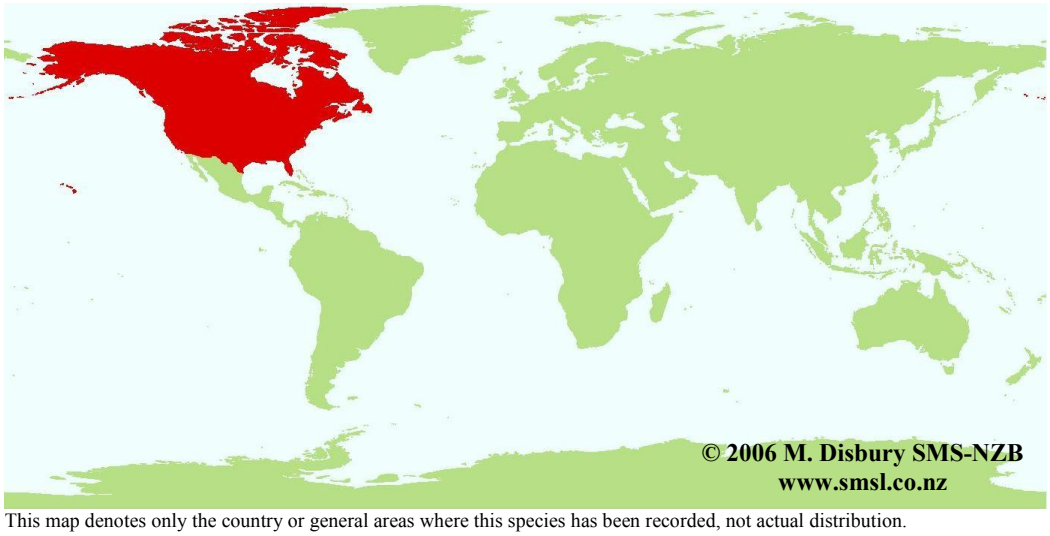
(Photo ex www.msmosquito.com)

Vector and Pest Status

Aedes sierrenis is a major pest species, commonly biting humans and other large animals (Bohart and Washino, 1978; Garcia *et al*., 1989), as well as some reptiles. It is a major vector of dog heartworm (*Dirofilaria immitis*) in dogs and deer in parts of the United States (Scoles *et al*., 1993), and also of deer body worm (*Setaria yehi*) (Lee, 1971, in Woodward *et al.,* 2003) and implicated as a less efficient vector of West Nile virus (Goddard *et al*., 2002). It is an experimental vector of Western Equine encephalitis virus in the laboratory (Reeves and Hammon, 1962) and has been experimentally infected with Japanese B encephalitis (Reeves and Hammon, 1962) and California encephalitis virus (Berge, 1975).

Geographic Distribution

This species is widely distributed in western North America from British Columbia southward to Baja, California and westward to Idaho, Montana and Utah (Bohart and Washino, 1978; Darsie and Ward, 1981).



This map denotes only the country or general areas where this species has been recorded, not actual distribution.

Incursions and Interceptions

This species has been intercepted in New Zealand, at the Ports of Auckland on one occasion, 10/12/02. A larva was found in a tyre which was part of the shipment of a logger boom with was secured to a flat rack container from the United States.

Taxonomy

Aedes sierrensis is part of a species complex involving a total of four species in the subgenus *Ochlerotatus*. In addition to *Ae. sierrensis* and *Ae. varipalpus*, the other members of the complex are *Aedes monticola* and *Aedes deserticola* from western North America (Bohart and Washino, 1978).

Aedes sierrensis has long been known in literature as *Aedes varipalpus* (Coquillett). It was recognized that *Ae. varipalpus* from Arizona was different from the common tree hole mosquito found in California, which was subsequently named *Ae. sierrensis* (Bohart and Washino, 1978).

Habits and Habitat

Aedes sierrensis is common in oak woodlands and mixed conifer forest habitats in rural and sub-urban areas. Larvae have been found in tree holes of at least 21 different tree species, usually with lots of organic matter (Bohart and Washino, 1978). This species has also been collected in artificial containers such as barrels and watering troughs.

Eggs are laid in batches of 200-300 and hatch when rainwater fills the tree holes. Development proceeds slowly and once they have reached 4th instar, larvae enter diapause until long day length cues pupation in the spring (Jordan and Bradshaw, 1978; Woodward *et al*., 2003).

Adults emerge between late February and June in the United States, (www.msmosquito.com) and observations indicate they doesn't disperse far from breeding sites, and rarely fly during windy conditions (Washburn *et al*., 1992). They will bite anytime of day, including in full sun (Garcia *et al.,* 1989).

Adult males emerge two weeks before the females and form mating swarms around mammals. Adults of both sexes are attracted to hosts, primarily mammals, where mating occurs and females obtain blood meals (Washburn *et al*., 1989).

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